



SOCIAL SCIENCES INTERNATIONAL RESEARCH CONFERENCE

**19 - 21 Oct 2022
Mauritius
Hybrid conference**

**CONFERENCE
PROCEEDINGS**



SOCIAL SCIENCES INTERNATIONAL RESEARCH CONFERENCE

**Organized by the Faculty of Economic
and Management Sciences, North-West
University, South Africa
and
The Open University of Mauritius**

**19 - 21 Oct 2022
Mauritius
Hybrid Conference**

**Theme: Navigating Social Sciences
research amidst unprecedented
disruption, challenge and crisis:
Looking to the future**

CONFERENCE PROCEEDINGS



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REVIEW PROCESS

The first call for papers went out early in December 2021, with a due date of abstract submissions by 1 March 2022. A total of 219 abstracts were submitted and abstract acceptance was communicated by 18 March. The abstracts were blind peer-reviewed by appointed subject chairs who are experts within their respective fields. Authors with accepted abstracts were invited to submit a full paper with a deadline of 29 April 2022. A total of 143 full papers were received, of which one was not accepted because of a high similarity index. The remaining 142 papers were subjected to a double-blind peer review process managed by the head of reviewers according to South Africa's Department of Higher Education and Training (DHET) refereeing standards. Subject chairs within the different tracks of Business Management, Economics, Finance, Public Relations and Human Resource Management, Marketing, Sport and Leisure and Technology Integration identified reviewers unknown to the authors and from a different institution for the review process. Likewise, the identity and the institution of the reviewer remained anonymous.

A database of possible reviewers was compiled by the SSIRC organising committee, indicating each reviewer's area of expertise. Each subject chair drew from this database within their subject field or included new additions to the list of reviewers. Some of the reviewers were authors of papers, however, several reviewers were from international institutions. The list of the scientific committee and reviewers is provided within the proceedings. At least two anonymous reviewers reviewed each paper submission and where discrepancies occurred, a third reviewer was used, or the head of the reviewers performed the third review. Papers were reviewed according to the following criteria:

- Significance of the paper
- Originality
- Content including the abstract, quality literature review and/or research question
- Appropriateness of research methodology
- Adequacy of results and discussion
- Technical; including language, spelling and references.

Authors received a reviewer report on the above-mentioned aspects and attended to comments and recommendations where needed by submitting a change log when required by reviewers. Four papers were rejected after review. The second manuscript submissions, if needed, were assessed by the head of reviewers when papers were returned, or alternatively reviewed for a second round by the reviewer according to their comments. In total, 113 full papers were included in the conference proceeding.

PREFACE

The Social Sciences International Research Conference (SSIRC) 2022 proceedings contain full papers submitted to the hybrid Social Sciences International Research Conference held in-person and virtually from 19 to 21 October 2022. The conference was organised and hosted by the Faculty of Economic and Management Sciences of the North-West University, South Africa, in partnership with the Open University of Mauritius.

SSIRC 2022 provided high-quality pre-conference workshops, addressing the need for expanded research methodologies using new technologies. The PhD round table discussion session also provided a novel opportunity to develop young social science researchers as they engaged with experienced faculty. The conference keynote address by the Honourable Mr Deepak Balgobin, the Mauritian Minister of Information and Technology, Communication and Innovation on Artificial intelligence and the keynote from Nepal, Prof Biju Thapalia address on “The future of Supply Chain: response to disruption, challenges and opportunities”, denoted the conference theme excellently. Partnering with the Open University of Mauritius has equally brought new opportunities for conference delegates, and we thank the Local Organising Committee members from OU for their contribution to the conference’s success.

The conference solicited and attracted research submissions on all aspects of the Social Sciences. A total of 143 full papers were submitted to the conference. All papers were first subjected to a scientific and technical review, which included determining the content similarity index using specialised software. Subsequently, 142 papers adhering to the technical guidelines and with an acceptable similarity index were double-blind peer-reviewed by reviewers drawn from the scientific committee and external experts depending on the subject matter. Following the review process, 129 full paper submissions were accepted for the conference. Of the papers accepted for presentation at the conference, 113 full papers were included in the conference proceedings.

The Organising Committee of the SSIRC would like to thank the scientific committee, subject chairs, external reviewers, session chairs, staff from OU and presenters for their contribution to the conference.

We trust that the first hybrid conference was an insightful and fruitful experience, contributing to research inspiration.

Prof J Surujlal

SSIRC Co-chair

On behalf of the organising committee

Executive Dean: Faculty of Economic and Management Sciences

North-West University

INSTITUTIONAL CONTRIBUTIONS

A total of 113 full papers were included in the proceedings after the double-blind peer review process. The contributions of papers were received from 22 different national and international institutions, which is depicted in Table 1. The host institution, NWU contributed 29.4% of the full papers in the conference proceedings with 70.6% of the contributions by other institutions. Thus, the proceedings adhere to the DHET criteria that more than 60% of papers have to be from other institutions.

Table 1: Institutional and weighted author contributions

| No | | n | Institutional % |
|--------------|--|------------|-----------------|
| 1 | University of Johannesburg | 9.5 | 8.4 |
| 2 | University of Limpopo | 14.5 | 12.8 |
| 3 | Cape Peninsula University of Technology | 3 | 2.7 |
| 4 | Vaal University of Technology | 20.7 | 18.3 |
| 5 | North-West University | 33.2 | 29.4 |
| 6 | University of South Africa | 9.8 | 8.7 |
| 7 | University of KwaZulu-Natal | 1.3 | 1.2 |
| 8 | University of Free State | 2.5 | 2.2 |
| 9 | Central University of Technology | 2 | 1.8 |
| 10 | Walter Sisulu University | 2 | 1.8 |
| 11 | Durban University of Technology | 2 | 1.8 |
| 12 | University of Fort Hare | 2 | 1.8 |
| 13 | Wageningen University and Research, The Netherlands | 0.75 | 0.7 |
| 14 | Tshwane University of Technology | 2 | 1.8 |
| 15 | Aros, Pretoria, South Africa | 0.5 | 0.4 |
| 16 | Human Sciences Research Council, South Africa | 1.5 | 1.3 |
| 17 | University of Cape Town | 0.5 | 0.4 |
| 18 | Open University of Mauritius | 2 | 1.8 |
| 19 | Richards Bay Coal Terminal (Proprietary) Ltd, South Africa | 0.25 | 0.2 |
| 20 | University of Mpumalanga | 1.5 | 1.3 |
| 21 | University of Western Cape | 0.5 | 0.4 |
| 22 | University of Zululand, South Africa | 1 | 0.88 |
| Total | | 113 | 100 |

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THE EFFICACY OF THE INTERNAL AUDIT ACTIVITY IN THE SOUTH AFRICAN POLICE SERVICE

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ABSTRACT

The purpose of this study was to assess the effectiveness and efficiency of the Internal Audit Activity (IAA) within South African Police Services (SAPS) and how effectiveness and efficiency could be measured. This is important because IAA is a key pillar of good governance that provides all stakeholders with an independent view on whether the organisation has an appropriate risk and control environment. A quantitative research method was used in conducting this study. Data was collected from previous studies, followed by a questionnaire distributed by hand and email to 100 participants. The SPSS version 25.0 for Windows was used to analyse data. The findings of the study found that barriers that impede effective functioning of other IAA in the public sector are not necessarily barriers to SAPS IAA. The study further indicated that SAPS IAA carefully planned their audits by way of spreading audit resources across all phases of the audit, providing adequate supervision and issuing clear and concise audit reports. The study confirmed that SAPS IAA reporting functionally to the audit committee comprises competent members with mixed skills and experience, which is in line with Institute of Internal Auditors (IIA) standards. Further, it was confirmed that IAA is considered effective when it completes all audits in the audit plan within the budgeted timeframe and complies with its own approved audit manual, methodology and Internal Audit Charter. When IAA has qualified and experienced staff with sound knowledge of the business, and when the audit plan is a risk-based audit plan, covers assurance and consulting engagements, it is regarded as effective. When IAA incorporates inputs from various stakeholders in developing the three-year rolling plan and annual audit plan, it is deemed effective. Continuous affiliation to the professional bodies, appointing auditors with various backgrounds, skills and experience could make SAPS IAA one of the best departments in the public sector. Management should create an environment conducive for IAA to execute its duties and enable IAA to deliver on its commitment objectively and independently.

Keywords: Internal Audit Activity, efficiency, Institute of Internal Auditors, effectiveness, South African Police Service, Internal Auditors, Audit Committee.

INTRODUCTION

Globally, organisations experience rapid change in the business environment which are economic changes, regulatory requirements and technological advancements. Internal Audit Activity (IAA) is part of the organisation and should not be static when changes occur in the organisation. For it to be relevant and continue to provide value-added services, it should take the direction the

organisation is taking because IAA is a key pillar of good governance that provides all stakeholders with an independent view on whether the organisation has an appropriate risk and control environment.

SAPS is a public service institution, which renders services in terms of preventing and combating crime, investigating crime and providing safety and security services to South Africans. Its IAA strategy should always be aligned with organisational strategy to assist SAPS achieve its goals and objectives.

IAA serves as eyes and ears of management and to be effective and efficient, full support from management and the audit committee is required. This is supported by the results of the study conducted by Mihret & Yismaw (2007) who state that internal audit quality, support from management and auditee attitudes towards the work of IAA can be the basis or fundamental principles of IAA effectiveness. The study further cited that support from management is vital by means of providing IAA with the necessary resources, which are financial, human and physical, required to carry out its audits.

When sufficient resources are made available, IAA is able to increase the audit coverage, and it strengthens the independence and objectivity of IAA. Morgan (2009) supports this notion by stating that when IAA is allocated insufficient resources, it is an indicator of lack of management support or a sign of not understanding the role of internal audit and benefits that management derive from IAA.

The main responsibility of IAA is to provide management with assurance on the adequacy and effectiveness of controls, risk management and governance processes instituted and implemented by management. The other responsibility is to establish if public funds are used within specified areas, and where there are deficiencies, a report is compiled with value-add recommendations for management to implement (Goodson 2012; Mory et al., 2012). This also assist the organisation to achieve a desired outcome/report from the AGSA, which is unqualified audit opinion. A well-equipped IAA plays a crucial role in assisting the organisation to fight allegations of fraud and corruption, therefore it is easier to achieve this and to get a clean audit report when the organisation has effective and efficient IAA.

The study assessed the effectiveness and efficiency of IAA within SAPS and how such effectiveness and efficiency could be measured. The results of the study conducted by other researchers revealed several challenges that makes IAA to be ineffective and inefficient. A study by Onumah and Krah (2012) found that insufficient human and financial resources makes it difficult for IAA to carry out its mandate. This notion is supported by Adel (2011) that there is a huge shortage of internal auditors in most IAA in the public sector.

LITERATURE REVIEW

This paper commenced with the introduction in the previous section, this section analyses a summary of related literature reviewed on the effectiveness and efficiency of internal auditing. It continued by highlighting the methodology applied, results and discussion of the study. After presentation of the findings, this section is concluded by providing conclusion and recommendations.

Internal Auditing

There is a huge complaint in the context that the performance of some of IAA within the South African public sector does not meet the expectations of the society. This could be because of a lack of effective audit committees, shortage of human and financial resources, non-compliance with IIA standards and lack of support from management. As a result of these challenges, many organisations are regarded as ineffective and inefficient as it becomes difficult to execute their mandate. Most organisation face financial crisis, new laws and regulations that emerge in the business environment, and this makes internal and external stakeholders to place many requirements on the IAA (IIA, 2016). As IAA plays a critical role in the governance framework, there has been an excessive increase in the requirements placed on the IAA.

IIA (2010) states that the quality of an IAA is mainly related to its effectiveness, efficiency and measuring effectiveness of IAA is a complex task to do. Effectiveness is defined as the magnitude to which agreed objectives are achieved, while efficiency is described as the degree to which allocated resources have to be deployed to achieve a certain objective.

IIA (2010) makes provision for indicators that can be used to measure the effectiveness and efficiency of IAA in an organisation. These were the indicators used to measures IAA effectiveness.

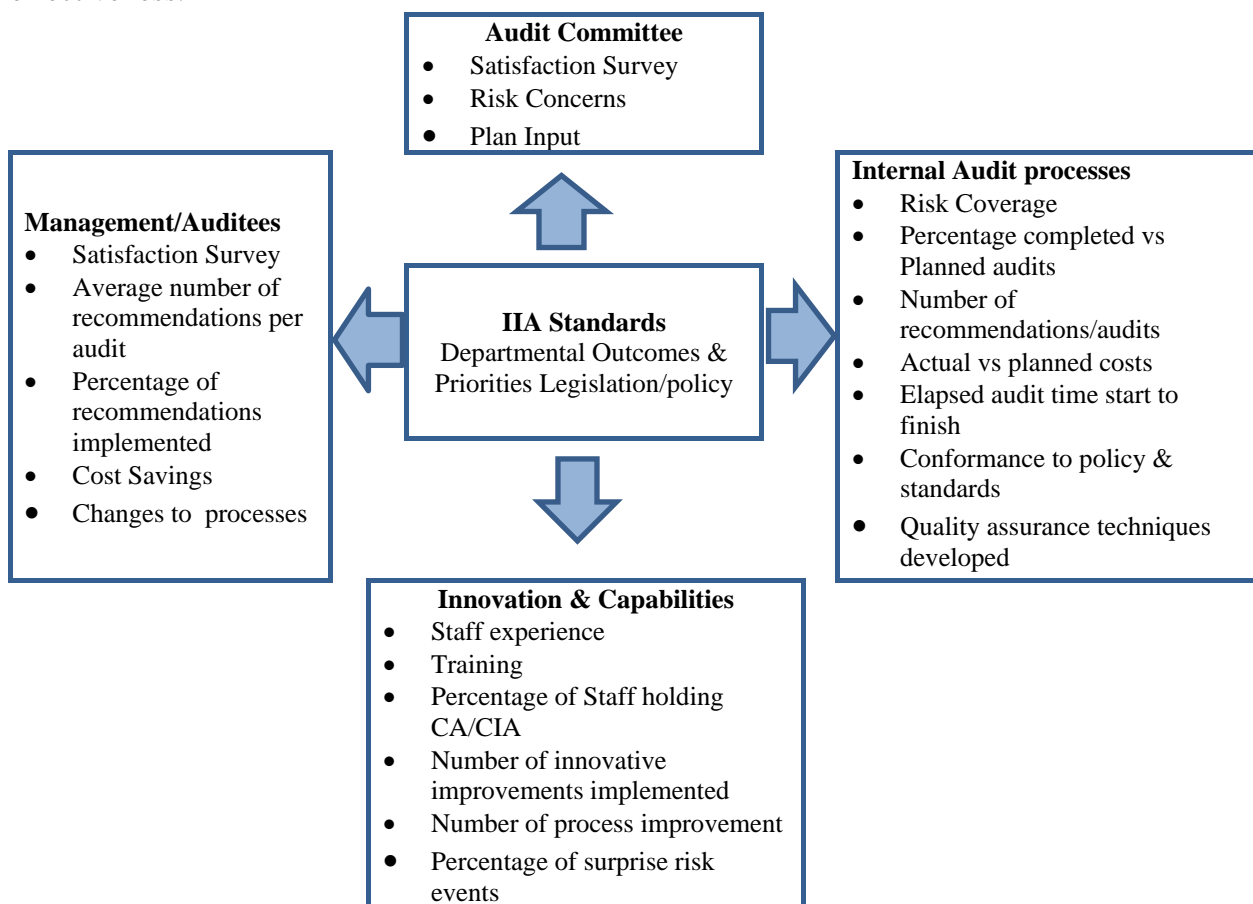


Figure 1: Effectives and efficiency indicators

Source: IIA (2016)

Internal auditors worldwide are required to affiliate with a professional body, which is the Institute of Internal Auditors established in 1941 in Florida, USA. The institution established the IIA SA Chapter in 1964 and transitioned from Chapter to National Institute in 1983. This institution has developed an International Professional Practices Framework (IPPF) for effectiveness of internal audit. The aim of this framework is to effectively support and guide everyone who is in the audit profession. The IIA developed the Standard for the Professional Practice of Internal Auditing, which incorporates the definition of internal auditing (Chapman & Anderson, 2002). “Internal auditing is defined as an independent and objective assurance and consulting activity designed to add value and improve the organisation’s operations. It helps an organisation to accomplish its objectives by bringing a systematic, discipline approach to evaluate and improve the effectiveness of risk management, control and governance processes” (IIA, 2017).

A study conducted by Savcuk (2007) found that only efficient IAA can execute its mandates or tasks properly. Furthermore, the study indicated that the efficiency of IAA depends on its independence and objectivity; the experience, skills and professional qualification of IAA staff; the internal audit strategy and value added to improve the organisation’s operations (Savcuk, 2007). The results of this study are in line with Figure 1, developed by IIA to measure effectiveness and efficiency of IAA.

A study conducted by Ali et al. (2007) showed a huge challenge IAA face is insufficient resources to execute its mandate. This notion is supported by another study by Ahmad et al. (2009), which revealed that insufficient funding was the root cause of IAA poor performance in Malaysian government departments. However, studies conducted by Ali et al. (2007), and Alzeban and Gwilliam (2014) support the notion that when IAA is well resourced and has sufficient number of staff to execute the audit plan, it is highly likely to be effective.

Alzeban and Gwilliam (2014) found that independence or objectivity is the main element in ensuring effectiveness of IAA. Their study identified lack of independence and objectivity as the main obstacle to good performance of internal audit in most developed countries. This suggests that reporting lines of internal activity are critical and should be aligned with IIA standards, which allow for reporting to the highest level in the organisation.

A study by Menza, Aga and Jerene (2019) on determinants of IAA in the Ethiopian public enterprises contradicts results of other researchers. The results indicated that having sufficient human and financial resources, qualified internal audit staff and approved IA charter do not significantly predict effectiveness of IAA. The respondents also disagreed with the notion that an independent internal audit significantly predicts effectiveness of internal auditing.

Regulations of Internal Audit Activity in the Public Sector

In South Africa, internal audit activity (IAA) is established in the public sector to meet the requirements of Section 38(1) (a) (ii) of the PFMA Act of 1999. This Section further requires that the established IAA must be under the direction and control of the Audit Committee (AC). In support of the PFMA requirement, the National Treasury has developed an internal audit framework that serves as a guide for the development and functioning of internal audit activities in the public sector.

Theoretical Framework

Theory adopted for this study is Agency Theory. In Agency Theory, owners delegate authority for making decisions to the managers, and managers perform certain tasks as agents on behalf of the owner. At SAPS, auditors are appointed by executives and operate as audit committee representatives, expected to assess the work of the executives and give feedback to the audit committee. IAs, therefore, are regarded as agents who monitor the performance of the following stakeholders: executives, the board, and audit committee. Agency problems arise where the audit committee is inefficient, and management are so powerful and can influence the IA.

Internal Auditing of SAPS

To fulfil the requirements of the PFMA Act of 1999, SAPS has established IAA in 2003 at the national level and expanded its wings to all nine provinces in 2007. The fixed establishment for the component is currently at 144 internal auditors, comprising junior, middle, and senior managers. For the financial year 2022/2023, the component internal audit is operating at a budget of approximately R25 million, which is 5% above the baseline or 5% more compared to the previous financial year's budget. This is in line with the study by Alzeban and Gwilliam (2014), which found that effectiveness of IAA is likely to be high when IAA is provided with sufficient financial and human resources.

SAPS IA is expected to provide management with assurance on the adequacy and effectiveness of internal controls, risk management and governance processes on all SAPS divisions, components, sections and police stations. Amongst internal audit staff, there are four members qualified as Certified Internal Auditor (CIA), three members as Certified Fraud Examiner (CFE) and one member as Certified in Control Self-Assessment (CCSA); the rest hold university degrees and diploma qualifications. This is in line with the study by Savcuk (2007), which hold that the efficiency of IAA depends on the skills, experience and professional qualifications of internal audit staff. The results of a study conducted by Abu-Azza (2012) showed there is a need for internal auditors to be highly qualified if a high level of effectiveness is to be achieved. Abdolmohammadi (2009) supports this notion by stating that CIAs comply with IIA standards in Anglo-Saxon countries when carrying out their audit assignments.

The Role of Internal Audit Activity in SAPS

IAA is responsible for providing assurance and consulting services in the organisation. This is clearly stated in the definition of internal auditing provided earlier. IIA (2010) states that assurance services involve unbiased examination of evidence to reach conclusion on the process being assessed. Internal audit should be involved in analysing compliance with governance processes and practices and make recommendations on whether those governance processes are suitable for organisation needs (Marks, 2012).

Consulting services are advisory kind of services aimed at improving organisational processes (IIA, 2010). In situations where management is struggling to develop governance processes and procedures, IAA provides advice on how organisational governance processes and procedures should be developed and implemented.

Analysis of Enterprise Risk Management, Controls and Governance Processes.

“Enterprise risk management is defined as structured, consistent and continuous process across the whole organisation for identifying, assessing, deciding on responses to and reporting on opportunities and threats that affect the achievement of its objectives” (IIA, 2013). Arena and Sarens (2015) imply that IAA has a key role to play in the development, implementation and operations of enterprise risk management. However, the study further indicated that too much involvement in enterprise risk management may threaten the independence and objectivity of IAA. A study by Abdurrahman et al. (2020) supports the notion that IAA may play a critical role in the development and implementation of enterprise risk management.

In Malaysia, it was found that most of organisations are struggling to survive due to poor enterprise risk management. A study by Sottanizadeh et al. (2016) recommended that all firms and government institutions should involve IAA in the development and implementation of risk management. SAPS has a fully functional risk management component that facilitates the risk management process across the entire organisation and develops a risk management profile of each business unit. The function of risk management falls under second line of defence in the combined assurance framework (IIA, 2013).

The departmental risk management profile includes both strategic and operational risks, as well as existing controls to manage identified risks. When this process is completed, IAA is involved in reviewing the risk management profile and provides management with information on whether the risk management profile is adequate and effective or not.

IIA (2013) defines corporate governance as the combination of processes and structures implemented by the board to inform, direct, manage and monitor the activities of the organisation towards achieving its objectives. According to Irwan Adimas and Achmad (2019), good corporate governance increases the effectiveness and operational efficiency of an organisation and, as part of corporate structure, an audit committee is established to monitor the performance of management of the organisation. The study concluded that internal audit can play an important role in corporate governance of the organisation.

A study by Zou (2019) implies that a healthy organisation is built on solid corporate governance. The study further revealed that internal audit is an integral part of corporate governance as it forms part of determining the integrity and security of the corporate governance structure. Internal audit can promote effective corporate governance by means of evaluating the organisation’s operating conditions and effective utilisation of resources. Good corporate governance also enhances or strengthens the independence and objectivity of IAA. Consequently, it is important for IAA to be part of corporate governance structure.

Control is defined as any action taken by management to manage risk and increase the possibility that set objectives and goals will be achieved (IIA, 2013). The Committee of Sponsoring Organisation (COSO) developed an internal control framework to guide management of the organisation on the development and implementation of internal controls. The COSO framework is used and recognised worldwide and comprises of five components, which are: control environment, risk assessment, control activities, information and communication, and monitoring (Graham, 2015).

An organisation benefits when internal controls are properly developed and implemented by means of securing the entity's assets, providing reliable financial reporting, complying with laws and regulations and preventing and detecting fraud. An important role internal audit plays in internal control is reviewing such controls and giving assurance on whether controls are adequate and effective or not.

METHODOLOGY

The research method applied for this study is quantitative research method. Tewksbury (2009) implies that this method could make correct or true predictions. This method was chosen because it makes use of questionnaires for collecting data and allows large amounts of numerical data to be generalised and analysed statistically. The researcher sourced data from various research participants, analysed, and interpreted the data.

RESEARCH DESIGN

This study employed a descriptive survey research design as it determines and reports the way things are (Khalid & Kuma, 2012). This design provides high quality data; the data collected represented a large population, which made things easier to analyse and draw a conclusion.

SAMPLING METHOD

The population for this study comprised current SAPS auditors, AGSA auditors and Audit Committee members, who were working in SAPS at the time the study was conducted. A simple random sampling method was used in selecting eighty (80) SAPS auditors, sixteen (16) AGSA auditors and four (4) audit committee members. Simple random sampling affords each element in the population an equal chance of being selected (Daniel, 2012). A sample of 100 participants was deemed sufficient for this study.

Research instrument

Cooper and Schindler (2014) mention various instruments that can be used to collect data, such as interviews and questionnaires. Data were collected from various participants using a structured questionnaire.

Data collection

Permission was given by SAPS National Commissioner to conduct the study. One hundred (100) questionnaires were distributed to the 100 selected members who constituted the sample, delivered personally to participants based in Pretoria and by email to those outside Pretoria. Of the 100 questionnaire, 91 responses were received, 60 from SAPS employees consisting of senior and middle managers, 20 from SAPS internal auditors, 7 from AGSA auditors and 4 from audit committee members. All 91 responses received were fully completed and valid.

Data analysis

Data collected were captured on Excel and exported to Statistical Package for Social Sciences (SPSS) version 25 for Windows for analysis. Validity and reliability tests were conducted to assess for the internal consistency of the questionnaire items. This was done by an expert in the field through scientific verification applying normality tests, skewness, and kurtosis of the factors.

RESULTS AND DISCUSSION

Normality Test

From the descriptive statistics, the skewness and kurtosis values were achieved, which indicates whether the data are normally distributed or not. According to Hair et al. (2016), normal distribution is acceptable when the skewness and kurtosis values are in the range of +/-3. The test of the results is shown in Table 1. Subsequently, the data were determined as normally distributed since the values of skewness and kurtosis were in the range of +/-3 for each variable. Table 1 depicts the normality results of skewness and normality values.

Table 1: Normality Analysis

| Variables | Normality Analysis | | | |
|---|--------------------|-------|--------------|--------------|
| | Obs | Items | Pr(skewness) | Pr(Kurtosis) |
| Examine the efficiency and effectiveness of internal audit activity | 91 | 8 | 0.0066 | 0.0066 |

RELIABILITY AND VALIDITY TESTS

Data were tested for reliability and validity as reflected in Table 2. Validity is the degree to which dimension yields true score of the variable under investigation (Block & Block, 2005). To establish reliability and accuracy of the measuring instrument, Cronbach's alpha coefficients were calculated and coefficients of 0.70 or higher were considered to give sufficient evidence of reliable scale (Hair et al., 2014), but values of 0.5 or lower are regarded as acceptable (Loewenthal, 2004).

The alpha values for the variables indicated that the items formed a scale of reasonable internal consistencies in their reliability. The correlation for the item in the constructs was between the value of 0.7 and 0.83. The item, therefore, correlate adequately in the constructs, confirming the theoretical and empirical evidence of the items from the literature.

Table 2: Cronbach's Alpha Reliability Test

| Variables | Cronbach Alpha |
|---|----------------|
| Examine the efficiency and effectiveness of Internal Audit Activity | 0.838 |

Analysis of Response to the Research Objective

The purpose of the research was to assess the effectiveness and efficiency of SAPS IAA and how such effectiveness and efficiency could be measured. The mean, standard deviation and frequency distributions were calculated to describe the sample. To summarise the sample in the study, response categories on the five-point Likert scale for both the dependent and independent variables were categorised as follows: responses from $1 \leq \bar{x} < 2.5$ were categorised as disagree; $2.5 \leq \bar{x} < 3.5$ categorised as neutral; and $3.5 \leq \bar{x} \leq 5$ were categorised as agree.

Results of the study indicate that SAPS internal audit meets all key performance indicators used to measure effectiveness and efficiency of IAA. Therefore, the study results qualify SAPS internal audit as effective and efficient. Most of the participants were in agreement with the notion that SAPS internal audit staff are experienced, qualified, and undergo necessary training to enhance their knowledge and skills.

Table 3: The Analysis of the Extent of SAPS IAA Efficiency and Effectiveness and measurement of such Effectiveness and Efficiency

| | Strongly disagree | | Neither agree nor disagree | | Strongly Agree | | | |
|---|-------------------|--------------|----------------------------|--------------|----------------|----------------|------|----------|
| | disagree | Disagree | Disagree | Agree | Agree | Agree | | |
| Planned audits not completed | 18 20.0% | 33 36.7% | 11 12.2% | 17 18.9% | 11 12.2% | 90 100.0% | 2.67 | Disagree |
| Utilisation of technology to cut costs | 3 3.3% | 3 3.3% | 9 10.0% | 29 32.2% | 46 51.1% | 90 100.0% | 4.24 | Agree |
| Satisfaction survey received from client | 2 2.2% | 4 4.4% | 15 16.7% | 40 44.4% | 29 32.2% | 90 100.0% | 4.00 | Agree |
| IA considers stakeholders' inputs when developing IA plan | 1 1.1% | 1 1.1% | 12 13.2% | 42 46.2% | 35 38.5% | 91 100.0% | 4.20 | Agree |
| IIA appointed experienced staff | 3 3.3% | 1 1.1% | 11 12.2% | 48 53.3% | 27 30.0% | 90 100.0% | 4.06 | Agree |
| Audits not completed within the budgeted time & money | 20 22.0% | 33 36.3% | 20 22.0% | 12 13.2% | 6 6.6% | 91 100.0% | 2.46 | Disagree |
| IIA considers risk assessment when developing IA plan | 1 1.1% | 2 2.2% | 14 15.4% | 43 47.3% | 31 34.1% | 91 100.0% | 4.11 | Agree |
| Staff holding relevant designation | 3 3.3% | 6 6.6% | 20 22.0% | 43 47.3% | 19 20.9% | 91 100.0% | 3.76 | Agree |
| Sufficient training to internal auditors | 3 3.3% | 5 5.5% | 22 24.2% | 39 42.9% | 22 24.2% | 91 100.0% | 3.79 | Agree |
| IA performs assurance audits & quality audit reports | 3 3.3% | 1 1.1% | 1 1.1% | 46 50.5% | 40 44.0% | 91 100.0% | 4.31 | Agree |
| IA performs consulting audits & reports to Audit committee | 4 4.4% | 4 4.4% | 12 13.2% | 43 47.3% | 28 30.8% | 91 100.0% | 3.96 | Agree |
| Supervision & conformance with IIA standards, methodology & IA charter. | 4 4.4% | 6 6.6% | 16 17.6% | 37 40.7% | 28 30.8% | 91 100.0% | 3.87 | Agree |
| Less number of recommendations. | 29 31.9% | 37 40.7% | 14 15.4% | 9 9.9% | 2 2.2% | 91 100.0% | 2.10 | Disagree |
| Total | 94 8.0% | 136 11.5% | 177 15.0% | 448 38.0% | 324 27.5% | 1179 100.0% | 3.65 | Agree |

Adequate supervision of the work of internal audit is provided throughout the audit process. These results are in line with the results of the study conducted by Mihret and Yismaw (2007), which found that internal auditors who are experienced, skilled and have knowledge of the business are vital in making internal audit effective.

Participants indicated that internal auditors perform both assurance and consulting audits and comply with IIA standards, methodologies and IA charter when carrying out their work. Furthermore, departmental risk assessment and inputs from management and other stakeholders are considered when developing the internal audit plan, planned audits are completed within the budgeted time and costs and all audits in the audit plan are completed before the financial year end.

The results also confirmed that internal audit reports to the Audit Committee strengthen independence and objectivity. The results of this study further indicated that SAPS internal audit utilises various technological tools such as Audit Command Language to analyse data and

Teammate software to record and store all audit working papers. This enhances efficiency and effectiveness of SAPS IAA

Table 4: Analysis of Research Objective One - Sample Test (Test Value=3)

| | N | Mean | Std. Deviation | t-statistics | Sig(2-tailed) |
|---|------|------|----------------|--------------|---------------|
| Examine the effectiveness & Efficiency of internal audit activity | 1179 | 3.65 | 1.219 | 18.444 | 0.000*** |

***, **, * on the p-value represent 1%, 5%, 10% respectively.

Table 4 depicts the significant level of responses by participants, relating to their average decision on the effectiveness and efficiency of IAA in SAPS. The results revealed that the average of the respondents agree on the effectiveness and efficiency of the SAPS IAA. Most of the key performance indicators used to measure effectiveness and efficiency of internal audit were adequately in place.

CONCLUSION

The results of this study are in line with most of the literature reviewed regarding the effectiveness and efficiency of SAPS internal audit. The study results also indicate that key performance indicators outlined in the guideline document for measuring the effectiveness of IAA are, indeed, tools that can be used to measure effectiveness and efficiency of each IAA globally.

Though the overall results confirmed SAPS internal audit as effective and efficient, majority of its members the participants do not have professional certifications. Therefore, there is a need for management to encourage internal auditors to study towards professional certifications such as CFE, CIA, CCSA, and CA. The organisation should make bursaries available to all internal auditors or establish a training budget to enable them study towards these professional qualifications.

Continuous affiliation to the professional bodies, appointing auditors with various backgrounds, skills and experience could make SAPS IAA one of the best departments in the public sector. Management should continue to create an environment that is conducive for IAA to execute its duties and to be able to deliver on its commitment.

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APPLICATIONS OF RDI TO AGRI PROJECTS AND BUSINESSES' RISK ANALYSIS OVER MANGAUNG METROPOLITAN MUNICIPALITY'S GRASSLAND, SOUTH AFRICA

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ABSTRACT

Scientists have warned that climate change would occur rapidly resulting in extreme floods and droughts that would adversely affect human lives, economy, and environment. Given the recent drought risk disaster declared in the Free State province of South Africa, Mangaung Metropolitan Municipality (MMM) was selected as it is the only Metropolitan Municipality in the province with large farms in animal and crop husbandry. Data used in this study was collected from an online source Tutiempo. These data were checked for outliers in both precipitation and temperature. All outliers detected were removed and replaced by Expectation maximum algorithm using SPSS. This procedure was followed by stationarity test to avoid spurious results. Due to fact that RDI requires PET and precipitation for computation, Thornwaite method was used to compute PET from DrinC software. The aim of this study was to determine the climatic changes in MMM's vegetation using a 3-month Reconnaissance Drought Index (RDI). The results revealed a significantly decreasing Mann Kendall's trend which implies intensifying drought events over MMM. This situation threatens MMM vegetation and maize production that support human lives. The study therefore has provided a basis for proactive planning against drought events in the near future, through policy and legislation enforcement, sparingly water use and community outreaches in water importance and use.

Keywords: Climate change, RDI, grassland biome, vegetation, drought, disaster

INTRODUCTION

The flora of South Africa is extremely rich in diversity both in species and ecosystems (Burton et al. 2011; Mostert, 2017). This country is one of the 25 most diverse countries and ranked as the 5th highest in plant species in the world (Reyers *et al.* 2001). These authors assert that the grassland in this country covers 26% of South Africa and shows some diversity where multiple rare and endemic plants are found. The grassland biome of this country covers the most agriculturally productive area (Swanepoel, 2006). This area is the country's major source of beef, crops, and dairy. It also serves as an area where majority of the country's population lives (Swanepoel, 2006). However, factors such as drought, soil erosion, invasion by exotic species and anthropogenic activities pose a serious threat to the existence of this biome. Due to these threats, this biome has been identified as critically endangered, based on the degree of habitat loss, fragmentation aggravated by the vast changing climate (Cerling *et al.* 1997). Thus, ecosystems are increasingly prone to local discontinuities, extreme events, extinction of species, decline of intra-specific diversity and the reorganization of the existing communities rather than to synchronous shifts of whole vegetation units (Glick, Staudt and Stein, 2009; Sabatini *et al.* 2014). According to Bredenkamp *et al.* (2006) about 60 to 80% of South African grasslands are already irreversibly

transformed by activities such as agriculture and rapid urbanisation. In addition to this, Low and Rebelo, 1998; Reyers *et al.* (2001) state 2.3% of the grasslands are currently conserved while International Union for Conservation of Nature (IUCN) recommends 10% of this biome to be conserved.

Climate is one of the primary controls on species diversity and distribution globally and changes in climate have significantly modified biodiversity. At the Kyoto climate summit in 1997, various highly recognized scientists issued world scientists call of action. They stated, “*climate change will accelerate the appalling pace at which species are now being extirpated especially in vulnerable ecosystems*” (Dirzo and Miranda, 1991; Grewley, 1986). Similarly, the Millennium Ecosystem Assessment (2005) and Kiraso (2012) also forecasted that at the end of the 21st century, climate change and its impacts may be dominant drivers of biodiversity loss and the change in ecosystem services globally where there may be adverse impacts from (i) rise in sea level, (ii) an increase in severity and frequency of extreme weather conditions and (iii) increase in temperatures. McLachlan, Hellmann and Schwartz (2006; Julia *et al.* 2011) also suggested based on compelling evidence that climate change will be a significant driver of extinction. Unfortunately that is the case, climate change impacts fall disproportionately on the world’s poorest, most marginalized communities, especially those which are wholly and directly dependent on a stable and consistent supply of local natural resources for daily subsistence and trade because they lack alternative means of income and livelihoods and they are unable to sufficiently adapt to changes of climate (Westerman, Oleson and Hams, 2013; Tompkins and Adger, 2004; IPCC, 2007; UNFPA, 2009). These communities often suffer from a vicious mix of poverty, poor public health, and high population, all of which together hinder resilience and adaptation to climate change. The instability of natural resources due to climate change in such communities highly reliant on natural resources therefore has devastating effects on food security, sustainable development, human wellbeing, and household income (Baxter, 2014; Causton, 1988; Tagestad, 2010) Hlalele, 2016). Moreover, there is a widespread alarm on the rate of biodiversity loss due to many factors such as anthropogenic activities and climate change. This accelerating loss of biodiversity in those vulnerable ecosystems results in unsustainable human-nature interactions hence food insecurity and other environmental problems (McDonald and Service, 2007). The uncontrolled exploitation of resources by communities that are highly reliant on natural resources is likely to bring about adverse population declines and in the long run the extinction of some species. This will in turn result in many changes in the habitat dynamics through the loss of seed dispersers, pollinators, granivores and frugivores (Dirzo and Miranda, 1991; Podani, 1986; Grime, 1979; Bordi and Sutera, 2007). Already to be seen or to be further expected are changes on all levels of ecosystem; on a species level, food chains, decomposition processes and overall changes in the dynamics of the ecosystems (Hughes *et al.* 2003). Thus, ecosystems are increasingly prone to local discontinuities, extreme events, extinction of species, decline of intra-specific diversity and the reorganization of the existing communities rather than to synchronous shifts of whole vegetation units (Glick, Staudt and Stein, 2009). A changing climate will probably also affect some essential soil functions too. Hughes *et al.* (2003) also reports that the climate change has left visible marks within different ecosystems all over the world and the expectation is for the warning trend to continue or even increase with time.

In South Africa, the biodiversity hotspots in the succulent karoo and cape floristic region for instance are already experiencing major vegetation shifts due to climate change effects which will

eventually exceed the natural response of a large number of species (Hannah, Midgley, Lovejoy, Bond, Bush, Lovett, Scott and Woodward, 2002: Bureau of Land Management, 1999). Vulnerability to climate change involves both social and ecological factors and any efforts to reduce and build long term resilience must target both to ensure that resource dependent communities are able to cope with effects of climate change such that they are less affected or can easily recover from the effects of climate change (Tompkins and Adger, 2004: Grant, 1968). According to Kiraso (2012), climate change affects various aspects of the socio-ecological system including disease coverage, biodiversity, land degradation and the availability of water. SADC sub region is among the most affected regions in the world. Rural communities in Southern Africa are highly vulnerable to climate change because of their extreme poverty of a vast majority of its dwellers, high existing disease burden, low levels of education, frequent natural disasters such as drought, agricultural systems that are highly dependent on rainfall and the community's high and direct dependence on natural resources (Kiraso, 2012: Mandal and Joshi, 2014: Castillon, *et al.* 2015: Akira, 2014). The current study area lies in the outskirts of Thaba Nchu Township. In 2015, the South African Free State province was one of the five provinces that were first declared drought disaster struck. In addition, in a study conducted by Hlalele (2016b) in Mangaung Metropolitan Municipality (MMM) on spatio-temporal climate change risk assessment, results revealed most vulnerability to climate change explained by rural communities. In the light of all the above, the current study aimed to determine the climatic changes in MMM's vegetation using a 3-months Reconnaissance Drought Index (RDI) for improved proactive agricultural and water resources planning.

METHODS AND MATERIALS

Data quality control

The study used monthly precipitation and average temperature from Bloemfontein airport station in Bloemfontein obtained from an online source. Both the data sets were checked for outliers using the following outlier range formular.

$$(\mu - \alpha; \mu + \alpha) \dots \dots \dots \text{Eqn [1]}$$

Where μ denotes mean in both precipitation and temperature data sets and α denotes standard deviation

The outliers were removed and gaps filled with Expectation Maximum (EM) algorithm for missing data using SPSS. These two data were collected from 1977 January to 2017 October. The November and December values were estimated together with outlier gaps from EM. In order to ensure the reliability and validity of the final results and avoid spurious results, three stationarity tests (i) Dickey-Fuller, (ii) Phillips-Perron and KPSS were conducted for both precipitation and temperature. Reconnaissance Drought Index (RDI) is a water balance drought index that uses Potential Evapotranspiration (PET) and precipitation as basic input parameters. The researchers used Thornwaite method computed from DrinC calculator developed by in Greece. This method used only the average temperature to compute PET.

We calculated RDI on 3-month time steps from October-September over 41 hydrological years. RDI was computed from gamma probability distribution fitting. RDI is a climatic change indicator and used for drought detection as an early warning system for drought disasters (Tigkas *et al.*

2015). Given the focus of the current study which assesses the climate changes over MMM vegetation, a 3-months RDI time series was considered. To detect if any changes occurred in the RDI series, a non-parametric Mann Kendall's trend test was used.

RESULTS

Table 1: Stationarity test for monthly precipitation (mm)

| Test statistic | Tau (Observed value) | Tau (Critical value) | p-value (one-tailed) | alpha |
|----------------------|----------------------|----------------------|----------------------|-------|
| Dickey-Fuler test | -10.589 | -0.889 | < 0.0001 | 0.05 |
| Phillips-Perron test | -9.928 | -1.941 | < 0.0001 | 0.05 |
| | Eta (Observed value) | Eta (Critical value) | p-value (one-tailed) | alpha |
| KPSS test | 0.380 | 0.458 | 0.082 | 0.05 |

Table 1 shows data quality assessment before more detailed analysis could take place. Three stationarity tests were used in precipitation data to check if the data was stationary to avoid incorrect and misleading results. The Dickey-Fuler, Phillips-Perron and KPSS tests were used to complement one another. The results showed that the precipitation data was indeed stationary with p-values less than $0.0001 < 0.05$ significant level.

Table 2: Stationarity test for maximum monthly average temperature ($^{\circ}$ C)

| Test statistic | Tau (Observed value) | Tau (Critical value) | p-value (one-tailed) | alpha |
|----------------------|----------------------|----------------------|----------------------|-------|
| Dickey-Fuler test | -12.826 | -0.889 | < 0.0001 | 0.05 |
| Phillips-Perron test | -2.898 | -1.941 | 0.004 | 0.05 |
| | Eta (Observed value) | Eta (Critical value) | p-value (one-tailed) | alpha |
| KPSS test | 0.034 | 0.458 | 0.968 | 0.05 |

Given that RDI requires two input parameters for computation, the average maximum temperature was also tests for stationarity and the data was found stationary as shown in table 2 above.

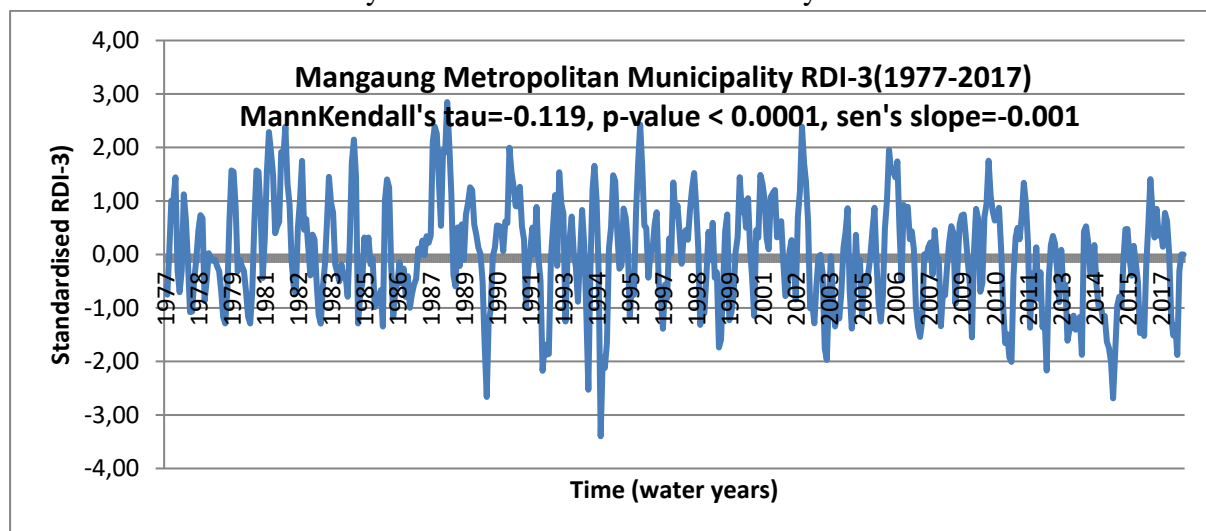


Figure 1: Standardised 3-Months Reconnaissance Drought Index (RDI)

The 3-month time scale in RDI can be linked in agricultural drought which affects crops and vegetation (Kanellou *et al.* 2012). Figure 1 above shows the plot of RDI-3 over 41 years from 1977-2017 in MMM. A non-parametric trend test (Mann Kendall test) was applied to detect if any monotonic increasing or decreasing trends existed in the RDI-3. The results showed decreasing climatic changes specifically intensifying drought episodes in MMM with a p-value = < 0.0001

and a Sen's slope of -0.001. Drought intensity measures how far precipitation is below the average (Abdulmalek *et al.* 2013). This drought parameter is determined from the concept of Standard Total Accumulative Dry (STCD) which is the total summation of all RDI with negative values. In order to quantify the intensity drought researchers, use Average drought Index derived from the following equation:

$$ADSI = STCD/N \dots\dots\dots Eqn [2]$$

Where N, denotes the numbers of uninterrupted consecutive months with negative RDI values. The results showed N=60, STCD= -195, hence ADSI=-3.25. when using table 3 below, the study area is classified as experiencing a special drought regime with a significantly increasing drought intensity. According to this study, the 2015 drought is the second after 1994 as shown in figure 1 above.

Table 3: Classes of RDIst

| | |
|-------------------|-------------|
| Special Wet | >2 |
| Extremely Wet | 1.6 – 2 |
| Severely Wet | 1.3 – 1.6 |
| Medium Wet | 0.8 – 1.3 |
| Small Wet | 0.5 – 0.8 |
| Normal | -0.5 – 0.5 |
| Small Drought | -0.8 – -0.5 |
| Medium Drought | -1.3 – -0.8 |
| Severely Drought | -1.6 – -1.3 |
| Extremely Drought | -2 – -1.6 |
| Special Drought | <-2 |

Source: Gholamreza *et al.* 2013

CONCLUSION

Mangaung Metropolitan Municipality is fully covered with grasslands that supports livestock and serves as a habit for most animal species (Rebelo, 2001). This area is found in the central region of South Africa with most animal population and serves as the *breadbasket* of the country through the highest production of maize. The results of this study indicated a threatening behaviour towards MMM vegetation and maize production that support human lives. The study therefore has provided a basis for proactive planning against drought events in the near future, through policy and legislation enforcement, sparingly water use and community outreaches in water importance and use.

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A CLUSTER-BASED FACTOR ROTATION IN ASSESSING AGRICULTURAL PROJECTS' EXTERNAL RISK AND CLIMATE CHANGE VARIABILITY OVER LERIBE DISTRICT, LESOTHO

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ABSTRACT

Climate change is probably the most complex and challenging environmental problem facing the world today. Currently, the intriguing questions include weather uncertainties, persistent climatic abnormalities, such as floods and drought events, rampant environmental degradation, and eminent food insecurity. The current study therefore aimed at assessing how climate is current varying with time thereby affecting agricultural business activities. For this study precipitation dataset was obtained from an online NASA database for Leribe district in Lesotho. Both non-parametric Pettitt homogeneity test and outlier detection were conducted by XLSTAT and SPSS respectively for data quality control. A drought Monitoring and Prediction software was used in the computation of Seasonal Standardised Precipitation Index (SPI-3) and drought severity. A non-parametric Mann Kendall's test was used for monotonic trends patterns detection over the precipitation time series, where there was no trend in the entire time series but a statistically significant decreasing trend in SPI-3 ($p < 0.00013$). Exploratory factor analysis was employed to cluster months into new seasons. Four factors were extracted using a greater than 1 eigenvalue rule, with a chi-square p-value of ($p=0.915$). The new seasons depicting new clusters were subjected to a confirmatory factor analysis where model fit indices; Comparative Fit (CFI), Tucker-Lewis (TLI) and Root Mean Square Error of approximation (RMSEA) indices were all within expected threshold levels. The cluster-based rotation revealed new seasons where Spring was found be longer and extended into Summer, a shorter Autumn and fragmented Winter season all with severe drought episodes. The study then recommends a paradigm shift in crops growing times and cultivators to cash crops that drought resistant.

Keywords: Cluster-based rotation, climate change, variability, risk, drought, SPI

INTRODUCTION

A period in time whereby conditions are drier than usual and there is a lesser amount of rainfall than normal for a long period of time; for several weeks, months and even years which lead to water-related problems is defined as drought (Praveen, Ramachandran, Jaganathan, Krishnaveni, & Palanivelu, 2016). Nevertheless, there is no specific definition of drought; but it can be classified into four essential types. In this study, drought is described as a severe state which is has undesirable dry spell which has negative impacts on the economy, society, and environment. The four essential types of droughts are: meteorological drought, hydrological drought, agricultural drought and socio-economic drought. (i) Meteorological drought is simply the degree of dryness compared to normal conditions and this is irregular over time and certain regions (Olivares Campos, 2016), (ii) hydrological drought on the other hand is deficient rainfall which results into grave reduction in run-off streamflow, inflow into storage reservoirs and revitalizing of

groundwater (Orlando Olivares & Zingaretti, 2018), (iii) Agricultural drought refers is a deficit of soil moisture to sustain plants and livestock in that way causing weakened growth and reduced produce (Tefera, Ayoade, & Bello, 2019) and Socio-economic drought is a period in time whereby human activities are negatively affected by reduction in water availability and precipitation. (Praveen et al., 2016). As much as all these types of droughts have a linkage, one leads to another and every now and then overlaps; thus, agricultural drought is regarded as of prime importance and a roadmap in this study. The figure 1 below illustrates the interrelationship of the types of droughts.

Even though numerous continents around the world pass through the separation between two hemispheres, Africa is the only continent that lies within them all and is affected by numerous climatic conditions. (Roman-Cuesta, 2007). As a result, this continent receives conventional rainfall. (Choi, An Prof., Yeh, & Yu, 2013). This also escalates to different climatic conditions such as El Nino. El Nino is a recurring climate pattern which is caused by changes in temperatures of water by warming the eastern Pacific, and therefore affecting the global climate. (Ali & Ali, 2011). This natural occurrence is responsible for exacerbating drought events in the southern hemisphere. (Ali & Ali, 2011). In accordance with Keil, Zeller, Wida, Sanim, & Birner (2008), drought is a resultant of the shifting, changing weather patterns. On the other hand, it is also a belief that droughts chiefly transpire because of natural occurrences due to the earth and atmospheric systems. In contrast, Granzow-de la Cerda, Lloret, Ruiz & Vandermeer (2012) are of the belief that no one knows for sure why droughts occur, but many scientists believe that there is an affiliation between drought occurrence and El Nino events. Thorough comprehension of the relationships between droughts and repeated changes in high and low pressures from one side of the Pacific to the other linked with La Nina allow scientists to formulate improved predictions of this calamitous drought hazard. (Ryu, Svoboda, Lenters, Tadesse, Knutson 2010). Both El Nino and La Nina form the El Nino-Southern Oscillation (ENSO) cycle. ENSO is a recurring climate pattern whereby temperature fluctuate between the ocean and atmosphere in the east-central Equatorial Pacific, approximately between the International Date Line and 120 degrees West (Olivares Campos, 2016). Nevertheless, these two events happen every 2-7 years with El Nino events occurring more often than those of La Nina (Tefera et al., 2019). There has been a rising trend in global weather disasters since 1980, and with extreme climatic events such as droughts. (Orlando Olivares & Zingaretti, 2018). Comprehending phenomena such as ENSO is pivotal because of the possibility that it could cause an enormous loss of property, destruction to the environment and the loss of human life. Conjectures by ENSO, tracing and monitoring is of a significant role to insurers, government authorities and other pertinent stakeholders for drought management for proactive planning against unfavourable impacts such as acute climatic changes like drought events. (Praveen et al., 2016). Sunspots could also be another source associated with drought. Sunspots commonly last for a period of approximately 11 years. (Minckley, Roulston, & Williams, 2013). They are described as cool surface areas on the sun that are visible in pairs and are darker in comparison with other parts of the sun. These spots have a strong magnetic field and rotate like a giant hurricane. (Mèthy, Damesin, & Rambal, 1996). These authors also affirm that several authors have acknowledged that sunspots have impacts on temperature, precipitation, length of growing seasons, air circulation, atmospheric pressure, high altitude, wind speed and other natural phenomena around the world. Furthermore, Xiao & Zhuang (2007) construct solar activity as a main cause of cyclic deviations of the global climate through triggering of the

evaporation processes. Scientists have also shown that sunspot numbers and drought events are correlated. For instance, during solar activity- drought events take place at solar maximum (Solheim, Stordahl, & Humlum, 2011). This occurrence is related to climatic conditions where temperatures become high during solar maximum (Minnis, 1958). Solar energy is the principal energy source as well as control on evaporation; therefore, distributions of insolation and evaporation are strongly linked. (Siingh et al., 2011). The energy from the sun is the central source of energy present for heating the surface of the planet earth. This energy supplied by the sun is an outcome of its activity and it differs with time. The major cycle of the sun is eleven years. The major cause of drought events is believed to be the solar activity (Ghormar, 2014). The coefficient of correlation between insolation and evaporation ranges between 0.820 and 0.948 and values of the calculated solar radiation are used in the computation of the Potential Evapotranspiration (PET) in Penman equation (Abarca del Rio, Gambis, Salstein, Nelson, & Dai, 2003). The solar radiation that falls on the earth's surface depends on the distance it travels to the object and the angle at which rays hit an area or object. (Méthy et al., 1996). The universal law for the intensity of radiation, distinctively the sine law of sunlight states that the sunlight always strikes the high latitude obliquely, so it spreads out more and is less intense. (Minckley et al., 2013).

DROUGHT IMPACTS

There are several impacts of drought, and these include: mass starvation, famine and a pause or sometimes an end to economic activities particularly in areas where rain fed agriculture is the main stay of the rural economy. It is generally known that drought is the chief cause of forced human migration and environmental refugees, deadly conflicts over the use of diminishing natural resources, food insecurity and starvation, a damage to significant habitations and as well as loss of biological diversity; volatility of socio-economic conditions, poverty, and unpredictable climatic conditions through reduced carbon sequestration possibility (Roman-Cuesta, 2007). Drought and desertification impacts are among the pricey incidents or occurrences in Africa, for instance, the prevalent destitution as well as the unstable economy of many African countries which depend on climate-sensitive segments such as rain-fed agriculture. All plants and animal life present in a particular region which are not resilient to drought are most likely to go into extinction. (Nagamuthu & Rajendram, 2015). The collective results of drought and bush burning (during dry seasons) have made the plants to go extinct and animals to drift into safer places. Drought, land degradation and desertification have had grave impacts on the richness and variety of fauna and flora (Francisco, 2013). Moreover, plants biodiversity will alter with time, unpleasant species will dominate, and total biomass production will dwindle (Khan & Gomes, 2019). Plants and animals are reliant on water, like people. Drought can minimize their food supplies and damage their habitats. Occasionally, this damage lasts for only a limited period, and other times it is irrevocable. Drought can also affect people's health and safety. For example, drought impacts on society include anxiety or depression about economic losses, conflicts due to water shortages, reduction of income, fewer recreational activities, and increase of heat stroke incidents and sometimes loss of human lives. Moreover, drought conditions can also grant a considerable increase in wildfire risk. This is due to withering of plants and trees from lack of precipitation, scourge insect infestations, and diseases, all of which are associated with drought. (Prokurat, 2015). Lengthy periods of drought can cause more wildfires and more powerful wildfires, which impinge on the economy, the environment as well as the society in a number of ways like destroying

neighbourhoods, crops and habitats (Do Amaral, Cunha, Marchezini, Lindoso, Saito, & Dos Santos Alvala, 2019). Again, drought not only always offers similar instant and remarkable visuals related with occurrences such as hurricanes and tornadoes, but it still has a huge price tag. Actually, droughts are the second in rank types of phenomena that are associated with billion-dollar weather disasters for the past three decades (Nagamuthu & Rajendram, 2015). With staggering yearly losses close to \$9 billion annually, drought is a severe hazard with socioeconomic risks for most African countries. (Siingh et al., 2011). These pricey drought impacts come in different forms. For instance, the economic impacts of drought include farmers who lose money because drought destroyed their crops or worse ranchers who may have to spend more money for animal feeds and irrigation of their crops. Economic impacts can either be direct or indirect. Directly, it could be a decrease in dairy production and indirectly, it could be observed through increases in the price of the cheese (Francisco, 2013).

MATERIALS AND METHODS

The monthly rainfall dataset of this study was obtained from National Aeronautics and Space Administration (NASA) data portal. This dataset was used as the only input parameter for Standardized Precipitation Index computation. Standardized Precipitation Index (SPI) is plainly described as a normalised index that signifies a likelihood of a rainfall occurrence of an observed rainfall amount in comparison with the rainfall climatology at a particular geographical location over a long-term reference period (Siingh et al., 2011). Furthermore, Yusof, Hui-Mean, Suhaila, Yusop, & Ching-Yee (2014) affirm that SPI is a probability index that offers an enhanced demonstration of both abnormal wetness and dryness than any Palmer indices such as Palmer Drought Severity Index (PDSI). The value of this index is that it can be computed for different time scales, for that reason, issuing early warning of drought and its severity (Gaas, 2018). This index is appropriate for risk management purposes (Verma, Verma, Yadu, & Murmu, (2016). Moreover, this index is advantageous in that precipitation is the only parameter in its computation therefore making it less complex. Conversely, the weakness of this index is that it can only compute the precipitation deficit; values founded on initial data may alter, and values vary as the period of record grows (Jordan, 2017). The table 1 below illustrates the values of SPI categorisation.

Table 1: SPI values

| SPI Value | Category | Probability % |
|---------------|----------------|---------------|
| ≥ 2.0 | Extremely wet | 2.3 |
| 1.5 to 1.99 | Very wet | 4.4 |
| 1 to 1.49 | Moderately wet | 9.2 |
| -0.99 to 0.99 | Near normal | 34.1 |
| -1.0 to -1.49 | Moderately dry | 9.2 |
| -1.5 to -1.99 | Severely dry | 4.4 |
| ≤ -2.0 | Extremely dry | 2.3 |

Source: Hlalele, 2016

The SPI calculations are founded on the fact that precipitation increases over a fixed time scale of interest, for instance; SPI-3, SPI-6, SPI-9, SPI-12, SPI-24 and SPI-48, so from that a series is integrated in a gamma probability distribution which is apt for this climatological precipitation

time series. (Yusof et al., 2014). The gamma distribution is described by the following density function.

$$g(x) = \frac{1}{\beta^\alpha \Gamma(\alpha)} x^{\alpha-1} e^{-x/\beta} \quad \text{for } x > 0 \quad \dots\dots\dots (1)$$

Where α and β are estimated for each station as well as for each month of the year.

$$\alpha = \frac{1}{4A} \left(1 + \sqrt{1 + \frac{4A}{3}} \right) \quad \dots\dots\dots (2)$$

$$\beta = \frac{\bar{x}}{\alpha}$$

where $A = \ln(\bar{x}) - \frac{\sum \ln(x)}{n}$, and n = number of observations

After these parameters have been estimated then their resulting values are used to calculate cumulative probability as.

$$G(x) = \int_0^x g(x) dx = \frac{1}{\beta^\alpha \Gamma(\alpha)} \int_0^x x^{\alpha-1} e^{-x/\beta} dx \quad \dots\dots\dots (3)$$

In cases where $t=x/\beta$ then an incomplete gamma function becomes

$$G(x) = \frac{1}{\Gamma(\alpha)} \int_0^x t^{\alpha-1} e^{-t} dt \quad \dots\dots\dots (4)$$

Since gamma function is undefined at $x=0$ then the cumulative probability is calculated from the following equation (Rahmat, Jayasuriya, & Bhuiyan, 2012):

$$H(x) = q + (1 - q) G(x) \quad \dots\dots\dots (5)$$

where q is the probability of a zero and $G(x)$ the cumulative probability of the incomplete gamma function. If m is the number of zeros in a precipitation time series, then q can be estimated by m/n . The cumulative probability is then transformed to the standard normal random variable z with mean zero and variance one, which is the value of the SPI (Yusof et al., 2014). In the event where it is standardized, the potency of the irregularity is categorised as illustrated in Table xx, where the table also demonstrates the corresponding probabilities.

DATA QUALITY CONTROL

Homogeneity tests are carried out to scrutinize statistical properties of a certain dataset in statistics. In essence, the tests thoroughly look at the location, stability and variations which are local within the time series over time (Abraham & Yatawara, 1998). The author also confirms that this occurrence is the same as testing statistical distribution, for that reason identifying if there are any changes in the distribution. The test is also carried out to evade false or unauthentic results from the data sets. (Hosseinzadeh Talae, Kouchakzadeh, & Shifter Some'e, 2014). A non-parametric Pettitt's test was used. Outliers and missing were identified and substituted by Expectation Maximum algorithm (EIM) with the help of SPSS software. EM is described as a statistical algorithm appropriate to be used when there are missing or hidden values in the data sets (Lobato

& Velasco, 2004). Tan & Yilmaz (2002) construct that EM is a well-liked too used in statistical estimation problems that involve data which is incomplete. Likewise, Technology & Bay (2001) define EM as an algorithm that allows parameter estimation in probabilistic models with data which is not complete.

Before carrying out any data analysis, it is essential to assess the apparent proof of patterns and trends in the climate data (Kliewer & Mertins, 1997). Non-parametric Mann-Kendall test is used in the study to assess if any trends existed. This test is universally used to identify monotonic trends in series of environmental, climate and hydrological dataset. The null hypothesis (H_0) means that data came from a population with autonomous realisations is identically distributed. The alternative hypothesis (H_a) means that data follows a monotonic trend. The Mann-Kendall statistic indicates how strong and weak two variables are associated and show correlation direction (Kliewer & Mertins, 1997). One of the advantages of this statistic is that data does not necessarily have to follow any definite probability distribution. The test was conducted simultaneously with a non-parametric Pettitt's test to gauge data homogeneity and descriptive statistics.

PARAMETERS USED TO CHARACTERISE DROUGHT

The temporal characteristics are those features of a hazard associated with time and they are commonly linked with questions such as the following: When does the hazard occur? What is the frequency of the occurrence? What is the duration of the hazard? How fast do they hit and how conventional are they? (Andreadis, 2005; Van Niekerk, 2011). Drought intensity is described in numerous ways by different academics; nevertheless, According to Pope et al (2013) intensity is a degree of insufficient rainfall. The authors further explain that intensity can be defined as a result of duration as well as intensity. Abdulmaleket *al.* (2013) affirms that drought intensity gauges how far rainfall is below the average precipitation of the region. Understanding intensity can be used as a way of ascertaining the feasible impact of a hazard on communities. Understanding intensity can be used as a way of ascertaining the feasible impact of a hazard on communities as well as the levels of risk at which elements are exposed to (Van Niekerk, 2011). This aspect of drought is conveyed in several parameters such as the Standard Total Accumulative Dry Spell (STCD), Average Dry Spell Index (ADSI), Longest Multi year Drought (LMYD) and Largest Single Year Drought (LSYD) (Abdulmaleket et al., 2013). STCD signify the total cumulative drought index used. One more parameter used to quantify the same aspect is ADSI. LMYD and LSYD are other parameters obtained from drought indices such as SPI whose high values have negative outcomes on every facet of the environment, including socio-economic situation of communities. ADSI values offer valuable knowledge on the region's characteristics essential for arrangement of water resources as well as irrigation projects. Areas with low values need special attention. Likewise, The ADSI values are of great significance to decision makers for the planning of agricultural projects of the affected areas for future. The LSYD also is significant to take into consideration in crop cultivation given that crops barely survive its high values. So, these four parameters are defined by the equations below:

$$ADSI = STCD/N \dots\dots\dots (6)$$

where N=total number of years of the series

$$LMYD = \text{Maximum of any successive years} \dots\dots\dots (7)$$

LSYD = Maximum drought index value of the single year (8)

Drought Frequency and duration analysis

For a long-term planning to be effective in water projects such as irrigation and dam sizing purposes, there has to be an analysis of both dry and wet spells from a climatic and hydro-meteorological standpoint. (Abdulmalek *et al.*, 2013). In drought analysis a period declared as dry when $SPI < 0$. These are some of the parameters used to calculate the drought duration: Longest Dry Spell Duration (LDS), Drought Tendency (DT) and Average Dry Spell Duration (ADSD). LDS is described as the highest of any consecutive dry spells that occurred on one occasion through the study record N. High values of both LDS and ADSD it means that water resources planning must be considered in that particular region. Nevertheless, DT is the ratio which involves the total number of dry spell cases to the wet spell cases. This parameter measures the predisposition of the study area which suffers from the dry spells; thus it measures the frequency of a hazard under consideration. These are defined by the following equations:

$$LDS = \sum_i^N Di, i = 1, 2, \dots, N \dots\dots\dots (9)$$

$$DT = \sum D / \sum W \dots\dots\dots (10)$$

$$ADSD = \sum D / N \dots\dots\dots (11)$$

If successive dry spell cases (D) are followed by a wet spell, like D, D, D, W, D then $\sum D = 4$, and $N = 2$ since an interrupted sequence of several cases of (D) constitute only one dry spell event.

A frequency analysis offers an early warning system. Disaster managers and appropriate stakeholders have the ability to foresee when the next incident will take place. (Sobrinho *et al.* 2011). Hydro-climatic hazards such as drought have a propensity of following a seasonal pattern. When the number of times and the length of a hazard such as drought are known, such knowledge helps in planning accordingly (Hlalele, 2016). In a frequency analysis, approximation of the probability of an incidence of future occurrences is established on a primary base for risk management. (Yuliang *et al.* 2014). Again, it is used to foresee how frequently a hazard event happens over space and time (Des Jardins, 2012).

RESULTS AND DISCUSSIONS

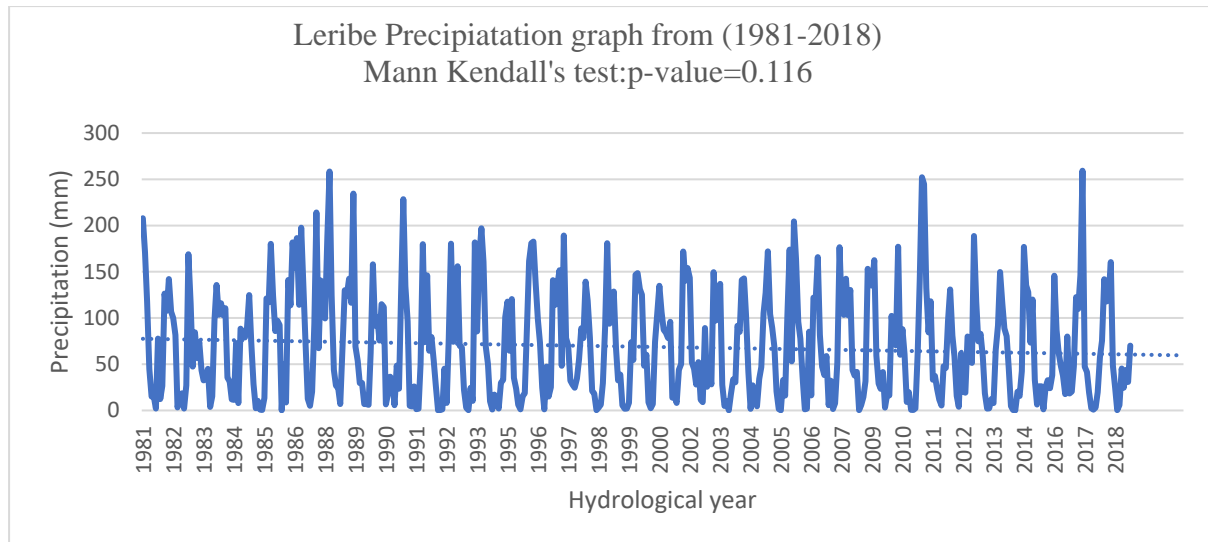


Figure 2: Leribe precipitation plot (1981-2018)

Table 2: Leribe's precipitation descriptive statistics

| Statistic | Precipitation |
|------------------------|---------------|
| Nbr. of observations | 456 |
| Nbr. of missing values | 0 |
| Minimum | 0.060 |
| Maximum | 259.290 |
| Range | 259.230 |
| 1st Quartile | 18.515 |
| Median | 54.865 |
| 3rd Quartile | 110.888 |
| Mean | 69.132 |
| Variance (n) | 3344.386 |
| Standard deviation (n) | 57.831 |

Figure 2 shows a graph of Leribe's precipitation from 1981 to 2018 where a non-parametric Mann Kendall's test indicated that there were no significant trends detected in the time series. The p-value of Mann Kendall's test was 0.116 which is greater than the significance level of 0.05. Table 2 depicts descriptive statistics where the minimum and maximum values are 0.060 and 256.29 mm respectively with a standard deviation of 57.831 mm. The average precipitation is found to be 69.132 mm. No missing values were present in the datasets, therefore there was no need for replacing them. Outliers were detected, removed and replaced by Expectation Maximum algorithm. Having explored the raw dataset, it was necessary to calculate drought index SPI on three-month time scale that corresponds to agricultural drought.

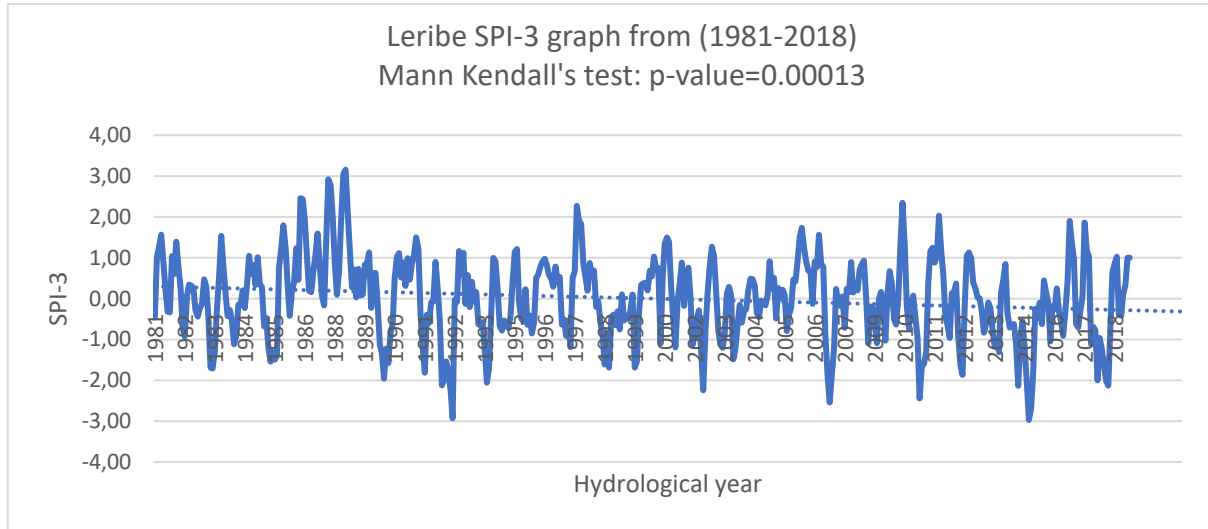


Figure 3: Leribe SPI-3 plot (1981-2018)

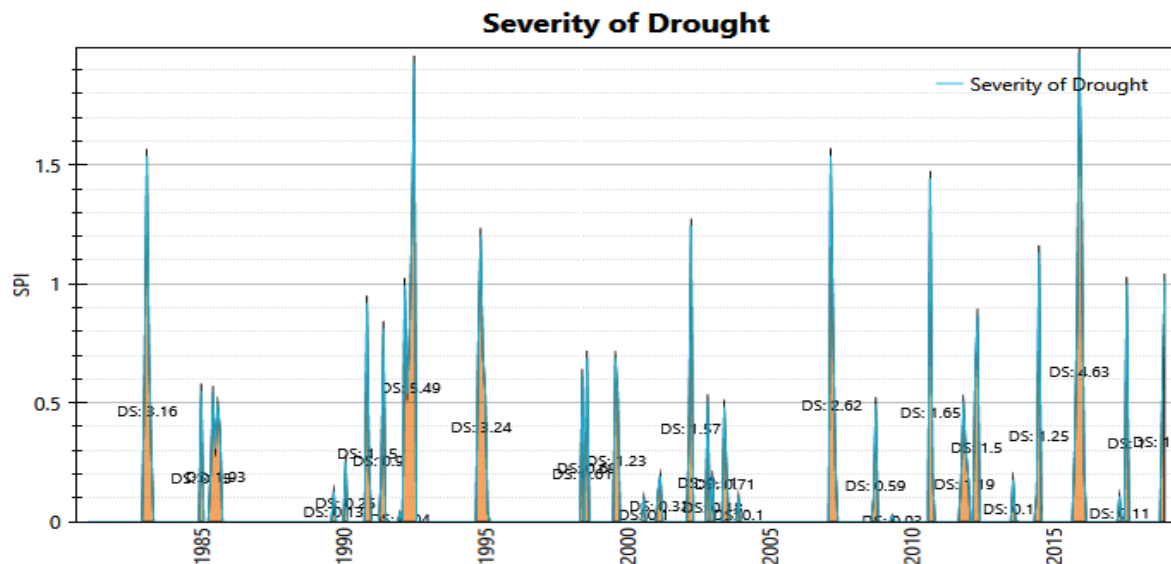


Figure 4: Leribe SPI-3 drought severity plot (1981-2018)

Standardised Precipitation Index (SPI-3) at three-month time scale assesses agricultural drought. Figures 3 and 4 show both the graphs of SPI-3 and its drought severity from 1981 to 2018. The SPI-3 showed a statistically decreasing trend. A decrease in SPI-3 implies an increase in drought intensity. The severity plot shows that study area under constant frequent drought severity on SPI-3 where the 1992/3 and 2015/16 are seen to have had to most severe drought events. These are the years in which drought was declared a disaster in the country and the neighbouring country, South Africa in 2015/16. Several drought parameters were then extracted from the SPI-3 to provide a holistic view of the study area in terms of drought conditions. Table 3 shows drought parameters to characterise drought on SPI-3 scale. It can be seen that dry spells events (D) are approximately equal to wet spells (W). The study area had 52 drought events with an average dry spell duration (ADSD) of 4.21 months. A drought tendency of 0.93 shows how frequently SPI-3 droughts are in the study area. Drought is said to be extreme if SPI value reaches -2 and below, therefore the study area receives an average of -3.44 drought intensity every 4 months, as shown by ADSD.

Table 3: Drought parameters

| LSDS | D | W | DT | N | ADSD | STCD | ADSI | LYSYD |
|--------|-----|-----|------|----|------|--------|-------|-------|
| -19.23 | 219 | 235 | 0.93 | 52 | 4.21 | -179.0 | -3.44 | -2.97 |

An exploratory factor analysis was applied to the computed SPI-3 to cluster similar months in groups. An greater than 1 eigenvalue rule was applied to get factors that belonged to similar groups. A cluster based rotation was applied over all the thelve. Table 4 shows the cluster rotated matrix with loading on each month. The researcher selected loadings above 0.300 as highlighted in the table 4. This is where months were loaded in different groupings as it would be expected from known seasons. January formed a factor on its own implying a change in a season where January belonged. Spring was found to be longer than normal as shown while winter season was fragmented in which case February part. Table 5 shows a criterion used to judge factors in table 4, where a non-significant chi-square with p-value =0.915 was found

Table 4: Factor Loadings

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Uniqueness |
|-----|----------|----------|----------|----------|------------|
| APR | 0.457 | 0.233 | 0.065 | 0.134 | 0.664 |
| AUG | 0.109 | 0.428 | 0.069 | -0.033 | 0.798 |
| DEC | -0.224 | 0.351 | 0.105 | 0.047 | 0.846 |
| FEB | 0.172 | 0.058 | 0.209 | -0.399 | 0.793 |
| JAN | 0.027 | -0.031 | 0.992 | -0.075 | 0.004 |
| JUL | 0.269 | -0.206 | -0.005 | 0.545 | 0.562 |
| JUN | -0.031 | 0.143 | 0.059 | 0.449 | 0.772 |
| MAR | 0.783 | -0.012 | -0.089 | -0.117 | 0.412 |
| MAY | 0.422 | -0.241 | 0.063 | 0.030 | 0.768 |
| NOV | -0.025 | 0.300 | -0.153 | -0.200 | 0.836 |
| OCT | -0.129 | 0.502 | -0.042 | 0.047 | 0.735 |
| SEP | 0.241 | 0.599 | -0.042 | 0.022 | 0.542 |

Note. Applied rotation method is cluster.

Table 5: Chi-squared Test

| | Value | df | p |
|-------|--------|----|-------|
| Model | 15.179 | 24 | 0.915 |

Having determined these factors, a confirmatory factor analysis was conducted to confirm that indeed these months belonged to the groupings as determined by the cluster based rotation exploratory factor analysis. The confirmatory analysis confirmed the factor belongings. Table 6 shows the model fit judged by chi-square with a p-value of 0.692. Chi-sqaure is sensitive to sample size, therefore further indices were used to assist the judgement of the model fit. From table 7 and 8 all the selected fit indices were within the expected ranges to render the model suitable. Both Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values must be above 0.9 for the model to be said good. These indices were then 1 and 0.981 respectively. A third index Root mean square error of approximation (RMSEA) was used. This index must be <0.05 to be rendered good. Therefore, its value was found to 0.000 as shown from Table 7.

Table 6: Model fit, Chi-square test

| | X ² | df | p |
|----------------|----------------|----|-------|
| Baseline model | 14.870 | 10 | 0.915 |
| Factor model | 3.051 | 5 | 0.692 |

Table 7: Additional fit measures

| Index | Value |
|--|-------|
| Comparative Fit Index (CFI) | 1.000 |
| Tucker-Lewis Index (TLI) | 0.981 |
| Bentler-Bonett Non-normed Fit Index (NNFI) | 1.801 |
| Bentler-Bonett Normed Fit Index (NFI) | 0.795 |
| Parsimony Normed Fit Index (PNFI) | 0.397 |
| Bollen's Relative Fit Index (RFI) | 0.590 |
| Bollen's Incremental Fit Index (IFI) | 1.198 |
| Relative Noncentrality Index (RNI) | 1.400 |
| Comparative Fit Index (CFI) | 0.981 |

Table 8: Other fit measures

| Metric | Value |
|---|---------|
| Root mean square error of approximation (RMSEA) | 0.000 |
| RMSEA 90% CI lower bound | 0.000 |
| RMSEA 90% CI upper bound | 0.172 |
| RMSEA p-value | 0.734 |
| Standardized root mean square residual (SRMR) | 0.058 |
| Hoelter's critical N ($\alpha = .05$) | 138.899 |
| Hoelter's critical N ($\alpha = .01$) | 188.922 |
| Goodness of fit index (GFI) | 0.995 |
| McDonald fit index (MFI) | 1.026 |
| Expected cross validation index (ECVI) | 0.870 |

CONCLUSION AND RECOMMENDATIONS

In conclusion, scientists have warned that there will be changes in the climate hence resulting frequent extremities such as floods and drought events. Seasons would be longer and highly variable. These variations are likely to adversely impact on environmental and socio-economic systems. A non-parametric Mann Kendall's test was used for monotonic trends patterns detection over the precipitation time series, where there was no trend in the entire series but a statistically decreasing trend in SPI-3 with a p-value = 0.00013. Exploratory factor analysis was employed to cluster months into new seasons. Four factors were extracted using a greater than 1 eigenvalue rule, with a chi-square p-value=0.915. The new seasons depicting new seasons were subjected to a confirmatory factor analysis where model fit indices; Comparative Fit (CFI), Tucker-Lewis (TLI) and Root Mean Square Error of approximation (RMSEA) indices were all within expected thresholds levels. The cluster-based rotation revealed new seasons where Spring was found to be longer and extended into Summer, a shorter Autumn and fragmented Winter season all with severe drought episodes. The study then recommends a paradigm shift in crops growing times and cultivators to cash crops that are drought resistant.

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THE DEVELOPMENT OF THE SOUTH AFRICAN CREDIT DERIVATIVE MARKET DURING ITS FIRST DECADE

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ABSTRACT

The South African over-the-counter credit derivatives market is a potential source of systemic risk contagion. Opacity in some credit derivative markets was at the core of the 2008/09 global financial crisis, prompting new regulations designed to give authorities access to information on the size and composition of this market for macro-prudential supervision. This article analyses the evolution of the size and composition of this market from 2005 to 2016 using data from the South African Reserve Bank (SARB). The study found that despite the initial slump after the crisis, the market has witnessed a significant increase with the notional amounts outstanding reaching R133bn in January 2016 (adjusted for inflation, using 2005 as the base year) up from only R32bn in January 2005. The enforcement of a capital charge on non-centrally traded OTC derivatives in early 2015 could have had an unintended positive effect on the size of the credit derivatives market because banks are permitted to hedge against this charge using credit derivatives. As the regulatory environment continues to change, policymakers should be aware of the unintended consequences of regulation on the credit derivatives market as this market allows for large leveraged exposures to credit risk.

Keywords: Credit derivatives, South Africa, global financial crisis 2008/2009, capital requirements, credit valuation adjustment

1. INTRODUCTION

1.1 Statement of the research problem

Credit derivatives exacerbated losses during the global financial crisis of 2008/09, leading to the failure of some systemically important financial institutions, jeopardizing the stability of the global financial system (Blanchard, 2009). Credit derivatives are unique amongst all asset classes of derivatives because they expose the protection seller to an asymmetric jump to default risk. Prior to the crisis, all credit derivatives were traded over-the-counter (OTC) through dealers with almost no direct supervision despite the large size of this market (National Treasury, 2012). Commercial banks were the only market participants legally required to report on the notional amounts of their outstanding derivatives prior to the crisis, whilst investment banks and insurers (such as Lehman Brothers and AIG respectively) were not. It was this opacity of the OTC derivatives market which created uncertainty about the exposure of some systemically important financial institutions through their credit derivatives positions (Stulz, 2009: 58–70), exacerbating counterparty credit risk (CCR).

A survey prepared by the International Swaps and Derivatives Association (ISDA, 2010) showed that the global market size for credit default swaps (one type of credit derivative) more than doubled in size each year from a notional value of US \$3.7tn in 2003 to \$62.2tn at the end of 2007.

The notional value of credit default swaps (CDSs) exceeded the global gross domestic product (GDP) in 2007, which was only US \$57.5tn (The World Bank, 2016). Muyambiri & Odhiambo (2018) find that financial development has an empirically significant impact on investment in individual countries. The South African OTC derivatives market is large in relation to the country's economy (International Monetary Fund [IMF], 2015); and it is the only derivatives market in Sub-Saharan Africa (Adelegan, 2009). The big five South African banks are the primary market makers in the country, therefore systemic risk in the derivatives market could spill over into the larger financial system as it did during the financial crisis. The World Bank considers total bank assets to GDP as a good measure of the depth of a country's financial system. Total bank assets as at December 2015 was R4.8 trillion (SARB, 2015) whilst GDP for 2015 is estimated at 4.5 trillion ZAR. Therefore, South African banks' balance sheets make up a large portion of the country's economy. Thus, information on the size and composition of the South African market is necessary for academics and regulators alike to assess the possible impacts of regulatory changes to this important financial market. A trade repository is valuable for reducing systemic risk because it aggregates and stores important data on transactions, which can be accessed by authorities for macro-prudential supervision as well as during a financial crisis to assess CCR, thereby reducing the opacity of the market for these complicated instruments (National Treasury, 2012).

According to a former South African credit derivatives trader,¹ the local market is characterized by a handful of local banks acting as market makers with very little local interbank trade. Trade between local banks and foreign dealers tends to be largely one-directional; where South African banks buy protection from local nonbank institutional clients, and in turn, foreign dealers buy protection from local banks, primarily to hedge against South African based risks. The IMF confirmed this market structure, indicating that interbank trading between South African and offshore banks constitutes a significant part of transactions in the OTC derivative market and that "domestic banks use foreign dealers primarily to offset risk exposures assumed from domestic nonbank financial institutions" (IMF, 2015: 12) This means that most transactions will have one of the local reporting banks as a counterparty with very few instances of double counting, i.e. where both counterparties are reporting banks, meaning that aggregate values are a good approximation of market size.

To date (April 2022), a trade repository has not been licenced and central clearing and trading have not yet been mandated nor has the market been subject to trade compression, therefore the market can only be analysed on an aggregate basis. Thus, given the lack of central clearing and trade compression for the South African CDS market as well as the one-directional transfer of risk with domestic banks acting as dealers, one can infer that the notional amounts outstanding presented in this article provide a relevant and useful estimation of market size. Given the relative size and regional importance of this market, this paper seeks to provide possible explanations for changes to the size and composition of this market from its infancy in 2005 to 2016, before the implementation of any post-crisis reforms excluding CVA in 2015, shedding light on this otherwise opaque market.

¹ *Acknowledgement:* Special thanks for the insights and contributions from a former South African credit derivatives trader who wishes to remain anonymous.

1.2 Study Objectives

Given the relative size and regional importance of this market, this paper seeks to provide possible explanations for changes to the size and composition of this market from its infancy in 2005 to 2016. Devoid of a local trade repository to date, information about the size and the composition of the South African OTC derivatives market is limited to the information which commercial banks report to the South African Reserve Bank (SARB) on a monthly basis in the BA350 form (National Treasury, 2012).

This study analyses and evaluate the size and composition of the South African OTC credit derivatives market from 2005 to 2016 using data aggregated by the SARB, increasing transparency in this otherwise opaque market. This study further conducts an examination of the variances in the size of the credit derivatives market as an absolute value and relative to the total of all other OTC derivatives annually over the period January 2005 to January 2016.

2. LITERATURE REVIEW

Credit derivatives are financial instruments that allow parties to transfer credit risk (Choudhry, 2012). CDSs transfer the risk of a credit event involving the underlying reference entity, such as bankruptcy or default from the protection buyer to the protection seller; thus, providing a method for hedging credit risk (Choudhry, 2012). However, CDS protection buyers do not need to have an interest in the underlying reference entity; therefore, they can be used for purely speculative purposes. Credit derivatives require a small initial outlay when they are created; therefore, they can be highly leveraged to create large outstanding notional values. Moreover, unlike most other derivative products, CDSs have a highly asymmetric distribution of risk between counterparties because the protection seller faces much higher potential losses than the protection buyer.

Nijskens and Wagner (2011) found that the ability to transfer credit risk reduced individual banks' volatility prior to the crisis; however, credit risk transfer resulted in higher levels of systemic risk in the financial system. Credit derivatives were found to amplify systemic risk during the crisis via direct losses as defaults triggered embedded derivatives as well as indirect mark-to-market losses through increased CCR (Nijskens and Wagner, 2011). On 15 September 2008 Lehman Brothers filed for bankruptcy after suffering large losses on mortgage-backed securities. CCR soared in the wake of this news as Lehman Brothers had more than \$600bn in assets of which it was unclear how much was owed to other financial institutions due to the opacity of the OTC derivatives market (Blanchard et al., 2014). At the cash settlement auction for CDSs on Lehman Brothers debt on 10 October 2008, the recovery rate was set at 8.625 percent. That meant that protection sellers had to pay out 91.375 percent of the notional amount outstanding of CDSs where Lehman Brothers debt was the reference entity (Stulz, 2010). Although the demise of Lehman Brothers was not due to credit derivatives, the resulting increases in CCR amplified systemic risks and led to mark-to-market losses on many asset classes.

CCR is the risk that the counterparty to a transaction defaults before the transaction is settled, thus it is the two-way risk between the two parties to a contract that the counterparty will default (Gregory, 2010). As the 2008/09 crisis unfolded, CCR increased as general market risk factors increased and this positive correlation is known as wrong-way risk (Canabarro and Duffie, 2003). Defaults and mark-to-market losses increased CCR, which pro-cyclically resulted in further mark-to-market losses (EU Commission services, 2010). Higher CCR required more collateral to be

posted to counterparties further constraining liquidity, and the ensuing liquidity crisis threatened the operation of otherwise solvent institutions (Blanchard, 2009). In fact, the Basel Committee on Banking Supervision (BCBS) noted that approximately two-thirds of CCR losses were due to mark-to-market losses and only one third due to actual defaults (Bank for International Settlements [BIS], 2009). The US Federal Reserve was quick to respond, supplying liquidity to the market. The Bank of England and other central banks followed suit preventing what could arguably have been a catastrophic disintegration of the global financial system.

In response to the information asymmetry in the OTC derivatives market, the G20 issued a directive in 2009 to improve the transparency of this market through the establishment of trade repositories as well as the central clearing and/or central trading of appropriate derivatives, while non-centrally cleared derivatives would be subject to higher capital requirements in the form of a credit valuation adjustment and a debt valuation adjustment. In November 2011, the Group of 20 (G20) leaders further agreed to add margin requirements for non-centrally cleared OTC derivatives (National Treasury, 2015). South African banks have had to maintain full capital requirements for credit valuation adjustment (CVA) risk since 1 April 2015 (SARB, 2015), and the margin requirements for non-centrally cleared derivatives begun to be phased in during 2019. To date, a trade repository has not been licenced and central clearing and trading have not yet been mandated nor has the market been subject to trade compression. Vause (2010) found that in the first half of 2010 gross notional amounts outstanding for the global CDS market was almost half that of its size at end 2007. He found that this shirking in notionals was not due to decreased trading in the market, in fact, trading volumes had grown strongly in the period. Rather, Vause found that the lower notional amounts outstanding were due to efforts to reduce CCR such as trade compression and central clearing

South African financial markets remained robust during the crisis, however, stunted global economic activity negatively affected local growth. South Africa's average growth rate between 2000 and 2007 was 4.3 percent, but this declined to 3.8 percent in 2008 and down to -1.5 percent in 2009 (Blanchard et al., 2014). The South African stock market fell by 36.0 percent between May and December 2008, and almost one million jobs were lost (Financial Stability Board, 2013). According to the Financial Stability Board, South Africa was one of the worst affected emerging economies, thus international regulatory reform designed to dampen the effect of future financial contagions has benefits for the local market. As a member of the G20, South Africa has committed to implement OTC derivative market reforms in line with other G20 nations to avoid international regulatory arbitrage (National Treasury, 2012).

3. METHODOLOGY

Reporting guidelines for the 2016 Triennial Central Bank Survey issued by the BIS advise that the two best measures of the size of the OTC derivatives market are data on notional amounts outstanding and gross market values (BIS, 2015b). According to the BIS:

“Notional amounts outstanding are comparable to measures of market size in related underlying cash markets and shed useful light on the relative size and growth of cash and derivatives markets... gross market values at current market prices provide a measure of derivatives market size and economic significance that is readily comparable across markets and products (BIS, 2015b: 4-5).”

A single comprehensive measure of risk does not exist; however, the BIS uses the concept *market value* (BIS, 2015b: 1) whereas the SARB uses the concept *fair value* (SARB, 2012: 666). Market value is the cost of replacing all open contracts at prevailing market prices. Conversely, the SARB regards fair value as a broader term than market value since the market value of an instrument refers to the price obtainable in an active market. According to the IMF, “The measurement of fair values maximizes the use of relevant and reliable inputs and [is] consistently applied for risk management and reporting purposes” (IMF, 2015: 70). Even though there is no single complete measure of market risk, the concept of fair value is used by the SARB to identify potential losses. The data for this article is sourced from the SARB and thus this article reports on fair value. The SARB mandates that all commercial banks complete and submit the BA350 form monthly (The OTC Derivatives Working Group, 2012: 32-33). The content of the individual forms submitted by banks is confidential and not available for public review; however, the SARB publishes (on its website) the accumulated data for the South African banking sector. The consolidated data distinguish between transactions entered into through a formal exchange and those entered into OTC in respect of the following derivative categories: interest rate, foreign exchange, credit, equity and commodity instruments (SARB, 2012: 659-663).

The notional amounts outstanding presented in this analysis could be overstated for a variety of reasons but all these factors are partly, if not largely, offset. One can thus infer that the notional amounts outstanding provided in this analysis give a relevant and useful estimation of the size of real market year on year (YoY) growth from January 2005 to January 2016.

The first factor that could lead to overstated notional amounts is agreements where counterparties are also reporting banks as opposed to another financial institution or non-financial customers; thus, the contract is counted twice (BIS, 2015b). Double counting is not a significant factor in the South African credit derivatives market because the local inter-dealer market is limited and reporting banks rarely transact with each other (Anonymous, 2016).

The second factor leading to the possible overstating of notional amounts outstanding is the difficulty in unwinding CDSs. Instead of cancelling or unwinding CDSs, the party would normally buy a corresponding CDS to offset the initial exposure. However, after ISDA’s Big Bang protocol in 2009, scheduled termination dates of CDSs must always match a quarterly roll date. These quarterly roll dates are always 20 March, 20 June, 20 September and 20 December. On these dates, dealers are able to collapse their books, that is, netting protection bought and sold for each of their counterparties. The South African market is characterized by limited inter-dealer trading by local dealers, and a largely one-directional transfer of risk in trades with foreign dealers, so the benefits of portfolio compression would be limited.

Since the crisis, technology companies have been offering portfolio compression services whereby redundant CDSs are eliminated. An example is triReduce from TriOptima, originally a Swedish company with global offices. According to the company, by 2009, redundant CDSs with a notional outstanding amount of \$60.2tn were eliminated (National Treasury, 2012). However, portfolio compression such as triReduce has not yet been applied to the credit derivatives market in South Africa². As is the case with bilateral netting made possible by standardized termination dates, the

² Portfolio compression has been applied to South African rand (ZAR) interest rate swaps. On 6 October 2014, TriOptima announced that after its first triReduce compression cycle for cleared South African rand (ZAR)

effect of portfolio compression would arguably be minimal because of the largely one-directional transfer of risk that characterizes the South African credit derivatives market with limited local inter-dealer activity. Thus, trade compression is not a limitation in the interpretation of the South African market size.

3.1. Methods: Indicators and computations

3.1.1 Total notional amounts outstanding and computations

The notional amount outstanding of a derivative is defined as the nominal amount underlying the respective derivative contract (BIS, 2015b), i.e. the contracted base value on which payments and receivables are calculated (SARB, 2012). Notional amounts outstanding also provide useful information on the structure of the OTC derivatives market as well as being a rough estimate for the potential transfer of price risk in derivatives markets (BIS, 2015b). However, because notional amounts outstanding represent the potential transfer of price risk, they should not be interpreted as a measure of the riskiness of these positions.

For the research on which this article reports, the notional amounts outstanding annually at month-end for January 2005 to January 2016 were calculated for credit derivatives in accordance with the method used by the BIS and the ISDA and the OCC, as per the following methodology:

$$\text{Total notional amounts outstanding} = \text{protection bought} + \text{protection sold}$$

Equation 1: Computation of total notional amounts outstanding.

Totals for banking book and trading book activities were added. The distinction between banking book and trading book activities is primarily based on the subjective intention of the individual bank. Assets which the bank intends to keep until maturity for hedging purposes are listed in the banking book, while those assets the bank intends to trade are listed under the trading book (BIS, 2013).

The data were analyzed on a year-on-year basis using January as the reference month. The GDP deflator was used to adjust for inflation and all amounts are therefore reported in constant (real) prices, with 2005 as the base year. The GDP deflator is defined as the ratio of the nominal estimates of GDP to the real estimates of GDP (Stats SA, 2012). As data for the same month (January) of each year was analysed, seasonal fluctuations were not a concern.

3.1.2 Gross fair values and computations

Gross negative fair value refers to the accumulated fair value of contracts where the reporting bank owes money to its counterparties, without taking into account netting or collateral. This represents the maximum losses the bank's counterparties would incur from the bank's default assuming there is no netting of contracts, and no bank collateral is held by its counterparties (OCC, 2014). The figures for negative fair value are reported as absolute amounts. Conversely, the gross positive fair value reflects the values of contracts where the reporting bank would lose money if its counterparties defaulted, without taking into account netting or collateral (SARB, 2012). When a

interest rate swaps had been completed, and \$284.3bn in notional amounts outstanding had been eliminated for LCH.Clearnet's SwapClear members.

derivative has a positive fair value the reporting bank is said to be in the money and when it has a negative fair value the reporting bank is out of the money (van Wyk, Botha, and Goodspeed, 2015).

Prior to the financial crisis, Basel II required banks to hold capital against the risk of counterparty default on their OTC derivatives portfolio; however, potential mark-to-market losses from credit valuation adjustments were not capitalized. In response to CCR losses during the crisis, Basel III introduced a (CVA - the adjustment to the fair value of derivatives to account for CCR) variability charge into the pricing of derivatives (BIS, 2015a). Debt valuation adjustment (DVA), on the other hand, refers to the losses of the reporting bank's counterparty if the reporting bank defaults. CVA is thus the market value of CCR and is a cost to the reporting bank as it reduces the positive fair value of derivatives that are assets for the bank (BIS, 2015a). DVA conversely reduces the negative fair value of derivatives that are liabilities for the bank. Banks are permitted to use CDSs to reduce their exposure to CVA, which could result in a disproportionate increase in the market size of credit derivatives compared to the OTC derivatives market as a whole especially in established markets (Anonymous, 2016).

The original framework for calculating CVA was based on the probability of default of one counterparty only; however, the BCBS issued a revised framework in 2015 for comment. The new framework includes a CVA charge for underlying market risk factors, i.e. mark-to-market adjustments (BIS, 2015a). According to Van Vuuren and Esterhuysen (2014), proposed methodologies for calculating CVA were found to be “unstable and unreliable at high average spread levels” thus requiring stronger mathematical models to avoid instability and unintended consequences in volatile times. CVA is deducted from the fair value of derivatives where the reporting bank is in the money, i.e. it reduces positive fair value of derivatives recorded as an asset. Conversely, DVA is deducted from the fair value of derivatives where the bank is out of the money, i.e. it reduces the negative fair value of derivatives recorded as a liability.

The BIS calculates gross market value by adding the absolute values of all open contracts with either positive or negative mark-to-market value, before counterparty or any other netting (BIS, 2015b). Thus, in the present research, gross fair value is calculated as follows:

$$\text{Gross fair value} = \text{absolute gross positive fair value} + \text{absolute gross negative fair value}$$

Equation 2: Computation of gross fair value.

With the implementation of Basel II, banks have been required to complete and submit the BA series of forms to the SARB. However, prior to 1 January 2008, banks would complete and submit the DI series of forms. The BA350 and DI430 forms are largely equivalent and record the derivative positions of reporting banks on a monthly basis. Both were used to calculate notional amounts outstanding, however, it was not possible to extract gross fair value for credit derivatives using the DI430 form. Thus, it is not possible to report on gross fair value for January 2005, 2006 and 2007.

4. RESULTS AND DISCUSSION

Notional amounts outstanding and gross fair value were reported on a year on year (YoY) basis to indicate the development of the size of the South African credit derivatives market between 2005 and 2016.

4.1. Notional amounts outstanding

In Figure 1, notional amounts outstanding for credit derivatives where the reporting bank was a protection buyer and a protection seller are illustrated.

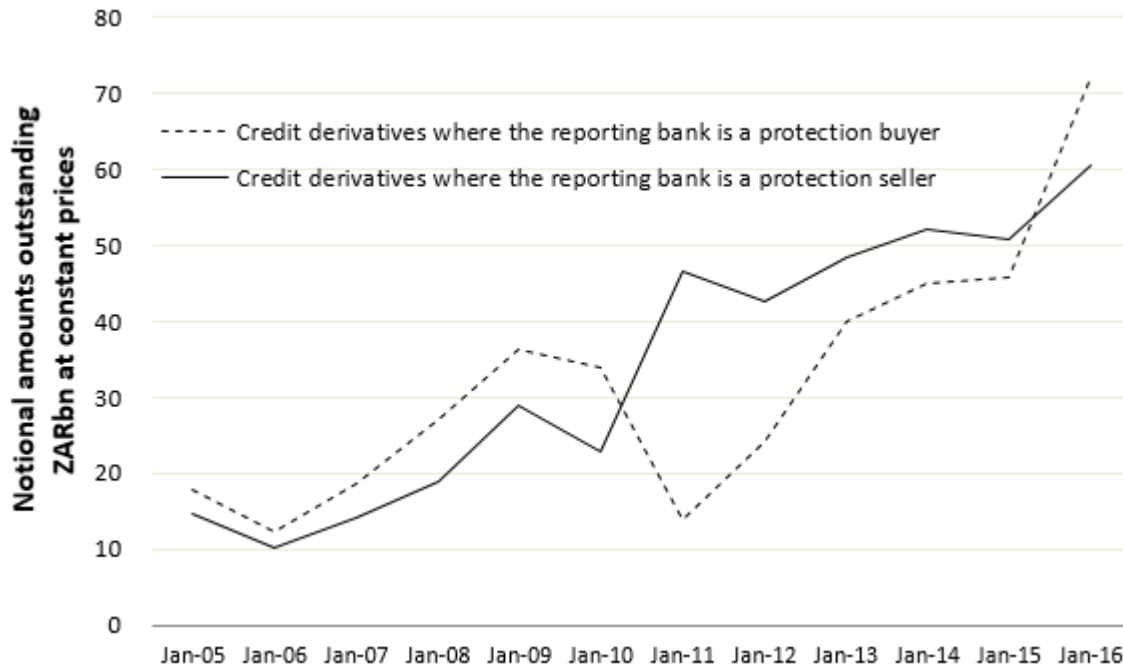


Figure 1: Notional amounts outstanding for credit derivatives: protection buyer versus protection seller

Source: Compiled by researcher using data obtained from the SARB (2016)

A 31 percent drop in the notional amounts outstanding for credit derivatives (see Figure 1) was recorded YoY from January 2005 to January 2006, while January 2006 to January 2009 saw a prolonged period of YoY growth with market size at January 2009 triple the January 2006 figure. On 21 February 2007, the Minister of Finance announced exchange control reforms that removed several barriers to growth in the market for derivatives in all asset classes (Adelegan, 2009). This period saw an increase in instruments available to institutional clients. For instance, in 2008, Absa introduced new products such as enhanced return credit-linked notes (CLNs) and inflation credit-linked notes, and this period also saw an increase in the number of market participants (*Risk*, 2008). This is a possible factor for the YoY growth seen from January 2007 to January 2008. According to a former South African credit derivatives trader, after Lehman Brothers filed for bankruptcy on 15 September 2008, market activity was muted from that time until January 2009 (Anonymous, 2016). Therefore, the YoY growth seen from January 2008 to January 2009 would have been mostly from February 2008 until mid-September 2008. The YoY market size then dropped 13 percent from January 2009 to January 2010. This could have been the result of lower market confidence after the crisis. The Big Bang protocol was adhered to in April 2009, and dealers ‘collapsing’ their books would have reduced the YoY notional amounts outstanding from January 2009 to 2010 however the limited local inter-dealer market and largely one-directional risk transfer from foreign banks to local banks would limit the effect on notional amounts outstanding. It can be deduced that the fall in notional values was primarily due to the financial crisis. Market size

was on an upward YoY trend from January 2011 until January 2015, spiking in January 2016 at R133bn.

Compared with January 2015, the YoY spike in January 2016 of 38 percent may have in some way resulted from the enforcement of the CVA charge on non-centrally cleared derivatives. The SARB directed banks to maintain the full capital requirements for CVA risk from 1 April 2015 (SARB, 2015), up until then they had been largely exempted. Banks are permitted to hedge their CVA risk using CDSs; therefore, the regulation could have had an inadvertent positive effect on the size of the credit derivatives market. However, a former credit derivatives trader, cautions that the South African credit derivatives market is developing and lacks the depth and liquidity to benefit properly from the incentive created by CVA to use CDSs (Anonymous, 2016). If the local market is in fact not in a position make use of CDSs to hedge CVA risk then the large spike in 2016 is unexplained. It is possible that some market forces are driving this growth, however, it could also be an anomaly resulting from reporting errors.

During the observation period (January 2005 – January 2016), protection sold by banks generally balanced protection bought by banks, the exceptions being January 2011 and January 2012, when protection sold dwarfed protection bought. During the same period (January 2011 – January 2012), the size of other credit derivatives reported for protection bought plummeted, falling by nearly 70 percent from R29bn in January 2010 to R8bn in January 2011. January 2012 remained low at R9bn before notional amounts outstanding started picking up again in January 2013. It is therefore possible that this large anomaly is due to reporting errors, and that the credit derivatives books of South African banks were more balanced than the YoY notional amounts outstanding for January 2011 and 2012 indicate. In Figure 2, the notional amounts outstanding for credit derivatives are expressed as a percentage of the notional amounts outstanding for all other derivative asset classes.

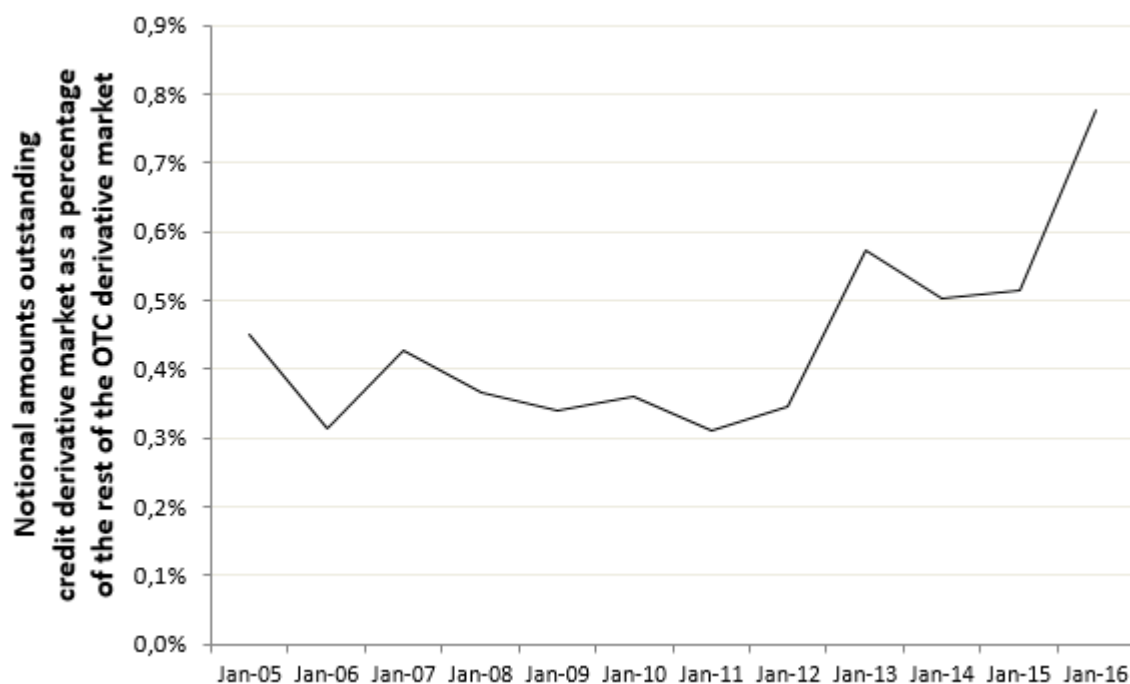


Figure 2: Size of the total credit derivatives market compared to the rest of the OTC derivatives market

Source: Compiled by researcher using data obtained from the SARB (2016)

The YoY size of the credit derivatives market as a percentage of the size of the rest of the OTC derivatives market in South Africa remained between 0.3 percent and 0.4 percent from January 2006 to January 2012, with only January 2005 and January 2007 breaching the 0.4 percent mark. However, during January 2013, 2014 and 2015, the size of the credit derivatives market was over 0.5 percent of the rest of the OTC market. The credit derivatives market did grow by 30 percent YoY from January 2012 to January 2013, which partly explains this jump. Another possible contributor could be the use of portfolio compression for interest rate swaps. On 6 October 2014, TriOptima announced that after its first triReduce compression cycle for cleared South African rand, interest rate swaps had been completed, \$284.3bn in notional amounts outstanding had been eliminated for LCH.Clearnet's SwapClear members. This decline in notional amounts outstanding for interest rate swaps could have raised the size of the credit derivatives market as a percentage of the size of the rest of the OTC derivative market artificially.

January 2016 saw a 38 percent YoY increase compared to January 2015. This large increase in the relative size of the credit derivatives market could have been partly explained by the enforcement of CVA charges on non-centrally cleared OTC derivatives from 1 April 2015. The size of the total market for OTC derivatives shrunk slightly YoY in January 2016 compared to January 2015, which could also have been due partly to the enforcement of the CVA charge. Local dealer banks transact with foreign dealers who are primarily located in the European Union, where a full CVA charge is not yet mandatory. This could put local banks at a disadvantage when entering into contracts with European banks. CVA could thus have had a distortive effect on the sizes of both the total OTC and the credit derivatives market leading to a large increase in the relative size of the credit derivatives market as a percentage of the total OTC derivatives market.

4.2 The composition of the SA credit derivatives market 2005-2016

The BA350 form classifies credit derivative instruments into three subcategories for reporting purposes, namely CDSs, total return swaps (TRSs) and 'other' which include CLNs. CDSs transfer the risk of a credit event involving the underlying reference entity. TRSs transfer the cash flows from the underlying reference entity (such as a loan or a bond) in return for interest payments, thereby hedging interest rate receipts for one party while the other accepts the risk of variable returns (Choudhry, 2012: 30). CLNs are similar to CDSs, but they differ in one crucial respect, namely, they are funded, while hardly any CDSs are funded in practice (Choudhry, 2012: 22). The CLN issuer is the protection buyer and the CLN investor is the protection seller. Investors buy securities from the CLN issuer usually through a special purpose vehicle (SPV). A SPV is a separate legal entity, sometimes known as off-balance-sheet entities, which allow banks to move assets and liabilities off their balance sheets (Blanchard et al., 2014). The CLN buyers receive fixed or floating coupon payments for the life of the security and at maturity and, as long as there has not been a credit event, they receive par value. If the reference entity experiences a credit event, the CLN issuer will pay the investors only the recovery rate (Choudhry, 2012). The SPV enters into a CDS selling protection against the default of the reference entity. A CLN, therefore, has an embedded CDS.

4.2.1 Market composition where local banks are protection buyers

Figure 3 below illustrates the composition of the market for credit derivatives per instrument where the reporting bank is a protection buyer.

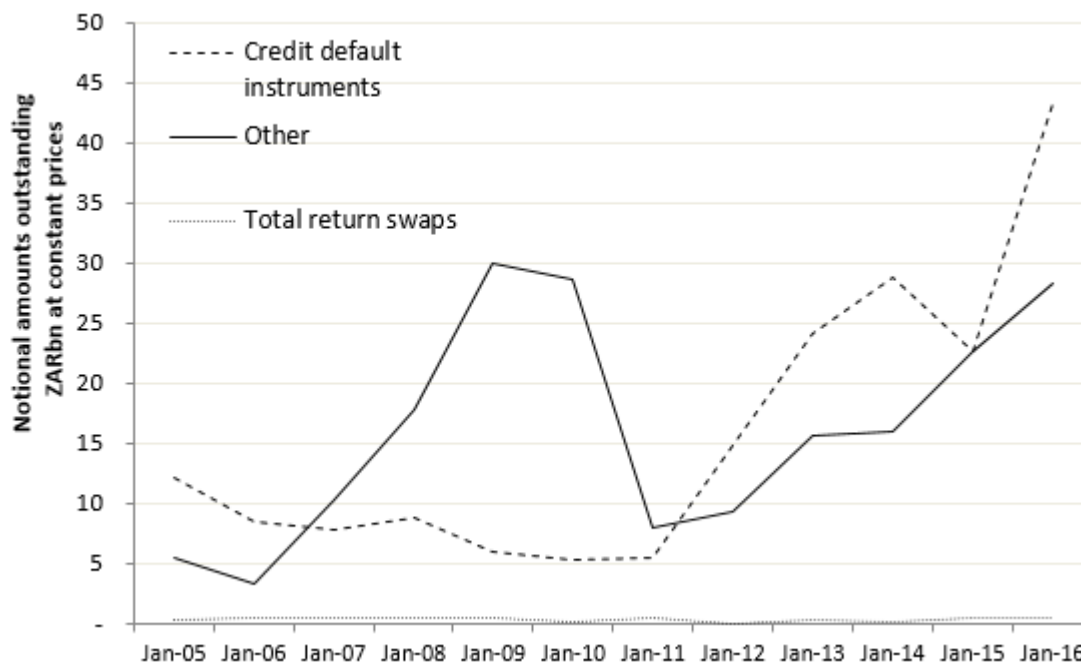


Figure 3: Notional amounts outstanding for credit derivatives per instrument where the reporting bank is a protection buyer

Source: Compiled by researcher using data obtained from the SARB (2016)

If one examines the development of the size of the CDS market where the reporting bank is a protection buyer depicted in Figure 3, the observed results can be separated into six distinct periods. The first period includes only January 2005, for which the notional amount outstanding was over R10bn. The second period sees a 31 percent YoY drop in notional amounts outstanding beginning in January 2006 and continuing until January 2008, where notional amounts remained at around R8bn. The third period sees a further YoY drop in notional amounts outstanding, starting in January 2009 until January 2011 where they remained just above R5bn. This third period could be in reaction to the global financial crisis, resulting in a decline in desirability of these instruments. The fourth period sees a rapid increase in the YoY growth rate of notional amounts outstanding for CDSs, starting in January 2012 and continuing until January 2014. YoY notional amounts almost tripled between January 2011 and 2012 and saw a further 63 percent increase from January 2012 to 2013. Growth then tapered with the YoY period from January 2013 to January 2014 seeing only a 19 percent increase. The fifth period, i.e. only January 2015, sees a decline in the notional amounts outstanding to R23bn, down from R29bn in January 2014. The sixth period sees a large increase with notional amounts outstanding almost doubling to R43bn in January 2016. The TRSs market size recorded insignificant amounts when compared with the whole credit derivatives market over the observed period, and will therefore not be discussed in further detail.

The development of the size of ‘other’ credit derivative instruments over the observed period has fluctuated greatly. There is a healthy market for CLNs in South Africa. South African banks issue and sell CLNs to other local market participants to offset the protection they have sold to foreign banks. The observed period can be separated into three distinct periods. The first period spans January 2005 to January 2006, which saw a YoY decline of 38 percent in the notional amounts outstanding of other credit derivatives. The second period started in January 2007 and ended in January 2010. Market size almost triples from January 2006 to 2007 and increased by a further 74

percent and 67 percent in January 2008 and 2009 respectively before tapering off to R29bn in January 2010. The size of the market dropped drastically YoY between January 2010 and January 2011, falling by 72 percent to R8bn from R29bn. The third period then saw another period of continuous growth in the market size, ranging from January 2011 to January 2016 reaching R28bn in January 2016. Reporting errors could be responsible for the vast fluctuation in ‘other’ credit derivatives where some banks reported CLNs a. Ag. s credit derivatives for protection bought and others did not (Anonymous, 2016).

4.2.2 Market composition where local banks are protection sellers

The size of the market for credit derivatives for all instruments differs significantly where the bank is a protection seller compared to a protection buyer. South African banks primarily sell protection to foreign banks, with CDSs the instrument of choice (see Figure 4).

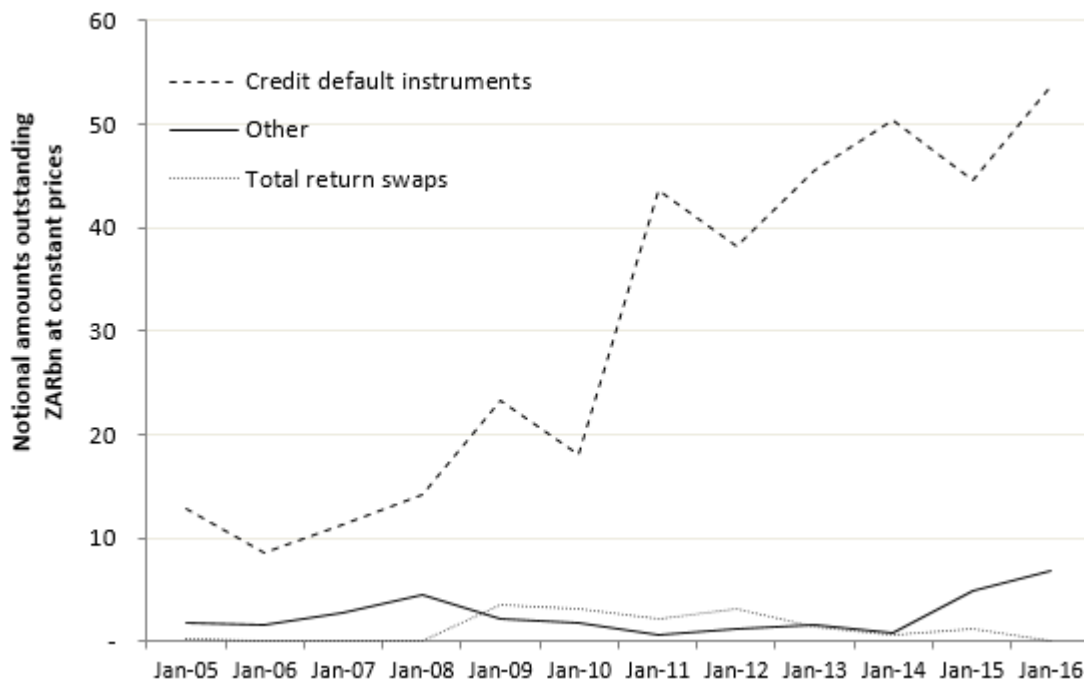


Figure 4: Notional amounts outstanding for credit derivatives per instrument where the reporting bank is a protection seller

Source: Compiled by researcher using data obtained from the SARB (2016)

For CDSs, the market size followed a generally increasing trend over the observable period (i.e. January 2005 – January 2016). However, there were few instances of annual declines in market size observed. The first of these declines was 33 percent YoY from R13bn in January 2005, to R9bn in January 2006. From January 2006 to January 2009, the notional amounts outstanding continuously increased until January 2010. The increase in the notional amount outstanding in January 2009 compared to January 2008 is likely due to activity between February 2008 and mid-September 2008 (as observed in Section 4.1). The 22 percent YoY drop from January 2009 to January 2010 was probably due to the influence of the crisis and to a much lesser extent, the Big Bang protocol. January 2011 saw a substantial increase with YoY notional amounts outstanding more than doubling compared to January 2010. There was a small YoY decline of 12 percent in January 2012 compared to January 2011, followed by another period of sustained growth

cumulating in a high of R50bn in January 2014. From January 2014 to January 2015, there was a 10 percent YoY drop to R45bn. January 2016 saw a peak at R54bn.

As with credit derivatives where the reporting bank was a protection buyer, the notional amounts outstanding of TRSs where the reporting bank was a protection seller represent a small percentage of the total credit derivatives market. The TRS market saw a period of growth between January 2009 and January 2012, but has since declined and in comparison to the market for CDSs and other credit derivatives, it remains relatively small.

In sharp contrast to the notional amounts outstanding of ‘other’ credit derivatives where the reporting bank is a protection buyer, the size of the market for other credit derivatives where the reporting bank is a protection seller is exceedingly small. According to Anonymous (2016), the reason for this is that South African banks sell protection to foreign banks primarily through CDSs and buy protection from local market participants either in the form of CDSs or CLNs. CLNs are classified as “other” credit derivatives. The notional amount outstanding in January 2005 was R2bn, spiking to R5bn in January 2008. This was followed by a period of decline lasting from January 2008 to January 2011, where it experienced overall growth until reaching a high of R6.8bn in January 2016. Unlike the market size of other credit derivatives where protection is bought, the market for other credit derivatives where protection is sold has been dwarfed by the CDS market where protection is sold since January 2008.

4.3 Gross fair values

Gross fair value could not be extracted from the DI430 form; therefore, it is only recorded from January 2008 onwards after the implementation of Basel II. Figure 5 below illustrates gross fair value for credit derivatives, distinguishing between gross positive fair value and gross negative fair value.

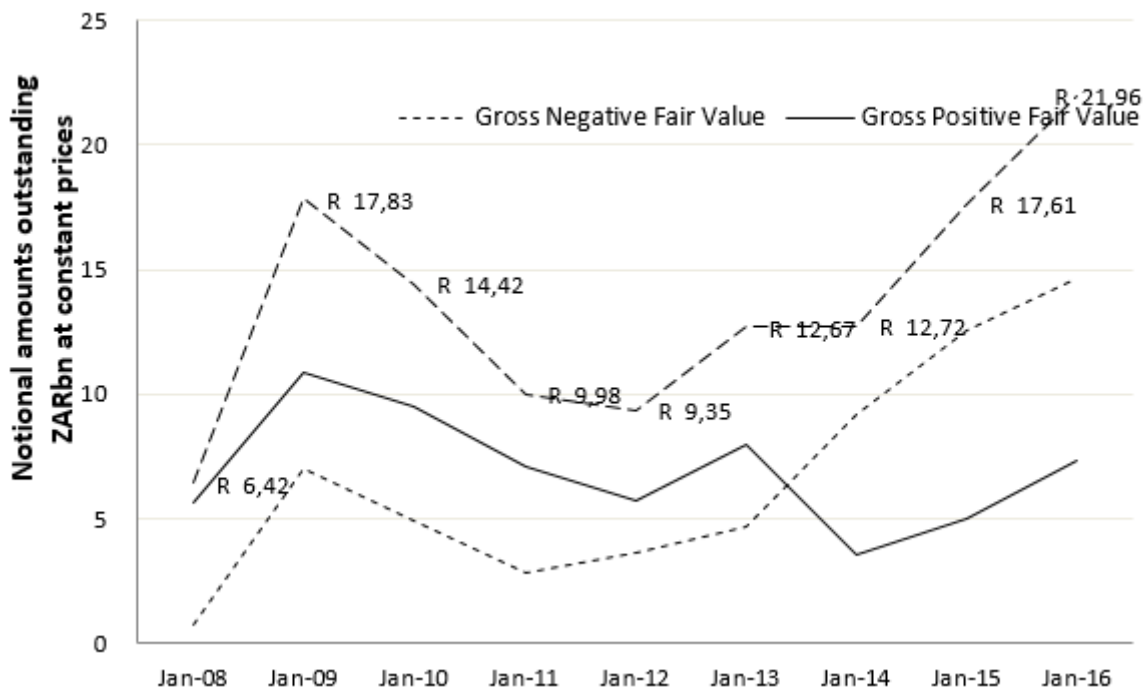


Figure 5: Gross fair value of credit derivatives: gross positive fair value vs. gross negative fair value.

Source: Compiled by researcher using data obtained from the SARB (2016)

Gross fair value more than doubled YoY from January 2008 to January 2009 from R6.6bn to R17.8bn, reaching its highest YoY level prior to January 2016. It then declined from January 2010 to 2012 and has been on an upward trajectory since reaching R17.6bn in January 2015 and R21.9bn in January 2016.

4.3.1 Gross positive fair value

Figure 6 below illustrates gross positive fair value (GPFV) and distinguishes between GPFV where the reporting bank is a protection seller and GPFV where the reporting bank is a protection buyer.

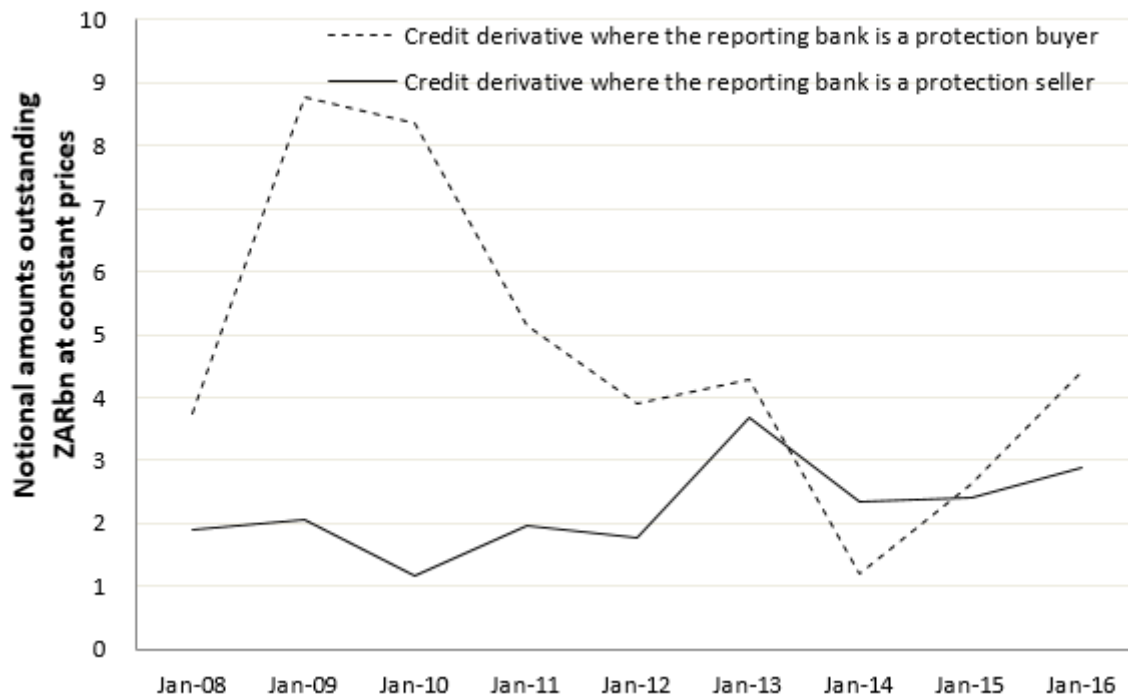


Figure 6: Gross positive fair value of protection bought versus protection sold

Source: Compiled by researcher using data obtained from the SARB (2016)

Overall, the GPFV of credit derivatives where the reporting bank was a protection buyer exceeded GPFV of credit derivatives where the reporting bank was a protection seller. The only exception was January 2014 where GPFV was R2.3bn for protection sold and R1.2bn for protection bought.

As at January 2009 and January 2010, the GPFV of protection bought, dwarfed the GPFV of protection sold. It is during this same period that there was a massive spike in ‘other’ credit derivatives where the reporting bank was a protection buyer (Figure 3). The author postulates that this increase was due to an increase in CLNs issued by South African banks and bought by local non-bank local market participants, such as asset managers and insurance firms. South African banks sell protection to local market participants by issuing CLNs and hedge their own risk with corresponding CDSs where the local bank is a protection buyer.

4.3.2. Gross negative fair value

Figure 7 below illustrates gross negative fair value (GNFV) and distinguishes between GNFV where the reporting bank is a protection seller and GNFV where the reporting bank is a protection buyer.

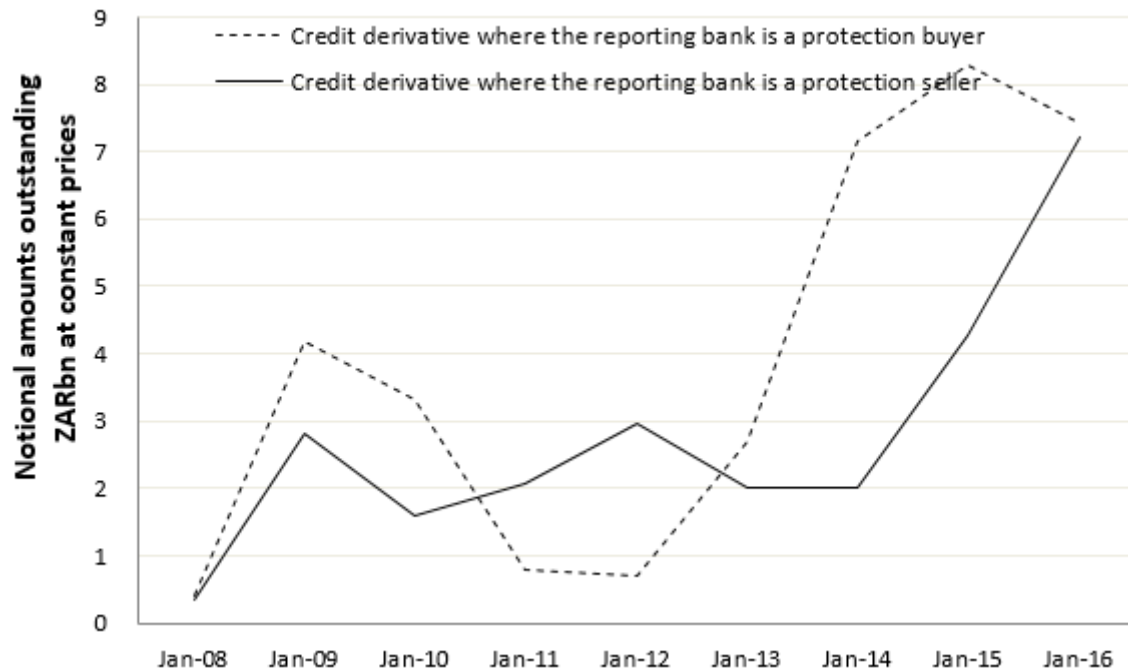


Figure 7: Gross negative fair value of protection bought versus protection sold

Source: Compiled by researcher using data obtained from the SARB (2016)

There was a large variation between the GNFV of credit derivatives where the reporting bank was a protection buyer and a protection seller. GNFV was extremely low at only R0.7bn in January 2008 for both protection bought and sold. It then rose sharply YoY tenfold to R7bn by January 2009. YoY GNFV then declined until January 2010 and further in January 2011. From January 2011, YoY GNFV increased steadily until it reached a peak in January 2016 of R14.6bn.

January 2014, 2015 and 2016 saw a large increase in YoY GNFV where the reporting bank was a protection buyer (an average of R7.6bn over the period) relative to YoY GNFV for protection sold (averaging at R4.5bn). This means that the CCR to local non-bank market participants, such as asset managers and insurance firms (excluding bilateral netting and collateral), has increased significantly YoY in the preceding three years (January 2014 – January 2016). It is possible the reporting of CLNs has been inconsistent, where some banks report only the underlying the CDS while others may report the full value of the CLNs as well. Reporting errors could explain this skewed representation of fair value during the YoY period January 2014 - 2016.

The establishment of a local trade repository with clear reporting requirements, which would likely run concurrently with the BA 350 forms for the initial phase, will strengthen the quality of the data collected and allow for the identification of reporting errors.

5. CONCLUSION

This article sought to provide transparency on the evolution of the size and composition of the South African credit derivatives market in its first decade, from 2005 to 2016. The period under study is prior to the implementation of post-crisis reforms apart from enforcement of CVA on non-centrally traded OTC derivatives in early 2015. The development of the size of the South African credit derivatives market can be separated into the following four distinct phases: infancy, pre-crisis growth, crisis aftershock and post-crisis growth. The infancy stage saw the birth of the credit derivatives market in South Africa in 2003³ up until 2007 when the Minister of Finance announced exchange control relaxation (Manuel, 2007). Up to that point, exchange controls had presented a significant barrier to growth in the market for all derivative asset classes (Adelegan, 2009). The pre-crisis growth period was characterized by an increase in the number of market participants and greater product innovation. The third period, beginning in late September 2008 and lasting for several months, was characterized by uncertainty and sluggishness in the market in the aftermath of the global financial crisis. The fourth period has seen continued growth after the crisis (since January 2010) culminating in January 2016 when the notional amounts outstanding for credit derivatives stood at R132.6bn (adjusted for inflation, using 2005 as the base year).

The South African credit derivatives market is currently too small to allow for a liquid interdealer CDS market. This lack of market liquidity will continue to restrict the range of local structured credit products on offer and would likely be further reduced if central clearing were mandated. The one-directional nature of risk transfer in the market would also severely negate the benefits of multilateral netting through central clearing. The credit derivatives market remains relatively small compared to the total OTC derivatives market, only making up between 0.31 percent and 0.77 percent during the period under study (January 2005 to January 2016), however, the relative increase in January 2016 may have been the result of the enforcement of a full CVA charge on local banks while some foreign counterparties remain exempt. The depth and liquidity of the South African credit derivatives market is most likely not high enough to warrant central clearing of this asset class. The costs associated with operating an authorized central counterparty (CCP) for the credit derivatives asset class would most likely outweigh the revenue that could be generated from offering services in South Africa for credit derivatives. Despite the continued post-crisis growth observed, the future of the South African credit derivatives market is uncertain as the regulatory environment continues to evolve. Despite the possible positive effect on the size of the credit derivatives market after the enforcement of CVA in early 2015, the liquidity and depth of the market remain limited. Mandatory central clearing, increased capital requirements (including adjustments to the calculation of CVA) and margining requirements for non-centrally cleared derivatives could stunt future growth as the cost of doing business rises. While the inconsistent application of regulation as well as the volatility in the calculation of CVA pose risks for the market and require further study. The CCR to local non-bank market participants, such as asset managers and insurance firms (excluding bilateral netting and collateral), has increased significantly YoY in the preceding three years (January 2014 – January 2016). Indicating a build-up of dealer exposure during this time, possibly increasing systemic risk.

³ The first time the researcher could find credit derivatives reported on the DI430 form was January 2003.

The current study was based upon the aggregated data published by the SARB, however, the enforcement of trade reporting would allow for the detailed analysis of granular contract level data going forward. Trade reporting improves transparency in the market and can lower CCR if the information is properly reported and properly used by authorities and the public. Trade reporting does not eliminate CCR, however, it allows supervisors to assess the build-up of systemic risk. Better trade reporting also enables supervisors to monitor previously unregulated market participants such as insurance firms, hedge funds and large corporates. Further study into the costs, benefits and unintended consequences of central clearing vs CVA and margining requirements on non-centrally cleared trades for the liquidity and size of the OTC credit derivatives market as well as the OTC derivatives market at large to inform South African regulators is needed.

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FOREIGN EXCHANGE RATE EXPOSURE FROM CENTRALLY CLEARED SOUTH AFRICAN OVER-THE-COUNTER DERIVATIVES

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ABSTRACT

In their commitment to implement G20 regulatory reforms to the over-the-counter derivatives market, a critical decision still faced by South African Authorities is which central clearing counterparty/ies (domestic or international), if any, to licence. Assuming an international counterparty is licenced, the foreign exchange rate exposure in value at risk and expected shortfall is calculated using a GARCH type model which accounts for volatility clustering and in addition, allows for the presence of regime-switching to be tested. Collateral demand calculated with the risk-sensitive models used by central clearing counterparties is sensitive to the market volatility scenarios, spiking during periods of market stress, highlighting the pro-cyclical nature of these requirements. Should an international clearing counterparty be licenced, South African Authorities should be prepared for a substantial increase in the demand for foreign currency. The transaction foreign exchange rate exposure was measured in USD and GBP, and it was found that the exposure demanded in USD was lower and relatively more stable than that in GBP.

Keywords: South African systemic risk, regulation of over-the-counter derivatives, exchange rate risk.

1. INTRODUCTION

Derivatives intensified losses during the 2008/09 Great Financial Crisis as market opacity created uncertainty about the exposure of some systemically important financial institutions from their credit derivative positions (Stulz, 2009, pp. 58–70). In an effort to improve transparency and risk transfer in the over-the-counter (OTC) derivatives market the G20 introduced various reforms including the central clearing of appropriate derivatives and margin requirements for non-centrally cleared derivatives. As a G20 member, South Africa has committed to implement market reform in line with the rest of the G20 nations so as to avoid international regulatory arbitrage (National Treasury, 2012). According to the Financial Stability Board, (FSB, 2019) “*differences in rule-making could lead to cross-border regulatory arbitrage and a potential build-up of risks in parts of the global financial system that go beyond those addressed by individual national authorities*”. However, not all reform decisions are made at an international level; domestic regulators must take some decisions after considering their market’s unique conditions. One such decision for South African Authorities⁴ is; how many central clearing counterparties (CCPs) should be

⁴ The regulatory landscape itself has changed in South Africa post-crisis. The Twin Peaks framework for financial sector regulation came into effect on 1 April 2018, governed by the Financial Sector Regulation Act, Act No. 9 of 2017. Twin Peaks saw the creation of two new regulators, the Prudential Authority (PA) which is housed within the South African Reserve Bank (SARB) and the Financial Sector Conduct Authority (FSCA) which replaces the Financial Services Board. The PA is responsible for prudential regulation and supervision as well as promoting financial sector stability. The FSCA is responsible for supervising market conduct. Unless otherwise specified, these two regulators, as well as National Treasury, will be referred to as South African “Authorities”.

licensed, if any, to provide central clearing services in the domestic market. Authorities indicated in June 2016 that they would allow a global CCP to establish a local office and they would not licence a domestic CCP other than the temporary license given to JSE Clear that would not be renewed (National Treasury, 2016). Although the legislation is in place to allow for a global CCP to be licensed, South African Authorities have not yet done so. South Africa has been one of the slowest members of the G20 to implement reforms to the OTC derivatives market.

Margining requirements on centrally cleared derivatives as well as contributions to a CCPs default fund (DF) would increase collateral demand for OTC derivatives providers (ODPs). The magnitude of the increase depends on the model inputs of the CCP's margin model. These demands should increase during times of market stress to cover the increasing CCR and potential future exposures (PFE); thus, the relationship between market stress and initial margin (IM) and DF requirements is pro-cyclical. A CCP may even choose to increase the number of IM calls it makes during times of increased market risk. Gibson & Murawski (2013) liken increasing margin requirements to a run on a bank, increasing liquidity demands when liquidity is scarce. They find that high margin rates when collateral is scarce increases the risk of default. Thus, when collateral is scarce, margining may increase default risk in contrast to the regulatory objective of reducing systemic risk. Licencing an international CCP exposes ODPs to exchange rate risk if IM and DF contributions are not accepted in ZAR. It is consequential to estimate the potential foreign exchange rate exposure of South African ODPs from clearing through an international CCP for macroprudential and microprudential stability. According to Heath, Kelly, & Manning (2012), an excess demand for HQLA in a foreign denominated currency could lead to a financial crisis because the local central bank is not the ultimate source of the needed liquidity. This is particularly true for institutions in the periphery of a central clearing network, for instance, small dealers like SA ODPs and domestic end-users. In addition, existing exchange control rules could restrict ODPs from complying with their collateral requirements. National Treasury may need to adjust exchange controls to accommodate this increase in demand and the SARB will need to be prepared to provide foreign exchange to the market in the event of a shortage of supply.

2. BACKGROUND AND LITERATURE REVIEW

Following the regulatory push post-crisis towards central clearing Duffie & Zhu (2011), in their seminal work, found that clearing through one CCP is always more efficient and cost-effective than multiple CCPs. Therefore, the stated intention of local Authorities to licence only one CCP is supported by Duffie & Zhu (2011) from a market efficiency perspective. Further work by Heller & Vause (2012), Heath et al. (2012) and Duffie, Scheicher, & Vuillemeys (2015) found that as the number of CCPs increase, multilateral netting benefits are reduced, and more collateral would need to be posted. Thus, the decision not to licence a domestic CCP minimises cost implications for domestic market participants because many existing foreign counterparties of the local ODPs are already clearing members of global CCPs.

Existing CCPs charge their clearing members IM and variation margin (VM) whilst prior to the Great Financial Crisis bilateral contracts seldom included VM and almost never included IM (International Swaps and Derivatives Association [ISDA], 2014). Since the crisis, however, exchanging VM has become common in bilateral contracts whilst the voluntary use of IM remains rare, this is true of the South African market as well (FSCA & PA, 2019b). In South Africa, margin

requirements on non-centrally traded derivatives were to be slowly phased in, with the first implementation phase starting in 2019, according to a (FSCA & PA, 2019a). However, the implementation schedule published in the 2019 draft document has been delayed by a year due to the Covid-19 crisis. The final implementation schedule for margin requirements for non-centrally cleared OTC derivative transactions was published on 2 June 2020. No ODP is anticipated to be large enough to be subject to mandatory IM posting on non-centrally cleared derivatives until 2023.

VM is held to protect against mark-to-market losses on a contract that is to limit the build-up of current exposure. The market values of derivative contracts vary continuously with the variation in the value of the underlying instrument. At any given moment one party's derivative contract is "in-the-money," i.e. the contract is an asset for the party who holds it, and the counterparty is, therefore "out-of-the-money," i.e. their derivative position is a liability. In a bilateral exchange, the party whose position is a liability transfers the VM straight to the party whose position is an asset, while when a contract is centrally cleared the CCP acts as a middle man, receiving the VM from the one-party and transferring it to the other. In a bilateral contract, both parties exchange IM to protect against PFE, which is defined as the maximum amount at a given confidence interval an investor could lose on their positions during a pre-specified period of time (Lopez et al., 2013). In the case of central clearing, IM is one-directional risk cover. Both parties to the initial contract post IM to the CCP, while the CCP does not post IM to its counterparties. IM is the first barrier to protecting a CCP against the default of one of its clearing members.

VM and IM are tools for mitigating CCR; however, it is possible for a counterparty's end of day loss position to exceed the VM and IM collateral its counterparty holds against the contract. The counterparty with the net loss position may then decide to default on its obligation. In the bilateral market, the defaulter's counterparty must then absorb the loss that exceeds the collateral it holds. Under central clearing, the CCP is still responsible for transferring the VM to the counterparty with the profit position, thereby absorbing the loss, as well as for finding a new counterparty to replace the defaulting counterparty. To cover such potential losses, CCPs demand from their clearing members an additional risk mitigation payment in the form of contributions to a default fund (DF). SwapClear (a subsidiary of LCH.Clearnet Ltd, which specialises in interest rate swaps) mandates that VM must be paid in the currency of the underlying exposure, i.e. ZAR to cover VM on ZAR denominated contracts. However, IM must be posted in GBP, USD, EUR and a few other eligible major currencies, currently excluding ZAR. Collateral can also be received in the form of acceptable securities subject to haircuts determined by LCH.Clearnet Ltd, currently, no ZAR denominated securities are classed as acceptable collateral (LCH.Clearnet Ltd, 2014). In addition, ZAR has been identified by LCH.Clearnet (2015) as one of four currencies that do not demonstrate a stable and/or strong relationship, therefore it is subject to a margin add-on to limit its use. Given the volatility of the ZAR already acknowledged by LCH.Clearnet, it may be deemed imprudent risk management for a foreign CCP, even one with an office in South Africa, to accept IM from its counterparties in ZAR. This would mean that local market participants would need to post collateral in foreign exchange or eligible securities, exposing them to exchange rate risk. In addition to posting margin to a CCP, local clearing members would also need to contribute to the DF. All contributions to SwapClear's DF are payable exclusively in GBP (LCH.Clearnet Ltd, 2013). South African banks are subject to exchange controls; thus, a sizeable increase in the

demand for foreign currency to meet collateral requirements may require South African Authorities to adjust foreign exchange regulation.

VM is passed from one counterparty to the other and since it is already common practice in bilateral contracts in South Africa its net aggregate impact on collateral demand in South Africa will be lower than IM and contributions to the DF. VM is also mostly posted in cash which is readily reused by dealers. According to Heath et al., (2012), the impact of IM on collateral demand will be “quantitatively much more important” than the demand as a result of VM. Thus, the effect of VM is beyond the scope of this study. DF contributions to CCPs as well as IM on centrally cleared and non-centrally cleared derivatives will increase the demand for high-quality liquid assets (HQLA).

In the bilateral OTC derivatives market structure, the interconnectedness of market participants and lack of counterparty relationship transparency were exposed as sources of systemic risk during the Great Financial Crisis (FSB, 2010). Central clearing increases the transparency of market participant’s derivative holdings compared to an opaque bilateral market structure and as a result, reduces systemic risk (Hull, 2010). When a party to a bilateral derivative contract defaults, the counterparty would usually want to replace the contract. However, since default would typically take place under conditions of financial stress with increasing concern over CCR, market liquidity may be reduced and if so, a replacement contract may come at a higher price, or it may not be possible to replace the contract at all in the bilateral market. CCPs are able to reduce this potential for market failure, where a contract cannot be replaced in times of financial stress, by facilitating the calm transfer of contracts from a defaulted clearing member to others by auction. Thus, CCPs can improve liquidity and reduce systemic risk during times when the bilateral market may seize up due to counterparty credit fears. CCPs can curtail price volatility and increases in systemic risk, which would result from the default of a large derivatives dealer in a bilateral market. However, not all derivative contracts are suitable for central clearing. According to the FSB (2010), only standardised products which have liquid markets and whose price is easy to attain and is generally agreed upon by the market are suitable for central clearing. If a product is not standardised, and/or does not have a sufficiently liquid market, and/or does not have an acceptable and easily available pricing source, then defaulted contracts are more complicated, if it is possible at all, to replace during times of market stress. Even a CCP would struggle to close out and replace such contracts leading to losses and potentially the failure of the CCP. The riskiness in underlying assets and the degree of heterogeneity in market participants both impact on the ability of a CCP to effectively perform its risk-sharing function (Antinolfi et al., 2022). Large CCPs are themselves systemically important institutions; thus, authorities should not force them to clear unsuitable contracts which could expose them to undue risk. Thus, the G20 only mandated central clearing for “standardised” OTC derivative contracts. Almost all interest rate derivatives (IRD) are highly contractually and operationally standardised, making them suitable for central clearing (FSB, 2010). The South African OTC derivatives market is one of the smallest in the G20 with IRD making up 88% of the market (as at end December 2018). Therefore, the initial central clearing mandate is likely to extend only to IRD as the other derivative asset classes in South Africa do not have as liquid markets with high levels of price transparency.

Some domestic trades already clear through foreign CCPs as a result of ODPs transacting with foreign counterparties who are already subject to mandatory central clearing requirements. In

January 2013, the first OTC derivative transaction involving a South African bank (Absa) and a foreign counterparty was cleared by LCH.Clearnet Ltd (FSB, 2013). However, no local ODPs are currently clearing members to any CCP; therefore, any transactions being centrally cleared are done so for local ODPs by clearing members offering client clearing services. SwapClear (a subsidiary of LCH.Clearnet Ltd, registered in the UK) is responsible for the central clearing of the majority of IRDs globally. Thus, given the fact 88% of South African OTC derivatives are IRD and SwapClear clears almost all IRDs globally, it would seem most likely that LCH.Clearnet Ltd will be given a licence to operate its SwapClear service in South Africa to maximise multilateral netting benefits. Another international CCP which could be licenced is the Chicago Mercantile Exchange (CME) which specialises in futures and commodities derivatives; however, it has a separate clearinghouse for IRD.

Dealer banks face higher liquidity requirements than they did before the Great Financial Crisis as a result of OTC derivatives reforms such as higher capital requirements, VM, IM, central clearing fees and trade reporting. This is in addition to the Basel III liquidity coverage ratio (LCR), net stable funding ratio and other post-crisis reforms (Sidanius & Zikes, 2012). Most dealers are large banks which means that higher collateral demands may result in lower credit extension by banks, which could reduce production in the real economy. A collateral shortage in the derivatives market could force dealers to limit market-making activities. Gibson & Murawski (2013) find that increased margin requirements may impact negatively on trading volume in the derivatives market, which could have devastating results for liquidity and the operation of this market. Thus, the ability of dealer banks to meet their increased collateral and liquidity demands has implications for systemic risk in the financial system. Despite the systemic weaknesses highlighted during the Great Financial Crisis, the derivatives market may serve an important role in the financial market by improving risk pricing and allowing for risk transfer (Cecchetti et al., 2009). The FSB (2010) notes that *“OTC derivatives benefit financial markets and the wider economy by improving the pricing of risk, adding to liquidity, and helping market participants manage their respective risks. However, it is important to address the weaknesses in these markets which exacerbated the financial crisis.”*

Participants in a bilateral OTC market are interconnected through a vast network of privately negotiated transactions, dominated by a few large dealers. The failure or default of a market participant can have large systemic risk implications as all of their counterparties attempt to replace their contracts while the market may be less liquid as a result of the default. Thus, market participants who act as dealers may pose a systemic risk to the derivatives market through their interconnectedness with other market participants even if their net positions are equal to zero, i.e. they have a “balanced book”. Conversely, dealers are exposed to systemic risk through their derivatives positions should one of their counterparties default. South African dealers or ODPs are primarily the country’s big five banks; therefore, systemic risk in the derivatives market could spill over into the larger financial system as it did in other countries during the Great Financial Crisis. The World Bank considers total bank assets to GDP as a good measure of the depth of a country’s financial system. Total bank assets as of December 2015 was 4.8 trillion ZAR (SARB, 2016) whilst GDP for 2015 was estimated at 4.5 trillion ZAR. Thus, South African banks’ balance sheets are large in relation to the country’s economy. This makes it important to quantify the collateral required for South African ODPs in the derivatives market to comply with incoming regulations.

In addition, the local market's exposure to foreign currencies is likely to increase during times of local market stress through the potential depreciation of the ZAR (possibly as a result of a risk-averse flight to reserve currencies or as a result of a deterioration of South African fundamentals). In addition, shocks to global liquidity typically involve large foreign exchange liquidity shortfalls, barring intervention from authorities (Committee on the Global Financial System [CGFS], 2013). These factors of increased demand for collateral and the possible short-term shortages of HQLA in times of volatility could lead to a crippling shortage of liquidity for financial institutions. A shortage of liquidity could result in the bankruptcy of otherwise solvent institutions, in other words, where assets exceed liabilities. In the case of systemically important financial institutions, their bankruptcy could result in complete market failure. This then places a burden on the SARB to be prepared to provide liquidity to the market in its function as the lender of last resort. According to van Wyk, Botha, & Goodspeed (2019), the lender of last resort function is fulfilled by *"a country's central bank in extending credit to banks or to other entities in unusual circumstances involving a national or regional emergency, where failure to obtain credit would have a severe adverse impact on the economy."* This liquidity assistance should only be extended when the failure of the entity poses a systemic threat, and when the entity is otherwise solvent.

3. METHODOLOGY

South African Authorities have indicated their intention to mandate central clearing for eligible products, thus it is assumed that all IRD are cleared through a single global CCP and subject to exchange rate risk. The potential magnitude of collateral demands on South African ODPs that would result from the enforcement of IM and DF contributions on centrally cleared derivatives (using a CCP's margin model) are estimated in ZAR in Kennedy-Palmer (2021). These estimates are used to quantify and examine the foreign exchange rate risk that ODPs would be exposed to through an international CCP. The two currencies (against the ZAR) considered in this analysis are the GBP as it is the preferred currency accepted by SwapClear as well as the USD because it is still the world's top reserve currency (IMF, 2019). An estimation of risk is crucial to limiting the misallocation of capital, for this reason, the presence of regime-switching, asymmetry, and different conditional distributions are tested for. This study investigates the in-sample accuracy of the ARCH, GARCH, E-GARCH, GJR-GARCH and T-GARCH models for up to four regimes and six conditional distributions for both currencies. The top-performing model is then used to estimate the value at risk (VaR) and expected shortfall (ES) for both exchange rates at a 99% confidence level to evaluate the exchange rate risk exposure to local ODPs through their cleared derivative portfolios.

This study employs a univariate approach to modelling foreign exchange rate volatility as well as measuring exchange rate risk because it is desirable to measure the exchange rate exposure for each of the two selected exchange rates individually. Papaioannou (2006) identifies VaR as the most appropriate approach for measuring foreign exchange rate risk. Given the recent regulatory focus on ES over VaR, both will be calculated. Papaioannou (2006) finds that when measuring exchange rate risk, the typical holding period is one day, and the confidence levels are typically 99% and 95%. For the sake of prudence, this study measures exchange rate risk at the 99% confidence level for VaR and ES.

Pérignon, Deng, & Wang (2008) find that a GARCH type model is superior for calculating VaR because it accounts for volatility clustering. The two exchange rates will be fitted to a total of 120 GARCH-type models to identify the best performing in sample-fit for each series. The ARCH, GARCH, E-GARCH, GJR-GARCH and T-GARCH, with six conditional distributions and up to a maximum of four regimes will be tested. The best performing GARCH type model for each exchange rate will then be used to forecast the 99% VaR and ES for one period ahead. The percentage daily loss for each exchange rate under the appropriate number of regimes will provide a band for the potential economic exposure to an international CCP from IM and DF demands denominated in GBP or USD.

4. RESULTS AND DISCUSSION

The Akaike information criterion (AIC) and Bayesian information criterion (BIC) goodness-of-fit tests are used to select the preferred in-sample model for both exchange rates. The lowest AIC and BIC indicate the model which provides the best fit for the data. The model with the lowest AIC is the one that maximises the likelihood function. The BIC imposes a greater penalty on the number of parameters than the AIC; therefore, it favours parsimony. The results of the 120 models tested for each of the two exchange rates are available on request. The AIC and BIC both select the 3-State T-GARCH with a GED distribution for the ZARGBP data. Thus, the ZARGBP data exhibits regime-switching, asymmetry in response to past negative observations as well as a non-normal distribution. However, the AIC and BIC select different models for the ZARUSD data. The AIC prefers the 3-State GJR-GARCH with Skewed Student's t distribution while the BIC prefers the 1-State GJR-GARCH with Skewed Student's t distribution. Thus, the ZARUSD data exhibits asymmetry in response to past negative observations and a skewed non-normal distribution; however, the presence of regime-switching is uncertain. The two top-performing models for the ZARUSD exhibit skewness while the unilaterally selected model for the ZARGBP does not.

The GJR-GARCH of (Glosten, Jagannathan, & Runkle, 1993) reflects the asymmetric nature of responses by defining the conditional variance as a linear piecewise function.

$$\sigma_{k,t}^2 = \alpha_{0,k} + (\alpha_{1,k} + \alpha_{2,k} \mathbb{I}\{r_{t-1} < 0\}) r_{t-1}^2 + \beta_k \sigma_{t-1}^2$$

Equation 1: GJR-GARCH (1,1)

where $\sigma_{k,t}^2$ is the time-varying variance of a variable for period t, $\alpha_{0,k}$ is the constant and r_{t-1}^2 is the squared percentage change in the differenced interest rate. $\sigma_{k,t-1}^2$ is the previous period's variance. $\alpha_{1,k}$ captures the sign effect, and $\alpha_{2,k}$ indicates the degree of asymmetry. $\mathbb{I}\{\cdot\}$ is an indicator function which takes the value 1 if $\{r_{t-1} < 0\}$, otherwise it takes the value 0. The persistence is captured by β_k . To ensure positivity the following must hold: $\alpha_{0,k} > 0$, $\alpha_{1,k} > 0$, $\alpha_{2,k} \geq 0$ and $\beta_k \geq 0$. The persistence is captured by $\alpha_{1,k} + \alpha_{2,k} E[\eta_{k,t}^2 \mathbb{I}\{\eta_{k,t} < 0\}] + \beta_k$. Covariance-stationarity in each regime requires $\alpha_{1,k} + \alpha_{2,k} E[\eta_{k,t}^2 \mathbb{I}\{\eta_{k,t} < 0\}] + \beta_k < 1$

Zakoian's Threshold GARCH (T-GARCH) was developed in 1994. The conditional volatility is the dependent variable instead of the conditional variance.

$$\sigma_{k,t} = \alpha_0 + \alpha_{1,k} r_{t-1} \mathbb{I}\{r_{t-1} \geq 0\} + \alpha_{2,k} r_{t-1} \mathbb{I}\{r_{t-1} < 0\} + \beta_k \sigma_{t-1}$$

Equation 2: T-GARCH (1,1)

To ensure positivity the following must hold: $\alpha_{0,k} > 0$, $\alpha_{1,k} > 0$, $\alpha_{2,k} > 0$ and $\beta_k \geq 0$. The volatility persistence is captured by $\alpha_{1,k}^2 + \beta_k^2 - 2\beta_k(\alpha_{1,k} + \alpha_{2,k})E[\eta_{t,k} \mathbb{I}\{\eta_{t,k} < 0\}] - (\alpha_{1,k}^2 - \alpha_{2,k}^2)E[\eta_{t,k}^2 \mathbb{I}\{\eta_{t,k} < 0\}] + \beta_k$. Covariance-stationarity in each regime requires $\alpha_{1,k}^2 + \beta_k^2 - 2\beta_k(\alpha_{1,k} + \alpha_{2,k})E[\eta_{t,k} \mathbb{I}\{\eta_{t,k} < 0\}] - (\alpha_{1,k}^2 - \alpha_{2,k}^2)E[\eta_{t,k}^2 \mathbb{I}\{\eta_{t,k} < 0\}] + \beta_k < 1$

The effect of the previous period's differenced interest rate on the conditional variance depends on its sign. It is α_1 when r_{t-1} is positive, and when negative it is $\alpha_1 + \alpha_2$. Therefore α_2 is positive when a leverage effect is present.

A summary of the top three models selected are presented in table 1 below.

Table 1: Details of the 3-State T-GARCH, 3-State GJR-GARCH and 1-State GJR-GARCH

| Coefficients | ZARGBP | | ZARUSD | | ZARUSD | |
|----------------|---------------------|------------|------------------------|------------|------------------------|-----------|
| | 3-State T-GARCH GED | | 3-State GJR-GARCH SSTD | | 1-State GJR-GARCH SSTD | |
| $\alpha_{0,1}$ | 0.0000001 | (0.00E+00) | 0.0000325 | (2.99E-26) | 0.02487457 | (6.12E-3) |
| $\alpha_{1,1}$ | 0.0000010 | (2.00E-14) | 0.0206636 | (4.13E14-) | 0.03835724 | (1.35E-2) |
| $\alpha_{2,1}$ | 0.9998910 | (8.84E-29) | 0.0001000 | (2.00E-12) | 0.04040547 | (1.40E-2) |
| β_1 | 0.4578817 | (9.12E-33) | 0.9791053 | (3.51E-26) | 0.91899899 | (5.84E-3) |
| v_1 | 0.7000001 | (5.36E-33) | 7.7183220 | (7.38E-20) | 9.26425360 | (1.15E-0) |
| ξ | n/a | | 0.5994591 | (7.17E-21) | 0.88249675 | (1.95E-2) |
| $\alpha_{0,2}$ | 0.0171905 | (6.15E-22) | 0.0736896 | (8.59E-21) | n/a | |
| $\alpha_{1,2}$ | 0.0411394 | (9.70E-22) | 0.0003589 | (3.36E-23) | n/a | |
| $\alpha_{2,2}$ | 0.0473002 | (1.37E-22) | 0.1820260 | (6.09E21-) | n/a | |
| β_2 | 0.9442416 | (2.14E-36) | 0.7126342 | (1.95E-20) | n/a | |
| v_2 | 2.1017450 | (9.57E-22) | 36.336790 | (4.45E-20) | n/a | |
| ξ | n/a | | 1.1431126 | (1.18E-19) | n/a | |
| $\alpha_{0,3}$ | 0.0313603 | (4.78E-22) | 0.0629000 | (4.39E-21) | n/a | |
| $\alpha_{1,3}$ | 0.0014660 | (1.62E-24) | 0.0528538 | (2.64E-21) | n/a | |
| $\alpha_{2,3}$ | 0.1243920 | (2.15E-21) | 0.1003761 | (3.98E-21) | n/a | |
| β_3 | 0.9488326 | (7.54E-33) | 0.8757591 | (6.83E-22) | n/a | |
| v_3 | 1.3926720 | (1.00E-20) | 92.846010 | (1.24E-21) | n/a | |
| ξ | n/a | | 0.9953466 | (9.29E-20) | n/a | |

| Coefficients | ZARGBP | | ZARUSD | | ZARUSD | |
|--------------------|---------------------|--|------------------------|--|------------------------|--|
| | 3-State T-GARCH GED | | 3-State GJR-GARCH SSTD | | 1-State GJR-GARCH SSTD | |
| σ_1 Mean | 0.7308 | | 1.0959 | | 1.0881 | |
| σ_1 Maximum | 14.8301 | | 3.2068 | | 4.8496 | |
| σ_2 Mean | 0.9306 | | 0.7871 | | n/a | |
| σ_2 Maximum | 2.3790 | | 6.7019 | | n/a | |
| σ_3 Mean | 1.6215 | | 1.2292 | | n/a | |
| σ_3 Maximum | 9.0392 | | 6.4041 | | n/a | |
| Log-likelihood | -5924.46 | | -6221.15 | | -6250.76 | |
| AIC | 11890.93 | | 12490.29 | | 12513.52 | |
| BIC | 12024.67 | | 12643.13 | | 12551.73 | |

Source: Author's calculations. Standard errors are in brackets. All of the coefficients are significant at the 1% level

All three models are covariance-stationary in each state. Covariance-stationarity in each state for the GJR model requires $\alpha_{1,k} + \alpha_{2,k}E[|\eta_{k,t}^2 \mathbb{I}\{\eta_{k,t} < 0\}|] + \beta_k < 1$. Covariance-stationarity requires $\alpha_{1,k}^2 + \beta_k^2 - 2\beta_k(\alpha_{1,k} + \alpha_{2,k})E[\eta_{t,k} \mathbb{I}\{\eta_{t,k} < 0\}] - (\alpha_{1,k}^2 - \alpha_{2,k}^2)E[\eta_{t,k}^2 \mathbb{I}\{\eta_{t,k} < 0\}] + \beta_k < 1$ for a T-GARCH. The volatility persistence for each state of a T-GARCH is calculated as follows:

$$\alpha_{1,k}^2 + \beta_k^2 - 2\beta_k(\alpha_{1,k} + \alpha_{2,k})E[\eta_{t,k} \mathbb{I}\{\eta_{t,k} < 0\}] - (\alpha_{1,k}^2 - \alpha_{2,k}^2)E[\eta_{t,k}^2 \mathbb{I}\{\eta_{t,k} < 0\}] + \beta_k$$

The volatility persistence for the GJR-GARCH is calculated by $\alpha_{1,k} + \alpha_{2,k}E\left[|\eta_{k,t}^2\mathbb{I}\{\eta_{k,t} < 0\}|\right] + \beta_k$. In both equations, $E\left[|\eta_{k,t}^2\mathbb{I}\{\eta_{k,t} < 0\}|\right] = 1/2$ for an unskewed distribution and is dependent on the degree of asymmetry as per (Trottier & Ardia, 2016) for a skewed distribution. The volatility persistence for each model per state is presented in tables 2 – 4.

Table 2: The persistence in volatility per state of the 3-State T-GARCH GED for the ZARGBP data

| Volatility persistence of each state of the 3-State T-GARCH GED | |
|---|-----------|
| State 1 | 0.0017689 |
| State 2 | 0.8099124 |
| State 3 | 0.7847350 |

Source: Author's calculations

Table 3: The persistence in volatility of the 1-State GJR-GARCH SSTD for the ZARUSD data

| Volatility persistence of each state of the 1-State GJR-GARCH SSTD | |
|--|-----------|
| State 1 | 0.9807914 |

Source: Author's calculations

Table 4: The persistence in volatility per state of the 3-State GJR-GARCH SSTD for the ZARUSD data

| Volatility persistence of each state of the 3-State GJR-GARCH SSTD | |
|--|-----------|
| State 1 | 0.9998589 |
| State 2 | 0.7949048 |
| State 3 | 0.9808084 |

Source: Author's calculations

The volatility persistence for the single state GJR-GARCH is almost indistinguishable from that of the 3rd state of the 3-State GJR-GARCH. However, it does not represent the persistence of other two states, either under or overstating the persistence, indicating that the single state model is unable to capture the full extent of the volatility dynamics in the ZARUSD data. The transition probability matrices for the two multi-state models are presented in tables 5 and 6. The transition probabilities for both multi-state models are not $p_{11} = 1 - p_{22}$, therefore rejecting the null hypothesis used by Engel & Hamilton (1990)⁵. Thus, confirming that the multi-state models do not follow a random walk and the data exhibits regime-switching behaviour. This result indicates that the 3-State model is preferred over the 1-State model for the ZARUSD data.

Table 5: The transition probability matrix of the 3-State T-GARCH GED for the ZARGBP data

| | t+1 k=1 | t+1 k=2 | t+1 k=3 |
|-------|------------|-----------|-----------|
| t k=1 | 0.06337951 | 0.5273493 | 0.4092712 |
| t k=2 | 0.10140738 | 0.8798137 | 0.0187789 |
| t k=3 | 0.02379537 | 0.3639686 | 0.6122360 |

Source: Author's calculations

⁵ Engel & Hamilton's (1990) pioneering work finds that there are long swings in the quarterly USD exchange rate against major currencies between 1973 and 1988, which persist over time, rejecting the random walk hypothesis. They do so by testing the null hypothesis that the change in the exchange rate during the current period is independent of the state in the previous period, i.e. $H_0: p_{11} = 1 - p_{22}$. In other words, the null hypothesis is that exchange rates follow a martingale (where the expected value of the next random variable in a sequence, given all prior values, is its current value) and the alternative is the presence of segmented trends. If the null holds, the probability of currently being in a state does not depend on the state of the previous period; thus, the process follows a random walk. They reject the null and find that long swings are captured by a Markov-switching process which is a feature of changing underlying economic conditions. Engel & Hamilton find that a two regime Markov-switching process outperforms a random walk both in-sample and out-of-sample in the short-term.

Table 6: The transition probability matrix of the 3-State GJR-GARCH SSTD for the ZARUSD data

| | $t+1 k=1$ | $t+1 k=2$ | $t+1 k=3$ |
|---------|-------------|------------|----------------------------|
| $t k=1$ | 0.001395446 | 0.99673049 | 0.001874068 0.580203556 |
| $t k=2$ | 0.142617649 | 0.27717880 | |
| $t k=3$ | 0.656423584 | 0.00118952 | 0.342386895 |

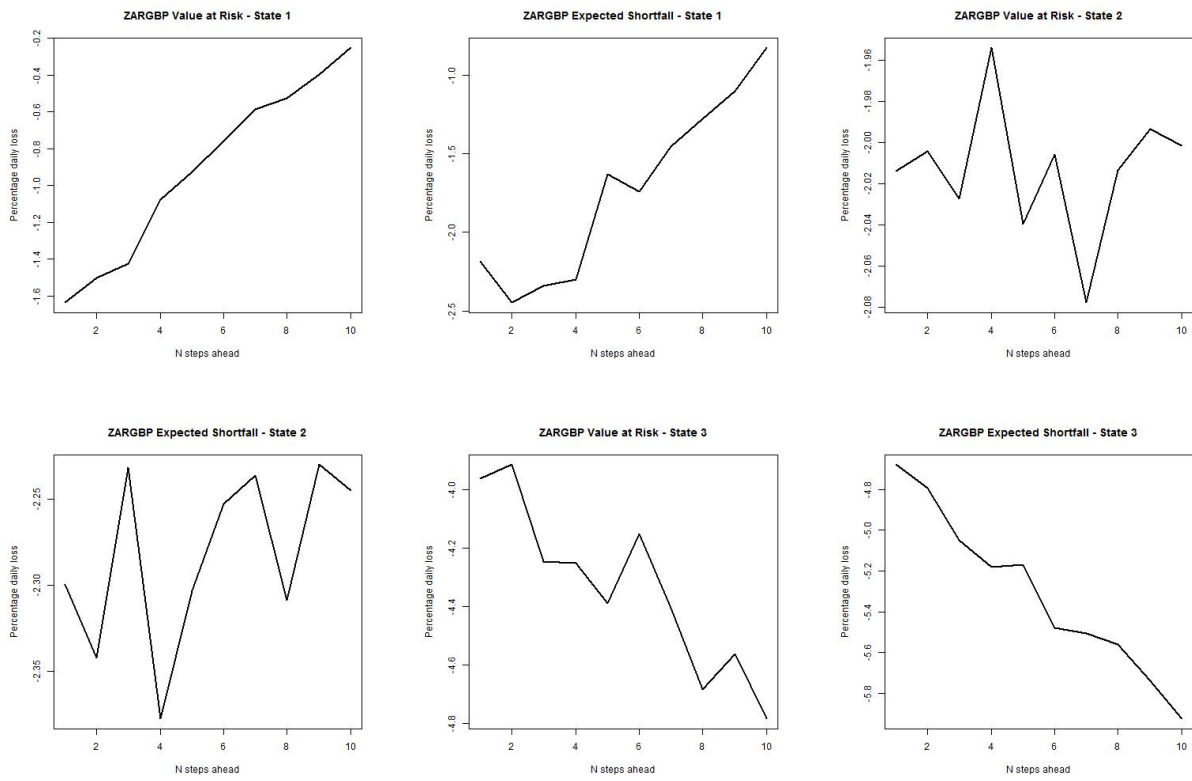
Source: Author's calculations

For the ZARGBP data, State 1 represents a period of the lowest mean volatility combined with the highest maximum volatility, indicating that volatility shocks in this state are particularly large and rare. The volatility persistence of State 1 is extremely low at 0.1769% and reports only a 6.3% chance of remaining in State 1 in $t+1$ if initially in State 1. State 2 represents the more moderate state with the lowest maximum volatility and the lowest differential between the mean and maximum volatility. State 2 is the most persistent state, the probability of remaining in State 2 in $t+1$ if initially in State 2 is 88%, and it has the highest volatility persistence of 80.99%. State 3 characterises the highest mean volatility and a high maximum volatility. The probability of remaining in State 3 in $t+1$ if initially in State 3 is 61% and its volatility persistence is 78.47%.

The single state ZARUSD reports a mean and maximum volatility that represents an approximate average of the volatilities in three states of the multi-state model. It neither captures the lowest nor highest volatilities of the three-state model. The single state model also reports a high volatility persistence of 98.08%. State 1 of the 3-State GJR-GARCH exhibits the smallest differential between the mean and maximum volatility as well as the lowest maximum volatility amongst the three states. It has a high volatility persistence of 99.99% and a 0.14% probability of remaining in State 1 in $t+1$ if initially in State 1. State 2 reports the lowest mean volatility combined with the highest maximum volatility. There is a 28% probability of remaining in State 2 in $t+1$ if initially in State 2, and the volatility persistence is the lowest for this state at 79.49%. State 3 reports the highest mean volatility and a maximum volatility slightly smaller than that of State 2. The volatility persistence is slightly lower than that of State 1 at 98.08% and the probability of remaining in State 3 in $t+1$ if initially in State 3 is 34%.

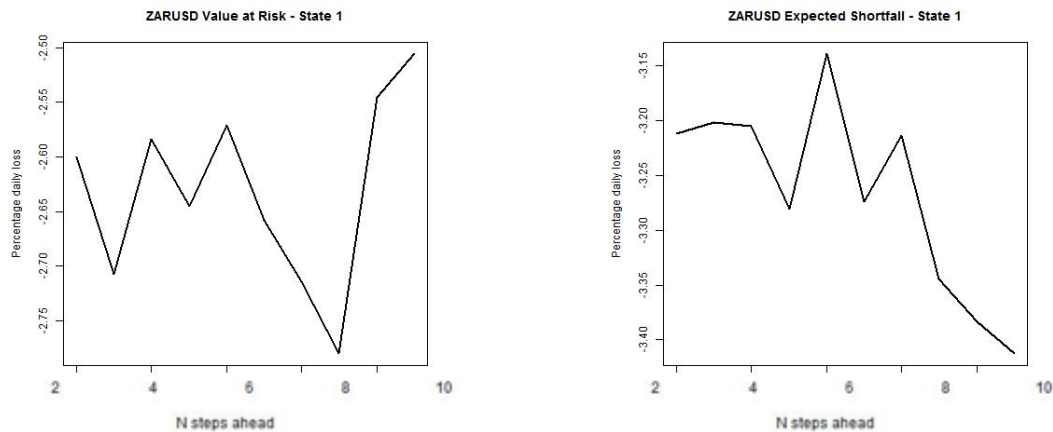
The 10-day ahead VaR and ES for all three models per state are illustrated below in tables 7 – 9. The influence of the volatility dynamics in each state can be seen through the percentage daily loss as well as the fluctuation of VaR and ES over the 10-day ahead period. The states with the smaller differential between the mean and maximum volatility and higher volatility persistence tend to fluctuate around the mean percentage daily loss. See the VaR and ES diagrams of State 2 for the ZARGBP model as well as the single state model for ZARUSD and State 1 of the 3-State ZARUSD model. These diagrams exhibit a zig-zag type pattern, displaying a high reversion to the mean percentage daily loss as well as a high volatility persistence. The states with a high differential between mean and maximum volatility and lower volatility persistence, on the other hand, tend to exhibit more of an explosive process, either increasing or decreasing the loss as the number of steps ahead increases. For example, see the VaR and ES diagrams of States 1 and 3 for the ZARGBP model as well as States 2 and 3 for the 3-State ZARUSD model for illustrations of a diversion from the mean percentage daily loss through time. The percentage daily loss is influenced more by the mean volatility than by the maximum volatility in each state, indicating that extreme tail losses are large and rare.

Table 7: 3-State T-GARCH GED 10 steps ahead percentage daily loss for VaR and ES at 99% for ZARGBP



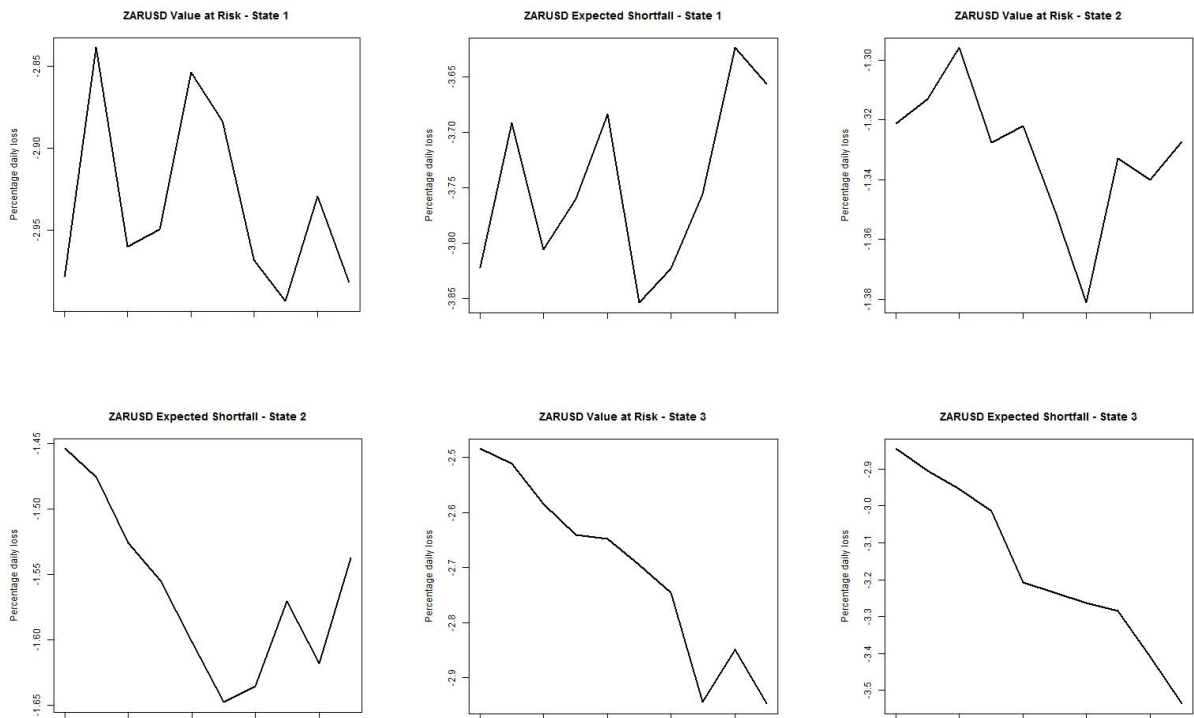
Source: Created by Author using data from Bloomberg

Table 8: 1-State GJR-GARCH SSTD 10 steps ahead percentage daily loss for VaR and ES at 99% for ZARUSD



Source: Created by Author using data from Bloomberg.

Table 9: 3-State GJR-GARCH SSTD 10 steps ahead percentage daily loss for VaR and ES at 99% for ZARUSD



Source: Created by Author using data from Bloomberg

The 1 step ahead VaR and ES are used to estimate the foreign exchange rate exposure due to IM and DF requirements per market volatility scenario and state for both currencies.

4.1 Foreign exchange rate exposure denominated in GBP

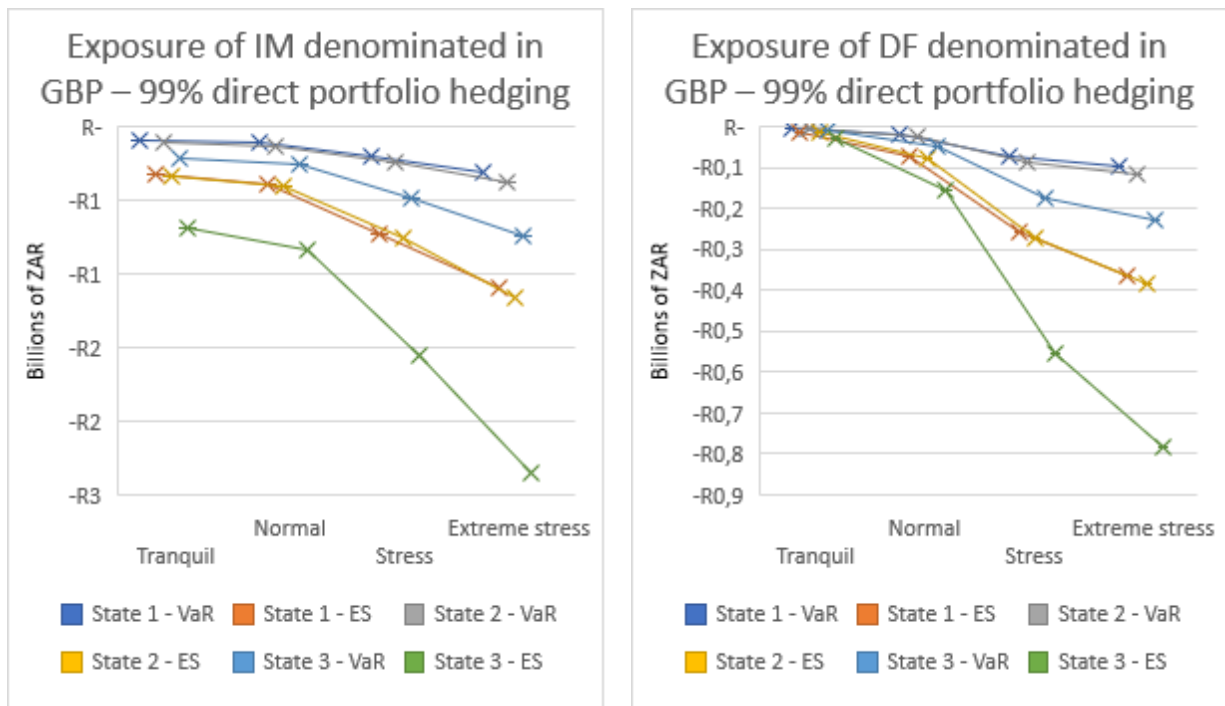


Figure 8: Foreign exchange rate exposure of IM denominated in GBP – 99% direct portfolio hedging

Source: Author's calculation

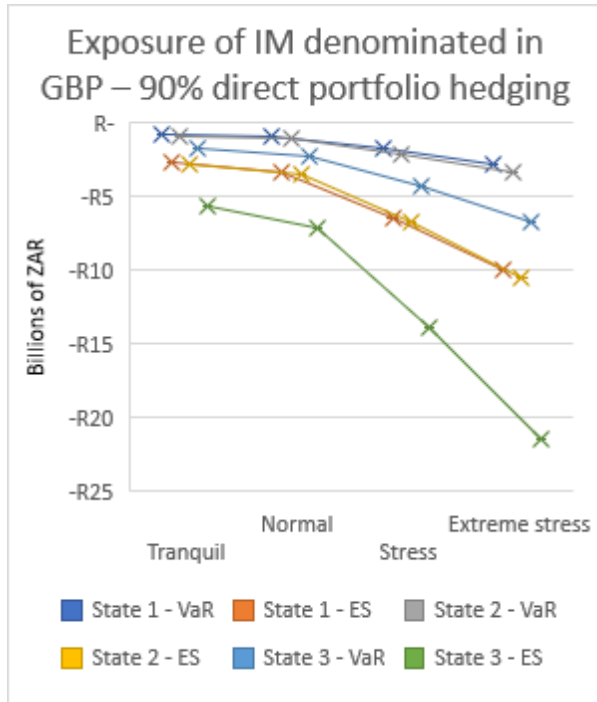


Figure 10: Foreign exchange rate exposure of IM denominated in GBP – 90% direct portfolio hedging

Source: Author's calculation

Figure 9: Foreign exchange rate exposure of DF denominated in GBP – 99% direct portfolio hedging

Source: Author's calculation

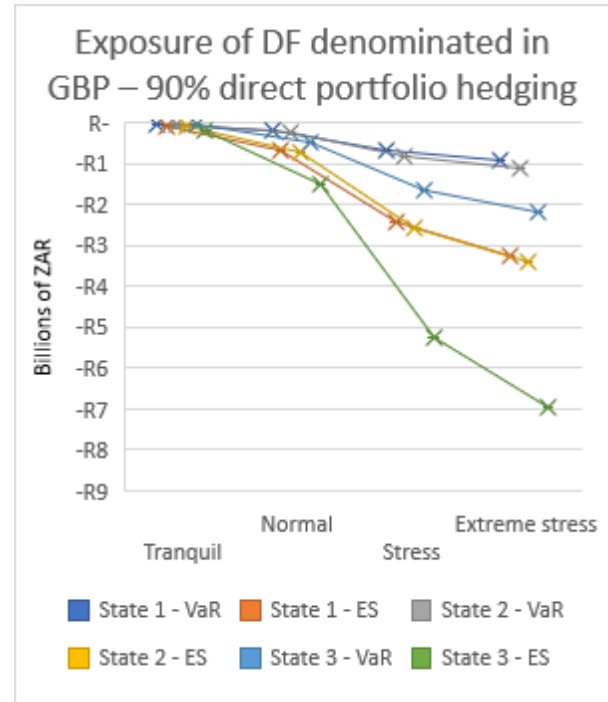


Figure 11: Foreign exchange rate exposure of IM denominated in GBP – 90% direct portfolio hedging

Source: Author's calculation

See figure 8, which illustrates the 1-day ahead foreign exchange rate exposure of IM requirements denominated in GBP under a 99% direct portfolio hedging assumption across volatility scenarios and per state of the 3-State T-GARCH GED. The exposure increases as the market volatility increases and ES is more sensitive to changing market conditions than VaR, as is to be expected. States 1 and 2 report similar foreign exchange rate exposure. State 1 has the lowest VaR and ES 1 step ahead and a sharply declining exposure as the number of steps ahead increase. It has an incredibly small volatility persistence, meaning that shocks quickly dissipate. Despite being characterised by the highest maximum volatility, State 1 also exhibits the lowest mean volatility. This indicates that in this state, shocks are very large; however, they are rare and quickly dissipate. State 2 is characterised by the lowest maximum volatility, the smallest differential between mean and maximum volatility and the highest volatility persistence, the VaR and ES follows a mean-reverting process. The 1-day foreign exchange rate VaR of IM demands denominated in GBP is 0.09 and 0.11 billion ZAR in the tranquil market conditions, rising to 0.31 and 0.38 billion ZAR for States 1 and 2 respectively. The ES of IM demands is 0.32 and 0.34 billion ZAR in tranquil market conditions, rising to 1.1 and 1.16 billion ZAR for States 1 and 2 respectively under extreme market stress. State 3, in contrast, represents a high-risk state, with the highest mean volatility and a high maximum volatility. The volatility persistence is slightly lower than that of State 2, and the exposure increases as the number of steps ahead increase, displaying a more explosive exchange rate risk. The IM VaR in State 3 increases from 0.22 billion ZAR under tranquil market conditions to 0.74 billion ZAR under extreme market stress, while the ES rises from 0.69 to 2.35 billion ZAR.

Figure 9 illustrates the foreign exchange rate exposure of DF requirements denominated in GBP under a 99% direct portfolio hedging assumption. If South African ODPs' DF contributions did not exceed the minimum contribution required by SwapClear then the foreign exchange rate exposure would be represented by the VaR under normal market conditions. The DF VaR for States 1 and 2 respectively increases from 0.003 and 0.004 to 0.09 and 0.12 billion ZAR when moving from tranquil to extreme market stress conditions. Conversely, when transitioning from tranquil to extreme market stress conditions, the DF ES increases from 0.013 and 0.014 to 0.36 and 0.38 billion ZAR for States 1 and 2, respectively. In State 3, the VaR increases from 0.01 to 0.23 billion ZAR when transitioning to extreme market stress from tranquil market conditions and the ES from 0.03 to 0.78 billion ZAR. It is clear that State 3 represents the high-risk state with a high exposure that increases as the number of steps ahead increases. Combining the IM and DF requirements denominated in GBP, the potential 1-day loss when in State 3 increases from 0.23 and 0.72 billion ZAR under tranquil market conditions for VaR and ES respectively, to 0.97 and 3.13 billion ZAR under extreme market stress.

Changing the direct portfolio hedging assumption from 99% to 90% has a much higher impact on IM and DF requirements than changes in market volatility. As such, the 90% direct hedging portfolio has a much larger exchange rate exposure than the 99% direct hedging portfolio, see figures 10 and 11. The potential combined IM and DF 1-day loss when in State 3 assuming 90% direct hedging increases from 1.87 and 5.94 billion ZAR under tranquil market conditions for VaR and ES respectively, to 8.93 and 28.43 billion ZAR under extreme market stress.

The combined upper and lower bound VaR and ES GBP exchange rate exposure expressed in billions of ZAR for both direct hedging assumptions across volatility scenarios are presented below in table 10. State 3 represents the upper bound for ZARGBP exchange rate exposure, and State 1 represents the lower bound for ZARGBP exchange rate exposure. The VaR amount in billions of ZAR is presented on the left side of the hyphen, and the ES amount in billions of ZAR to the right side.

Table 10: VaR and ES upper and lower bounds for foreign exchange rate exposure in billions of ZAR when posting IM and DF denominated in GBP

| VaR and ES upper and lower bounds for IM and DF denominated in GBP | | | | |
|--|-----------------|---------------|---------------|-----------------------|
| | Tranquil market | Normal market | Market stress | Extreme market stress |
| 99% direct hedging Lower bound | 0.093 – 0.33 | 0.13 – 0.46 | 0.27 – 0.98 | 0.40 – 1.46 |
| 99% direct hedging Upper bound | 0.23 – 0.72 | 0.31 – 0.98 | 0.66 – 2.11 | 0.97 – 3.13 |
| 90% direct hedging Lower bound | 0.77 – 2.77 | 1.11 – 4.01 | 2.48 – 8.93 | 3.68 – 13.28 |
| 90% direct hedging Upper bound | 1.87 – 5.94 | 2.7 – 8.59 | 6.01 – 19.12 | 8.93 – 28.43 |

4.2 Foreign exchange rate exposure denominated in USD

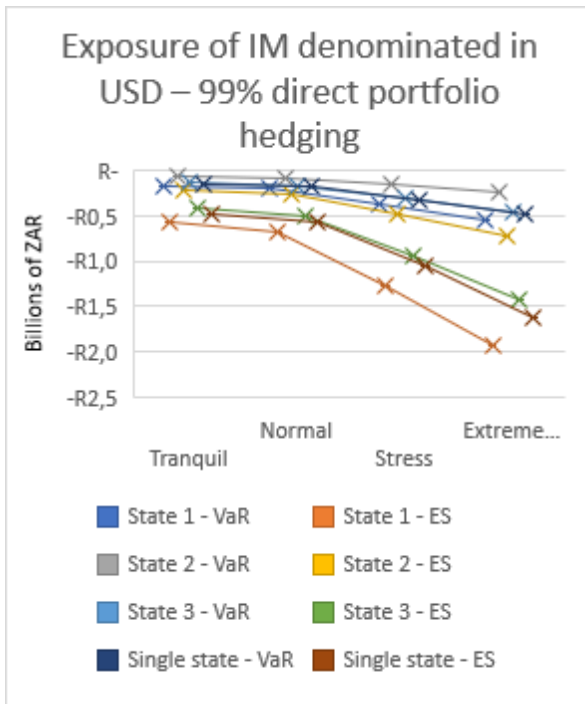


Figure 12: Foreign exchange rate exposure of IM denominated in USD – 99% direct portfolio hedging

Source: Author's calculation

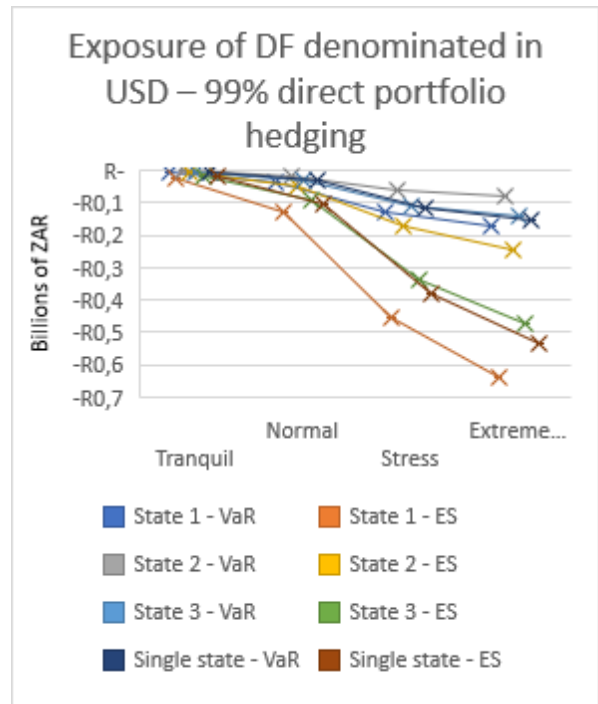


Figure 13: Foreign exchange rate exposure of DF denominated in USD – 99% direct portfolio hedging

Source: Author's calculation

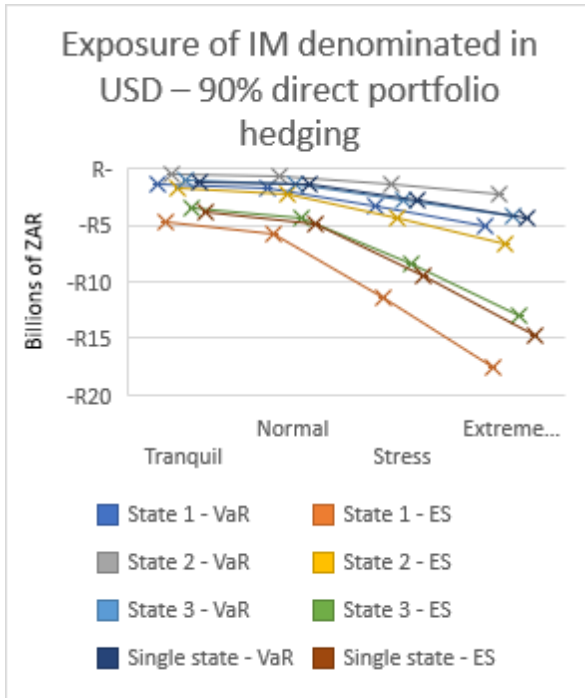


Figure 14: Foreign exchange rate exposure of IM denominated in USD – 90% direct portfolio hedging

Source: Author's calculation

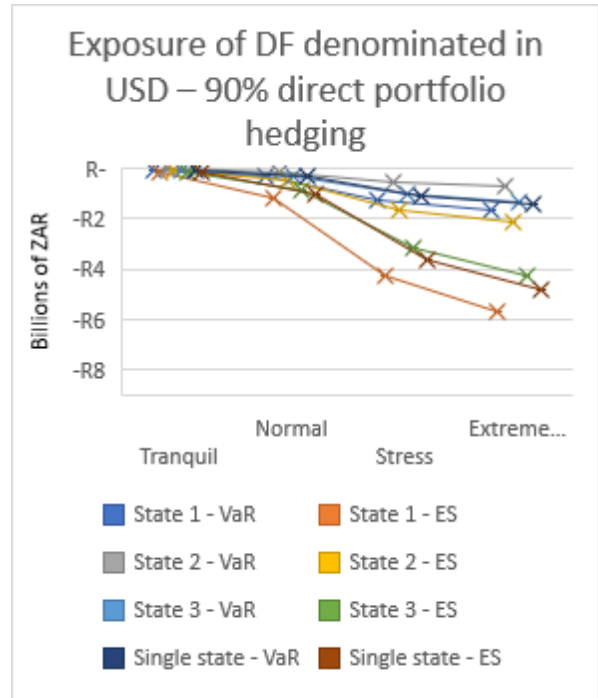


Figure 15: Foreign exchange rate exposure of DF denominated in USD – 90% direct portfolio hedging

Source: Author's calculation

Figure 12 represents the 1-day ahead foreign exchange rate exposure of IM requirements denominated in USD under a 99% direct portfolio hedging assumption. The VaR and ES per the

three states of the 3-State GJR-GARCH SSTD (labelled State 1-3), as well as the single state of the 1-State GJR-GARCH SSTD (labelled Single state), are presented across volatility scenarios. State 1 of the multi-state model characterises the largest exposure at 1 step ahead, however, with the lowest differential between mean and maximum volatility and the highest volatility persistence, there is a strong reversion to the mean percentage daily loss meaning that the exposure in this state is relatively constant through time. The VaR ranges between 0.16 and 0.56 billion ZAR as market conditions transition from tranquil to extreme market stress, conversely the ES ranges between 0.56 and 1.92 billion ZAR. State 2 of the multi-state model is characterised by the lowest mean volatility, the highest maximum volatility, the lowest volatility persistence and the lowest VaR and ES for the portfolio denominated in USD. Thus, indicating that shocks in this state are large, rare and quickly dissipate. The VaR ranges between 0.07 and 0.25 billion ZAR as market conditions transition from tranquil to extreme market stress, conversely the ES ranges between 0.21 and 0.73 billion ZAR. State 3 exhibits the highest mean volatility and the second-highest maximum volatility. Despite a volatility persistence slightly below that of State 1, the differential between the mean and maximum volatility is high, resulting in a weak reversion to the mean percentage daily loss and an escalating exposure as the number of steps ahead increase. The VaR ranges between 0.14 and 0.46 billion ZAR as market conditions transition from tranquil to extreme market stress, conversely the ES ranges between 0.42 and 1.43 billion ZAR. The single state model reports VaR and ES exposures close to those reported by State 3 of the multi-state model. It is characterised by a small differential between mean and maximum volatility as well as an extremely high volatility persistence, as such it exhibits a strong reversion to the mean percentage daily loss. The VaR ranges between 0.14 and 0.49 billion ZAR as market conditions transition from tranquil to extreme market stress, conversely the ES ranges between 0.47 and 1.62 billion ZAR. The single state ZARUSD model does not capture the extreme tail risk captured by the 3-state model. Therefore, although the presence of regime-switching is indeterminate, regime-switching models provide more information about possible tail losses.

Figure 13 illustrates the foreign exchange rate exposure of DF requirements denominated in USD under a 99% direct portfolio hedging assumption. In State 1, the DF VaR increases from 0.01 to 0.17 billion ZAR when transitioning to extreme market stress from tranquil market conditions and the ES from 0.02 to 0.64 billion ZAR. The transition from tranquil to extreme market stress results in an increase in VaR from 0.003 to 0.08 billion ZAR and in ES from 0.01 to 0.24 billion ZAR in State 2. The DF VaR for State 3 and the single regime state respectively increases from 0.005 and 0.01 to 0.14 and 0.15 billion ZAR when moving from tranquil to extreme market stress conditions. Conversely, when transitioning from tranquil to extreme market stress conditions, the DF ES increases from 0.02 and 0.02 to 0.48 and 0.54 billion ZAR for State 3 and the single regime state, respectively. State 1 represents the high exposure state, and a quick reversion to the mean daily percentage loss, meaning the exposure stays relatively constant throughout the 10 steps ahead illustrated in table 8. Combining the IM and DF requirements denominated in USD, the potential 1-day loss when in State 1 increases from 0.17 and 0.58 billion ZAR under tranquil market conditions for VaR and ES respectively, to 0.73 and 2.65 billion ZAR under extreme market stress. As for the GBP foreign exchange exposure discussed above, changing the direct portfolio hedging assumption from 99% to 90% has a much larger impact on IM and DF requirements than changes in market volatility. As such, the 90% direct hedging portfolio has a much larger exchange rate exposure than the 99% direct hedging portfolio, see figures 14 and 15 The potential 1-day loss

when in State 1, assuming 90% direct hedging, increases from 1.41 and 4.85 billion ZAR under tranquil market conditions for VaR and ES respectively, to 6.71 and 23.23 billion ZAR under extreme market stress. The upper and lower bound VaR and ES expressed in billions of ZAR for both direct hedging assumptions across volatility scenarios is presented below in table 11. State 1 represents the upper bound for ZARUSD exchange rate exposure, and State 2 represents the lower bound for ZARUSD exchange rate exposure. The VaR amount in billions of ZAR is presented on the left side of the hyphen, and the ES amount in billions of ZAR to the right side for IM and DF combined.

Table 11: VaR and ES upper and lower bounds for foreign exchange rate exposure in billions of ZAR when posting IM and DF denominated in USD

| VaR and ES upper and lower bounds for IM and DF denominated in USD | | | | |
|--|-----------------|---------------|---------------|-----------------------|
| | Tranquil market | Normal market | Market stress | Extreme market stress |
| 99% direct hedging Lower bound | 0.073 – 0.22 | 0.11 – 0.31 | 0.22 – 0.65 | 0.33 – 0.97 |
| 99% direct hedging Upper bound | 0.17 – 0.58 | 0.06 – 0.81 | 0.5 – 1.72 | 0.73 – 2.56 |
| 90% direct hedging Lower bound | 0.08 – 1.84 | 0.9 – 2.67 | 2 – 5.94 | 2.98 – 8.83 |
| 90% direct hedging Upper bound | 1.41 – 4.85 | 2.03 – 7.02 | 4.51 – 15.62 | 6.71 – 23.23 |

Source: Author’s calculations

5. CONCLUSION

The one day ahead transaction foreign exchange rate exposure is estimated for local ODPs through membership to an international CCP, assuming either GBP or USD denominated collateral requirements. A contribution of this study is the analysis of volatility dynamics, accounting for regime shifts, asymmetry in the reaction to past negative observations and different conditional distributions. The results strongly indicate the presence of regime-switching in the GBP data; however, the presence of regime-switching in the USD data is inconclusive. Regime-switching does appear to increase explanatory power when there is heterogeneity in a series, and its presence cannot be rejected for the USD data.

A key finding is the relatively higher exchange rate risk, as measured in VaR and ES, for GBP over USD against the ZAR during the period under observation, this is supported by the relatively higher volatility found in the GBP data. As a result of the relatively higher exchange rate risk it may be beneficial for South African ODPs to become clearing members of CME based in the USA, the second largest clearer of IRDs rather than the UK based SwapClear. The relative netting benefits of SwapClear would have to be fully offset by the exchange rate risk differential of transacting only in USD. Although IRDs are the largest derivative asset class in South Africa, the netting benefits for other derivative classes might be larger at CME than at SwapClear again making it a worthwhile consideration. Brexit provides another reason to consider the second largest clearer of IRDs (CME) over the largest. SwapClear grew to be the largest clearer of IRDs because of its ability to “passport” into the rest of the EU. Following Brexit however, the EU has not granted equivalence to SwapClear which could threaten its market dominance.

The cause of the relative stability in the ZARUSD over the ZARGBP is an area for future research; however, the relative stability of the ZARUSD may be due to the USD’s position as the world’s

top reserve currency. The disparity in the volatility of the two exchange rates against the ZAR indicates that the ZAR volatility dynamics may be driven primarily by foreign rather than domestic shocks. This suggests that although domestic political stability would reduce foreign exchange rate volatility, external factors which cannot be influenced by the South African government such as global economic shocks and commodity prices may have a greater impact.

The impact of regime specific volatility dynamics on exchange rate risk measured by VaR and ES is explored. For both exchange rates studied during the period under observation, it was found that the higher the mean volatility, the higher the exchange rate risk, and therefore the larger the exposure. The high exposure state for the ZARUSD data (State 1 of the multi-state model) exhibits an extremely high volatility persistence and a strong reversion to the mean percentage daily loss, indicating that even during times of high USD exchange rate exposure, the VaR and ES are relatively stable through time. In contrast, the high exposure state for the ZARGBP data (State 3) exhibits a lower volatility persistence and a weak reversion to the mean, displaying a more explosive exchange rate risk. This indicates a deviation from the mean percentage daily loss in the high ZARGBP exposure state resulting in increasing VaR and ES through time.

Major depreciations and high South African exchange rate volatility appear to have occurred simultaneously between 2001 and 2018 (Kennedy-Palmer, 2021), while the research results show that the higher the mean volatility, the higher the exchange rate risk. Therefore, a shock may lead to a simultaneous depreciation, an increase in exchange rate volatility and an increase in exchange rate risk, compounding the increase in collateral requirements. In addition, a large global shock may decrease foreign exchange market efficiency in developing markets, decreasing liquidity and the supply of HQLA (CGFS, 2013). An international CCP exposes South African ODP's to economic exchange rate exposure because the amount payable increases when there is an increase in the volatility of the foreign exchange rate as well as a depreciation of the rand. A sustained period of depreciation would expose ODPs to increasing economic exchange rate risk, which is difficult to hedge against. Thus, understanding the volatility dynamics of foreign exchange rates and its effect on the value of foreign currency-denominated capital requirements is important for individual ODPs in order to limit the misallocation of capital as well as by monetary and fiscal Authorities to limit systemic risk.

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FACTORS HINDERING THE PROGRESS AND EFFECTIVENESS OF USING DEOXYRIBONUCLEIC ACID TECHNOLOGY TO COMBAT STOCK THEFT IN SELECTED AREAS OF KWAZULU-NATAL PROVINCE

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ABSTRACT

The existence of factors hindering the progress and effectiveness of using Deoxyribonucleic Acid (DNA) technology to combat stock theft in the selected areas of KwaZulu-Natal (KZN) Province is crystal clear. The use of this technology seems to be a new concept for the Anti-Stock Theft Unit of the South African Police Service in this province. This inadequacy adversely affects the delicate economy of small-scale and commercial farming sectors. The current study applied descriptive and exploratory research designs, aided by qualitative research approach. Fifty-seven (57) participants were purposively selected and were all subjected to semi-structured Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) for data collections. The collected data was analysed through the inductive Thematic Content Analysis (TCA). Major study finding reveals that the relevant stakeholders, including the local South African Police Service Stock Theft Unit (SAPS STU), livestock farmers and other Anti-Stock theft structures were knowledgeable about DNA technology. However, the finding indicates that they faced various difficulties in terms of proper application of this technology. As a result, far-reaching multiple effects were strongly highlighted, as the three identified study themes of this study refers. Improvements have to be made with regard to the use of DNA technology, as one of the current strategies to combat this scourge in the selected areas of KZN Province. This calls for the induction of DNA technology through training of communities, marking livestock, improving socio-economic conditions, practicing livestock documentations, implementing legislative frameworks, regulations and trading patterns, as well as enhancing Criminal Justice System (CJS) responses. The selected participants shared some positive anecdotes to combat this crime, however, there is still more to be done to win the war of stock theft in the selected study locations.

Keywords: Effectiveness, factors, combating, deoxyribonucleic acid, hindering, KwaZulu-Natal province, progress

1. INTRODUCTION

Stock theft is prevalent in all provinces of South Africa. It is also a problem globally, with more complexities compared to other property-related crimes. Livestock theft have negative consequences on the farming communities. These are not only financial, but can also be physical, such as injuries and killings of livestock owners, and psychological or emotional to both the actual and potential victims (Doorewaard, 2015a, 2015b). According to SAPS (2011:2 & 7) and Stock Theft Act (No. 57 of 1957); 'stock' refers to:

“Any horse, mule, ass, bull, cow, ox, heifer, calf, sheep, goat, pig, poultry, domesticated ostrich, domesticated game, or the carcass, or portion of the carcass of any such stock, while the definition of ‘animal/livestock [Domesticated] produce’ means whole, or any part of, skins, hides, horns, intestines, heads, parts of bones, claws, semen, or embryos, and any wool, mohair, or ostrich feathers, and ostrich eggs.”

Rural livestock farmers, farm workers, and residents within rural communities, are considered vulnerable soft targets by stock thieves. This is because of their isolation geographically, the remoteness and vastness of their areas, high market value placed on livestock, distances between livestock farms, police stations and villages, transportation accessibility, and lack of basic infrastructure, like roads (Maluleke, 2014). This scourge of stock theft is nothing new to livestock farmers from a South African perspective. The available research (Clack, 2013; Doorewaard, 2020; Lombard, 2015; Lombard, Van Niekerk & Maré, 2017; Lombard, van Niekerk, Geyer & Jordaan, 2017; KZN Department of Community Safety and Liaison - KZN DCSL, 2008; Maluleke, 2014; Maluleke, 2016; and Manganyi, Maluleke & Shandu, 2018) contend that stock theft is as old as agriculture itself. The recorded cases of stock theft in South Africa can be traced as far back as 1806. Livestock theft has become a lucrative business in South Africa and affects the livestock industries in all nine provinces in the country (Maluleke, 2014; Maluleke, 2016; Maluleke, 2018; Maluleke & Mofokeng, 2018). The selected areas in KZN Province (Bulwer, Ladysmith and Utrecht) are prone to stock theft, which causes long-term pain and suffering to the livestock farmers. The KZN Department of Community Safety and Liaison [DCSL] (2008) observes that different crimes occur on farms in general, and form an integral part of South African history. From the mid-1990s, the old cycle of theft and counter-theft [Stock theft included] has been witnessed. Its integration into rural communal life is recorded, and it shows high levels of occurrence.

The notable changes in livestock prices have reportedly led to high numbers of reported stock theft cases across South African rural areas. Thus, the researcher submits that the current strategies of dealing with this problem are ineffective, and this leads to serious financial and personal losses to the local livestock farmers. Peires (1994:2) highlights that this crime is still regarded as an African crime, and forms art of rural criminality. There is a scarcity of research that analyses the nature, extent and implications of stock theft. Even less research has been done to elucidate the nature of organised crime in the black rural areas, where the targets are not ethnic strangers but one’s neighbours and relatives (Peires, 1994:2). Clack (2013:77) highlights that the agricultural sector is one of the cornerstones of South African’s economy. Thus, crimes occurring in rural agricultural communities should be researched, in order to clearly understand the economic impact and challenges on food security.

This study field is often neglected by researchers in the Criminal Justice disciplines, such as Rural Criminologists/Criminologists. These disciplines could contribute significantly to the body of knowledge on this subject. Such knowledge is critical to identify gaps in, and offer adequate analysis of this crime. This study aims to present knowledge on the use of DNA technology in the combating of stock theft in the selected areas of KZN Province, and to explore the factors that hinder progress and effectiveness of current strategies that are implemented to combat this crime.

While considering the submissions made in this introductory section, the factors hindering progress and effectiveness of using DNA technology to combat stock theft in the selected areas of

KZN Province was the objective of this study. Therefore, it is hoped that the findings of this study will fill the gaps, as well as address the inconsistencies and existing controversies in the existing body of knowledge. The basis of the study rests on DNA technology applications to combat stock theft in the selected areas of KZN Province. Ladysmith, Bulwer (Pietermaritzburg) and Utrecht (Newcastle) were chosen. The participants in this research included the KZN Department of Agriculture, Forestry and Fisheries (DAFF) officials, SAPS STUs officials, SAPS STU Provincial Coordinator, livestock farmers, managers of Anti-Stock Theft Associations, and Community Policing Forums (CPFs) leaders. All the participants participated in the FGDs and KIIs. The reviewed literature/documentary studies were matched with participants' verbatim expressions to the identified three study themes.

2. LITERATURE REVIEW

This section presents the body of literature to assist in the exploration factors hindering progress and effectiveness of using DNA to combat stock theft in the selected areas of KZN Province. The problem formulations and nature of this crime is discussed in detail, as well as the value of DNA technology in this regard. The key areas in combating and policing stock theft also form part of this section.

2.1 Exposition the nature of stock theft and the determination of the value of Deoxyribonucleic Acid to combat stock theft

Mapholi (2015) contends that stock theft remains one of the major challenges to the livestock farming community across South Africa. It impacts the economy of many sectors; from large commercial organisations, to the stud breeders, and the rural livestock farmers owning one or two herds of cattle. The African News Agency [ANA] (2021) reports that stock theft is costing the South African economy about R1.4 billion annually. In 2020/2021, the value of stolen cattle was over R779 million, with the value of R862 million for the 2019/2020 financial year. The Anti-Stock theft authorities recovered stolen cattle valued at more than R210,6 million, compared to R251,2 million in 2019/2020. The value of stolen sheep amounted to almost R212 million for 2020/2021, with R206 million for 2019/2020 recorded. Losses suffered due to the theft of goats were just over R116,8 million in 2020/2021, while the losses amounted to almost R111,4 million in 2019/2020 (Marais, 2021).

As a result of the findings above, the local SAPS identified this crime as one of priority areas by establishing partnership between them and the Animal Genetics Laboratory (AGL) of the Animal Research Council (ARC), and the Animal Production Institute (API) at Irene, Pretoria in 1996. This was initiated to address stock theft challenges by applying DNA technology. From this agreement, about 45 000 cases of stock theft were reported, with only 8 000 reported cases going to court. More than 500 of these court cases, involved more than 3 000 exhibits that relied on DNA analysis. About 95% of these cases were resolved, accomplishing suspect prosecutions. The accompanying four tables illustrate the economic impacts of stock theft and the estimated value of livestock stolen and recovered per year.

Table 1: Value of all livestock stolen and recovered and the resulting financial loss

| | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 |
|-----------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Stolen | R 788 536 200 | R 819 045 200 | R 877 381 700 | R 1 058 806 200 | R 1 222 352 592 | R 1 243 349 100 | R 1 179 458 600 | R 1 107 644 600 |
| Recovered | R 277 475 800 | R 301 452 200 | R 309 211 200 | R 324 285 400 | R 344 104 296 | R 314 091 600 | R 311 642 000 | R 263 040 800 |
| Loss | R 511 060 400 | R 517 593 000 | R 568 170 500 | R 734 520 800 | R 878 248 296 | R 929 257 500 | R 867 816 600 | R 844 603 800 |

Source: Clack (2018), National Stock Theft Prevention Forum [NSTPF] (2019); Mabunda, Maluleke and Barkhuizen (2021); and ANA (2021)

Table 2: The number of stock theft per quarter in 2020/2021

| 1st quarter | 2nd quarter | 3rd quarter | 4th quarter |
|--------------------|------------------------|--------------------------|-----------------------|
| April-June 2020/21 | July-September 2020/21 | October-December 2020/21 | January-March 2020/21 |
| 7 549 | 7 339 | 7 298 | 5 643 |

Source: ANA (2021)

Table 3: Value of stolen and recovered livestock and the resulting financial loss per livestock type

| | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 |
|--------|-----------|---------------|---------------|---------------|---------------|---------------|
| Cattle | Stolen | R 598 017 000 | R 610 467 000 | R 653 148 000 | R 796 328 000 | R 864 812 800 |
| | Recovered | R 231 735 000 | R 247 632 000 | R 251 676 000 | R 263 965 000 | R 266 942 200 |
| | Loss | R 366 282 000 | R 362 835 000 | R 401 472 000 | R 532 363 000 | R 597 870 600 |
| Sheep | Stolen | R 127 540 800 | R 143 541 200 | R 153 183 700 | R 180 086 000 | R 183 286 300 |
| | Recovered | R 26 660 800 | R 35 523 200 | R 38 243 200 | R 36 006 000 | R 34 974 000 |
| | Loss | R 100 880 000 | R 108 018 000 | R 114 940 500 | R 144 080 000 | R 148 312 300 |
| Goats | Stolen | R 62 978 400 | R 65 037 000 | R 71 050 000 | R 82 392 200 | R 94 287 600 |
| | Recovered | R 19 080 000 | R 18 297 000 | R 19 292 000 | R 24 314 400 | R 19 676 800 |
| | Loss | R 43 898 400 | R 46 740 000 | R 51 758 000 | R 58 077 800 | R 74 610 800 |

Source: Clack (2018), NSTPF (2019) and Mabunda, Maluleke and Barkhuizen (2021)

Table 4: The economic impacts of stock Theft

| | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 |
|--------------------|-----------|-----------------|-----------------|-----------------|
| Overall Statistics | Stolen | R 1 058 806 200 | R 1 142 385 600 | R 1 214 427 000 |
| | Recovered | R 324 285 400 | R 95 718 800 | R 307 346 600 |
| | Loss | R 734 520 800 | R 324 100 800 | R 907 080 400 |
| Cattle | Stolen | R 796 328 000 | R 864 812 000 | R 904 657 000 |
| | Recovered | R 263 965 000 | R 41 068 000 | R 246 363 000 |
| | Loss | R 532 363 000 | R 101 178 000 | R 658 294 000 |
| Sheep | Stolen | R 180 086 000 | R 183 286 000 | R 203 246 000 |
| | Recovered | R 36 006 000 | R 34 974 000 | R 40 220 000 |
| | Loss | R 144 080 000 | R 148 312 000 | R 163 026 000 |
| Goats | Stolen | R 82 392 200 | R 94 287 600 | R 106 524 000 |
| | Recovered | R 24 314 400 | R 19 676 800 | R 20 763 600 |
| | Loss | R 58 077 800 | R 74 610 800 | R 85 760 400 |

Source: Clack (2021) and Mabunda, Maluleke and Barkhuizen (2021)

In an attempt to understand factors hindering progress and effectiveness of using DNA technology to combat stock theft in the selected areas of KZN Province, Kempen (2015:10) confirms that DNA can be best used to link potential stock thieves or suspects to stock theft scenes. With the use

of DNA, criminals can be identified with incredible accuracy, owing to biological evidence. Moreover, they can also be cleared or exonerated if mistakenly accused or convicted. This technology is pivotal in ensuring accuracy and fairness in the CJS. However, over reliance on the traditional methods of physical matching of animal hides, bones and ivory with animal identification tools, such as brand marking and tattooing, as well as placing more emphasis on current legislative frameworks, like the Stock Theft Act (No. 57 of 1959) and Animal Identification Act (No. 6 of 2002) is not helping the current status of effectively combating this crime. The envisaged integration of the conventional methods with the ‘DNA technology’ is largely ignored in and the selected areas of KZN Province, and in South Africa, in particular.

This study identified the factors hindering progress and effectiveness of using DNA technology to combat stock theft, to provide notable contribution to the safety measures, preservations and protections of livestock, South African economies and the local livestock farmers. This was proposed by soliciting experiences of various prominent Anti-Stock theft associations to explore current stock theft combating strategies by means of available literature studies and operations, and empirical findings. The crux of the discussions in this study revolved around functions of combating this crime by using DNA technology, while considering the existing hindrances. Stemming from the findings of this study, recommendations will be made for future improvements and intervention systems by explaining the value of DNA technology in combating stock theft. This can also be used to highlight vast experiences in conducting research, guided by the applications of DNA technology and combating of stock theft. To this end, courses and educational materials can be developed, or designed interventions can be implemented to assist relevant Anti-Stock theft structures with the provision of adequate services and informing of policies related to the improvements of the livestock farming sector.

Through the application of DNA technology to combat stock theft, the livestock acts as the ‘reference sample.’ Van der Walt (2015:196) states that “reference samples are used in the process involving disputed samples, which can be compared to the evidence collected from the stock theft scenes. This sample is regarded as ‘origin,’ because it can be used to identify the origin of the disputed sample. For the purpose of this study, the researcher contends that ‘hair’ found at stock theft scenes can be collected as evidence (i.e., a disputed sample). It can then be compared to the livestock ‘hair’, or another known livestock. To this end, a reference sample which is deemed to have some form of relationship can be linked to the stock theft scenes through the verifications of collected samples, and a DNA profile can be built. This can act as the representative portion of a known sample. For practicality, the collected samples are kept in a file or in the laboratory, as typical reference of livestock, to avoid transient evidence, such as the ‘hair, blood, and intestines,’ to name only three, to become degraded nor contaminated, this evidence is swiftly collected to avoid losing its value. Essentially, the use of standard samples obtained from the laboratory for a possible comparison of evidence similar to the known sample, such as sources of DNA [Carcasses; Vehicles; Firearms; Blood/Bloodstains, Hair, Meat or other tissues; Fingerprints; Footprints; Equipments used during stock theft; and Clothes], found in a stock theft scene, cannot be accomplished without the use of the reference samples in the laboratory, NSTPF (2016:32).

Research conducted in the KZN Province by the KZN DCSL (2008) indicates that the challenges on policing stock theft can be restricted to the following aspects: 1) Many livestock owners, 2) Individuals entrusted to take care of the livestock, including herdsman or family members;

normally report stock theft incidences to the local SAPS STUs far too late or choose not to report it at all. Therefore, based on inadequate monitoring and counting of livestock, they often realise too that their livestock is missing. They also search for their stolen livestock first before reporting their alleged cases [i.e., late/delay reporting]. This can be influenced by travelling distances to the main city adjacent to the selected rural areas (KZN DCSL, 2008:17). The researcher noted uncontrollable organised nature of this crime is currently existing in South African rural communities. Chelin (2019), Dean (2020); and The Economist (2020) agree that the threat of growing transnational organised crime involving stock theft is posed by syndicates who steal cattle in South Africa, taking them across the border to Lesotho for a cooling-off period, and then selling them back to South Africans.

2.2 Key areas in combating and policing stock theft

The KZN DCSL (2008:17 & 18) went on to suggest the following areas requiring more attention when policing stock theft in the KZN Province holistically:

- The SAPS STUs make use of livestock pounds for safekeeping during criminal trials or until the owner is positively traced. Therefore, adequate provisions of such pounds and payable fees should be reviewed.
- The local ‘Municipal pound’ in Vryheid, charge a fee of R50 per day, which is significantly higher than at nearby private pounds, like the ‘*Nooitgedacht*,’ which charges R8 a day. Thus, lack of adequate impounding facilities complicates the confiscation of livestock from the stock thieves. Importantly, the proposed National Animal Pounds Bill [Notice 398 of 2013] should be put into practice.
- Swaziland authorities are reportedly not reporting South African cattle found in their country, while the local SAPS STUs make efforts to notify Swaziland authorities if cattle from Swaziland are discovered in South Africa.
- Witnesses are not always traceable. In some cases, they refuse to cooperate, due to intimidations by stock thieves.
- Forensic investigations often take long, for example up to six (06) months.
- Stock thieves compensate victims, who then withdraw cases and become uncooperative towards the SAPS STUs investigating officers.
- Complainants enter into compensation agreements with stock thieves and only report the matter to the police if their agreement is breached.
- Traditional leaders, affectionately known as *Amakhosi*, sometimes mediate stock theft cases informally with the communal level, and some of these cases are not reported to the local SAPS STUs due to the increasing lack of trust and confidence between them.
- Delays in reporting of stock theft cases makes investigation difficult (KZN DCSL, 2008:17 & 18).

Limited studies have been done to explore factors hindering progress and effectiveness of using DNA technology to combat stock theft in the selected areas of KZN Province and other South African provinces. However, it is established that this technology is not effectively used to combat this crime in the selected areas within the identified province. The limited use of Criminal Law (Forensic Procedures) Amendment Act (No. 37 of 2013) (the ‘DNA Act’) is witnessed, while it is proven as an effective remedy for combating this scourge by providing rapid livestock

identification, as a confirmatory forensic tool to be used in the criminal and civil stock theft cases. Negatively, the majority of participants had limited knowledge regarding DNA technology to combat stock theft (Maluleke & Mofokeng, 2018).

Maluleke (2016) further highlights those studies on stock theft focused only on traditional methods to combat, prevent and investigate stock theft. Limited studies have been done on the application of DNA technology to combat stock theft in the KZN Province and other provinces of South Africa, and on the factors hindering its progress and effectiveness thereof. Researchers in the 'property-rated crimes' study field did not give stock theft related research required attention in South Africa. This crime is regarded as a minor crime in the public eye. Considerably, DNA technology is designed to revolutionise modern science to combat stock theft amongst other crimes in the country. As this crime evolves, more technological applications should be discovered to help in understanding its nature and its prevention. This technology provides irrefutable means of livestock identifications, focusing on unique livestock DNA profile. When livestock gets stolen, illegally relocated or even slaughtered, livestock biological samples can be taken, to compare their DNA profiles to the reference samples. This can be used to verify their identities and possibly link stock thieves to the stock theft scenes. This technological application can identify stock thieves with accuracy when livestock biological evidence exists, as initially stated (Maluleke, 2016). The value of using DNA technology in combating stock theft was not clear to most of the study participants. They focus on using traditional methods, such as brand-marking and tattooing, while placing more emphasis on legislative frameworks, such as the Stock Theft Act, 1959 and Animal Identification Act, 2002, respectively. As initially revealed, this is practiced while invalidating the use of the DNA Act, 2013 (Maluleke, 2016).

Memon, Kumar, Memon, Chowdhry, Aamir and Kumar (2016:1) contend that this crime has been a problem in the agricultural sector globally, regionally, and in South African rural areas, and it is reportedly threatening both commercial and emerging farming sectors. This crime can be emotional, psychological and financial-economical in nature, and its full impact is not yet realised. Most livestock farmers seem to be apathetic towards this problem, only reacting when stock thieves steal from them. Most of the SAPS STUs operations and patrol operations focus on organised runners responsible for stealing livestock and the local livestock farmers and the SAPS STUs channelling their energies, time and resources to combat stock theft unsuccessfully. Thus, an urgent change on latest strategies is required, to closely look at the extent, organised syndicate *MO* and identified outlets of stolen livestock. More than 131 000 stock theft [i.e., stolen livestock] reported cases are recorded yearly. The Free State Province alone registered about 4 000 cases. Equally, majority of stock theft cases are not reported, as the local livestock farmers feel that nothing will be done with their reported cases. This results in thousands of similar cases not being recorded in the official SAPS stock theft statistics (Harvest South Africa, 2021).

The Statistics South Africa (Stats SA) reveals that non-reporting of stock theft cases is approximately 70.7%. It is also estimated that the value of stolen livestock during the 2019/2020 was around R1 179 458 600. On average, there were about 182 cattle, 282 sheep and 138 goats stolen every day in South Africa (Harvest South Africa, 2021). The unchecked stock theft incidences are quickly becoming one of the gravest challenges to the South African livestock farmers, as they normalise waking up daily to find hundreds of livestock, like cattle, sheep or goats stolen. This adds to other devastating challenges they face, such as the farm attacks, droughts, and

constant threats of farms expropriations, with zero compensation. Between July and September 2020, there were 7 339 cases of stock theft across South Africa, recording over 26 300 sheep and 14 000 cattle stolen (Democratic Alliance – DA, 2021).

For remedy, Kempen (2015:10) contends that the DNA technology can positively link potential stock thieves to the identified scenes with incredible accuracy, and the livestock biological evidence makes this process possible. Stock theft suspects can also be cleared and exonerate if mistakenly accused or convicted of crime, as previously indicated. The CJS can also benefit from this technology by offering fair justice practices. The CJS should use this technological application as one of the important forensic instruments to combat this crime. The DNA-based technologies can be effectively used for livestock determination of identity, ownership, percentage, traceability and the species origin of animal products, such as tissue, blood and skin. Apart from identical twins or clones, no two livestock are genetically the same (NSTPF, 2016:34). Therefore, this study views livestock DNA as a fingerprints or unique identification. Importantly, only small quantities of this technology is needed to confirm livestock fingerprints. This technology can efficiently help to combat stock theft in South African rural areas through the application of the following processes:

“Hair samples (i.e., a source of DNA) are collected from individual livestock and stored in the laboratory as reference samples. When a livestock gets injured or have been slaughtered at a stock theft scene, or a piece of meat from a stolen livestock is found in possession of a suspect, a tissue sample is taken and compared to the reference sample in the laboratory. If the DNA fingerprint of the reference samples matches a sample from the stock theft scenes, the potential stock theft suspect can be linked with the identified scenes or committed stock theft itself, and the collected evidence can be used to put a potential offender behind bars. In other cases; even if there is no reference sample available, conviction is still possible if a DNA from blood/bloodstains, meat or other tissues found at the stock theft scenes compares with blood found on the stock theft suspects’ clothes, tools that were used, or meat found in his/her possession,” (NSTPF, 2016:35).

Lochner and Zinn (2015:34 & 35) highlights that a crime scene can generally and naturally be classified into five types, namely: 1) *Primary crime scene*: referring to a location detailing immediate vicinity of crime occurrence or incident and where majority of physical evidence can be obtained, proving elements of the identified crime under investigation are possible found, stock theft in this regard). 2) *Secondary crime scene*: This refers to a specific location, which may not be in the same vicinity as the primary crime scenes, but a distance from the primary scenes. 3) *Extended crime scene* relates to a crime scene where several unlawful actions occur, at different places while an offence is being committed. 4) *Macroscopic crime scene*: This is demarcated to the classification of a crime scene based on its size. It is not just a physical scene but can also include livestock carcasses. 5) *Microscopic crime scene* refers to any small or minute object or piece of physical evidence related to the case under investigations. According to Maluleke, Mokwena and Olofinbiyi (2019:110), the typical stock theft scenes can be found outdoor, indoor and mobile. Accordingly, and this can be divided as follows:

- The livestock may be found at the location where they were slaughtered (Outdoor and indoor scenes).

- The livestock may be slaughtered in a specific location to be transported by a suspect to another location for selling (Mobile scenes).
- The livestock may be stolen and moved to another location and to another owner for further illegal rearing, which may later be discovered (Mobile scenes).

Therefore, the success of the forensic DNA technology services is dependent on relevant parties involved to correctly collect required samples at stock theft scenes, process and analyse them in the laboratory, and report the findings. To ensure that each part of the process is handled correctly, the ARC continuously provides training to the SAPS STUs staff, covering DNA sampling, preservation, documentation, and dispatching of samples to the laboratory (NSTPF, 2016:35).

3. MATERIALS AND METHOD

This qualitative study was exploratory in nature, supported by the FGDs, KIIs and documentary studies for data collections. It was confined to the selected areas of KZN Province (Ladysmith, Bulwer - Pietermaritzburg and Utrecht - Newcastle). The non-probability, purposive sampling was adopted to select certain categories of participants, which provided more detailed information on this subject. Their years of experience as part of Anti-Stock theft structures were considered. The 57 selected participants comprised Black and White South Africans who speak English and IsiZulu, fluently.

The participants were distributed as follows: two DAFF staff [Assistant Directors: Animal Technicians and Animal Production officials] (KIIs); one SAPS STU provincial co-ordinator (KII); thirty-eight KZN SAPS STUs members (fourteen by means of KIIs, and 24 were part of the FGD); eight livestock farmers (FGDs); three CPF managers (KIIs); and five Anti-Stock Theft Association managers (KIIs), Manganyi, Maluleke and Shandu (2018). During the record-taking process; the researcher took notes and wrote detailed and complete report afterwards. A voice recorder was also used for conducting the FGDs and KIIs, and for performing transcriptions at a later stage.

The collected data was organised by categorising it according to the identified three study themes, while applying the inductive TCA. This was done by identifying similar features. It was ensured that the obtained empirical data and reviewed literature studies answered the objective of this study. The collected data was contextualised in a rich and descriptive manner, focusing on the use of DNA technology and stock theft combating strategies through the development of a conceptual framework in this regard. The researcher read the gathered data several times to grasp the selected participants' perceptions in comparison to the reviewed studies on this subject. This was done by making cryptic written notes of what the participants were saying during the FGDs and KIIs to elicit the identified three study themes. The actual words used by the participants were written down verbatim (Matlala, 2012: 113 & 114) and Maluleke (2016).

4. IDENTIFIED STUDY THEMES AND DISCUSSIONS

When the selected participants were asked about factors hindering the effectiveness of using DNA technology to combat stock theft in their selected areas, they shared the following in verbatim, this was followed by discussions on each study theme. Importantly, the following three study themes were identified during the interview process. Empirically, the referencing method for the interviews in this study comprised a numerical sequence. An example of this notation is as follows:

(5:1:2). The first digit (5) refers to the folder number in the voice recorder. The second digit (1) is the interview number in the aforementioned folder, whilst the third digit (2) is the sequence in which the cited interview was conducted, based on the FGDs and KIIs.

4.1 Limited prioritisation of stock theft scourge

“Some of our local courts do not consider stock theft as priority crime, even when they give convictions, they normally give three (3) months or suspend the sentence. It is very important to understand the value of livestock for African people as it is their back, their money” (FGDs-04:16:6).

“The current system does not comply with the systems of the traditional leaders; they can oppose anything with everything (might) that is the reason why we cannot have these improvements. There are more challenges to be precise” (KII-01:01:01)

“Quite few of our cases has been stricken off the roll because of the fact that we wait longer time for the financial authority process to be finalised and still have to send the DNA evidence away and wait for another 03 to Four (04) weeks for the feedback from the laboratory (for the results to come back). In that period of time the court refuses to remind the dockets Two (02) and Three (03) times and just strike off the roll and by that time you receive positive results then you have another problem you struggle your backside to go and find the accused as he / she is given bail or out and running away and struggle to locate that accused, that is also a big challenge that we have” (FGDs-04:16:6)

From the presented verbal expressions, this study shows that this crime is not regarded as a priority crime in South Africa. The selected participants contend that stock theft should be seen as one of the ‘National Priority Offences,’ requiring National government, SAPS STUs and other relevant stakeholders needed attention, in terms of combating, prevention and investigation. This crime should be viewed as a specialised field, with Section 16(1) of the SAPS Act, 1995 guiding this process. The Minister of Police should also intervene by offering new strategies, supported by the National Joint Operational and Intelligence Structure (NATJOINTS) within the provincial boundaries. The local SAPS, South African National Defence Force [SANDF], should clearly focus on border security, while applying intelligence-led policing, together with the National Intelligence Agency (NIA). In essence, stock theft should be urgently prioritised.

4.2 The finalisation of the DNA evidence feedback delayed from the laboratories

“While noting the importance of DNA technology in combating stock theft, they are issues that come upfront, like for instance, we had an issue the other day when one of our members received DNA results samples back from ARC-Irene and I really do not know what happened there but the case numbers did not correspond with the cases numbers as sent to Irene when it come back, it was completely difference and the results received did not make sense. So, we had to send back these results and make a query about it and then after that they eventual send back the results with correct case numbers but incidences of this kind do not happen a lot” (FGDs-04:16:8)

“Communal grazing lands, in that one bull may mate with several cows of different livestock owners over a period of time. When animals are stolen, one will for example find DNA of both parents in the off spring. Little knowledge of Livestock Identification Catalogue (LIDCAT) utilisation within the livestock owner Community. What is LIDCAT? - Build secure database for animal identification system, collecting biological materials from individual animals and storing

it under ideal condition. In the case of theft or dispute, the system can be used to identify the animal beyond doubt for court purposes and build a database for research purposes” (KII-06-01-01).

“We have got another case where I took human DNA using buccal swab evidence method – taken from the suspect’s mouth and have Touch-DNA from the recovered firearm to send to Cape Town laboratory. It is Five (05) / Six (06) months in and we were told that it can take-up to a year for them to send the results back. Touch-DNA can directly connect the suspects to the crime scene if found and proven positive, it is like fingerprints. We sent the samples and now we do not know which suspect(s) handled the firearm. Only if we can have a method of making these processes quicker, not a method of ‘hurry-up-and-wait.’ It should be noted that human DNA evidence results take very long to come back, sometimes it can take-up to Six (6) - Seven (7) months” (FGDs-04:16:5)

“The feedback from the laboratory takes long ... In a criminal case it can take up to Six (6) weeks and sometimes Three (3) months, the deadline is not adhered to, and this create problems with the court of law as stock theft cases get reminded, but is good to note that they are improving now, it is bit better but it is a big challenge for us to get the DNA reports quickly” (KII-5:1:1)

From the foregoing responses, it is evident that there is an urgent need for the establishments of the advised Stock Theft Forensic Laboratory (STFL) in the selected areas of KZN Province to avoid travelling long distances to submit DNA evidence obtained from the stock theft scenes. Currently (2022), Cape Town, Port Elizabeth and Pretoria, only have laboratories to analyse the high demands stock theft DNA evidence. Positively, the University of Pretoria (UP), ARC-Irene and other relevant private companies are acknowledged for offering quick feedback responses, based on the awaiting livestock DNA results.

4.3 Inadequate knowledge and application of the DNA technology usage

“These refer to the experienced challenges among others:

- *Lack in community involvement in some areas;*
- *Late detection and reporting of cases to the SAPS STUs by livestock owners;*
- *Non-marking of livestock by owners;*
- *Improper or non-safeguarding of livestock by owners;*
- *In-effective actions by livestock owners themselves to prevent stealing of their stock;*
- *Porous International borders (Lesotho, Swaziland and Mozambique), however, cross-border stock theft in KZN Province is very low in comparison to the total stock theft picture of the province; and*
- *Filling of vacancies at remote SAPS STUs” (KII-06-01-01)*

These included the following that arose from similar challenges experienced by the selected participants (Not in order of importance):

- The local livestock farmers should look after livestock.
- They livestock farmers embrace the importance of the Stock Theft Act, 1959, Animal Identification Act, 2002 and the DNA Act, 2013 to name just three.
- The livestock farmers should frequently count their livestock to avoid discovering that their animals are missing only after a few days, or two to three months, making the investigation process difficult to initiate and complete.
- The livestock farmers should report stock theft cases immediately.

- The majority of local commercial livestock farmers, more especially ‘White’ commercial livestock farmers use other technologies, such as the Radio Frequency Identification (RFID) to control and monitor their livestock’s movements within their enclosed facilities. This system can be very expensive for emerging ‘African/Black’ livestock farmers. Positively, the optional combination of the RFID, Wireless Fidelity (Wi-Fi), Wireless Sensor Node / Network (WSN) and ZigBee can ease the noted economic burdens.

In instances where a stock theft case cannot be proven due to lack of *prima facie* evidence, this technology can positively link potential stock theft suspects to the identified scenes, solving this crime with much ease. However, there are no plans to establish the STFL in the province, further making it difficult to deal with this crime in the selected areas of KZN Province. The existing knowledge and applications of this technology should be enhanced at all costs.

Overall, the researcher is of the view that the findings of this study can prompt readers to think of other contexts, settings or situations facing similar problem across South Africa and elsewhere, and to recognise the similarities. This study did not involve broad claims, but invites study readers to make connections between elements associated with the study participants in line with their own experiences. Thus, the researcher explored the subject relating to the factors hindering the progress and effectiveness of using DNA technology to combat stock theft in selected areas of KZN Province, while giving rich description of this study subject so that the study findings can be applied to other settings in order to contribute to the building of a new and technological pool of knowledge in respect of combating stock theft in the selected areas of KZN Province and elsewhere.

Overall, the use of DNA technology for combating stock theft seems to be a new concept to the livestock farmers residing in the selected areas of KZN Province. This can be also said about other relevant stakeholders, such as the CPFs leaders and DAFF personals. Another development is that local SAPS STUs officials and Anti-Stock theft associations are knowledgeable about this technology. However, the interviewed participants noted that they faced various difficulties associated with stock theft, and many factors are available hindering this process. Thus, improvements should be made regarding current stock theft combating, prevention and investigation strategies within the selected areas of KZN Provinces, more still to be done to combat stock theft effectively in this province to respond to a decline in the willingness of combating, preventing and investigating this scourge by relevant Anti-Stock theft structures.

5. CONCLUSIONS AND RECOMMENDATIONS

This study concludes that the use of DNA technology in combating stock theft in the selected areas of KZN Province can be very effective. However, the effectiveness of this application has not been clearly identified in the study locations, as differed perceptions were shared. Many factors exists that hinder progress and effectiveness of this technology. Thus, this technology should be fully explored to efficiently address this crime effectively. For recommendations, the prioritisation of this crime should be urgently addressed by all Anti-Stock theft structures, the finalisation of DNA evidence analysis, coupled with the establishment of the STFL in the province and the proper applications and scientifically disseminations of available knowledge should form part of this agenda. This technology can be one of the solutions to combat, prevent and investigate this scourge. The livestock ownership, both in civil and criminal cases can be achieved, by linking

potential stock theft suspects to the identified scenes, as well as exonerating innocent stock thieves. The livestock DNA is regarded as the ‘fingerprint’ and DNA collected from stock theft scenes that can either link stock theft suspects to the obtained evidence or eliminate them and compare the obtained evidence from one stock theft scene to others can enable potential stock thieves to be linked Nationwide, to provide valuable criminal [stock thieves] intelligence information to the local SAPS STUs and act as evidence in a court of law.

Importantly, the researcher further recommends that the SAPS management should give this crime the necessary public exposure. The South African CJS should start taking this crime seriously. All Anti-Stock theft structures should undergo in-depth constant lectures, workshops and quarterly refresher courses regarding the importance of livestock farming practices and consequences of stock theft. The National government should also initiate relationships with other relevant forensic laboratories across the country. Specific National Instruction should be added to the Crime Scene Policy (CSP), containing full descriptions of how to use this technology for combating, preventing and investigating this crime, as well as stock theft expert requirements. Over reliance on the ARC-Irene will not effectively combat stock theft, based on witnessed workload. The University of Stellenbosch in Cape Town and the UP are some examples of the notable forensic laboratories, which can add much value by their speedy analysis of DNA evidence. Other private laboratories should also become part of this solution. The SAPS management should also consider having their own STFL.

Moreover, it was clear, from the participants’ perspective, that knowledge of the application of this technology was limited. It is further recommended that more SAPS STUs’ members should be trained specifically in the usage of this technology. It would be best if each SAPS STUs in the selected areas of KZN Province could have designated DNA technology experts working along with the respective forensic laboratories across the country or the advised STFL. This can assist the SAPS STUs with investigations of this crime. This technology has proven to be a solution to the stock theft epidemic by providing rapid means of identification. It can be used as a confirmatory forensic tool in livestock identifications, irrespective of either criminal or civil nature.

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THE INFLUENCE OF THE AfCFTA CAPITAL AND INDUSTRIAL GOODS IN SOUTH AFRICA: A SIMULATION ANALYSIS.

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ABSTRACT

South Africa is already faced with macro-challenges of suppressed economic growth, increasing unemployment and inequality levels on one end. On the other end, the unavoidable pressures and priorities of regionalism and globalisation such as the African Continental Free Trade Agreement (AfCFTA) continue to increase. General trade theory postulates for positive gains between trade openness and economic growth. However, these generalisations often distort critical sectoral implications due to trade creation and trade diversion effects. This paper aims to answer the potential effects of the highly celebrated AfCFTA on the Fourth Industrial Revolution (4IR) in South Africa. This is achieved by applying the WITS-SMART simulation model on three key Harmonised Commodity Description System (HS) Classifications of capital goods and industrial goods by estimating the trade creation, trade diversion and revenue effects. Secondly, the potential dynamic effects on macroeconomic fundamentals of economic growth and unemployment are also estimated. Results indicated that for the two product classifications of industrial and capital goods, applied duty rate will slightly decline from 6.83 to 6.39 whilst the weighted rate will increase by 2.86%. Consequently, there will be an increase in South African exports by approximately USD 121 million but no changes were observed for imports. This is because it is likely that South Africa will not import any industrial and capital goods from any African country even though the AfCFTA is to be implemented due to capacity constraints. Lastly, results indicated that no significant effect will be observed in terms of trade creation and trade diversion leaving welfare effects and consumer surplus unchanged in the two product categorisations. The study recommends that South African policy makers should not only implement the AfCFTA but also proffer complementary policies which seek to exploit the increased market access of the three HS product categories. This is feasible given the comparative advantages South Africa has in the region on the production of the aforementioned products. However, this may not be as significant in the short and medium term due to lower absorption capacity in the region.

Keywords: South Africa, AfCFTA, 4IR, WITS-SMART simulation, economic integration, trade creation, trade diversion

INTRODUCTION

Irrespective of several international trade models which posit that trade openness leads to economic growth (Smith, 1776; Ricardo, 1817, Irwin, 1996), governments have not always been keen to open up their economies for several reasons. Among others, these include a subconscious belief in protectionism by policy makers in mercantilist ideologies which are largely rooted in the notion of zero-sum game (Gurova, 2014; Musila, 2005, Irwin, 1996). Others reasonably also cite

that the need to protect local and infant industries from predators which are usually multinational corporations which usually employ unfair trading practices to thwart out any form of competition. Despite some arguing for multinationals citing that they usually contribute to high employment rates in their operational economy, another school also argue that these multinationals do not contribute much to growth since much of the revenue and profit is withdrawn from the domestic economy to the parent country. Using Keynes' rationale, withdrawals are outflows and not good for growth due to the negative multiplier (Keynes, 1936). Thus, in practice, the subject of international trade and trade openness has not always been a cut and stone one. This paper intent to discuss on the potential merits (and demerits) of the recently signed African Continental Free Trade Agreement (AfCFTA) on the South African economy by focusing on three product classifications namely capital goods, industrial goods and petroleum. The paper will follow the Harmonised Commodity Description System (HS) which is internationally recognised and adopted by various international trade institutions including the International Trade Center (ITC) and UNCTAD. The AfCFTA arrangement is coming at a point when South Africa is pursuing other key policy issues - such as the Fourth Industrial Revolution (4IR). It will be of interest to analyse whether the new AfCFTA development plays a complementary or contrasting role to these growth-oriented policies such as the 4IR. Various contrasting theories posit varying arguments from the need for protectionism to the merits of trade liberalisation as intended by the AfCFTA instruments.

The 4IR was considered by many as a major disruptor to the South African economy. This is because while others posit that it will lead to increased productivity and production due to the use of advanced technologies thereby increasing economic growth (Mill, 1920; Cataneo, 2005, Karambakuwa et al. 2015), others have also highlighted that the 4IR could significantly compound to the already existing macroeconomic woes of high unemployment rate in South Africa. The rate of unemployment in South Africa has been worsening over the past decades and latest statistics indicates that the indicator hit a new record high of 34.9% (StatsSA 2021: Q3) from 34.4% (2021:2). If discouraged jobseekers are to be taken into account, the rates become even higher to respective figures of 46.6% and 46.2%. Prospects for the future become even gloomy bearing in mind that the level of youth unemployment is highest with a 2021: Q3 figure of 66.5% (StatsSA: Q3). In the preceding years, unemployment figures have been as follows: 26.54% (2016), 27.04% (2017), 26.91% (2018), 28.47% (2019) and 28.74% (2020). This reflects that unemployment has been on an upward trajectory for a couple of years with the coronavirus pandemic only compounding to already cause existing challenges. From a theoretical perspective, one could attribute this phenomenon to the inverse relationship between inflation and unemployment widely popularised in the Philips curve since inflation has remained low in the past two decades.

However, other factors could also significantly contribute to this structural outcome in South Africa. This paper will place its focus on the role of trade openness with a specific focus on the AfCFTA. South Africa being arguably one of the largest economies in Africa, and the largest in Southern Africa implies that its role on both international trade and intra-African trade will be significant. It remains critical that at every stage and new development such as the AfCFTA, a critical analysis be made to assess how such changes can influence the dynamics within the South African economy. This paper seeks to provide some critical insights into the influence of intra-African trade as proposed by the AfCFTA instruments on the 4IR and the South African economy in general.

This paper is structured as follows; the subsequent section discusses the theoretical and empirical literature. This is followed by the methodology section and then a discussion of results. The conclusion and recommendations are then suggested drawing from a blend of the theoretical, empirical and estimated results.

THEORETICAL AND EMPIRICAL PERSPECTIVES

The convergence arguments by Robert Mundell (1965, 73) posit that it is through macroeconomic convergence that economies can grow as they will be able to benefit from each other. Using the ex-ante argument, the model posits that there are pre-conditions which should be made before economies can successfully integrate with each other. These include ensuring that economies are synchronised, that is, macroeconomic indicators are moving within a systematic fashion. Prior to the signing of the AfCFTA, there existed macroeconomic convergence criteria within various regional economic communities (RECs) including the Southern African Development Community (SADC) (Pasara and Dunga, 2019b). The notion behind was to ensure that there is fiscal and monetary discipline and economies would move in a systematic fashion. This would be key from two strands: firstly, similar policies can be effectively applied at the REC level in the case of external shocks. When economies are not synchronised or there is no ex-ante convergence, then corrective policies will become effective in one economy and ineffective in another. For instance, it was lack of proper macroeconomic convergence which led to varying results across SADC countries during the 2008 Global Financial Crisis. In countries like Zimbabwe, the shock became so severe that the economy was grounded whilst mild shocks were experienced in neighbouring countries like South Africa and Botswana. The consequence was negative spill over effects from Zimbabwe to South Africa since there already existed some level of economic and/or trade integration between the two economies.

The ex-ante convergence argument then becomes critical in the context of larger trade integration arrangements such as the AfCFTA. There is sufficient empirical evidence to indicate that no effort was done to ensure that some form of convergence exists among African countries before the AfCFTA can be ratified and implemented. Unlike the European Union, Africa is a continent of extremes. On one hand, there are highly stable countries like Mauritius and Botswana and very unstable economies like Zimbabwe, Nigeria and Ethiopia on the other. There are larger economies like Egypt, South Africa, Kenya and Nigeria and smaller economies like Malawi, Sierra Leone, Gambia and Lesotho. All these disparities have trade implications. In the case of South Africa, trade openness in the context of AfCFTA would imply that negative shocks can easily spill over from trading partners such as Zimbabwe since there will be little to no trade barriers.

The ex-post convergence argument views to the contrary. It posits that pre-conditions are not necessary to establish trade integration. On the contrary, it is trade integration which will then leads to convergence. When countries integrate, there are basically leaders and followers. Thus, leaders like South African will be engaged in advanced research such as Science, Technology, Engineering and Mathematics (STEM) subjects which are core areas of the 4IR. It is through such technological advancements that these economies will gain from inventions, innovations and intellectual property rights thereby having a comparative advantage over smaller nations usually regarded as followers. At the same time, the view also argues that smaller nations will benefit because they can easily and cheaply 'imitate' these technologies and production processes thereby

accelerating their rate of growth and development leading to what is referred to as the ‘catch-up’ effect. Others also highlight that leading nations like South Africa will tend to gain from trade integration like AfCFTA because they will be able to easily and cheaply access regional markets for their efficiently and massively produced products, something which would not have been feasible had such integration arrangements not existed. Africa is largely characterised by high trade and non-trade barriers (NTBs). This has led to suppressed intra-trade levels of between 15%-18% (Pasara and Dunga, 2019; Mold and Mukwaya, 2017) compared to 60%-70% in the European and ASEAN communities. South African companies have found it challenging to expand into African markets despite them having sufficient capacity to do so. Thus, using the convergence (both ex-ante and ex-post) view, the AfCFTA does not only pose threats to the economy due to negative spill overs but also presents opportunities for expansion into regional markets.

Developments in new economic geography (Grossman and Helpman, 1991) can also be employed in the discussion. The model highlights that industries can be located in areas where there are abundant resources such as access to sea, natural endowments like minerals and favourable weather conditions and efficient transport infrastructure systems (Giroud and Mirza, 2006; Shaw et al. 1999). Complementary factors also include sound institutional frameworks (Hwang and Lee, 2015; Te Velde, 2011 and Law, 2006). South Africa is characterised by all these attributes which then explains, to some extent, why firms generally choose to concentrate their operations in the respective economy. The resultant effect is an uneven clustering of economic activities in South Africa compared to other African countries. This, as Pasara and Dunga (2019) highlighted, can lead to tensions among member countries as others would then feel the need to protect themselves against loss of position (Ujupan, 2005). Thus, economic and trade integration arrangements such as AfCFTA would lead to a ‘simultaneous process of agglomeration and decentralisation of sectorial activities’ which will in turn lead to an increase in both intra-sectoral and inter-sectoral trade.

Since there exists a bell-shaped link between transport costs and economic activities in a two-scenario economy where one is poorer and another is richer (Madariaga et al. 2003), empirical evidence suggests existence of divergent relationships across the NAFTA and Mercosur regions but positive relationship between density of economic activities and growth rate. Thus, using this analysis, it can be inferred that trade agreements such as the AfCFTA do not play significant role in the convergence process between those nations like South Africa who are aggressively pursuing 4IR policies and others like Zimbabwe and the rest of the member countries with a quiescent approach. In other words, although trade integration might present other benefits to South Africa, they are less likely to be in terms of its growth and development towards the 4IR. In fact, the new economic geography model postulates that disparities in wage rates and economic activities across economies can stimulate labour migration from poorer to richer economies thereby worsening the income inequalities and distribution (Pasara and Dunga, 2019b). Given the classical production function [$Q = f(L, K)$; output is a function of labour and capital], it is most likely that integration will lead to labour movement (from poorer to richer) as opposed to capital moving (from richer to poorer) economies. Prior to the AfCFTA, South Africa has already been experiencing an influx of labour migration from poorer nations thereby contributing to already existing challenges of structural unemployment.

On the other hand, prior free trade establishment such as SADC and the South African Customs Union (SACU) have benefited South Africa since most companies such as Unilever moved their headquarters from neighbouring countries into South Africa. The AfCFTA will likely compound to this effect leading to a greater concentration of industries and an even further acceleration of the growth and development of the 4IR agenda. This complements the empirical observation by Venables (1999) who observed that the production structure of Kenya moved was opposite of free market expectations. Kenya was able to expand its production base at the expense of poorer countries since they had to shift their manufacturing imports from the Rest of the World. This consequence was referred to as trade divergence by Viner (1950), a principle upon which our methodology will be anchored on. In the same vein, Tanzania and Uganda could not exploit the trade creation gains due to their limited product range. Thus, South Africa could gain because the 4IR will give it a comparative advantage over continental competitors in the AfCFTA.

Prior trade integration arrangements have led to mixed results, and it remains to be seen what the AfCFTA would bring. Investigating 29 Sub-Saharan countries, Ghura and Hadjimichael (1996) observed a 2% proclivity for income convergence. Using various models, Pasara and Dunga (2019a) and Mold and Mukwaya (2017) indicated that trade creation benefits outweighed trade diversion benefits. However, these gains are likely to lead to structural changes as some countries and economic sectors will gain at the expense of others. This study will add to this literature by focusing its analysis on how trade under the AfCFTA context will influence the industrial sector.

METHODOLOGY

The World Integrated Trade Solution-Software for Markets and Restrictions on Trade (WITS-SMART) simulation procedure developed by the World Bank was employed for this simulation. The rationale behind is because the AfCFTA is not yet being implemented, thus no existing trade data to employ alternative methodologies such as econometric models. Secondly, the WITS-SMART model is anchored on Jacob Viner's (1950) trade creation (and diversion) effects. The pros of the model are that it is able to employ trade data and perform simulations which produce results in terms of trade creation, diversion, revenue and welfare effects. Moreover, its data requirements are quite small compared to other models such as Computable General Equilibrium (CGE). The cons are that the model is static (as opposed to dynamic) and its focus on demand side economics. The paper rationally assumes infinite export elasticity implying changes in South African supply cannot influence world prices. Secondly, Armington's substitution assumption holds, that is, imperfect substitutes between domestic supply and import demand based in rules of origin for product differentiation (Armington, 1969). For instance, computing software from South Africa will be different from a similar software from any other African country since the intellectual property (IP) will be different.

The following equations will be estimated.

$$Cr_{iyz} = I_{ijk} * \eta * \frac{\Delta_{iyz}}{(1+t_{ijk}) * (1+\eta/\beta)} \dots\dots\dots (1)$$

- Cr_{ijk} = Trade created
- I_{ijk} = Imports
- t_{ijk} = Tariff
- η = elasticity of demand for imports

β = elasticity of supply for exports
 i = merchandise
 y = exporting nation
 z = importing nation

Equation (2) represents trade diversion which largely depends on the substitution elasticity:

$$Dv_{iyz} = \frac{M_{TFTA} * M_{RoW} \left[\left(\frac{1+t_t}{1+t_0} \right) - 1 \right] * \lambda}{M_{TFTA} + M_{RoW} + M_{RoW} \left[\left(\frac{1+t_t}{1+t_0} \right) - 1 \right] * \lambda} \dots\dots\dots (2)$$

Dv_{iyz} = Trade diverted

M_{TFTA} = Imported commodities from TFTA countries

M_{RoW} = Imported commodities from rest of the world

t_t = Tariff (where t_0 and t_t represent pre and post integration levels of tariffs)

λ = elasticity of substitution

The net trade effect (TE) is the summation of trade created and diverted:

$$TE = TC + TD \dots\dots\dots (3)$$

The net revenue effect (RE) in equation (4) indicates the revenue changes after a change in tariffs. It largely depends on price and volume of imports.

$$\Delta R_{izy} / R_{izy} = [\Delta t_{ijk} / (1 + t_{iyz})] * \eta * [(1 + \beta) / (\beta - \eta)] \dots\dots\dots (4)$$

ΔR_{izy} = The effects on revenue due to tariff changes

η = the elasticity of demand for the importing economy

t_{iyz} = Tariff

β = Elasticity of supply for the exporting economy

Equation 5 below estimates the welfare effects, which are the summation of the producer and consumers' surplus.

$$W_{iyz} = 0.5(\Delta t_{iyz} * \Delta M_{iyz}) \dots\dots\dots (5)$$

DATA DESCRIPTION

Data was sourced from the International Trade Center and the Harmonised Commodity Description and Coding System (HS) data format was used. The HS system allows traded goods to be classified on a common basis by participating countries for customs and related purposes. Globally, the HS is a six-digit code system which consists of around 5300 product descriptions, organised into 99 chapters and clustered into 21 sections. The six digits can be disintegrated into three parts: HS-2 identifies the chapter of the goods classification, HS-4 identifies groupings within that chapter, and the more specific HS-6. There are six (6) broad product classifications namely raw materials, intermediate goods, consumer goods, capital goods, agriculture, industrial and petroleum. However, this paper will focus on capital and industrial goods as proxies for the 4IR. The authors, however, acknowledges the applicability of 4IR across sectors like agriculture but they will not be considered for the purpose of this discussion as they are deemed indirect.

FINDINGS AND DISCUSSIONS SMART SIMULATION RESULTS

The results presented and discussed below are for only two product classifications as highlighted in the methodology section, that is, capital goods and industrial products for South Africa. The standard Harmonised System (HS) has a total of six product classifications as discussed earlier. Data was sourced from the International Trade Center (ITC) and the latest available data (2020) was used. The results were simulated under the underlying assumptions that supply elasticity is 99 which implies that changes within the South African productive capacity cannot influence world prices (practical assumption). Secondly, a substitution elasticity of 1.5 also implies that South Africa's technological developments as a result of the 4IR will be elastic which implies that it can be substituted with technologies from the Global North since they are most likely to be more likely to be invested in advanced research and technology than South Africa.

Table 1. Elasticities and Effects on Duty Rate

| Applied Duty Rate (Avg) | New Duty Rate (Avg) | Supply Elasticity | Substitution Elasticity | Old Weighted Rate | New Weighted Rate | Old Simple Duty Rate | New Simple Duty Rate |
|-------------------------|---------------------|-------------------|-------------------------|-------------------|-------------------|----------------------|----------------------|
| 6,834 | 6,387 | 99 | 1,5 | 1530 | 1573 | 654528 | 614491 |

The results indicate that applied duty rate will slightly decline from 6.83 to 6.39 once the AfCFTA is being implemented. Similarly, the simple duty rate will also decline from 654528 to 614491 reflecting a 6.5% change. However, the effect of the AfCFTA is that the weighted rate will increase from 1530 to 1575 (2.86%) for the two categorisations of industrial and capital goods.

Table 2: Effects on Exports and Imports

| Exports Before (USD 000) | Exports Before (Avg) | Exports After | Exports After (Avg) | Imports Before | Imports Before (Avg) | Tariff Revenue Before | Tariff Revenue New |
|--------------------------|----------------------|---------------|---------------------|----------------|----------------------|-----------------------|--------------------|
| 1688934 | 5071,873 | 1809842 | 5434,961 | 3426107 | 190339,3 | 12641 | 10139 |

The implementation of the AfCFTA under similar simulated conditions will lead to an increase in exports from 1 688 934 to 1 809 842 reflecting a change in exports of capital and industrial goods by 120 908 (approx. USD 121 million change). Since trade integration arrangements such as the AfCFTA implies removal of trade barriers like tariffs, it should be natural that tariff revenues will decline. Thus, in the case of the products under consideration, revenue declined from USD 12.7 million to USD 10.1 million. It is critical to note that these figures will become even significantly higher once all six product classifications are taken into account. Thus, the revenue loss is quite high. The implication of this revenue loss is that it is income which can be used by the government in the provision of public and merit goods such as street lighting, schools, roads and other services. Similar to most African countries, tariff revenue contributes a significant proportion of aggregate government revenue.

Table 3: Trade creation, Diversion, and Welfare Effects

| Trade Value (USD) | Trade Creation | Trade Diversion | Welfare Effects | Consumer Surplus |
|-------------------|----------------|-----------------|-----------------|------------------|
| 3426107 | No Effect | No Effect | No Effect | No Effect |

The total trade value for capital and industrial goods was noted to be around USD 3.4 billion. No trade creation and trade diversion effects were observed from this simulation. This is perhaps because no significant changes were observed for imports. The simulation is consistent with economic practicalities because South Africa is not a net importer of capital and industrial goods from other African countries. South Africa imports most, if not all, of its capital and industrial

goods either from developed countries like USA, Germany, United Kingdom or other emerging economies like the BRICS community. In fact, there are no African options to imports such goods due to capacity issues. The statistics could have been different had raw materials and agricultural goods been taken into account. Thus, as far as the 4IR revolution is concerned, South Africa is likely to benefit little from intra-African trade in terms of technological transfers. However, it will benefit from increased access to African markets as clearly reflected in the simulation results which showed an increase in exports.

CONCLUSION AND RECOMMENDATIONS

This paper discussed the influence of the AfCFTA towards the 4IR using WITS-SMART simulation analysis in South Africa by taking into account industrial and capital goods. Although majority of theoretical postulations are skewed towards the conclusion that trade integration is beneficial, this paper investigated this assertion based on Viner's model which indicates that conclusions are not obvious due to trade creation and diversion effects. Thus, taking into account the South Africa's National Development Plan (2030) which is hinged among other things on the 4IR, the study investigated how the AfCFTA could practically influence the 4IR policies. Results indicate that there will be an increase in net exports but no significant changes in imports leading to no effective trade creation and diversion effects for the two product classifications. Whilst the study suggests that South Africa can participate in the AfCFTA, the major highlight is that policy makers should not expect much influence with regards to the 4IR since majority of African countries do not have advanced technological (or STEM) integrated systems which would stimulate technological transfers among other things.

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DETERMINANTS OF STUDENT SUCCESS AND BELONGING AMONG POSTGRADUATE ECONOMICS STUDENTS

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ABSTRACT

The purpose of the Economics honours research report module at the University of South Africa (Unisa) is to guide students in putting together a research paper that demonstrates their ability to conduct guided research in the local context. This paper analyses the determinants of factors that best explain student success and belonging in this module. This study is divided into five sections. The first section describes the background and introduction. The second section presents a literature review. The third section describes the research methodology. The fourth section entails a summary of the results and the last section concludes the study. The study reported in this paper employs a quantitative methodology with an econometric analysis of the dependent variable namely the final marks for the research report and the independent variables that explain it. The results show significance in terms of the assignments and existing knowledge marks in terms of their B Com average mark. However, demographic factors are insignificant, showing that other factors such as the supervision and the holistic experience become more important for postgraduate students. This is also the first evidence of self-directed learning during the COVID-19 pandemic.

1 BACKGROUND AND INTRODUCTION

The Bachelor's Honours Degree is a postgraduate specialisation qualification on South Africa's National Qualification Framework (NQF). It is awarded at NQF level 8. In some countries, this qualification is offered as an undergraduate degree to prepare students for postgraduate study. However, in South African universities, this degree is meant to prepare students for research-based postgraduate study. Unisa is one of the universities offering the Honours degree at a postgraduate level. Examples of honours degrees at this university include Bachelor of Commerce Honours, Bachelor of Social Science Honours, Bachelor of Arts Honours, and Bachelor of Science Honours.

Unisa celebrates its 149th birthday in 2022. It is regarded as the first of its kind in the world, namely, a single-mode distance education institution (Peters, 2010 p. 57). As a mega university, it is also Africa's leading open distance learning (ODL) university. Unisa's vision and mission statements, as well as the motto "Define tomorrow", relate to its African but also futuristic character (Unisa, 2016). The open nature of the university means that it also caters to the underprivileged. Therefore, the academic staff at Unisa need to deal with a range of unemployed, young students that are digital learners chatting online in groups (Letseka & Pitsoe, 2013). Van Niekerk, Heydenrych and Higgs (2003) warn against merely duplicating the print-based effort online with no actual learning taking place. Guri-Rosenblit (2009) says that universities might have to be redesigned, and may have to adjust their strategy to cope with the online and virtual context.

The vision and mission statements of Unisa relate to the African character of the university, with open learning catering for quality life-long learning. A further key point in the mission statement refers to addressing the needs of a diverse learner profile by offering relevant learner support, facilitated by appropriate information and communications technology (ICT) (Unisa, 2010). E-learning or technology-enhanced learning can assist South Africa and the African continent's young population to stay relevant, vibrant and progressive within the fast-paced modern society. Mobile learning via smartphones tends to augment e-learning, rather than replace it (Macdonald & Chiu, 2011). The African continent has become more connected, with interconnectivity at the doorstep of most learners (Unisa, 2010).

In the workplace, more emphasis is on skills and abilities than on academic knowledge (Royal Bank of Canada, 2018). Therefore, universities need to produce research and graduates that are relevant to industry or employment to optimise their contribution to the workplace. To remain at the forefront of tertiary economics tuition in South Africa, the Department of Economics needs to be cognisant of the changing world, and the resultant demands and expectations of research and graduates by industry. The Department of Economics at Unisa has consequently expressed a need to review the degree curriculum by seeking input and perceptions from key stakeholders such as business, alumni and academic staff members. Such a review intends to prepare students for the demands of the current and future workplace more effectively and proactively. As such, graduateness usually covers the following key aspects (Coetzee et al., 2012):

- A suite of attributes that graduates acquire during their university study;
- The relationship between graduateness and employability, including employer needs and expectations; and
- Student attitudes and orientation towards the labour market.

Therefore, this paper is the first attempt of investigating student success and ultimately belonging within an online environment. The evaluation of the Economics honours degree offering through student progress and value accretive initiative, which together with the College of Economics and Management Sciences (CEMS) (Unisa) transformation agenda, as initiated in 2017, will foster and create a world-class, though still uniquely African offering.

The objective of the study reported on this paper is to find the factors that best explain the student performance in the Honours Economics Research report. Challenges faced and issues arising may include pedagogic interventions but also assisting with a more efficient, effective and economic open distance e-learning (ODeL) environment.

2 LITERATURE REVIEW

Student success/throughput “is one of the most widely studied issues in higher education over the past twenty-five years” (Tinto 2002: 2). Although this research resulted in “an ever more sophisticated understanding of the complex web of events that shape student leaving and persistence, most institutions have not yet been able to translate what we know about student retention into forms of action that have led to substantial gains in student persistence and graduation” (Tinto 2006: 1, 5).

The most compatible model with our analysis in this paper is probably Bean's causal path model (1980); (1982). The background variables are performance, socioeconomic status, state residence, distance from home, and hometown size. The determinants are institutional quality, integration,

university grade point average, goal commitment, communication, requirements (rules), distributive justice, advisor, staff/faculty relationship, housing, and campus organisations. The intervening variables are satisfaction and institutional commitment.

The focus will fall on more recent studies in the South African education environment (curriculum research also) and not just within an ODeL environment. Keeve, Naude and Esterhuyse (2011:121) found that for three-year–curriculum students, academic factors such as Grade 12 performance and language proficiency provide a significant explanation. This does not apply to four-year-curriculum students where psychosocial factors such as parents' education level play a role. Following a study by Davis and Venter (2011), the contributing factors of postgraduate honours business management, student success pertains to formative assessment, student enjoyment of the course, lecturer involvement and attendance of course workshops. In terms of international postgraduate students, key factors of academic success relate to good supervision mechanisms, student adjustment programmes offered for students to adjust within the country of learning, workshops and financial services, library services and individual characteristics of international students (Kaur & Singh, 2018). Rashied and Inglesi-Lotz (2017) found that the student-to-supervisor ratio has no significant impact on the research proficiency of an Economics Honours student. This shows that various other factors influence the research proficiency of these students. Financial difficulties, personal challenges and fewer opportunities for students to get study leave from employers can also impact throughput (Botha, 2018). Various articles refer to the importance of supervisory skills and relationships in academic success (Roongtawanreongsri & Awour 2018; Unsworth *et al.* 2010).

3 RESEARCH DESIGN AND METHODOLOGY

The honours research report module aims to guide students in putting together a research paper that demonstrates their ability to conduct guided research in the local context. This is a 36-credit module and is presented online. They can only choose a research topic in one of the two elective modules for which they were registered or are currently registered. Their choice of research method can be either qualitative (or descriptive-analytical) or quantitative (or empirical-econometric). Each student will be allocated a supervisor. The module format is fully online. The module aims to equip students with the competencies required to plan, execute and write an acceptable academic research paper in Economics. Students will be able to reason, debate in a written format a specific economic topic, recognise existing international and national research on the topic, and integrate appropriate research methodologies in Economics. The data for the empirical analysis drew on the year 2021. This sample comprised approximately 220 students, with 152 students retained for analysis. More importantly, ethical clearance was granted for the study.

3.1 Profile of students

The group comprised mainly females with a mean age of approximately 32, and where students mostly did not study in their home language (Table 1). The home language is included in the analysis as a reliable indicator of student success. Students must submit four assignments during the year, with the last assignment also serving as examination. For this study, the handing in and passing of the four assignments were taken as showing effort and commitment on the part of the student.

Table 1: Descriptive statistics

| | FINAL_MARK | AGE | FT_STUDENT | HL_ENG | M_F | B_COM_AVE | ASS1 | ASS2 | ASS3 | ASS4 |
|--------------|------------|----------|------------|----------|----------|-----------|----------|-----------|-----------|-----------|
| Mean | 59.35766 | 31.53285 | 0.138686 | 0.153285 | 0.394161 | 49.46851 | 17.31387 | 52.59854 | 56.16788 | 58.86861 |
| Median | 59.00000 | 31.00000 | 0.000000 | 0.000000 | 0.000000 | 50.00000 | 0.000000 | 55.00000 | 56.00000 | 58.00000 |
| Maximum | 98.00000 | 60.00000 | 1.000000 | 1.000000 | 1.000000 | 85.00000 | 69.00000 | 85.00000 | 88.00000 | 98.00000 |
| Minimum | 0.000000 | 22.00000 | 0.000000 | 0.000000 | 0.000000 | 10.20000 | 0.000000 | 0.000000 | 6.000000 | 0.000000 |
| Std. Dev. | 17.39368 | 6.747604 | 0.346887 | 0.361584 | 0.490463 | 14.13794 | 27.63436 | 16.35698 | 16.66564 | 17.26217 |
| Skewness | -1.060766 | 1.229139 | 2.090824 | 1.924797 | 0.433174 | -0.168674 | 0.974899 | -0.734401 | -0.576360 | -0.974938 |
| Kurtosis | 5.100556 | 5.348151 | 5.371543 | 4.704844 | 1.187639 | 2.713258 | 1.979122 | 4.252070 | 3.551763 | 5.011459 |
| Jarque-Bera | 50.87969 | 65.97091 | 131.9218 | 101.1852 | 23.03432 | 1.118977 | 27.65063 | 21.26385 | 9.322888 | 44.79890 |
| Probability | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000010 | 0.571501 | 0.000001 | 0.000024 | 0.009453 | 0.000000 |
| Sum | 8132.000 | 4320.000 | 19.00000 | 21.00000 | 54.00000 | 6777.185 | 2372.000 | 7206.000 | 7695.000 | 8065.000 |
| Sum Sq. Dev. | 41145.47 | 6192.102 | 16.36496 | 17.78102 | 32.71533 | 27183.87 | 103857.5 | 36386.92 | 37773.14 | 40525.64 |
| Observations | 137 | 137 | 137 | 137 | 137 | 137 | 137 | 137 | 137 | 137 |

3.2 Empirical methodology and model specifics

To assist the student, we needed to understand the determining factors in terms of student performance. The model was designed according to previous literature as discussed earlier but additional variables have also been chosen to support the discussion behind the success rate and belonging of Economics honours students at the fourth-year level, namely:

$$OUTPUT \text{ Final_mark_Hon_Ecn} = f(\text{Age}, \text{Dum_fulltime}, \text{Dum_HL}, \text{Dum_male}, \text{Final_mark_B Com_Average}, \text{Ass_1}, \text{Ass_2}, \text{Ass_3}, \text{Ass_4}).$$

The dependent variable effectively reaches the final mark while using a dummy variable to indicate pass or failure.

The coefficients, or explanatory variables, consisting of the following: Age, dummy time variable ('Dum_fulltime', with a value of 1 for full-time study, else 0), dummy language variable ('Dum_HL', with a value of 1 for study in the home language, else 0), dummy gender variable ('Dum_male', with a value of 1 if for male, else 0 if female); final mark reached in B Com_Average, Assignment marks).

Table 2: Description of variables for Economics Honours Research report

| Dependent variables | |
|--------------------------|---|
| Finalmark_Hon_Ecn | Final mark scored by the student in Economics Honours Research report |
| Dum_Final | Taking a value of 1 if passed and 0 if failed |
| Explanatory variables | |
| Age | Age of the student |
| Assignment_1 | Mark of assignment 1 |
| Assignment_2 | Mark of assignment 2 |
| Assignment_3 | Mark of assignment 3 |
| Assignment_4 | Mark of assignment 4 |
| Dum_HL | Taking a value of 1 if studying in the home language and 0 if not |
| Dum_Male | Taking a value of 1 for male students and 0 for females |
| Dum_full | Taking a value of 1 for full-time students and 0 for part-time |
| Final_mark_B Com_Average | Final mark B Com Average |

The assignment weight contribution is covered in the following Table 3:

Table 3: Year mark contribution

| Assignment | Year mark contribution | Type |
|------------|--|---|
| 01 | Contributes 10% towards year mark (3% towards final mark) | MCQs and Research topic and method and declaration |
| 02 | Contributes 40% towards year mark (12% towards the final mark) | Research proposal |
| 03 | Contributes 50% towards year mark (15% towards the final mark) | Report including: a) detailed literature review and methodology b) estimation results (quantitative) and improved proposal (qualitative); c) Conclusions, recommendations and abstract |
| 04 | Contributes 70% towards year mark | Final research paper |

4 RESULTS AND DISCUSSION

The results suggest that the final marks of first-, second-, third and fourth assignment marks significantly impact the final mark (Table 4). This was obvious and expected looking at these assignments' weight contribution. The better the student performs in the assignments, the better the student's final mark. However, home language does not turn up as a contributor, because these students can be regarded as more senior and mature in their studies. Indeed, many of the students can be considered as studying part-time, and they may be active in an environment where English is the main language of communication.

Table 4: Ordinary least squares with final mark Hon_Ecn as dependent

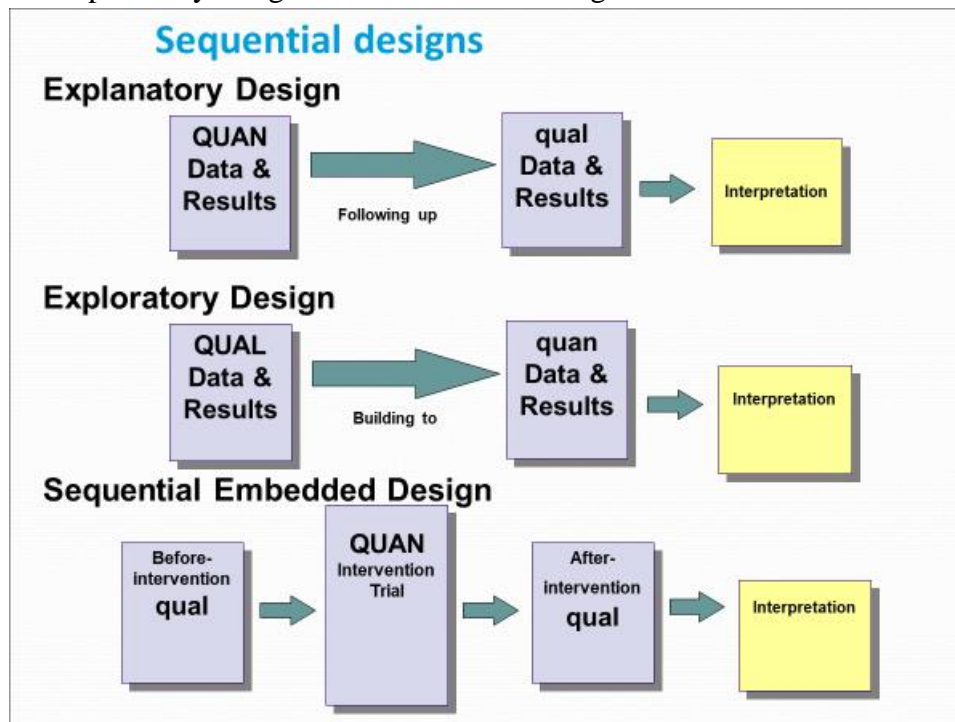
| Variable | Coefficient (2021) | Prob. |
|----------------------|--------------------|--------|
| C | -2.344034 | 0.0273 |
| FINMRK_B_Com_Average | 0.043496 | 0.0041 |
| DUM_FULL | 0.552986 | 0.2196 |
| DUM_HL | -0.586810 | 0.1959 |
| DUM_MALE | 0.173407 | 0.6025 |
| AGE | -0.008494 | 0.7335 |
| ASS 1 | -0.014382 | 0.0393 |
| ASS 2 | 0.033473 | 0.0019 |
| ASS 3 | 0.029938 | 0.0096 |
| ASS 4 | 0.960947 | 0.0000 |
| R-squared | 0.990123 | |
| Observations | 137 | |

Within age and the status of the student, full-time or part-time, the results tend to show insignificant outcomes. Existing knowledge from the B Com average shows significant results and confirm that pre-existing knowledge matter (Athey et al., 2007). The literature review in this paper also confirms the results. Our binary logit results turned out to be insignificant.

This study adopted a quantitative approach from secondary data. We hope to make it a mixed-methods study going forward. In this regard, we are hoping to collect primary data from the 220 registered Economics honours Unisa students of 2021 through a survey designed on Qualtrics.

This will also expand the research questions from demographic factors and subject knowledge including assignments to supervisor influence and other factors in terms of experience or belonging that play a role (see anonymous link at https://unisa.qualtrics.com/jfe/form/SV_9GFV9IKZuIk881U). Furthermore, this will also expand the study to include the drop out and retention factors. We are hoping to get more responses and feedback from this survey and

do more qualitative research in terms of this in future. This will make it a mixed-methods, sequential and explanatory design as seen in the next diagram.



5 CONCLUSIONS

The Economics honours research report module at Unisa aims to guide students in putting together a research paper that demonstrates their ability to conduct guided research in the local context. This paper analysed the determinants of factors that best explain student success and belonging in this module. This paper is divided into five sections. The first section describes the background and introduction. The second section presents a literature review. The third section describes the research methodology. The fourth section entails a summary of the results, and the last section concludes the study. The study employed a quantitative methodology with an econometric analysis of the dependent variable namely the final marks for the research report and the independent variables that explained it. The results show significance in terms of the assignments and existing knowledge marks in terms of their B Com average mark. However, demographic factors showed up insignificant, showing that other factors such as the supervision and the holistic experience (including belonging) become more important for postgraduate students. We have sent out a satisfaction survey to honours students to gain more insight and will in future extend the current study to mixed methods analysis. We hope to have more data analysis and results available during the conference in October 2022.

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VALIDATION OF THE DAILY SPIRITUAL EXPERIENCE SCALE IN A GROUP OF BLACK SOUTH AFRICAN STUDENTS

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ABSTRACT

This study aimed to validate the English version of the Daily Spiritual Experience Scale (DSES) in a group of $N = 324$ black South African students. Validation studies are important in Global South contexts, because they facilitate the broadening in understanding of psychological and psychometric phenomena, in general, and more specifically, validating psychometric instruments allows for a better understanding of psychosocial and existential phenomena in specific groups of people. Validation of the DSES was done by investigating its internal consistency, reliability, factorial validity, and convergent and divergent validity. The DSES had reliability of 0.85, a unidimensional factor structure, and showed convergent validity by significantly correlating with the Mental Health Continuum (MHC), and divergent validity by significantly correlating with the Patient Health Questionnaire (PHQ). The unidimensional, 16-item DSES is valid for use in a South African black student context as a domain general measure of spiritual experience.

Keywords: Compassion; daily spiritual experience; gratitude; love; mental health; spirituality; spiritual well-being; transcendence; well-being.

1. INTRODUCTION

Spirituality has gained traction in the field of positive psychology and well-being science, that aims to focus on supporting and encouraging positive internal resources by promoting subjective well-being and complete mental health (Seligman & Csikszentmihalyi, 2014). Spiritual well-being as a construct is continuously being theorised and clarified; initially, this occurred within the realm of religiosity but later, in the realm of spirituality and spiritual well-being (Pargament, 2007), and as an important component of complete mental health. The aim of this study was to validate the Daily Spiritual Experience Scale (DSES) (Underwood & Teresi, 2002) in a South African student group.

Spirituality, religiosity and spiritual well-being

Spirituality as an overarching site of inquiry has generally fallen within the disciplines of philosophy and theology, often grouped with religiosity, and placed within subjective well-being studies. However, spiritual well-being can rather be understood to fall within eudaimonic well-being that emphasises positive psychological functioning and meaning in life (Steger, Frazier, Oishi, & Kaler, 2006), gratitude, transcendence, and compassionate love (Underwood & Teresi, 2002). What follows is a brief description and definition of the constructs that are currently understood to form part of what is comprehensively known as spiritual well-being: spirituality, religiosity, spiritual well-being, and presence of mental health.

Spirituality

Spirituality and the experience of spiritual phenomena are present in the lives of most people (Emmons, 2000; Jantos & Kiat, 2007; Moberg, 1971; Underwood, 2006, 2011). Some facets of spirituality are often latently prevalent within interventions that promote well-being (Good & Willoughby, 2005; Piedmont, 1999; Underwood, 2011). Scientific studies that focus on spirituality have increased, and these studies are evidence that differences exist in conceptualising and operationalising the construct of spirituality. Despite these differences, the consensus is clear: spirituality plays an important positive role in enhancing individuals' well-being (Kalkstein & Tower, 2009; Moberg, 1971; Piedmont, 1999; Underwood, 2011; Underwood & Teresi, 2002). Emmons (2000) conceptualised spirituality as an intelligence with features such as transcendence and heightened states of consciousness and individual virtue sanctifying the mundane, as well as a source of problem-solving abilities in individuals. Wheeler, Ampadu, and Wangari (2002) further conceptualised spirituality as a social phenomenon, stating that spirituality is socially derived, inherently human, and functions as an internal psychosocial resource (Wheeler et al., 2002). Kalkstein and Tower (2009), therefore, emphasised that any definition of spirituality would have to be comprehensive and inclusive of context, practice, ritual, culture, as well as various other factors.

Religiosity and spiritual well-being

Literature on the conceptual distinction between spirituality and religiosity overlaps to a great extent, and research has found that spirituality and religiosity are statistically related (Dein, 2005; Hill et al., 2000). Hill et al. (2000) argued that a distinction between religiosity and spirituality should be approached with a deep understanding of the contextual overlap that exists in the nature and experience of spirituality and religiosity, while Hill and Pargament (2003), additionally, cautioned against separating the two constructs because doing so could yield superficial understanding of these concepts in the normal day-to-day lives of individuals. More specifically, Piedmont (2004) stated that spirituality is an individual attribute, and that religiosity, an institutional attribute. Good and Willoughby (2005) referred to spirituality as an individual's personal beliefs or intrinsic commitment to such beliefs; spirituality seems to be more inclusive in understanding the phenomenon of searching for the sacred, whereas religion refers to a search that is based specifically in traditional religious contexts and religious institutions. Spirituality and religiosity both comprise of a need to relate to a higher transcendent being or deity and, oftentimes, require an ability to transcend the self (Paloutzian & Park, 2005). Spirituality is concerned with the transcendent and addresses issues related to worldview and the meaning of life – it is possible to be spiritual while not being religious (Good & Willoughby, 2005; Underwood & Teresi, 2002). Sanchez, Arocena, and Ceballos (2010) found that those who were identified as atheist or agnostic, reported a higher frequency of spiritual experience. However, it is important to keep in mind that for most people, spirituality is often experienced within religious contexts (Hill & Pargament, 2003).

Spiritual well-being

Spiritual well-being is the perceived life-long presence (Moberg, 1984) and experience of transcendence, gratitude, and compassionate love in individuals' lives (Underwood, 2011). The prominent role of spiritual well-being, transcendence, and daily spiritual experience in general

health and wellness has been alluded to by previous research on spirituality (Moberg, 1971, 1984; Emmons, 2000; Jantos & Kiat, 2007; Underwood, 2011). Spiritual well-being is a predictor of positive outcomes, such as better performance of health behaviours and lowered alcohol intake (Kalkstein & Tower, 2009; Underwood, 2011), positive psychological adjustment (Van Dyke, Glenwick, Cecero, & Kim, 2009), decreased psychopathology (Kalkstein & Tower, 2009), decreased familial conflict (Kwon, 2008), and improved relational well-being (Kalkstein & Tower, 2009). Spiritual well-being is central in encouraging adaptive behaviour (Kalkstein & Tower, 2009; Underwood, 2011).

2. LITERATURE REVIEW

Traditionally, spiritual well-being has been measured along with religiosity or religious affiliation and participation. However, it is important to focus on spiritual well-being because it is increasingly found to be important for overall well-being. Some of the scales that measure spirituality are: The Spiritual Experience Index (SEI), that measures faith and the spiritual journey (Genia, 1991, 1997); the Spiritual Well-being Scale (SWBS), that focuses on perceived states of religiosity and existential well-being (Paloutzian & Ellison, 1982); and the Spiritual Health and Life-Orientation Measure (SHALOM) (Fisher, 2010, 2016), that aims to measure spiritual health or well-being by assessing quality of intra and interpersonal relationships as well as individuals' relationships with their immediate and extended socio-spiritual environments, including a relationship with a higher supernatural being (Fisher, 2010, 2016).

There are several psychometric instruments that specifically focus on examining the relationships between spirituality and psychological constructs; for example, between a daily spiritual experience and temporal changes (George & Park, 2013; Tong, 2017), alcohol abuse (Churakova, Burlaka, & Parker, 2017), meaning in life (George & Park, 2017; Meng & Dillon, 2014; Wnuk & Marcinkowski, 2014), as well as positive coping strategies such as managing burnout, life satisfaction, well-being, and prosocial behaviours (Underwood & Teresi, 2002; Underwood, 2011). The DSES has been consistently found to have a positive relationship with psychological adjustment (Underwood, 2006, 2011), and a negative relationship with maladaptive social behaviours (Lee, Veta, Johnson, & Pagano, 2014).

Daily Spiritual Experience (DSE)

The Daily Spiritual Experience (DSE) was conceptualised as part of understanding the non-religious spiritual experiences of individuals in healthcare settings, and in the individuals' general day-to-day lives (Underwood, 2006). The DSE considers individuals' perceptions of the transcendent in their day-to-day lives, with the focus being on the spiritual and experiencing spirituality, rather than religion or theistic affiliation and ritual (Underwood & Teresi, 2002). There are three important components of the DSE construct, namely: gratitude, transcendence, and compassionate love.

Gratitude

Gratitude is a state of appreciation for having received help which is perceived to be of great value (Wood, Froh, & Geraghty, 2010) and is accompanied by feelings of appreciation when experiencing altruistic deeds, helpfulness (Froh et.al, 2009), and can be directed inwards, towards objects, the metaphysical, and the spiritual. A trait level positive life orientation (Wood, Joseph,

Llyod, & Atkins, 2009; Froh et.al, 2009) and increased well-being, are features of gratitude (Winfield, 2013).

Transcendence

Transcendence is a core component of spirituality (Emmons, 2000) and spiritual well-being. Transcendence is inherent in individuals and is the sense of experiencing divinity or the divine. Transcendence can act as a source of motivation or innate need that influences behaviour (Piedmont, 1999, 2004). Kwon (2008), however, warned that seeking to continuously experience transcendence may lead to detachment from reality.

Compassionate love

Compassionate love is an altruistic love that extends to humanity, in general, and is defined as “a type of love that can be experienced for a variety of others, including all of humankind” (Sprecher & Fehr, 2005, p. 630).

In the seminal study, Underwood and Teresi (2002) found that the DSES had good construct validity when correlated with health and quality of life variables; a finding that was supported by research conducted by Kalkstein and Tower (2009). The DSES has been translated into various languages and validated in several populations globally (Underwood, 2011).

Complete mental health

Complete mental health is central to health, well-being, and policy. In its definition of overall health, the World Health Organization (WHO) includes complete mental health and social well-being as core indicators of general health and well-being. An individual is considered to have complete mental health when they are physically, mentally, and socially well; there should be a presence of health and not merely an absence of illness (WHO, 2007). Healthy individuals have agency and internal resources to manage and cope with daily stressors, and can contribute meaningfully to their communities (WHO, 2007). Galderisi, Heinz, Kastrup, Beezhold, and Sartorius (2017) state that mental health is a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society; they explain that basic cognitive and social skills – the ability to recognise, express and regulate emotions, ability to empathise, flexibility and an ability to cope with challenges, to function in social roles and harmonious relationship between body and mind – represent important components of mental health, which contribute to the state of internal equilibrium (2017, p. 408).

The complete mental health construct (Keyes, 2014) comprehensively includes emotional, psychological, and social well-being characterised by positive feelings (e.g., happiness; satisfaction), positive attitudes towards one’s own responsibilities and towards others, and positive social functioning (e.g., social integration, actualisation, and coherence). According to Keyes (2002), complete mental health manifests on a continuum of functioning, ranging from flourishing or feeling and functioning well, to languishing or feeling and functioning un-well. The complete mental health theory was operationalised by the Mental Health Continuum Scale, that is currently one of the most frequently used measurements of constructs such as flourishing, optimal mental health, psychological well-being and more (Khumalo, Wissing, & Schutte, 2014).

Measurement in different cultural contexts

Valid and reliable measuring instruments cannot be assumed to be appropriate in all contexts or across populations. This is an important consideration when using psychometric instruments because scale items may operate differently across cultures (De Kock, Kanjee, & Roodt, 2013), which could result in item bias. Measuring instruments should be validated for the populations for which they will be used (Cromhout, 2015), so that there is a reduction of implicit bias and language barriers. Such validation ensures fairness and cultural ‘fit’ of measurements (De Kock et al., 2013; Foxcroft & Roodt, 2009).

The aim of this study was, therefore, to validate the DSES in a black South African student group. The objectives were to investigate (1) the internal consistency reliability of the DSES, (2) the factorial validity of the DSES, and (3) the convergent and divergent validity of the DSES within a black South African student population.

3. METHODOLOGY

This study aimed to validate the English version of the DSES in a black South African student sample, by investigating the validity and reliability of the scale. The objectives set were to investigate: the internal consistency reliability of the DSES; the factorial validity of the DSES; and lastly, the convergent and divergent validity of the DSES.

3.1 Research design and sampling method

This study followed a quantitative approach (Creswell, 2013; Frels & Onwuegbuzie, 2013) with a cross-sectional design. Data was collected from black students at a South African university, by providing participants with a link to a survey that they completed in their own time, but within a set submission deadline. The sample consisted of $N = 324$ participants between ages 18 and 44 (male = 140; female = 184; mean = 1.57; $SD=0.50$), enrolled in different courses at different levels of study. All survey items were in English as it is the language of teaching and learning at this university.

3.2 Data collection

Data collection was carried out through a biographical questionnaire about gender, population group, and religious affiliations, as well as the following validated questionnaires: The Daily Spiritual Experience Scale (DSES) (Underwood & Teresi, 2002); the Mental Health Continuum – Short Form (MHC-SF) (Keyes, 2002, 2006; Keyes et al., 2008); and the Patient health questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001).

Daily Spiritual Experience Scale (DSES)

Underwood and Teresi’s (2002) DSES is a 16-item scale measuring daily spiritual experience (DSE). The DSES taps into dimensions of spirituality such as mercy, gratitude, awe, and a sense of connection with the transcendent, including feeling compassionate love. Participants are asked to indicate how often they have experienced an item; leeway is given to participants who do not identify with a deity, and they are encouraged to substitute another word that calls to mind the divine or holy for them (Underwood & Teresi, 2002). This unidimensional scale has been validated in several populations globally (Underwood, 2011). In a Chinese group, the DSES was found to

be valid and reliable (Cronbach alpha was 0.97) (Ng et al., 2009), and in a Brazilian sample, the scale was found to have temporal stability (Kimura et al., 2012). In a review of the use of the scale, Underwood (2011) found evidence of good psychometric properties and internal consistency with high validity and reliability scores (Cronbach alpha above 0.90). The DSES has been found to have good construct validity when correlated with measures of positive well-being, as was reported by Underwood and Teresi (2002), as well as in later research by Kalkstein and Tower (2009). The DSES has not been used for research in the South African context; this study was the first in validating the scale (Shube, 2020).

Mental Health Continuum– Short Form (MHC-SF)

The MHC-SF, developed by Keyes (1998, 2002, 2006), is a 14-item questionnaire measuring positive mental health. It has a three-dimensional factor structure which consists of emotional well-being (EWB; 3 items), psychological well-being (PWB; 6 items), and social well-being (SWB; 5 items). This three-dimensional factor structure has been confirmed in multiple countries across the world, including the United States of America (Keyes, 2002), the Netherlands (Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011), and South Africa (Keyes et al., 2008). The MHC-SF has been found to be reliable (0.57 and 0.71) with adequate construct validity (Keyes, 2002, 2006). Lamers et al. (2011) found that among a Dutch sample, the MHC-SF had high test-retest reliability over time. Specifically, in relation to the context of this study, the MHC-SF has been validated and found reliable (reliability score of 0.74) and valid in a South African youth population (Keyes et al., 2008). The three subscales of the MHC-SF have shown positive correlations with other measures of positive mental health, such as improved health, and overall improved adaptive behaviour (Liang, Tracy, Kenny, Brogan, & Gatha, 2010).

Patient Health Questionnaire (PHQ-9)

The Patient Health Questionnaire (PHQ-9, developed by Kroenke et al. (2001), is a 9-item scale used to assess symptoms of depression and other mental illnesses encountered in healthcare settings. The scale is unidimensional and measures symptoms of depression according to nine criteria of the *Diagnostic and Statistical Manual IV (DSM-IV)*. Along with these nine items, the PHQ-9 has an additional item that evaluates the influence of depression experienced in everyday life. The PHQ-9 had an internal consistency reliability of 0.89 and 0.86 in the initial validation studies (Kroenke et al., 2001), and has been validated for use in different contexts, including predominantly African populations (Adewuya, Ola, & Afolabi, 2006; Richardson, McCauley, & Grossman, 2010). Adewuya et al. (2006) validated the PHQ-9 for use among Nigerian students, where the test-retest reliability indices of the PHQ-9 have consistently been found to be above 0.65 (Adewuya et al., 2006; Kroenke et al., 2001; Richardson et al., 2010). The PHQ-9 has also been used in South African research by Botha (2011), Cromhout (2015) and Smith (2018), who all reported high reliability for the scale.

3.3 Data analysis

Data was analysed in four stages using the Mplus Version 8.2 statistical analysis software program (Muthén & Muthén, 1998-2017). Descriptive statistics were calculated, and confirmatory factor analysis was done to establish factorial validity and internal consistency reliability. Convergent validity was established by correlation patterns between the scores of the DSES and the subscales

of the MHC-SF (EWB, PWB, SWB). Divergent validity was established by correlation with a depression measure (PHQ-9).

4. RESULTS

4.1 Descriptive statistics, reliabilities, and correlations

In Table 1a, descriptive statistics, reliabilities, and correlations for *convergent validity* of the DSES are given, while in Table 1b, descriptive statistics, reliabilities, and correlations for *divergent validity* of the DSES are provided. SPSS 25 (IBM Corporation, 2017) was used to calculate means and standard deviations, while MPlus 8.2 (Muthén & Muthén, 1998-2017) was utilised for all other analyses. The mean scores of scales and sub-scales ranged between 2.53 for MHC-SWB, and 3.85 for MHC-PWB, with standard deviations of 0.61 for the PHQ ranging to 1.08 for MHC-SWB (see Tables 1a and 1b). These indices compared well with those reported in literature for the DSES, the MHC-SF, and the PHQ-9 (Keyes, 2002, 2006; Keyes et al., 2008; Kroenke et al., 2001; Underwood, 2011).

Table 1a: Descriptive statistics, reliabilities, and correlations for convergent validity

| Variable | M | SD | ρ | Corr (DSES) |
|-----------------------------------|------|------|--------|-------------|
| DSES | 3.63 | 0.62 | 0.85 | 1.00 |
| MHC-SF - Complete | 3.31 | 0.77 | 0.84 | 0.32†** |
| MHC-SF - Emotional well-being | 3.52 | 1.04 | 0.74 | 0.23** |
| MHC-SF - Psychological well-being | 3.85 | 0.82 | 0.76 | 0.30** |
| MHC-SF - Social well-being | 2.53 | 1.08 | 0.74 | 0.16* |

* $p < 0.05$ ** $p < 0.01$ † $r > 0.30$ = medium practical affect

Table 1b: Descriptive statistics, reliabilities, and correlations for divergent validity

| Variable | M | SD | ρ | Corr (DSES) |
|----------|------|------|--------|-------------|
| DSES | 3.63 | 0.62 | 0.85 | 1.00 |
| PHQ | 2.00 | 0.61 | 0.81 | -0.02 |

Internal consistency reliability of the DSES, calculated with MPlus 8.2, is a composite reliability value with the same preferred cut-off values as Cronbach's alpha (0.70) (Muthén & Muthén, 1998-2017). Therefore, as shown in Tables 1a and 1b, the reported reliability indices (ρ) for the DSES, the MHC-scales and the PHQ, that were between 0.74 (MHC-EWB) and 0.85 (DSES), could be considered as acceptable (Raykov, 2009).

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4.2 Factor structure of the DSES

The factor structure of the DSES, as depicted in Table 2, was verified by means of MPlus 8.2 (Muthén & Muthén, 1998-2017), using confirmatory factor analysis (CFA). The robust maximum likelihood (MLR) estimator was used due to skewness and kurtosis present in the data. To determine fit, the following indices were reported: χ^2 with its associated degrees of freedom; the MLR-adjusted χ^2 ; the comparative fit index (CFI) and the Tucker-Lewis index (TLI), both with values >0.90 , indicating acceptable fit; the root mean square error of approximation (RMSEA),

for which 0.05 – 0.08 is seen as a range of excellent to acceptable fit; and the standard root mean square residual (SRMR), with less than 0.08 indicating a good fit (Wang & Wang, 2012).

Table 2: Fit statistics of confirmatory factor analysis of DSES

| Model | χ^2 | df | MLR-adjusted χ^2 | CFI | TLI | RMSEA | SRMR |
|-------|----------|-----|-----------------------|------|------|-------|------|
| DSES | 204.01 | 101 | 251.92 | 0.92 | 0.90 | 0.06 | 0.05 |

χ^2 = Chi-square; df = degrees of freedom; MLR = Maximum Likelihood (Robust) estimator; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Table 2 displays these fit values that indicate a good statistical fit and confirms the unidimensional factor structure of the DSES as proposed by Underwood and Teresi (2002).

4.3 Convergent and divergent validity of the DSES

Convergent validity

A measurement model containing only the DSES items and the MHC-SF items (EWB, SWB and PWB combined into an MHC second order latent variable) was specified to check for model fit. It was found that items 13 and 14 of the DSES, and item 4 of the MHC-SF had low factor loadings (<0.35), and the error variances of DSES 13 and MHC 4 showed a high modification index. As a result, these three items were removed from further analyses. Error variances were, however, allowed to correlate between DSES 1 and 2, DSES 4 and 5, DSES 10 and 11, and MHC 11 and 14. The developed measurement model (see Table 3a) showed good fit and a significant correlation of 0.32** (see Table 1a), between the DSES-factor and the MHC-factor, proving convergent validity of the DSES.

The process was repeated, but with EWB, SWB, and PWB specified without an MHC second order latent variable. This was done to determine possible convergent validity between the DSES and the three factors (EWB, PWB, SWB) underlying a total well-being score. The same items were removed, and the same error variances allowed to correlate. The model showed good statistical fit. Significant correlations (see Table 1a) were found between the DSES-factor and the three separate factors of the MHC, further confirming convergent validity, even though SWB showed a correlation at a lower level of significance ($p < 0.05$) than EWB and PWB ($p < 0.01$). Table 3a shows the fit statistics of the measurement models for convergent validity, where Model 1 represents the measurement model including the second-order latent variable MHC, and Model 2, the measurement model with the three latent variables (EWB, PWB, SWB) specified separately.

Table 3a: Fit statistics of measurement models for convergent validity

| Model | χ^2 | df | MLR-adjusted χ^2 | CFI | TLI | RMSEA | SRMR | Model | χ^2 |
|---------|----------|-----|-----------------------|----------|----------|-------|------|-------|----------|
| Model 1 | 527,22 | 316 | 605,67 | 25142,14 | 25478,35 | 0,91 | 0,90 | 0,05 | 0,06 |
| Model 2 | 524,26 | 314 | 602,69 | 25143,18 | 25486,94 | 0,91 | 0,90 | 0,05 | 0,06 |

Table 3b: Fit statistics of measurement model for divergent validity

| Model | χ^2 | df | MLR-adjusted χ^2 | CFI | TLI | RMSEA | SRMR | Model | χ^2 |
|---------|----------|-----|-----------------------|----------|----------|-------|------|-------|----------|
| Model 3 | 390,62 | 224 | 439,10 | 19266,21 | 19549,53 | 0,92 | 0,90 | 0,05 | 0,06 |

χ^2 = chi-square; df = degrees of freedom; MLR = Maximum Likelihood (Robust) estimator; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual

Divergent validity

A measurement model containing the DSES and PHQ one-factor structures was specified to determine model fit (see Table 3b). As before, DSES items 13 and 14 were removed to determine divergent validity. The same error variances for the DSES items could correlate (DSES 1 and 2, DSES 4 and 5, and DSES 10 and 11). No PHQ items proved problematic, but two error variances were also allowed to correlate (PHQ 3 and 4, and PHQ 6 and 9). The subsequent measurement model showed good fit, as well as a non-significant correlation (close to 0.00) between the DSES-factor and the PHQ-factor, confirming the divergent validity of the DSES.

5. DISCUSSION

The main finding was that the unidimensional 16-item DSES had good psychometric properties and, therefore, met the criteria for validation in this group of black South African students. In determining the internal consistency reliability of the DSES, it was found that the scale in this study had a α -value of 0.85, which is comparable to a Cronbach alpha value, and could be considered as good (Raykov, 2009). This finding corresponds to reliability indices found by Underwood and Teresi (2002, 2011), ranging from 0.91 to 0.95 in three validation studies of the DSES.

In determining the factorial validity of the DSES, the one factor model of the 16-item DSES showed good statistical fit with data from this group of participants and supported the factor structure intended by Underwood and Teresi (2002), who developed the DSES. The single factor structure of the DSES has been translated (Ng et al., 2009) and used in various populations and contexts (Kimura et al., 2012; Underwood 2011).

Finally, to determine the convergent and divergent validity of the DSES, the scale had significant positive correlations with a measure of complete mental health, namely the MHC and its subscales for emotional well-being, psychological well-being, and social well-being. The DSES also had no (nil) significant correlations with a measure of symptoms of pathology, namely the PHQ-9. These findings, respectively, clearly indicated the convergent and divergent validity of the DSES in this research and correspond with those of Kimura et al. (2012), Ng et al. (2009), and Underwood (2011). The significantly positive correlations of the DSES with the MHC-complete (which is also of medium practical effect), and with the subscales measuring emotional, psychological, and social well-being, seem to indicate the relevance of the daily spiritual experience construct in the fields of psychological, spiritual, and relational well-being (Wheeler et al., 2009; Khumalo et al., 2014).

The DSES significantly positively correlates with psychological well-being; this implies that in this group of African youth, spiritual well-being contributes to experiences of self-acceptance, positive inter-personal relations, autonomy, environmental mastery, and personal growth. Different dimensions of spirituality and making use of different pathways can result in different psychological well-being outcomes. Such mechanisms – by means of which spirituality leads to well-being – would explain the dynamic interrelatedness of spirituality and well-being (Khumalo et al., 2014). Khumalo et al. (2014) found that meaning in life is one such factor that could explain the beneficial influence of spirituality on psychological well-being. Aspects such as hope, satisfaction with life, quality of life, and perceived social support have also been found as mediating factors in the spirituality-well-being relationship (Park, 2007; Steffen, 2012; Underwood, 2011).

The DSES also correlated significantly positively in this study, with emotional well-being, or the feeling good component of the MHC. Ciarrocchi and Deneke (2005) found that a daily spiritual experience was linked to improved emotional health of prisoners and, in a review study, Counted Possamai and Meade (2018) found that spirituality is beneficial for emotional well-being, because it acts as an internal locus of control in emotional regulation. Wheeler et al. (2002) argued convincingly about the role of spirituality in emotional development throughout the lifespan of the African individual, about the necessity of spirituality, and especially daily spiritual experience.

Furthermore, in this study, the DSES had a significant positive correlation with social well-being as a component of complete mental health. This implied that in this group of African students, their spiritual wellness – in the form of daily spiritual experience – contributed to them experiencing social coherence, actualisation, integration, acceptance, and social contribution (Keyes, 2006). Philosophically, this is confirmed by the views of Wheeler et al. (2002), who place spirituality at the centre of the collective (socially bounded) worldview of African people. According to their view, spirituality “tells the individual that s/he exists in and because of community” (p. 77). Through this awareness of their social connectedness, the individual has confidence in themselves, and the courage to conduct themselves within the community. In empirical research, Underwood (2002) found spirituality to be associated with perceived social support, and Kassin, Fein, and Markus (2014) cited research indicating socially constructed religious rituals that provide “a community lifeline of social support to prevent isolation and promote a safe and healthy way of life” (p. 602). Spirituality seemingly also works through features such as hope (Herth, 2001) and optimism (Pargament & Mahoney, 2009), towards social well-being.

The relationship between spirituality and positive mental health reported above, was succinctly captured by Ellison (1983, p. 332), in saying that, “if we are spiritually healthy, we will feel generally alive, purposeful, and fulfilled, but only to the extent that we are psychologically healthy as well”.

Finally, although the DSES in this study had no correlation with a measure of pathology, including symptoms of mood disorders, it could be noted that daily spiritual experiences are often included in interventions to alleviate mood disorders such as depression and anxiety (Mofidi et al., 2006; Underwood, 2011). Follow up research on such interventions showed the positive effect of DSE on mood disorders (Mofidi et al., 2006; Han & Richardson, 2010), and on physical conditions (Koenig, George, & Titus, 2004; Blumenthal et al., 2007; Fombuena et al., 2016). This study, to validate the DSES for use with a group of black South African students, found that the scale was valid for use within this context.

6. CONCLUSION

Spiritual well-being is an important part of well-being, and it is thus important that measuring instruments for it are valid and reliable. This study investigated the psychometric properties of the DSES in a black South African student context, by examining the internal consistency reliability and the criterion-related validity of the DSES. The scale has met validity criteria and proved to be psychometrically sound for research in a South African context. This indicates that the DSES is of general use in the current context as a domain-general measure of spiritual experience in daily life and can be recommended for further research in spiritual or well-being studies.

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PERCEIVED OBSTACLES FACED BY SMALL AND MEDIUM-SIZED ENTERPRISES: A CROSS-COUNTRY STUDY

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ABSTRACT

It is a well-known phenomenon that small and medium-sized enterprises (SMEs) worldwide play an important role in many economies. This sector is imperative for both individuals and the nation at large. Contributions are made on two fronts: (i) for individuals, SMEs provide employment and raise the living standards of the employees and (ii) for the nation, they complement the large scale of modern sector enterprises, make use of the raw materials that otherwise would not have been used and mobilise other resources required in the process of running the business. Governments have prioritised the support of this sector, but SMEs still face numerous obstacles, notably the lack of marketing skills, lack of access to finance and problems with electricity supply. The overall purpose of the study was to explore the perceived obstacles faced by SME owner-managers in South Africa and China. The rationale for a cross-country study was to understand the experiences of SME owners and how differently the obstacles affect entrepreneurial activities in the two countries. The rationale seems to be obvious; however, the notion was that the experiences of the two countries might be different and the entrepreneurs from the two countries could yield some positive spin-offs on how SME owners manage to run their businesses successfully and grow their profits. Understanding the experiences shared by the SME owners who participated in the study could enhance and enable other or nascent entrepreneurs to overcome the obstacles. In operationalising the research, the researcher adopted a quantitative research approach that was cross-sectional in nature. Quantitative data were collected from SME owner-managers in South Africa and China. 400 questionnaires were distributed in each country, equating to 800 distributed questionnaires. Upon completion of the data collection process, 401 questionnaires were returned and usable. In managing data and their analysis, the researcher used the statistical software packages Epi-Info and Stata V15. SME owner-managers identified factors perceived to be obstacles in the running of their businesses. The findings reveal that factors such as unreliable electricity supply, lack of access to finance, as well as lack of marketing skills are obstacles for SMEs. It further emerged that lack of government agency support is a major factor, especially in South Africa where the majority of respondents believed that they did not get support from the agencies. It is strongly recommended that SME owner-managers devise effective strategies to overcome these obstacles if they anticipate succeeding in pursuing their businesses.

Keywords: China, constraints, economic growth, employment, obstacles, SMEs, South Africa

INTRODUCTION

It is a well-known phenomenon that small and medium-sized enterprises (SMEs) worldwide play an important role in many economies. This sector is imperative for both individuals and the nation at large. Contributions are made on two fronts (Kamunge, Njeru, & Tirimba, 2014): (i) for individuals, SMEs provide employment and raise the living standards of the employees and (ii)

for the nation, they complement the large scale of modern sector enterprises, make use of the raw materials that would otherwise not have been used and mobilise other resources required in the process of running the business. SMEs contribute to economic growth, job creation and poverty alleviation (Abebaw, Mulate, & Nigussie, 2018; Sitharam & Hoque, 2016). Bilal and Mqbal (2015) argue that SMEs play a pivotal role in the growth and development of any economy. As a result of contributions made to individuals through employment and to the nation, SMEs create a significant amount of revenue in the country, which increases the GDP. In order to ensure the sustainability of the contributions made, it is important to support them so that they are successful in their endeavours.

Though the contributions of small businesses to economic development are generally acknowledged, these businesses face many challenges and obstacles that limit the prospects of their long-term survival (Abebaw et al., 2018). Scholars such as Bilal and Mqbal (2015) posit that SMEs are faced with an array of challenges characterised by difficulty to acquire finance, heavy costs of compliance, lack of marketing skills and lack of information. Kuratko and Hodgetts (1995) and Noshad, Amjad, Shafiq and Gillani (2019) share similar sentiments in their studies in which they identify the most common obstacles as technical competence, tolerance of failure, internal locus of control, human relations and high achievement drive. Shakantu and Shakantu (2007) and Nkwabi and Mboya (2019) maintain that SMEs face many constraints in the pursuit of their businesses, for instance, lack of skills of employees, political constraints, inadequate technology, lack of equipment, lack of infrastructure, shortage of collateral, corruption and difficulty getting raw materials. These factors seem to hamper the success of businesses and therefore it becomes important for SMEs to have strategies to overcome these types of obstacles. The purpose of this study was to explore the perceived obstacles faced by SMEs in South Africa and China. The choice of these countries was aimed at understanding the importance of converging and diverging peculiarities of entrepreneurship drive and challenges. South Africa and China have very wide economic variations (Rankhumise & Masilo, 2017) and this study aimed at unravelling different challenges faced by the SMEs in these countries. Considering that China has developed substantially in terms of entrepreneurial activities, South Africa can learn a great deal from Chinese practices. This is congruent with what Ahlstrom and Ding (2014) say, namely that it is essential to understand entrepreneurship in China and transfer that experience to other developing countries on how to remove the obstacles and improve business operations. It was therefore vital to understand how differently the obstacles affect entrepreneurial activities in the two countries.

LITERATURE REVIEW

Worldwide, scholars have presented several issues pertaining to the obstacles experienced by SMEs. Quite a few of these studies rank the SME obstacles in terms of their impact on business operations (Rahman, Yaacob, & Radzi, 2016). Scholars such as Ramukumba (2014) argue that SMEs in South Africa face some challenges, such as lack of managerial skills, problems in obtaining finance and credit, access to markets, appropriate technology and support for the role they play in economic development. Similarly, further obstacles experienced include lack of enabling environments and procedural knowledge and requirements on how funding can be obtained. Further studies (Ensari & Karabay, 2014) found that several factors such as shortage of resources and lack of managerial expertise and technical competencies of the owners are believed to be obstacles to the success of SMEs. It was also found that for businesses to flourish, the

business environment needs to be conducive to their business operations (Maye, 2014). Other key findings are lack of skilled staff, burdensome regulations, local economic conditions, lack of finance and heavy labour cost. Previously South Africa's labour force was dominated by unionised employees and the unions had negotiation rights for better wages for their constituencies. This situation has since changed due to the decline in the membership of unions. Due to high labour costs and the minimum wage determination in both countries, SMEs are unable to employ many job seekers.

Rankhumise and Masilo (2017) maintain that SMEs do not always succeed in attempting to secure start-up funding, and as such, they end up getting start-up capital from their savings and with friends' assistance. According to Hogan, Hudson and Drnevich (2016), securing start-up funding to establish and grow an entrepreneurial venture through its developmental stages is the major obstacle for start-up firms and it impacts their success and substance.

Mnisi and Rankhumise (2015) in their study identified several internal factors that serve as obstacles for businesses to succeed:

- *Lack of managerial skills* – Managerial skills are important in running and managing a business successfully. Owner-managers need to have experienced insight in planning, conceptual skills, communication and decision-making skills. Accordingly, managerial competencies could have a positive influence on the performance of SMEs, as advocated by Sitharam and Hoque (2016). In essence, managerial skills have to do with the manager's ability to execute the functions of the organisation, i.e. planning, organising, leading and control.
- *Lack of functional skills* – These skills are critical for the success of the business. Important to note is that SME owners should be able to understand the functions of the enterprise, i.e. administration, marketing, financial and human resources and so forth. SME owners should be able to plan properly for the business activities and to organise the resources required in the business.
- *Poor planning* – Kambwale, Chisoro and Karodia (2015) and other scholars attest that lack of planning is a major obstacle that may lead to business failure. Notably, in all aspects of business, planning plays a fundamental role in providing direction on how the planned activities would be achieved and the resources required to accomplish the activities.

Lack of proper infrastructure is another obstacle identified by Kinyua (2014) as a factor that could hamper SMEs in carrying out their activities successfully. Importantly, a spatial planning approach could ensure that there is an efficient use of available infrastructure and other resources.

Meyer and Meyer (2017) claim that there are major challenges faced by SMEs which have an impact on SME development in South Africa:

- *Lack of access to finance and credit resources* – In this regard, many businesses struggle to secure finance and in many cases, if not all, the owners use their savings to start their businesses. This is because commercial banks require collateral security for the loans (Bilal & Mqbali, 2015).
- *Business management skills* – For businesses to prosper in their activities, business owners need to be well versed in the management of SMEs. These relate to skills, such as communication, problem-solving and decision-making, and could assist SME owners in understanding how to start, manage and run a business venture.

- *Poor infrastructure* – Access to proper infrastructure is pivotal for the success of the business. This relates to physical property, transport, water, electricity and roads (Meyer & Meyer, 2017). In a similar vein, the Bureau for Economic Research (BER) (2016) indicates that lack of access to physical infrastructure is a key obstacle to business growth and adds to the costs of doing business. Small businesses in Gauteng are struggling to find physical space in which to operate their business, and in the North-West, businesses experience power supply interruptions (BER, 2016).

Bushe (2019) also shares similar sentiments that SME owners would run their businesses successfully if the infrastructure in the economy supported their endeavours instead of hampering their efforts.

Based on the above, it is imperative to address the identified challenges by SME owner-managers. Notably, some of these issues should have been identified at the inception of the business and should have been addressed accordingly.

Muriithi (2017) conducted a study among African SMEs and found that the following were some of the factors perceived as hindrances to the success of the businesses:

- *Electricity supply* – The supply of electricity to SMEs is key for their operations. A lack of electricity supply can prevent the business from operating at optimal capacity. There is either no electricity supply and/or there is continuous disruption due to load shedding, especially in South Africa. Arguably, to run a 21st century business, it is important to have a steady electricity supply in order to operate optimally, regardless of the type of business.
- *Poor management* – Worldwide, a major challenge facing SMEs is poor management. This is because some SME owners or managers lack managerial expertise, which will ultimately affect operations. Poor management could be as a result of lack of education and training. With poor or no management, SMEs are likely to experience challenges, which will impact negatively on the success of the business in terms of managing the affairs of the business and money generated.
- *Competency and capability* – These are associated with the owners' knowledge, skills and experience. When these owners are lacking in these aspects, they may struggle to operate their businesses successfully. To this end, Fatoki and Gware (2010) explain that “management capacities are sets of knowledge, skills and competencies that can make the small firm more efficient”. The reason for the continued lack of the aforementioned elements is that most SME owners start a business out of desperation and as such, they are unable to plan and even mobilise resources effectively.

Although China's labour force is not unionised and their cheaper labour has been harmonised through the national and regional authorities, the cost of labour has become more expensive (Ling, Yusof, Mahmood, & Soon, 2014) as well. SMEs in China have significant potential to create employment opportunities because of labour-intensive industries (Yang, 2015; Luo *et al.*, 2009). Luo *et al.* (2009) argue that the majority of firms enjoy a significant labour cost and this has been a driving force for many sectors in China. This notion has enabled SME owners to employ a sizable number of employees, decreasing the number of unemployed citizens.

Furthermore, Yang (2015) posits that Chinese SMEs, under a new normal economy, experience obstacles such as innovation in capabilities, which means that they need to focus mostly on product

renewals and reduce production costs. The new normal economy is a concept developed by President Xi Jinping which denotes the following: (i) Slowing down the speed of growth, from very high speed to medium-high speed, (ii) upgrading the structure of the economy and (iii) increasing demand for the service industry. Another obstacle is financing, and this persists despite the efforts made by the Chinese government to implement favourable loan and taxation policies to aid the SMEs.

Other studies have identified some obstacles hampering the success of SMEs worldwide. For instance, Ahlstrom and Ding (2014) point out that Chinese entrepreneurs face critical challenges such as limited access to credit. Cong (2009) asserts that very few of China's millions of SMEs obtain formal financing. Lam and Liu (2020) in their study similarly found that SMEs in China face access to financing as a major problem. It emerged that access to finance differs from one region to another; for instance, firms in large cities tend to have better financial access than those in smaller cities. Muriithi (2017) agrees that the growth of SMEs in Africa needs an adequate supply of capital, and this seems to be a major hindrance to SMEs' survival and possible prosperity. Rankhumise and Masilo (2017) concur with the aforementioned scholars and say that when applying for loans, SMEs are not always successful. Some of the reasons provided include lack of collateral and lack of identification of the market. It should further be emphasised that banks in South Africa are not convinced to invest in SMEs, and the same applies in China (Yang, 2015).

Noshad *et al.* (2019) also identify some obstacles hindering the prosperity of SMEs, one being insufficient and poor infrastructure which could impact SMEs, especially in the BRICS countries with specific emphasis on Chinese SME owners. In this regard, most profit-seeking businesses are restricted due to inadequate infrastructure. Ordinarily, poor infrastructure could include bad road conditions, lack of electricity and lack of suitable workplace.

RESEARCH DESIGN AND METHODOLOGY

In operationalising the research, the researcher adopted a quantitative research approach which was cross-sectional in nature (Collis & Hussey, 2014). In a cross-sectional study, researchers take surveys at a single point in time (Letsoalo, 2017). In South Africa, the researcher personally distributed the questionnaires to the participants. In China, the questionnaires were distributed by the coordinators using QR (WeChat), which is an electronic means used throughout China for surveys. The sample consisted of SME owner-managers in China and South Africa. The study was conducted in Limpopo and Mpumalanga provinces of South Africa, and in Xian and Shanghai in China. China has over 40 million SMEs and South Africa over 25 million. Therefore, the sample size of the SMEs was restricted to 800. The reason for focusing on 800 was financial constraints. A total of 400 structured questionnaires were distributed in each country by fieldworkers, totalling 800 distributed questionnaires (De Vos, Strydom, Fouché, & Delport, 2011). A convenience sampling technique was used for the study since it was not possible to include every SME owner-manager with the almost infinite population (Etikan, Musa, & Alkassim, 2015). This non-random sampling included the members of the target population that met certain practical criteria, for instance accessibility, geographical proximity, willingness to participate in the study and availability at a given time. The research collaborators in China had to make appointments with the SME owner-managers and similar arrangements were made in South Africa. A total of 401

questionnaires were returned that were usable, representing a response rate of 50.1%. In the process of managing data, the researcher used the Epi-Info statistical software package for data capturing. This software was regarded as appropriate for capturing and managing data due to its functionalities. It should further be noted that a number of data capturing programs exist, inter alia Notepad and Excel. It was the researcher’s choice to use the aforesaid software and Stata V15 was used for data analysis. Stata was preferred to other statistical analysis software because of its functionalities such as a version-control system enabling syntax to be saved and the analyst being able to check the theory behind the results before producing the final statistical report. Both descriptive and inferential statistics were computed. For internal consistencies of the questionnaire, Cronbach’s alpha was used (Tavakol & Dennick, 2011) and a cut-off point of 0.7 was taken as the baseline. Pearson’s chi-square test was used to test for association. The interpretation of the results was performed at a 0.05 error rate. In other words, the association was declared significant if the observed p-value was less than a nominal 0.05.

RESULTS AND DISCUSSIONS

Sample realisation

The results of the study are presented as aggregate proportions of the two countries and therefore only overall results for each variable per country are presented as reflected in Table 1 below. Data were collected from 401 respondents from South Africa and China. Most of the respondents (266; 66.33%) were from South Africa and China accounted for 135 (33.67%). Most of the businesses were owned by males: South Africa 59.02% and China 62.22%. The results show that most of the sampled businesses provided services, with South Africa at 52.65% and China at 40%. This was followed by retailers: 26.14% from South Africa and 25.93% from China. Businesses in manufacturing and other sectors were 9.85% and 11.36%, respectively, in South Africa and 13.33% and 20.74%, respectively, in China.

In terms of source of capital, it emerged that most of the SME owner-managers used their savings. The highest level of personal savings (71.97%) was found in South Africa compared to 51.85% in China. 21.97% of South African SMEs and 15.56% of Chinese SMEs used family investments. A low proportion of the businesses were able to acquire capital from the bank: a mere 3.79% for South African SMEs and 19.26% for Chinese SMEs. Government grants and other sources ranked the lowest, with only 0.38% for South African SMEs and 1.48% for Chinese SMEs. The level of support is therefore very low in each country in terms of acquiring capital from banks. Lastly, South African (1.89%) and Chinese (11.85%) SME owner-managers received finance from other sources. The findings reveal that in both countries, most of the respondents had no prior experience of how to run a business, as reflected in Table 1. The results suggest that this aspect was similar for both countries, 67.70% for South Africa and 66.15% for China.

Table 1: Characteristics of SME owner-managers

| Variables | South Africa | | China | |
|---------------|--------------|------------|------------|------------|
| | Frequency | Percent | Frequency | Percent |
| Gender | | | | |
| Male | 157 | 59.02 | 84 | 62.22 |
| Female | 109 | 40.98 | 51 | 37.78 |
| Total | 266 | 100 | 135 | 100 |

| Variables | South Africa | | China | |
|----------------------------------|--------------|------------|------------|------------|
| | Frequency | Percent | Frequency | Percent |
| Type of business | | | | |
| Manufacturing | 26 | 9.85 | 18 | 13.33 |
| Service | 139 | 52.65 | 54 | 40 |
| Retail | 69 | 26.14 | 35 | 25.93 |
| Other | 30 | 11.36 | 28 | 20.74 |
| Total | 264 | 100 | 135 | 100 |
| Source of funding | | | | |
| Personal savings | 190 | 71.97 | 70 | 51.85 |
| Family investment | 58 | 21.97 | 21 | 15.56 |
| Bank | 10 | 3.79 | 26 | 19.26 |
| Government grant | 1 | 0.38 | 2 | 1.48 |
| Other | 5 | 1.89 | 16 | 11.85 |
| | 264 | 100 | 135 | 100 |
| Prior business experience | | | | |
| No | 174 | 67.70 | 86 | 66.15 |
| Yes | 83 | 32.30 | 44 | 33.85 |
| | 257 | 100 | 130 | 100 |

Some of the respondents did not complete the questionnaire in its entirety. These missing values (less than 10%) were all included in the data analysis as zeros (Ploum, Blok, Lans, & Omta, 2018).

To assess scale reliability, Cronbach's alpha was computed to test for internal consistency. A cut-off point of 0.7 has been used as an acceptable value by various scholars (Hair, Black, Babin, & Anderson, 2010; Lance, Butts, & Michels, 2006).

It is noticeable from Table 2 that most of the South African respondents (76.09%) indicated that access to finance was a major obstacle to business success (China: 23.91%). This indicates that there is a significant association between the respondents from the two countries ($p < 0.0001$). In other words, the respondents of the two countries had significantly differing views on access to finance as an obstacle to business prosperity. This confirms what scholars such as Lam and Liu (2020) found in their study. It could be deduced that access to finance is seen as a challenge to the prosperity of SMEs, particularly in South Africa.

It was further revealed that access to electricity was not regarded as an obstacle, with South Africa at 59.31% and China at 40.69%. Therefore, there was a significant association ($p = 0.004$) between the participants in the two countries regarding access to electricity. Respondents had different views regarding access to electricity as an obstacle to the running of the business. This finding is contrary to what Noshad *et al.* (2019) found, namely that ease of access to electricity has a negative effect on the performance of businesses.

The respondents from both countries perceived the lack of equipment as a minor obstacle to the success of their businesses. There is a significant association ($p = 0.001$) between the respondents, with more South African respondents (67.42%) considering the lack of equipment as a minor obstacle than Chinese respondents (32.58%). The fact that lack of equipment was regarded as a minor obstacle could be a result of the types of business activities performed by the businesses surveyed, i.e. the majority (48.37%) of the businesses surveyed focused on service.

Table 2: Test of association by country and perceived business obstacles

| Item | Access to finance | | Access to electricity | | Lack of equipment | | Access to information | |
|-------------------|-------------------|------------------|-----------------------|------------------|-------------------|------------------|-----------------------|------------------|
| | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) |
| No obstacle | 15 (46.88) | 17 (53.13) | 86 (59.31) | 59 (40.69) | 48 (48.98) | 50 (51.02) | 95 (73.08) | 35 (26.92) |
| Minor obstacle | 5 (22.73) | 17 (77.27) | 51 (57.30) | 38 (33.50) | 89 (67.42) | 43 (32.58) | 65 (69.15) | 29 (30.85) |
| Moderate obstacle | 14 (27.45) | 37 (72.55) | 56 (71.96) | 22 (28.21) | 41 (68.33) | 19 (31.67) | 26 (46.43) | 30 (53.57) |
| Major obstacle | 140 (76.09) | 44 (23.91) | 46 (83.64) | 9 (16.36) | 55 (78.57) | 15 (21.43) | 53 (67.95) | 25 (32.05) |
| Severe obstacle | 66 (83.54) | 13 (16.46) | 10 (76.92) | 3 (23.08) | 17 (80.95) | 4 (19.05) | 10 (41.67) | 14 (58.33) |
| P-value | | < 0.0001 | | 0.004 | | 0.001 | | 0.001 |

| Item | Qualified personnel | | Political instability | | Regulations for SME development | | High rental costs | |
|-------------------|---------------------|------------------|-----------------------|------------------|---------------------------------|------------------|-------------------|------------------|
| | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) |
| No obstacle | 54 (71.05) | 22 (28.95) | 89 (57.42) | 66 (42.58) | 23 (51.11) | 22 (48.89) | 50 (60.98) | 32 (39.02) |
| Minor obstacle | 73 (61.34) | 46 (38.66) | 40 (63.49) | 23 (36.51) | 39 (58.21) | 28 (41.79) | 57 (65.52) | 30 (34.48) |
| Moderate obstacle | 36 (64.29) | 20 (35.71) | 29 (54.72) | 24 (45.28) | 41 (57.75) | 30 (42.25) | 47 (66.20) | 24 (33.80) |
| Major obstacle | 73 (70.19) | 31 (29.81) | 71 (88.75) | 9 (11.25) | 103 (75.74) | 33 (24.26) | 65 (72.22) | 25 (27.78) |
| Severe obstacle | 14 (56.00) | 11 (44.00) | 18 (62.07) | 11 (37.93) | 42 (70.00) | 18 (30.00) | 29 (61.70) | 18 (38.30) |
| P-value | | 0.406 | | < 0.0001 | | 0.006 | | 0.582 |

| Item | Competition for cheap products | | Transport costs | | Lack of government agency support | | Lack of marketing skills | |
|-------------------|--------------------------------|------------------|-----------------|------------------|-----------------------------------|------------------|--------------------------|------------------|
| | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) | RSA No. (%) | China No. (%) |
| No obstacle | 34 (47.22) | 38 (52.78) | 53 (59.55) | 36 (40.45) | 18 (42.86) | 24 (57.14) | 12 (34.29) | 23 (65.71) |
| Minor obstacle | 40 (51.95) | 37 (48.05) | 54 (56.84) | 41 (43.16) | 27 (50.94) | 26 (49.06) | 10 (29.41) | 24 (70.59) |
| Moderate obstacle | 57 (66.28) | 29 (33.72) | 37 (56.92) | 28 (43.08) | 35 (51.47) | 33 (48.53) | 13 (33.33) | 26 (66.67) |
| Major obstacle | 85 (84.16) | 16 (15.84) | 79 (80.61) | 19 (19.39) | 122 (80.26) | 30 (19.74) | 126 (74.56) | 43 (25.44) |
| Severe obstacle | 33 (76.74) | 10 (23.26) | 21 (77.78) | 6 (22.22) | 45 (72.58) | 17 (27.42) | 89 (86.41) | 14 (13.59) |
| P-value | | < 0.0001 | | 0.001 | | < 0.0001 | | < 0.0001 |

The majority of the South African SMEs (73.08%) did not perceive access to information as an obstacle to the success of the business. In China, only 26.92% felt that it was not an obstacle. Therefore, there is a significant association ($p = 0.001$) between the respondents of the two countries about access to information.

Most of the respondents from the two countries viewed finding qualified personnel as a minor obstacle, with South Africa at 61.34% and China at 38.66%. There is no significant association ($p = 0.406$) since the respondents of the two countries did not have very differing views. This could mean that there is an abundance of skills in both environments.

The respondents from both countries did not perceive political instability as an obstacle to the success of the business. There is a significant association ($p < 0.0001$) between the respondents of the two countries, with 57.42% of South Africans and 42.58% of Chinese respondents agreeing that this factor did not influence the success of the business negatively.

There is an insignificant association ($p = 0.006$) between respondents from the two countries about the regulations on SME development as an obstacle to business success, suggesting that the respondents held the same views. This means that the SME owners concurred that the regulations associated with SME development did not impede the efforts of running the business.

An insignificant association is observed between the respondents in the two countries regarding high rental costs ($p = 0.582$). A high proportion (72.22%) of South African SMEs and a small proportion (22.78%) of Chinese SMEs had similar sentiments regarding high rental costs. In other words, the SMEs in the two countries perceived high rental costs as a major obstacle that hampers the success of the business.

There are significant associations between the respondents regarding cheap import products ($p < 0.0001$) and transport costs ($p = 0.001$). In essence, the SME owners believed that cheap import products did affect the performance of their businesses.

The respondents had different perceptions of the lack of government agency support as a major obstacle to business success ($p < 0.0001$). More South Africans (80.26%) than Chinese (19.74%) believed that lack of government agency support was a major obstacle. As the Chinese SMEs did not regard the lack of government support as a problem for their respective businesses, it is imperative to have a deeper understanding of how the Chinese government is providing support to the SMEs to enable South Africa to learn from them.

The South African participants (74.56%) had a strong view that a lack of marketing skills was a major obstacle to the success of the business. Only 25.44% of Chinese participants agreed. The association in this regard is significant ($p < 0.0001$). Therefore, the respondents in the two countries had significantly differing views. This finding confirms what Mkwabi and Mboya (2019) state: that marketing skills have a negative effect on business operations.

CONCLUSIONS AND RECOMMENDATIONS

In this study, the researcher sought to identify the possible obstacles as perceived by SME owner-managers as barriers in the operation of their respective businesses. Based on the results of the analysis, it could be concluded that most South African SME owner-managers believed that access to finance was a major impediment to their businesses, but only a small margin of Chinese SMEs

iewed this factor as an obstacle. The second factor, access to electricity, was not considered an obstacle to the operation of the business by either country.

The third factor is lack of equipment, which was perceived to be a minor obstacle to the success of the business. This could be as a result of most of the SMEs surveyed being in the service industry and as such, they do not need large capital equipment outlay. The fourth factor relates to access to information and it can be concluded that this factor was regarded as an obstacle mostly by South African SMEs, whereas the Chinese SMEs did not see it as such; this varied conclusion could be due to the frequency of use of technology devices.

The fifth factor is regulations relating to SME development and it can be concluded that SME owner-managers from the two countries perceived this factor as an impediment to the success of the business. It is notable that when SME regulations do not serve as enablers for the development of SMEs, the businesses are likely to fail. This factor is evident in both countries and it is prudent for the two governments to address this matter to ensure that the regulations relating to SMEs are user-friendly and accessible.

The sixth factor regarded as an obstacle is a lack of government agency support. In this context, it is evident that the Chinese SMEs received government agency support, contrary to the South African SMEs. This could be one of the factors enabling Chinese SMEs to succeed in their respective business endeavours. The South African government could learn from what the Chinese government is doing in supporting SMEs. It is notable that South African SMEs perceived a lack of government support as a major obstacle compared to the Chinese. Finally, it can be concluded that a lack of marketing skills was also perceived to be a major obstacle in the success of the SMEs. The majority of the SMEs with this view were from South Africa; Chinese SMEs did not seem to regard the lack of marketing skills as a major obstacle. It is essential that South African SMEs strive to understand how the Chinese SMEs get it right in terms of marketing skills.

As a result of the above conclusions, business owners should devise strategies to overcome the obstacles identified. By doing so, their businesses are likely to prosper. The government can also play a pivotal role in supporting businesses by making the regulations for SMEs seamless and by considering tax relief for the sector. The regulations should create a conducive environment for the operation of SMEs. The challenges experienced by entrepreneurs in these countries could hamper entrepreneurial activities and increase the failure rates of entrepreneurship. The government and its support agencies should provide the necessary support for SMEs. In addition, SME owner-managers should be creative and innovative by adopting approaches that would grow their businesses and overcome the challenges that may hamper their success.

The study had several limitations which could lead to future research directions. Firstly, a convenience sample consisting of SME owner-managers from China and South Africa was used and only 401 participated in the study. As a result, no generalisability of the findings can be claimed across the two countries. Future research should employ a larger sample that is more representative of the two countries. Secondly, the study was cross-sectional and as such, there was no opportunity to survey those who were not available on the day of data collection. Perhaps those who missed out on the survey could have provided different perspectives.

IMPLICATIONS

This study identified major obstacles to business operations which, if managed properly, may contribute to the success of the businesses. Owners should channel their efforts toward managing these impediments to ensure prosperity. Policymakers should consider the following policy implications to avert the obstacles: (i) interventions in the form of tailor-made programmes should be developed to overcome the identified challenges; (ii) a conducive environment should be created for SMEs to prosper; (iii) suitable training programmes should be provided to assist SMEs in carrying out their activities properly.

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THE DETERMINANTS OF FEMALE EMPLOYMENT IN THE FORMAL AND INFORMAL SECTORS IN THE SOUTH AFRICAN LABOUR MARKET

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ABSTRACT

Females remain a pivotal pillar in driving economic development. Though much has been done over the past decade to reduce equality gaps, persistent disparities remain. As part of these disparities, especially within the developing world, there has been a challenge of providing decent and quality employment opportunities for females. What determines access to these opportunities for the gender group, in this regard, has become a key focal point, both from a theoretical and policy perspective. The main objective of the study was to identify the determinants of female employment in the formal and informal sectors of the South African labour market. A quantitative approach was followed, and a cross-sectional research design was employed. Data was sourced from Statistics South Africa's fourth quarterly labour force survey (QLFS) of 2021. The sample comprised a total of 4 300 female employees who were either employed in the formal or informal sectors within the labour market. The analysis involved the use of descriptive statistics, cross-tabulations and a binary logistic regression. The results from the study showcase various factors that affect the nature of female employment within the labour market. Higher levels of education, labour market experience, as well as access to social capital seem to assist females in transitioning to formal and more stable employment. The dynamics between informal and formal sector employment, however, do seem to be made more complex taking into consideration the gendered dynamics within households, females' geographical attributes as well as their racial backgrounds. As such, the study recommends that policymakers prioritise strategies that target soft skill acquisition, reducing the time burden of domestic tasks as well provide additional support networks for the cohort. Improving the financial market inclusion of women through microcredit programmes can also help facilitate quality self-employment, while the development of the informal sector needs to be prioritised.

Keywords: Female employment; formal; informal; labour market; South Africa

1. INTRODUCTION

"Equal opportunity and equal treatment in the labour market are at the core of decent work." (Statistics South Africa (Stats SA), 2021:1). Regrettably, females, in general, remain one of the most disadvantaged in many labour markets in the world compared to their male counterparts and irrespective of their age. When they do find employment, they tend to be employed in substandard employment, with low quality and vulnerable working conditions (Beukes, Fransman, Murozvi, & Yu, 2017). According to the International Labour Organization (ILO, 2009), workers in vulnerable employment are in jobs that are not safe, and their labour rights are most likely not to

be appreciated, an essential key form of precarious work. “*The current global labour force participation rate for women is just under 47 percent, while for men, it is 72 percent; a difference of 25 percentage points, with some regions facing a gap of more than 50 percentage points.*” (ILO, 2022). The participation of females in the labour market is prevented by many aspects including non-labour market activities such as care work, which places a limitation on their income earning opportunities and therefore increases their probabilities of being in poverty. To better understand this, gender has in fact been linked with marital status or family structure, where literature reveals that a woman’s marital status influences her behaviour in the labour market (Angrave & Charlwood, 2015). Family responsibilities may constrain the labour force behaviour of married women unlike that of single women (De Anda & Sobczak, 2011). For instance, due to family and home responsibilities and even religion, some women may be forced to seek employment with fewer hours than they desire, consequently also earning less income (McKee-Ryan & Harvey, 2011).

In most cases, labour markets, especially in Africa, have a high number of underutilised labour evidenced by high unemployment, and informal and vulnerable employment (Bhorat, Naidoo & Ewinyu, 2017). For instance, the ILO’s 2017 ‘*World Employment Social Outlook*’ reports that nearly two-thirds of workers in sub-Saharan Africa are living in extreme or moderate working poverty, and South Africa is not excluded (Lilenstein, Woolard & Leibbrandt, 2016). In most cases, females are over-represented in these statistics as fuelled by labour market bias, which may push them out of formal work.

The situation is no different in South Africa with the country’s labour market offering unequal opportunities and treatment towards females, hindering them from accessing employment, let alone decent ones. The quarterly labour force survey (QLFS 4 – 2021) reports that the unemployment rate among South African females is more than 5 percent higher than that of males at 38.2 percent compared to 32.8 percent respectively (Stats SA, 2022), which suggests that chances of getting any form of employment, regardless of the sector are presently very low (Institute for Economic Justice (IEJ), 2018). Even though many policies have strived to increase the participation of females in the labour market, thereby allowing females to achieve economic independence, the issue of poverty has continued to be female (Pearce, 1978; Twerefou, Senadza & Owusu-Afriyie, 2014; Mdluli-Maziya, 2021). The aim of this paper is to analyse the determinants of female employment in the formal and informal sectors in the South African labour market. It is important to have an understanding of the kinds of jobs that female workers are in and to know which factors fuel their employment, especially in the worse-off sectors (i.e., informal sector), as decent employment is an essential prerequisite for alleviating poverty since economic growth and income transfers alone are not sufficient (ILO, 2016a).

2. LITERATURE REVIEW

2.1 Theorising formal and informal sector employment

One of the assumptions of the perfect competitive model is that competition exists in a labour market. However, this does not mean any worker can work in any job they want, as there are certain factors that prevent that from happening. Although some researchers believed that most jobs are open to competition, others (Loveridge & Mok, 1979) believed otherwise. In fact, the

widespread thinking was that there is a definite division in the labour market which averts certain workers from leaving their jobs to work in other sectors. While the neoclassical theory was based on the idea that individuals find work and therefore receive rewards based on their human capital, the segmented labour market theory, on the contrary, contends that labour markets are not distinct competitive markets, however, they are made out of an assortment of not so related fragments where rewards to human capital vary due to institutional obstacles that prevent equal benefiting from education and training (Leontaridi, 1998; Eurofound, 2019).

Accordingly, these factors keep certain individuals from adequately competing for jobs in the other sector (Kaufman & Hotchkiss, 1999). Some of these barriers include individual human capital, discriminative factors such as gender and geographical limitations, among others. These ideas were derived from the institutional school of thought, which is the main rival to the neoclassical school of thought. The core premise of the labour market segmentation theory is that the economy has multiple, distinct labour markets in which working conditions, wage bargains, and job stability vary analytically. More specifically, and according to Wachter (1974), the dual labour market theory rests on three general hypotheses. Firstly, the economy contains two sectors, a primary sector, which pays high compensation and a secondary sector, which is confined to low wages. Secondly, the important difference for economic analysis is between good and bad jobs rather than between skilled and unskilled workers. Thirdly, workers restricted to the secondary sector experience a great deal of employment instability, frequently move between jobs, and are constantly in and out of unemployment.

These markets can also be classified as the formal and informal sectors (Golub & Hayat, 2015), inclusive of skilled and unskilled labour, which allows skilled workers to work in unskilled jobs or the core and the periphery economy. The primary sector has good jobs characterised by high wages, promotion possibilities and other durable attributes that make up the primary sector of the dual economy, while bad jobs compose the secondary sector (Uys & Blaauw, 2006). Another important aspect in this sector is the presence of trade unions, which ensures worker and job protection (Harrison & Sum, 1979), a missing aspect in the secondary sector.

Conversely, the secondary sector contains the worse-off members of the labour force, who are not protected from the law and have no say in any wage bargaining processes (Uys & Blaauw, 2006). Jobs assumed to be in this market are considered to be sub-optimal, associated with lower pay, shorter working hours, unstable, generally unattractive and skills underutilisation, poor working conditions, low to no job security, and few to non-existent promotion prospects (Muysken & Ter Weel, 1999). Jobs are sufficiently plentiful in this sector to employ all workers even those frozen out of the primary sector (Wachter, 1974).

2.2 Understanding formal and informal sector employment

The formal sector includes all types of work that provide regular wages and working hours, employees are protected by rights and are subject to income tax (Sumberg, Flynn, Mader, Mwaura, Oosterom, Sam-Kpakra & Shittu, 2019). Stats SA (2022) defines the informal sector as encompassing the following aspects:

- Employees working in establishments that employ fewer than five employees, who do not deduct income tax from their salaries/wages; and

- Employers, own-account workers and persons helping unpaid in their household business who are not registered for either income tax or value-added tax.

In this regard, informal employment is regarded as less secure with fewer fringe benefits (Rutkowski, 2006), weak or risky working environments and normally little compensation and output (ILO, 2017). There is an argument that informal work might be increasing somewhat because of growing globalisation. Because of expensive business start-up costs, some new entrepreneurs have now resorted to operating in the informal sector and paying workers lower wages with the aim of limiting costs (Nightingale & Wadner, 2011). The growth of the informal sector has additionally been influenced by rapid rural-urban migration patterns that have been surged by population growth. As the population grew, large numbers of people moved from rural areas to urban areas in search of improved economic opportunities.

Owing to the limited size of the formal sector, unskilled labour that could not get absorbed into the sector because of things like a lack of demand engages in any activity, even meagre work that they can find to survive (Portes & Schauffler, 1993). This is explained by the theory of modernisation, which suggests that informal sector expansions are a transitory side-effect of migrant movements of unskilful labour have been as a result of rapid urban industrialisation (Despres, 1988). According to the ILO (2017), the informal sector is a symptom of underdevelopment, underemployment and poverty. Nightingale and Wander (2011) and Horemans, Marx and Nolan (2016) contend that the poor, who work fundamentally in these types of employment, may find it significantly more difficult than those in formal employment earning low wages to lift themselves and their families out of poverty through work alone since these kinds of work arrangements are primarily characterised by lower wages and even lower likelihood for wage increases. These kinds of work offer the plausibility to hire and fire (De Stefano, 2016).

In the informal sector, we also find precarious work, which from the worker's perspective, is employment characterised by uncertainty, unpredictability, and riskiness (Kalleberg, 2009). Broadly, precariousness in employment refers to employment physiognomies that comprise insecurity, such as inadequate levels of regulatory security, low incomes, high job insecurity and very poor worker control over working conditions, wages and hours (Vosko, 2010). Informal employment presents a number of economic disadvantages in the sense that those in informal employment do not pay income tax, which may rob the economy of potential tax revenue that would have otherwise been earned (Mncayi, 2020). Be that as it may, some studies (*see* IEJ 2018; Cichello & Rogan 2018) point out the many positive contributions that come from the informal sector, such as the fact that it helps to alleviate poverty and even though the income received by those employed in the sector is comparably low, collectively they make a significant contribution to a country's gross domestic product (GDP). Labour market outcomes for women remain poor and have always been even though gender gaps in education and labour market have been on a continual decline (OECD, 2017).

2.3 Gender and informal and formal sector employment in South Africa

Globally – in developed, emerging and developing countries – informal work is a greater source of employment for males (63%) than for females (58%); however, the same cannot be said about Africa's low and lower-middle income countries, where approximately 90 percent of all employed females are in informal work (ILO, 2018a). Even though South Africa's picture mirrors the global

picture, research proves that females are the most vulnerable group over males in the labour market (ILO, 2018b). They face more negative employment outcomes, and they are most likely to be in poverty despite them being more educated than their male counterparts. The problems begin at an early age, where, for young females, the transition to adulthood can be a solitary one as they navigate societal standards that tend to limit their development and employment choices (Fox *et al.*, 2016) and this is especially true in Africa. In Mozambique, for instance, the burden of household care and the lack of water supply has implied that females, relative to males, particularly in rural areas, have fewer hours for income-generating activities such as employment overall affecting their labour force participation (World Bank, 2012). With females in South Africa already experiencing very low labour force participation rates compared to their male counterparts, many may find themselves at the brink of informal work. Unfortunately, many people in informal work are in low-skilled jobs, unprotected from low wages, long working hours and social security, and also exposed to insufficient training prospects (ILO, 2016b). Figure 1 (a & b) shows changes in employment within the formal and inform sectors. It should be noted that South Africa’s informal sector constitutes about 4.5 million workers (Rogan & Skinner, 2017).

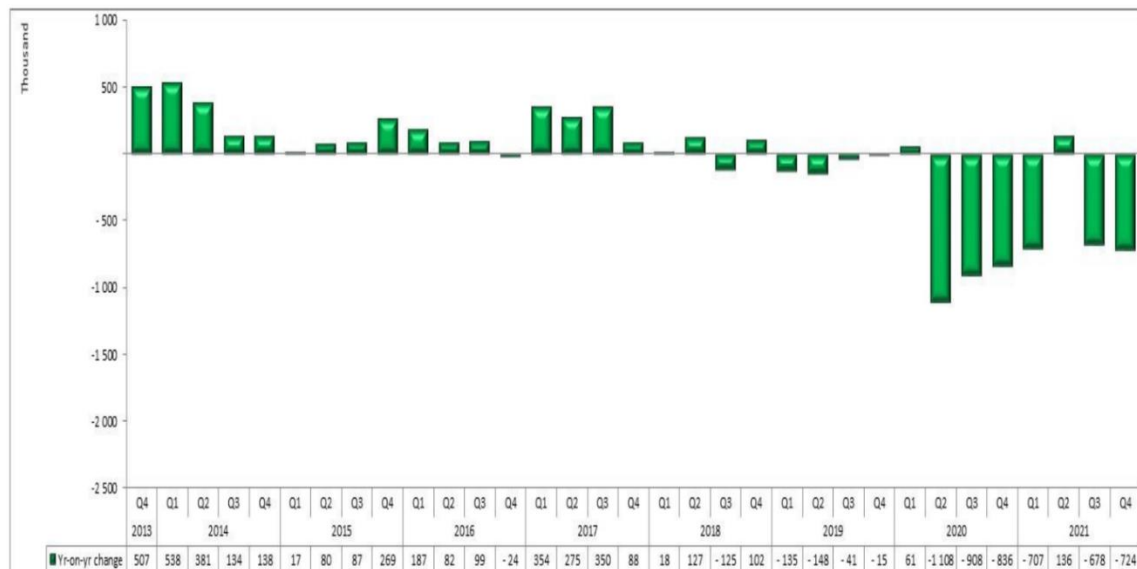


Figure 1(a): Changes in formal sector employment (Q4 2013 – Q4 2021)

Source: Stats SA (2022)

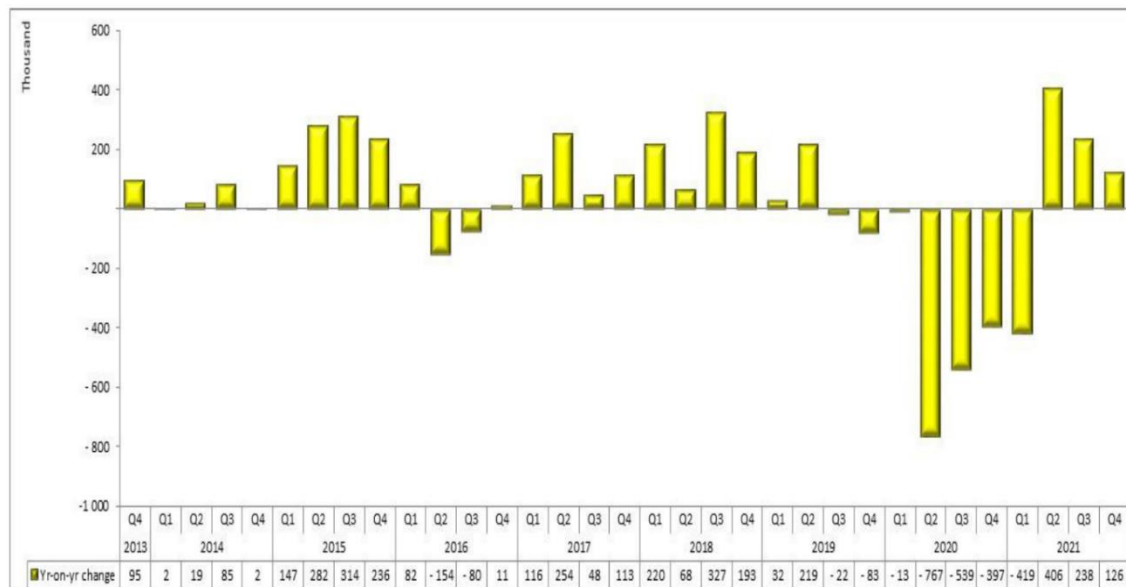
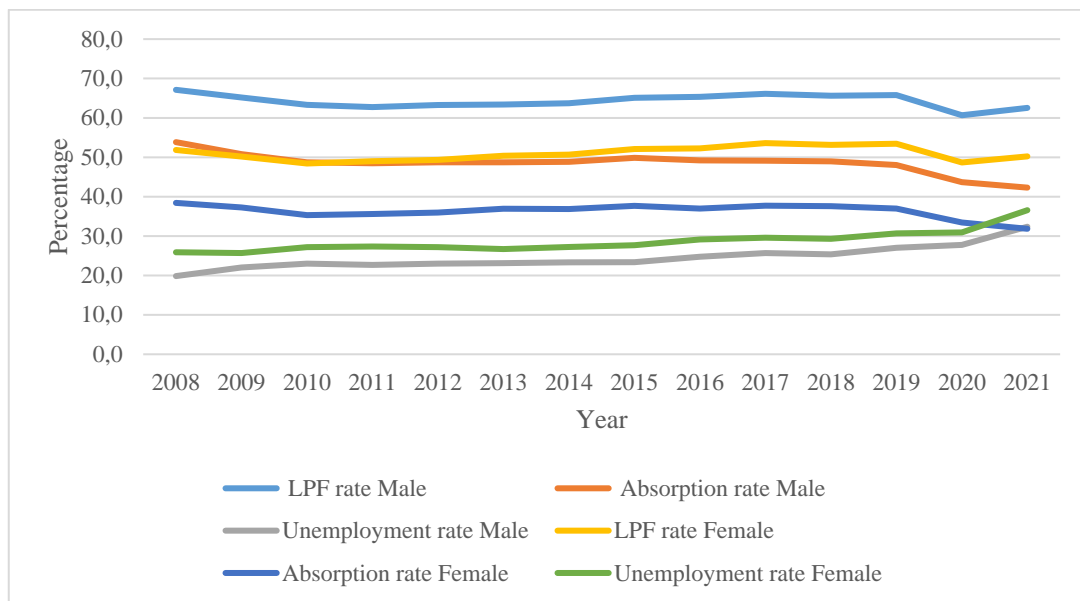


Figure 1(b): Changes in informal sector employment (Q4 2013 – Q4 2021)

Source: Stats SA (2022)

From the two figures above, the amount of employment created in the informal sector has for most of the years exceeded those created in the formal sector, although the paradox is that during periods of economic contraction, more jobs are being shed in the latter sector compared to the former. The fourth quarterly labour force survey of 2021 shows many wide disparities when it comes to both males and females. For instance, between 2020 and 2021, there was approximately an 8 percent decline in the number of females employed in the formal sector compared to 6.2 percent for males. The unemployment rates in the informal sector in the same period showed an increase in the number of males employed at 7 percent compared to 1.5 percent for females. Figure 2 below shows that males constitute a large portion of those employed in both the formal and informal sectors compared to females.



***employment is in non-agricultural sector*

Figure 2: Formal and informal sector employment by gender (2008-2021)

Source: Easy Data, Quantec (2022)

Despite the trends in Figure 2, the truth of the matter is that female workers often experience negative employment outcomes and even if they are employed, according to findings of Branson, De Lannoy and Brynde (2019:3), they are most likely to face substantial hardships in the form of unstable, irregular and low-paid-type of employment, depriving them of employment security. This is supported by other important statistics as indicated in Figure 3.

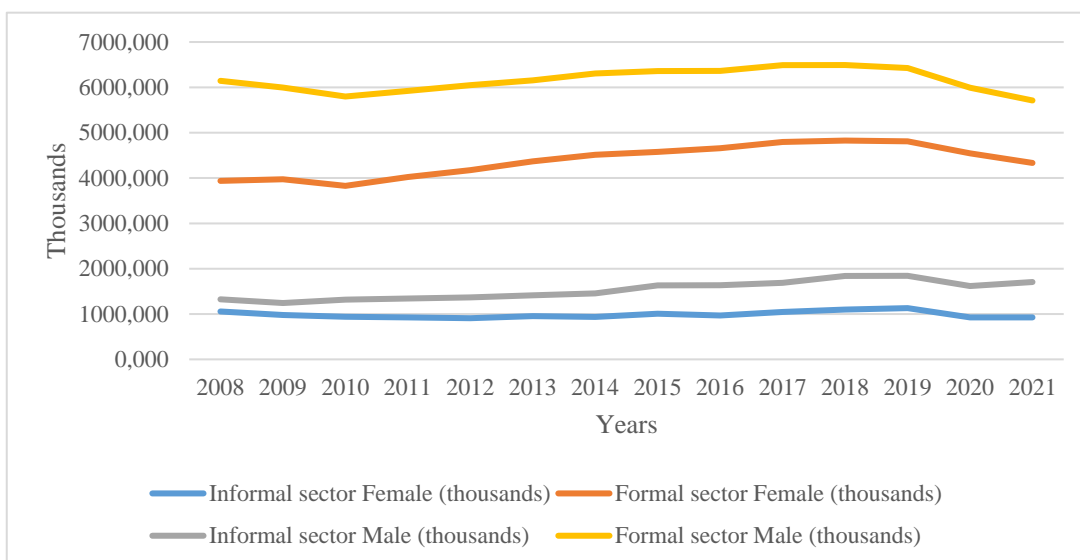


Figure 3: Unemployment, labour absorption and labour force statistics (2008-2021)

Source: Stats SA (2022)

From Figure 3, females remain the most vulnerable group in the South African labour market where they encounter high unemployment rates and low employment levels (Bhorat *et al.*, 2017). The gender gap in unemployment remains wide but has narrowed slightly with the unemployment rate for males increasing more rapidly than for females (DPRU, 2017; Stats SA, 2019). According

to the ‘2018 Labour Market Dynamics’ report, females in the labour force have attained higher levels of education than young males (Stats SA, 2020), but undeniably, males still have a distinctive benefit in finding work in contrast to females (Mlatsheni & Ranchhod, 2017). The reality is that many females are not investing in and acquiring relevant skills and experience needed by the labour market, which negatively affects their employment prospects (Branson *et al.*, 2019). In the ‘A Survey of Time Use’, Stats SA (2013) found large gender gaps with regard to time on non-income-generating activities such as care work. The report indicates that South African females spend three hours and 15 minutes on household care, which is more than their male counterparts spend which is just one hour and 28 minutes. Such instances are supportive of the low labour force participation rates that females encounter compared to males. Females are losing hours that they could have used on income-generating activities or searching for employment on unpaid care work. These continual disparities between males and females are one of the factors indicating that much work still needs to be made before females can achieve equality in the workplace (Department of Labour, 2017, p. 24). The next section discusses the methodology employed in the study.

3. METHODOLOGY

3.1 Research objective and design

The major objective of the inquiry was to identify the main determinants affecting female employment within the formal and informal sectors of the South African labour market. By doing so, the study utilised a quantitative approach. Secondary cross-sectional data was collected from the fourth quarterly labour force survey (QLFS) of 2021 from Statistics South Africa. Furthermore, the study employed a positivist research paradigm to serve as the philosophical base of the inquiry. By using the QLFS data, the sample was extracted using the criteria that all participants were female and either employed in the formal or informal sectors of the labour market. The final sample size and therefore comprised a total of 4 300 employed women, residing across all nine provinces of the country.

3.2 Data analysis and model specification

Subsequent to capturing the data, coding and analysis ensued. This included the use of the statistical package for social sciences (SPSS) software, version 27. The first step in the analysis comprised the use of descriptive techniques such as frequency and percentage distributions to provide a demographic overview of the sample. Thereafter, the study made use of a binary logistic regression. This particular model was used to identify the prominent determinants of female labour force participants’ likelihood of either being employed in the formal or informal sector. In line with this approach, the literature review in the previous section, shows that there are several factors that have been associated with the cohort’s employment classification. Table 1 below shows each of the included determinants as well as the coding criteria that have been applied to them respectively.

Table 1: Coding criteria for the identified possible determinants

| Possible determinants | Denotation | Coding criteria |
|-----------------------|-----------------------|--|
| Race | <i>Race</i> (X_1) | Categorical variable with two dummy variables created. Here 1 = black and 0 = otherwise; 1 = Other races and 0 = otherwise. Being white was used as the reference group. |

| Possible determinants | Denotation | Coding criteria |
|-----------------------|-------------|--|
| Marital status | $MS (X_2)$ | Dichotomous variable. 1 = Married or living with a partner; 0 = not married or living alone. |
| Age | $Age (X_3)$ | Categorical variable. A total of three dummy variables were created. Here 1 = 15 – 24 years and 0 = otherwise; 1 = 25 – 34 years and 0 = otherwise; 1 = 35 – 50 years and 0 = otherwise. Being older than 50 here was used as the reference group. |
| Geography | $Geo (X_4)$ | Dichotomous variable. 1 = residing in an urban area and 0 = residing in a rural area. |
| Education level | $EDL (X_5)$ | Categorical variable with three dummy variables created. Here 1 = primary or lower and 0 = otherwise; 1 = secondary education and 0 = otherwise; 1 = post-secondary / technical training and 0 = otherwise. In this instance tertiary education was used as the reference group. |
| Non-market activities | $NMA (X_6)$ | Dichotomous variable. Here 1 = being involved in at least 1 non-market activity and 0 = not being involved in any non-market activities. |

Source: Author’s own compilation

In light of these determinants, and the fact that a dichotomous outcome was selected for females’ employment classification, the model expresses the dependent variable in the model in equation 1 below as follows:

$$P_i = \frac{1}{1 + e^{-Z_i}} = \frac{e^z}{1 + e^z} \dots\dots\dots (1)$$

Here, P_i represents females’ employment classification and is binary either represented by 0 or 1. Additionally, within the equation, $Z_i = B_1 + B_2 X_i$. Equation 1 is known as the logistic distribution function and expresses the fact that as z moves between the values of $-\infty$ to $+\infty$ so too does the values on P_i fluctuate between 0 and 1 (Gujarati, 2004). In hindsight, this equation is linearised by incorporating an odds ratio, or in other words, the ratio of the likelihood of a success event to that of a failure for a binary dependent variable. Taking this into consideration, as well as incorporating the identified determinants into the model it can be expressed as follows:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + u_i \dots\dots\dots (2)$$

Equation 2 therefore depicts, the dependent variable (L_i) as the probability of being employed either in the formal sector (coded as 1) or the informal sector (coded as 0). As such, if females

were set to be formally employed, then $L_i = \ln\left(\frac{1}{0}\right)$ and if informally employed, $L_i = \ln\left(\frac{0}{1}\right)$. Here β_0 is indicative of the constant of the regression, $\beta_{1,2,\dots,n}$ represents the coefficients of the independent variables, while X_n shows the respective categorical variables that were included, as shown in Table 1. These pertained participants’ race, level of education, marital status, age, geography, and their involvement in non-market activities. Finally, u_i represents the error term. Upon estimating the model, the study made use of various diagnostic tests in order to determine the reliability of the results. These included the use of the Hosmer and Lemeshow goodness of fit tests as well as Cox and Snell R-Squared and the Nagelkerke R-squared. In addition to this, the study estimated variance inflator factors (VIF) as well as tolerance values for each of the

independent variables. This was done to ascertain that no multicollinearity was present between the respective regressors.

4. RESULTS AND DISCUSSION

As mentioned in the previous section, the analysis comprises two steps. The first of these withholds a descriptive analysis on the demographic and socio-economic background of the sample. Results for the analysis are reported in Table 2 below. Distributions with regard to the province of residence show that participants from all nine provinces in the country were included with Gauteng boasting the largest share (19.7%) closely followed by Kwazulu-Natal (17.3%). In addition to this, considering the racial composition, the distribution showed that 81.6 percent of the female participants were black, while nine percent were coloured, only 1.6 percent indicated that they were of Asian or Indian descent. Table 2 further showcases the participants' distribution according to age. Results in this regard pointed to the majority of employed females between the ages of 35 to 49 years (45.3%). The distribution in this instance indicated that for either side on the age continuum, lower participation rates were evident. This is to be expected given young females' transition to the labour market, while older employees are more likely to retire (Mncayi & de Jongh, 2021). On the basis of distinguishing between formal and informal sector employment, Table 2 indicates that approximately two thirds of the sample were employed in the formal sector (67.5%). Informal sector employment comprised those employed informally (18.2%), and importantly, those within private households (14.2%).

Table 2: Demographic and socio-economic distribution of the sample participants

| Aspect | Sub-category | f (%) | Aspect | Sub-category | f (%) |
|----------------------|----------------------------|-------------|---------------------|--------------------------|-------------|
| Province | Western Cape | 506 (11.8) | Education level | Lower than primary | 85 (2.0) |
| | Eastern Cape | 556 (12.9) | | Primary | 379 (8.8) |
| | Northern Cape | 164 (3.8) | | Secondary education | 2755 (64.1) |
| | Free State | 327 (7.6) | | Post-secondary technical | 679 (15.8) |
| | KwaZulu-Natal | 746 (17.3) | Tertiary | 402 (9.3) | |
| | North-West | 208 (4.8) | Race | Black / African | 3509 (81.6) |
| | Gauteng | 849 (19.7) | | White | 334 (7.8) |
| | Mpumalanga | 459 (10.7) | | Coloured | 387 (9.0) |
| | Limpopo | 485 (11.3) | | Indian / Asian | 70 (1.6) |
| | | | | | |
| Sector of employment | Formal | 2901 (67.5) | Age | 15-24 years | 166 (3.9) |
| | Informal | 783 (18.2) | | 25-34 years | 1014 (23.6) |
| | Private households | 616 (14.3) | | 35-49 years | 1948 (45.3) |
| Marital status | Married / living together | 1732 (40.3) | | 50-64 years | 966 (22.5) |
| | Not married / living alone | 2568 (59.7) | | 65 years + | 206 (4.8) |
| Geography | Urban | 2946 (68.5) | Non-market activity | Yes | 602 (14.0) |
| | Rural | 1354 (31.5) | | No | 3698 (86.0) |

Source: Authors own compilation from Stats SA data (2021b)

In line with the aforementioned demographic characteristics, the study also sought insight into the aspects such as the marital status of the participants. This is of particular interest given the role that social capital plays in female labour force outcomes (Arosio, 2017; Azcona, Bhatt, Cole, Gammarano & Kapsos, 2020). Results from Table 2, in this instance, showed that, 40.3 percent of all participants were either married or living with a partner. Another key aspect, unique to females'

labour market outcomes is the unequal distribution of time to non-market activities such as care work (Ferant, Pesando & Nowacka, 2014; Corsi & Ilkcaracan, 2022). As such, it was important to determine the level of involvement for the participants. Results indicate that only 14 percent were involved in at least one non-market-based activity in this regard. Based on their area of residence, more participants were situated in urban areas (68.5%) compared to those in rural areas (31.5%). Finally, upon review of their education level, almost two thirds (64.1%) of all participants attributed some form of secondary education, followed by 15.8 percent who had acquired a post-secondary education. Similar distributions for those with a primary education level (8.8%) and tertiary education (9.0%) were also noted.

Ensuing with the second step in the analysis, the study sought to identify the respective determinants affecting females' employment within the formal and informal sectors in South Africa. Prior to the estimation of the results, the study made use of various diagnostic tests in order to determine whether the proposed model attributed good fit with the data. Here, both the Omnibus test of model coefficients and Hosmer and Lemeshow test were utilised. These tests use opposing null hypotheses with the former stipulating that the model used is not a good fit, while the latter contrasts this. Results for both tests are shown in Table 3. The chi-square value ($\chi^2 = 696.378$) and sig. value (0.000) for the Omnibus test as well as the values for the Hosmer and Lemeshow test ($\chi^2 = 13.552$; sig. value = 0.094) both confirm good model fit. Subsequent to the estimation of these results, VIF as well as tolerance values were estimated to determine whether there was any present multicollinearity between the included independent variables. VIF values ($max = 0.965$; $min = 0.881$) were well below the prescribed value of 2 (Kim, 2019), while tolerance values ($max = 1.178$; $min = 1.036$) were above the 0.1 threshold (Field, 2018), confirming that there was no serious concern in this regard.

Table 3: Model summary and diagnostic statistics

| Omnibus test of model coefficients | | Hosmer and Lemeshow test |
|------------------------------------|-----------------------|-----------------------------------|
| Chi-square = 696.378; sig. = 0.000 | | Chi-square = 13.552; sig. = 0.094 |
| -2log likelihood | Cox & Snell R-squared | Nagelkerke R-squared |
| 4728.809 | 0.150 | 0.209 |

Source: Authors' own compilation from Stats SA data (2021b)

After ensuring the reliability and suitability of the utilised model, the estimation was undertaken. The dependent variable was entered dichotomously with *formally employed* coded as the success factor (1), while being *informally employed* was coded as 0. In line with the motivations of Labovitz (1968) for large sample sizes, only smaller error rates (0.001 and 0.05) were considered for the chosen significance levels. In line with the aforementioned, results for the binary logistic regression are shown in Table 4 below.

Firstly, considering the results for marital status, the coefficient was negative. As not being married was used as reference group, it suggests that being married or living with a partner reduced the likelihood of being formally employed, when compared to those who were living on their own or not married. The second independent variable entered into the regression model was the age of the participants. From the results shown, younger cohorts up until the age of 49 years seem to have a higher likelihood of being employed within the formal sector when compared to those that were 65 or older. Interesting though is that this seems to diminish as these female participants age.

Nonetheless, despite these insights, *significant values* for the respective age categories and marital status were deemed not significant (significant values larger than 0.05).

Table 4: Logistic regression results for formal – informal sector employment

| | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|----------|-------------|-------------|-----------|-------------|---------------|
| Married / living together | -0.016 | 0.075 | 0.045 | 1 | 0.831 | 0.984 |
| 65 years and older (reference group) | | | 13.964 | 4 | 0.007* | |
| 15-24 years | 0.495 | 0.257 | 3.695 | 1 | 0.055 | 1.640 |
| 25-34 years | 0.323 | 0.189 | 2.924 | 1 | 0.087 | 1.382 |
| 35-49 years | 0.171 | 0.181 | 0.895 | 1 | 0.344 | 1.186 |
| 50-64 years | -0.024 | 0.185 | 0.016 | 1 | 0.899 | 0.977 |
| Tertiary education (reference group) | | | 300.892 | 4 | 0.000* | |
| Lower than primary education | -3.268 | 0.350 | 87.137 | 1 | 0.000* | 0.038 |
| Primary education | -3.555 | 0.288 | 152.169 | 1 | 0.000* | 0.029 |
| Secondary education | -2.568 | 0.269 | 91.481 | 1 | 0.000* | 0.077 |
| Post-secondary education | -1.294 | 0.288 | 20.162 | 1 | 0.000* | 0.274 |
| Urban residence | 0.165 | 0.080 | 4.285 | 1 | 0.038** | 1.180 |
| White (reference group) | | | 82.036 | 2 | 0.000* | |
| Black / African | -1.216 | 0.207 | 34.371 | 1 | 0.000* | 0.296 |
| Other races | -0.198 | 0.239 | 0.682 | 1 | 0.409 | 0.821 |
| NMA involvement | -0.232 | 0.103 | 5.099 | 1 | 0.024** | 0.793 |
| Constant | 3.948 | 0.362 | 118.636 | 1 | 0.000* | 51.839 |

Note: * indicates significance at a 1% level of significance; ** indicates significance at 5% level of significance; tolerance values attributed values between 0.881 and 0.965; VIF values between 1.036 and 1.178.

Source: Authors' calculations from Stats SA (2021b)

In relation to the participants' education, results shown in Table 4 showcase that all education levels, from the lowest levels to post-secondary education coefficients, were negative and statistically significant (*at the 1% level of significance*). Given that tertiary education was used as the reference category, this points to the fact that the highest levels of education and human capital still serve as predominant drivers of stable and quality employment within the South African labour market (Mncayi, 2020; Duval, Shibata & Ji, 2021). Though other levels showed a greater likelihood to informal employment when compared to tertiary levels, this does seem to diminish, especially considering post-secondary or technical training. These findings point to the importance of providing quality post-secondary education towards improving female employment (Matenda, 2019).

For South Africa though, this has been a particular challenge, with the quality of TVET colleges under scrutiny (Mabunda, 2019; Mabunda & Frick, 2020). Scholars in this regard have pointed to the lack of decent work integrated learning (WIL) programmes offered by these institutions and the lack of adequate private sector partnership, consequently contributing to inherent skills mismatches in the labour market (Batholmeus & Pop, 2019). Another important factor as illustrated in the literature review was participants' geographic location. Results in this regard showcase a positive and statistically significant coefficient ($B = 0.165$; *sig. value* = 0.038) for females residing in urban areas. The odds ratio ($Exp(B)$) in this regard showcases that compared to those residing in rural areas, these participants were 18 percent (1.180 – 1) more likely to be formally employed. These results resonate with the impact of the proximity to quality employment opportunities and overcoming the consequent search costs (Pozarny, 2016; Litsardopolous, Saridakis & Hand, 2020).

Given the importance of race within the South African economic context (Oosthuizen, 2019) and especially in labour market outcomes (Mncayi & de Jongh, 2020), it was added as an explanatory variable in the model. Here, being white was used as the reference group. Results (shown in Table 4) indicate, in this instance, that coefficients for all other racial groups were negative suggesting that for Africans/blacks (70.4% higher likelihood) and other racial groups (Asian/Indian and coloureds; 17.9% higher likelihood), all were more likely to be informally employed compared to their white counterparts. These findings support those of Mabilo (2018). The experience of the African/black labour force, in this regard, has been ascribed to various facets, including the prolonged effect of racist policies during the apartheid era, which denied the population access to formal employment opportunities (Mashimbyi, 2021), historical disadvantages in accessing education (Mutize, 2016), as well as spatial inequalities towards acquiring formal employment (Turok, Scheba & Visagie, 2017).

Finally, as the study had a particular gender focus, it was considered significant to determine the effect of females' participation in non-market activities (NMA) on their employment outcomes. Results from Table 4, in this regard, showcase a negative (-0.232) and statistically significant coefficient (*sig. value* = 0.024). These findings support the rhetoric that the gendered burden of these activities in households contributes to the likelihood that females being situated in less stable employment positions (Hearle, Baden & Kalsi, 2019). Charmes (2019) explains that the over representation of females in activities such as care work and other household chores acts as gender-based constraints to accessing the formal labour market. Informal sector employment opportunities and their inherent flexibility in this regard offer women the ability to conciliate the additional non-market responsibilities with paid work to assist in satisfying the needs of their household members (ILO, 2018b).

5. CONCLUSION AND RECOMMENDATIONS

On the basis of the inquiry, the study highlighted the precarious position of women within the South African labour market. In comparison to their male counterparts, females face significant barriers towards securing decent employment opportunities (Stats SA, 2021b). Moreover, the current literature suggests that even when this does occur, significant wage gaps exist, with evidence pointing to widening distributions in earnings between the cohorts (Ebrahim & Lilenstein, 2018). In light of these characteristics, the study had the main aim to identify the specific determinants of female employment within the formal and informal sectors within South Africa. In doing so, several important findings emerged. Results suggest that females' ability to secure decent employment opportunities is largely dependent on their education background, geographic location and as well as their racial characteristics. This seems to be further complicated by specific gender and social norms within households. Their involvement in NMA activities in this regard seems to offset their ability to obtain formal employment opportunities, reducing their time allocation directed towards better search and matching processes within the labour market.

These findings infer significant implications towards understanding the nature of empowering and improving the position of the cohort in the labour market. While the influence of education is considered pivotal, the current system does not provide the needed skills required, condemning many to precarious employment in the informal sector (Nackerdien & Yu, 2019). Responses to these features necessitate improved quality in these programmes, especially at post-secondary

level. As such, the study recommends that policymakers prioritise strategies that target soft skill acquisition, reducing the time burden of domestic tasks as well as providing additional support networks for the cohort. Strategies from this point of view should look to improve school-leavers' practical experience with WIL initiatives that are cognisant of the specific skills demanded by the private sector. Furthermore, as the study pointed to specific gendered barriers, addressing the time burden of unpaid work should be prioritised. Strong policies in this regard should focus on addressing spatial inequalities through the provision of affordable housing, infrastructure development (water access, sanitation, transport, digital) and the provision of health guarantees. Improving financial market inclusion of women through micro-credit programmes can also help facilitate quality self-employment, while the development of the informal sector needs to be prioritised. These have shown noteworthy effects in reducing gender gaps in labour market outcomes in similar developing regions (Alonso et al., 2019).

While the aforementioned initiatives seek to facilitate the movement of women into the formal sector, the importance of the informal sector towards addressing the significant unemployment levels should not be disregarded. South Africa, in this regard, relative to similar regions, has a considerable smaller and underdeveloped informal sector (Francis & Valodia, 2020). Policy responses therefore should look to assist the so-called 'forgotten sector' with strategies tailored specifically to the informal nature of these activities, taking into consideration their unique texture and spatial interactions as well as improving finance access for business enterprises. More importantly though is that renewed interest should be afforded towards improving informal-formal sector linkages by integrating and spreading power in value chains, as well as lowering the economic concentration in the formal sector through the removal of key structural impediments for informal businesses. Notwithstanding these insights, the study did have its own limitations. This pertained to the cross-sectional nature of the dataset and a lack of insight into more local dynamics. Future studies therefore can look to more detailed insight in this regard, focusing on prolonged inquiries and understanding specific dynamics within different geographical contexts within the country.

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HOW HAS ECONOMIC GLOBALISATION AFFECTED INDUSTRIALISATION IN SOUTH AFRICA? ANSWERS FROM AN ARDL APPROACH

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ABSTRACT

Globalisation has had a profound impact on shaping modern economic and social life. Thought to bring with it significant benefits, especially for countries' industrialisation, the process' impact has not been uniform. No more so has this been evident than in South Africa. Characterised by its own unique trade and financial liberalisation, global integration after 1994 sparked signs of economic and social progress. Recent evidence though has pointed to an ailing manufacturing sector, with concerns surrounding premature deindustrialisation. The study's main objective was to analyse the relationship between economic globalisation and industrialisation in the South African economy. A quantitative approach through the use of secondary time series data ranging from 1990 to 2019 was employed. Two ARDL models were used to test the long-run relationships, while two ECM models were used to estimate the short-run dynamics. The results suggest that higher levels of economic globalisation increase manufacturing output in the long run. However, it seems that the process exhibits a significant negative relationship with manufacturing employment. These results show that greater economic integration does benefit the quantitative aspects of the country's industrialisation endeavours, however it does withhold consequences for the process' inclusivity and broader qualitative contribution towards the standard of living. Based on these findings, it is recommended that stakeholders adequately align industrial policy towards improving regional infrastructure and market institutions as well as the development of mutually beneficial value chains, especially across the African continent. In addition, strategies should be aimed towards enhanced industrial financing and building sound public-private relationships.

Keywords: Economic globalisation, industrialisation, econometric; ARDL, South Africa.

1. INTRODUCTION

The importance of industrialisation in facilitating structural change has been markedly expressed (Nixon, 1990; Mujeri & Mujeri, 2021). The process has become a fundamental prerequisite and cornerstone towards realizing better standards of living for societies. The role of manufacturing sectors in this regard has been unique, displaying idiosyncratic characteristics which has placed their performance as one of the leading considerations for policy makers across the globe (Pal, 2021). Their role in facilitating the development of economic structures, has been encompassed in their ability to stimulate activity across value chains, displaying unique backward and forward linkages whilst likewise withholding the capacity to increase productivity through new methods of production (ADB, 2019). In light of these characteristics, much emphasis has been placed on the process to facilitate the convergence of income levels, particularly allowing developing countries the ability to transition to a developed state (Siddiqui, 2021). As the world has become increasingly interconnected, especially over the course of the last two decades, the significance of

this process has been further advanced (Vu, 2018). General expectations from this perspective, have been directed towards the assumption that the liberalisation of trade and capital accounts would afford developing countries the ability to benefit from comparative advantages, knowledge transfers and spill-over effects, all which have become synonymous with the economic globalisation process (Rodrik, 2021). These expectations have rightly been justified, as countries such as Singapore, Taiwan and South Korea have all utilised trade and foreign investment to facilitate the drive towards industrialised states. Unfortunately, these benefits have not been shared by all, as notable dichotomies within the developing world have emerged (Hauge, 2019). Coinciding with the move towards a more globalised economic system, has been the decline in manufacturing sectors' performance, especially in most of Africa (Lopes & te Velde, 2021). These performances have arguably shed light on the associated deleterious effects which amongst others have included the effect of concentrated supply chain networks, rapid and intrusive technological changes and debilitating import penetration (Adreoni & Tregenna, 2020)

In light of these complexities, understanding the nuances between economic globalisation and industrialisation has been significantly problematic (Bianchi & Labory, 2018). No more so has this been evident than in the South African context. Whilst the country has displayed similar declines in its manufacturing sector, it has had its own unique socio-economic challenges which have largely been associated with its controversial past (Habiyaemye et al., 2022). More so, compared to other countries it has displayed an idiosyncratic economic integration which as opposed to being externally imposed, by structural adjustment programmes (SAPs) has been driven internally (de Jongh, 2019). In light of these features, evidence towards addressing the question as to how the globalisation process has affected the capability of the manufacturing sector to act as an engine of growth has been severely limited. Studies in this regard, have primarily assessed the relationship on a theoretical premise (Andreoni et al., 2021; Bell et al., 2021). Where empirical attempts have been made, these have either been marked by measurement discrepancies (using proxies for economic globalisation) or have solely focused on either quantitative (output) or qualitative (employment) aspects in isolation. In light of these shortcomings, the study seeks to add to the limited body of knowledge surrounding the South African context. In doing so, it has the primary objective to examine the relationship between economic globalisation and industrialisation within the country. The paper is structured with the following section covering the literature review. Thereafter the methodology is explained, whilst section four presents the results and discusses the findings. Finally, the paper concludes with the conclusion where the major implications are identified, and pertinent recommendations provided.

2. LITERATURE REVIEW

From a theoretical viewpoint, the process of industrialisation has been continuously highlighted as one of the underlining features characterising the development of economies (Erumban & de Vries, 2021). These arguments find themselves entrenched in the seminal works of key scholars (Lewis, 1954; Kaldor, 1967), which at the core, suggest that manufacturing sectors have unique and intricate characteristics that enable them as engines of economic growth. Their ability to accumulate comparatively high levels of capital and realising important economies of scale allow for a more effective use of resources (Moyo, 2016). Blakeslee et al. (2018) further attest that they are closely linked to the use of new technologies and embody significant spill-over effects as they hold close ties and linkages with other sectors. Taking this into account, the role of industrialisation

in enforcing structural change has been profound (Andreoni et al., 2021). Towards explaining this relationship, scholars have suggested that manufacturing sector activity has displayed an inverted U-shape formation with the level of income inherent within economies (Rowthorn & Ramaswamy, 1997). These arguments suggest that as countries move from low-income levels, manufacturing sectors are important drivers of growth as economic activity shifts from agrarian based tasks to more productive and commercialised orientated motions (Hallward-Driemeier & Nayyar, 2017). During this transition, economies are able to exploit greater specialisation of labour, enhanced diversity in production, up-skilling and learning, as well as greater levels of investment and saving, all induced through industrial development (Cruz, 2015). Though as these benefits are realised, and productivity levels increase, higher income levels are associated with a drop in the share of manufacturing activity, as service sectors gain prominence on the basis of productivity differentials (Joseph et al., 2021). From this perspective, countries are set to deindustrialise as they move into a more developed state, characterised by an advanced and enabling economic structure.

In light of the fact that most modern advanced countries achieved their structural transformation via this process, it has led to the general belief, especially among modernisation and convergence theorists, that the replication of these features would essentially allow developing countries to do the same (Simandan, 2020). Whilst these suppositions, provide notable insight, the onset of a more globalised and interconnected world has significantly augmented these dynamics. Dependency and world systems scholars argue, that as trade relationships have formed and integrated financial markets have taken up prominence, core-periphery relations within international exchanges have impeded some countries' ability to adequately industrialise (Kaya, 2010). For others though it has inferred the ability to accelerate the process (Felipe, 2019). Economic globalisation in this regard has played a fundamental role in shaping manufacturing sector performances across the globe. Thibane and Wait (2017) describe this process as one that entails the international exchange of goods, services and technology through the liberalisation of trade. Likewise, it has seen the internationalisation of financial markets, leading to a significant mobility of capital and a growing influence of multinational corporations through the establishment of global value chains (GVCs) (Erel et al., 2020).

From these perspectives, the influence of economic globalisation on the ability of economies to modernise and industrialise has been captured to some extent within the Stolper-Samuelson theorem (Rodrik, 2021). The theorem posits that as countries have integrated into the global economy, a global reorganisation of manufacturing has ensued, largely on the basis of an international division of labour (Haile et al., 2013). These views, suggest that developed countries seeking to take advantage of low-labour costs inherent within more labour-intensive structures in the developing world, have relocated their manufacturing activities as a means to shift resources to more capital intensive and high value activities (Wood, 2019). Consequently, as developing countries exploit their comparative advantages and enjoy sustained foreign investments, this induces higher levels of manufacturing output and employment (WTO, 2019).

Whilst these benefits have been evident in the success of various Southeast Asian countries over the course of the last 30 years, the reality unfortunately, has been that economic integration likewise has inferred noteworthy adverse consequences on the developing world (Joseph et al., 2021). Desai and Rudra (2019) explain that whilst low- and middle-income countries, have liberalised their trade and financial markets to take advantage of the associated benefits, they have

inadvertently exposed themselves to international price trends. In the face of low competitiveness within their domestic markets, this has inferred what various scholars have come to understand as a premature deindustrialisation (Tregenna, 2016). In contrast to the deindustrialisation experienced by already developed countries, this process is characterised by a fall of manufacturing share in GDP at much lower levels of income and far lower levels of industrial activity (Dasgupta & Singh, 2006). As a result, many of these countries have been unable to realise the associated economic benefits of the industrialisation process, so desperately required to facilitate structural change (Hajime & Hiroshi, 2019).

Taking these complex dynamics into account, understanding the influence of South Africa's economic integration on the industrialisation of the economy has proven a difficult task, especially considering the unique nuances within the country's social and economic climate (Deliotte, 2013). These pertain primarily to the country's abolishment of the apartheid regime in the early 1990s, which up until that point attributed signs of significant concentration, a lack of diversification as well as comparatively low levels of investment and productivity within the economy (Joffe et al., 1994). With the transition to a democratic state and the removal of various economic sanctions, much optimism was afforded to the manufacturing sector to act as critical facilitator in fostering structural transformation and address the triple challenges of unemployment, poverty, and inequality (Habanabakize & Mncayi, 2022). As the country liberalised its trade and embarked on its own unique economic integration, industrial policy followed suit, embodying Washington Consensus-type reforms (Zalk, 2014). The adoption of these reforms was based on the assumptions that financial and trade liberalisation would induce a more efficient allocation of capital and allow the exploitation of comparative advantages, all which would assist in developing a strong and competitive industrial base.

For the first 10 years after 1994, the adoption of these policies in managing the integration into the global economy did seem to do just that. From 1994 to 2005 manufactured exports increased by an average annual growth rate of approximately 6.7 percent, which was much higher than the preceding 2.7 percent of the prior two decades (Manuel, 2007). Although these gains were noteworthy, the sector's performance since then has been all but lacklustre (Avenyo et al., 2021). Stats SA (2021) reports that manufacturing employment as a share of the total labour force has declined from above 15 percent to below eight percent during this time. Likewise, manufacturing value added (MVA) as share of gross domestic product (GDP) has declined from highs of 15.7 percent to 11.74 percent (World Bank, 2022). Whilst these declines might suggest the transition towards an innovative and service-based economy, reflecting the needed structural transformation, this has occurred at much lower income levels compared to the already industrialised countries. For example, Rodrik (2020) reports that South Africa achieved its peak of MVA (as a % of GDP) at approximately \$5 432 GDP per capita, which compared to countries such as Italy (\$18 034), the US (\$14 765) and Spain (\$13 360) is considerably lower. Even when compared to the performance of other developing countries (*Mauritius = 1.6%; Thailand = 2.9%; India = 5.9%*), the average MVA per capita growth rate (0.5%) for the past two decades, points to the country experiencing a premature deindustrialisation (Bowden 2021).

In light of these dynamics, much attention has been afforded towards understanding the impact of the country's economic globalisation in relation to its industrialisation path. Scholars in this regard, have pointed to several considerations that might have contributed to this decline (Green, 2009;

Barnes, 2019). As the world has integrated, manufacturing sectors too have been greatly linked to global networks which has played a detrimental role in local performances. These nuances have presented themselves from both the financial and trade related aspects which have been aggravated by the country finding itself in a so-called middle-income trap (Andreoni et al., 2021). Amongst these challenges, has been the country's inability to penetrate globally concentrated manufacturing networks. Though, where they have managed to do so, engagements with GVCs have been characterised by low value-added production which has contributed to the disarticulation of local performances (Bell et al., 2021). An additional challenge is fostered around the inability of the country to keep pace with rapid technological advances, which has seen it been excluded on the basis of a lack of international competitiveness (Andreoni & Tregenna, 2020). The latter has been further exacerbated by the fact, that despite various industrial policy initiatives, the country has continued to display significant lower levels of productivity and a concerning high dependence on commodity exports (United Nations, 2018).

Taking these ambiguities into account, empirical evidence directed towards understanding the dynamics between economic globalisation and industrialisation, especially in the developing world have been limited. Additionally, in instances where studies have analysed these interrelationships, evidence has been miscellaneous. For example, Kaya (2010) through the use of a fixed effects, OLS panel regression for 64 developing countries from 1980 – 2003, using proxies (trade openness; FDI) for globalisation, suggested that trade drives industrialisation through enhancing manufacturing employment. A more recent study by Ngouhouo and Ewane (2020) in comparing these dynamics between 23 Franc using and non-Franc using African countries likewise showed the positive association of FDI and industrial activity. By means of a pooled PMG estimator, from 1990 – 2017, the findings showed that currency considerations did in fact play an important role in facilitating the influence of economic globalisation on manufacturing output. Conversely, Tamuno and Edoumiekumo (2012), by means of Johansen co-integration and VECM analysis for Nigeria from 1980 to 2008 showed that trade openness induced negative effects on industrial employment in the country. Similarly, Oduola et al. (2021) likewise showed these effects. Considering the impact of FDI on industrialisation on a panel of 43 sub-Saharan African economies for the period 1996 to 2018, through the use of a system GMM technique, the study highlights the influence of competition effects, natural resource seeking investment and the repatriation of profits as key factors driving the disintegration of industrialisation in these countries.

3. METHODOLOGY

3.1 Empirical study and data sources

Towards achieving the main objective, the study made use of a secondary time-series dataset for South Africa, with data ranging from 1990 to 2019. A total of 30 annual observations were included with data sourced from various databases. Included variables are shown in Table 1 below and comprised, both MVA (% of GDP) and manufacturing employment (MEMP) as dependent variables in the respective models. With the purpose of capturing the levels of economic globalisation, the study made use of an economic globalisation index, as developed by the KOF Swiss Economic Institute. The index serves as sub-index of a general globalisation index. It captures both trade and financial globalisation dynamics. Moreover, gross national income (GNI)

per capita and the real effective exchange rate (REER) were utilised as control variables. These were chosen on the basis of their inclusion in similar studies (Aldersen, 1997; van der Heijden, 2018) and with the purpose to account for productivity levels as well as the international price competitiveness. Subsequently, all variables used were transformed to their natural logarithms before the models were estimated.

Table 1: Variable description and data sources

| Variable | Measure | Database |
|--|---|-------------------------------------|
| Manufacturing Employment (MEMP) | Number of individuals employed in the manufacturing sector | SARB (2022) |
| Manufacturing gross value added (MGVA) | Value of manufacturing output (% of GDP) | World Bank (2022) |
| Real effective exchange rate (REER) | Real effective exchange rate index | SARB (2022) |
| Economic globalisation (ECG) | KOF globalization index ranging from 0 to 100. A high score indicates a high level of economic globalization. | KOF Swiss Economic Institute (2022) |
| Gross national income (GNI) | GNI per capita | SARB (2022) |

3.2 Econometric method of analysis and model specification

The study carried out the analysis by making use of an autoregressive distributed lag (ARDL) modelling technique as refined by Pesaran et al. (2001). This specific modelling technique was chosen on the basis of being utilised in cases where variables are integrated of different order of integration, that is either I(0) or I(1). Whilst it holds this advantage over similar modelling techniques such as Johansen and Julius' (1990) model of co-integration, it likewise has shown to provide more accurate results when used with smaller sample sizes (Haug, 2002). Given the aforementioned, two models have been employed aiming to achieve the main objective of the study and are shown as follows in equations 1 and 2 below:

$$\Delta LMEMP = \varphi_0 + \sum_{j=1}^k \eta_j \Delta LMEMP_{t-j} + \sum_{j=1}^k \alpha_j \Delta LECG_{t-j} + \sum_{j=1}^k \gamma_j \Delta LREER_{t-j} + \sum_{j=1}^k \delta_j \Delta LGNI_{t-j} + \omega_1 \Delta LMEMP_{t-1} + \omega_2 \Delta LECG_{t-1} + \omega_3 \Delta LREER_{t-1} + \omega_4 \Delta LGNI_{t-1} + \mu_t \dots \quad (1)$$

$$\Delta LMGVA = \varphi_0 + \sum_{j=1}^k \eta_j \Delta LMGVA_{t-j} + \sum_{j=1}^k \alpha_j \Delta LECG_{t-j} + \sum_{j=1}^k \gamma_j \Delta LREER_{t-j} + \sum_{j=1}^k \delta_j \Delta LGNI_{t-j} + \omega_1 \Delta LMGVA_{t-1} + \omega_2 \Delta LECG_{t-1} + \omega_3 \Delta LREER_{t-1} + \omega_4 \Delta LGNI_{t-1} + \mu_t \dots \quad (2)$$

from these equations, $\Delta LMEMP$ refers to any change sustained in the natural logarithm of manufacturing employment, $\Delta LECG$ the change sustained in the natural logarithm of economic globalization, $\Delta LREER$ the change sustained in the natural logarithm of the real effective exchange rate, $\Delta LGNI$ the change sustained in the natural logarithm of gross national income, $\Delta LMGVA$ the change sustained in the natural logarithm of manufacturing gross value-added (MVA), and μ_t the error term. The study also represented the short-run coefficients by $\eta_j, \alpha_j, \beta_j, \gamma_j, \delta_j$ while k is indicative of the number of lags included in both models. Furthermore, the long-run coefficients are expressed by $\omega_1, \omega_2 \dots \omega_n$. After the formulation of equations 1 and 2 specified above, the study subsequently formulated the following hypotheses:

Null hypotheses (H_0): No co-integration between the variables

Alternative hypotheses (H_1): Co-integration is present between the variables

The study employed a bounds testing procedure to test the hypotheses mentioned above. The bounds testing procedure calculates and compares the F-statistics to the lower- and upper-bound critical values established by the work of Pesaran et al. (2001). When the F-statistics are greater than the critical values, the null hypotheses are rejected, which infers that the variables are in fact co-integrated. Contrastingly though, in cases where the F-statistics are found to be lower than the critical values, there will be no rejection of the null hypothesis. Subsequent to this procedure, an error correction model (ECM) was estimated to determine the speed of adjustment back to equilibrium. This also allowed the determination of the short-run dynamics between the variables. For this purpose, the ECM models that were used are expressed in equations 3 and 4 respectively:

$$\Delta LMEMP = \varphi_0 + \sum_{j=1}^k \eta_j \Delta LMEMP_{t-1} + \sum_{j=1}^k \alpha_j \Delta LECG_{t-j} + \sum_{j=1}^k \gamma_j \Delta LREER_{t-j} + \sum_{j=1}^k \delta_j \Delta LGNI_{t-j} + \theta ECT_{t-1} + \mu_t \dots \dots \dots (3)$$

$$\Delta LMGVA = \varphi_0 + \sum_{j=1}^k \eta_j \Delta LMGVA_{t-1} + \sum_{j=1}^k \alpha_j \Delta LECG_{t-j} + \sum_{j=1}^k \gamma_j \Delta LREER_{t-j} + \sum_{j=1}^k \delta_j \Delta LGNI_{t-j} + \theta ECT_{t-1} + \mu_t \dots \dots \dots (4)$$

Again, from these equations, the error correction term is represented by ECT_{t-1} whilst θ represents the coefficient of the error correction term. The latter is used to indicate the speed of adjustment back to equilibrium. Based on these results, Granger (1988) infers that if there does in fact exist at least one co-integrated relationship, it implies the presence of causal relationships between the variables. As such, the study applied the Toda-Yamamoto Granger causality test using block exogeneity and Wald tests in an augmented VAR model to identify any causal relationships. Much like ARDL modelling, the model can be estimated using a mixture of different integrated variables (Toda-Yamamoto, 1995). Finally, towards ensuring the reliability of the results, various stability and diagnostic testing procedures were all carried out.

4. RESULTS AND DISCUSSION

4.1 Correlation analysis

As the first step in the analysis the study ensued by determining the nature and strength of the relationships that exist between the variables, doing so through correlation analysis. Table 2 below shows the results of the analysis. As shown, manufacturing employment seems to exhibit a significant and strong positive relationship with the real effective exchange rate (*sig. value* = 0.0012) and a weak negative relationship with gross national income per capita (*sig. value* = 0.0392). In addition to this, results show a significant and strong negative relationship between manufacturing employment and economic globalization (*sig. value* = 0.0000). Interestingly though, manufacturing gross value-added illustrated a strong positive relationship with both gross national product (*sig. value* = 0.0000) and economic globalization (*sig. value* = 0.0000)

Table 2: Correlation results for the selected variables

| Probability | LMEMP | LMGVA | LGNI | LECG | LREER |
|-------------|--------------------------|--------------------------|------------------------|--------------------------|----------------|
| | 1.0000 | | | | |
| LMEMP | ----- ----- | | | | |
| | -0.5734 | 1.0000 | | | |
| LMGVA | [-3.4294] (0.0022***) | ----- ----- | | | |
| | -0.4067 | 0.9482 | 1.0000 | | |
| LGNI | [-2.1809] (0.0392**) | [14.6233] (0.0000***) | ----- ----- | | |
| | -0.7425 | 0.7959 | 0.6448 | 1.0000 | |
| LECG | [-5.4312] (0.0000***) | [6.4406] (0.0000***) | [4.1329] (0.0004*) | ----- ----- | |
| | 0.6003 | -0.5273 | -0.3780 | -0.6430 | 1.0000 |
| LREER | [3.6777] (0.0012***) | [-3.0402] (0.0056***) | [-2.0005] (0.0569*) | [-4.1133] (0.0004***) | ----- ----- |

Note: () shows *p*-values; *** is indicative of significance at 1% level of significance, * at 5% level of significance, * at 10% level of significance.

4.2 Unit root analysis

Subsequent to the correlation analysis, the study used the Augmented Dickey-Fuller (ADF) unit root test for the purpose of determining the order of integration of the variables. This was done to ascertain if these indeed were integrated at I(0) (levels) or I(1) (first order of integration). Moreover, it served the purpose to identify if there were any variables that were integrated at the second order of integration as these would render the computed F-statistics of the bounds testing procedure invalid (Ibrahim, 2015). Table 3 below therefore accounts for the results obtained from these tests. Among the five variables used, four variables were integrated at first order, whilst only *LMEMP* was deemed stationary at levels. This therefore confirmed the absence of any variables that were integrated at I(2), and that bounds testing could proceed.

Table 3: Augmented Dickey-Fuller (ADF) unit root results

| Variable | Levels | | | | 1 st Difference | | | | I (0)/ I (1) |
|----------|-----------|---------|-------------------|-----------|----------------------------|----------|-------------------|----------|-----------------|
| | Intercept | | Trend & intercept | | Intercept | | Trend & intercept | | |
| LMEMP | -2.6722 | 0.0934* | -4.5193 | 0.0085*** | -3.1651 | 0.0350** | -3.1369 | 0.1207 | I (0) |
| LMGVA | -3.1369 | 0.1207 | -1.2451 | 0.8782 | -1.2451 | 0.8782 | -4.3586 | 0.0108** | I (1) |
| LECG | -2.6272 | 0.1016 | -2.3399 | 0.3986 | -3.1940 | 0.0329** | -3.4424 | 0.0692* | I (1) |
| LGNI | -0.9482 | 0.7536 | -0.5384 | 0.9742 | -3.0091 | 0.0483** | -3.0542 | 0.1392 | I (1) |
| LREER | -2.9606 | 0.0533* | -3.1202 | 0.1243 | -4.4277 | 0.0020 | -4.3892 | 0.0101 | I (1) |

Note: *** is indicative of significance at 1% level of significance, * at 5% level, * at 10% level.

4.3 Bounds testing for co-integration and long-run analysis

To test the impact and effects of economic globalization on South Africa's industrialisation, the study used two models. The first model employed MEMP as a dependent variable whilst the second model used MVA to quantify the industrialisation process. This was done for two reasons. Firstly, by using both employment and output measures, it provided the study with the possibility of distinguishing between the quantitative and qualitative impacts of economic globalisation on industrialisation. Secondly, by employing two different measures of industrialisation, the robustness of the analysis and its findings are enhanced. As such, the two models were estimated as ARDL 1 (1,3,3,3) and ADRL 2 (1,3,3,3) using the Schwarz information criterion (SBIC) for lag selection. After this, bounds testing was undertaken with the purpose of determining any

possible long-run relationships. The results for these tests are shown in Table 4 below with the estimated F-statistics for both Model 1 and Model 2 exceeding the upper and lower bound critical values. This confirmed the presence of co-integration for both models.

Table 4: Bounds test results for model 1 and 2

| Model | Estimated F-value | Pearson critical values | | | Presence of co-integration |
|----------------------|-------------------|-------------------------|-------------|-------------|----------------------------|
| | | Sig. level | Lower bound | Upper bound | |
| Model 1 DV: LMEMP | 5.7039 | 10% | 2.72 | 3.77 | Co-integration confirmed |
| | | 5% | 3.23 | 4.35 | |
| | | 2.5% | 3.69 | 4.89 | |
| | | 1% | 4.29 | 5.61 | |
| Model 2 DV: LMGVA | 12.4227 | 10% | 2.72 | 3.77 | Co-integration confirmed |
| | | 5% | 3.23 | 4.35 | |
| | | 2.5% | 3.69 | 4.89 | |
| | | 1% | 4.29 | 5.61 | |

Subsequent to the bounds testing, long run coefficients were estimated. Shown in Table 5 below, for Model 1, the coefficients for LECG were estimated at -0.9111, which shows the existence of a negative relationship between economic globalization and manufacturing employment levels. In other words, this implies that if the economic globalization levels increase by 1 per cent, it would lead to a 0.9111 per cent decline in manufacturing employment. Contrastingly, results for Model 2 reveals a statistically significant and positive relationship between LECG and LMGVA. The positive relationship between higher integration levels and manufacturing output are in line with the findings of Apopo and Justice (2018).

Table 5: Long-run results and coefficients

| Model | Variables | Coefficient | Std. error | t-statistics | Prob. |
|----------------------|-----------|-------------|------------|--------------|-----------|
| Model 1 DV: LMEMP | LECG | -0.911183 | 0.279636 | -3.258464 | 0.0472** |
| | LGNI | 0.700812 | 0.233552 | 3.000668 | 0.0576* |
| | LREER | -0.141084 | 0.161927 | -0.871282 | 0.4477 |
| | C | 10.878027 | 1.651900 | 6.585160 | 0.0071*** |
| Model 2 DV: LMGVA | LECG | 0.823079 | 0.531350 | 7.195028 | 0.0055*** |
| | LGNI | 0.375142 | 0.456012 | 3.015582 | 0.0570* |
| | LREER | -0.180435 | 0.390817 | -0.461687 | 0.6757 |
| | C | -5.522667 | 5.747049 | -6.181028 | 0.0085*** |

Note: *** denotes significance at 1% level; ** 5% level of significance; * 10% level of significance

Whilst the aforementioned supports the integration led industrialisation hypothesis, findings relating to the negative inducing employment effects suggest that economic globalisation does impose qualitative consequences in the long-run, primarily as a result of industrial structure change, and the ensuing demand for higher-skilled workers (Das & Ray, 2020). In addition to these results, the coefficient for LGNI in both models was positive and significant at a 10% level of significance (*model 1: p-value = 0.0576; model 2: p-value = 0.0570*).

4.4 ECM results and short-run analysis

An ECM model is conducted with aim of establishing the speed at which the variables that were found to have co-integration can adjust back to equilibrium. Table 6 illustrates the results for both model 1 and 2. It depicts the short-run coefficients and error correction terms. It can be deduced that the error correction terms for both models are negative and statistically significant, serving as a confirmation of error correction in the two co-integrating relationships. Adding to that, the ECT coefficient for Model 1 ($ECT = -0.1456$) proposes that, in one year, 14.56 per cent of the distortions

to equilibrium in manufacturing employment are eliminated. In contrast, results for Model 2 ($ECT = -0.5930$) suggests a faster rate of return to equilibrium for output, with only 1.69 ($1/|-0.5930|$) years needed for these distortions to be rectified.

Table 6: ECM results and short-run coefficients

| Model | Variables | Coefficient | Std. error | t-statistics | Prob. |
|--|----------------|-------------|------------|--------------|-----------|
| Model 1 (1,3,3,3) DV: LMEMP | D(LECG) | -0.033532 | 0.345712 | -3.442269 | 0.0374*** |
| | D (LECG (-1)) | -0.142144 | 0.271304 | -0.523929 | 0.6366 |
| | D (LECG (-2)) | 0.648315 | 0.297422 | -2.179781 | 0.1174 |
| | D(LGNI) | 0.532541 | 0.896705 | 2.824273 | 0.0665* |
| | D (LGGNI (-1)) | -0.001707 | 1.222827 | -0.001396 | 0.9990 |
| | D (LGNI (-2)) | 0.023421 | 1.011309 | 0.023159 | 0.9830 |
| | D(LREER) | 0.188545 | 0.129281 | 1.458414 | 0.2408 |
| | D (LREER (-1)) | 0.187125 | 0.099508 | 1.880512 | 0.1566 |
| | D (LREER (-2)) | 0.273917 | 0.120576 | 2.271726 | 0.1078 |
| CointEq (-1) | -0.143556 | 0.257945 | -4.433326 | 0.0213*** | |
| Model 2 (1,3,3,3) DV: LMGVA | D(LGNI) | 0.274129 | 0.697081 | 0.393253 | 0.7204 |
| | D (LGNI (-1)) | 0.912660 | 1.221198 | 2.385084 | 0.0972 |
| | D (LGNI (-2)) | 0.242166 | 0.624081 | 3.592748 | 0.0370** |
| | D(LECG) | -0.136350 | 0.482580 | -2354739 | 0.0999* |
| | D (LECG (-1)) | -0.31645 | 0.304435 | -3.388725 | 0.0428** |
| | D (LECG (-2)) | 0.028690 | 0.196296 | 0.146157 | 0.8931 |
| | D(REER) | -0.445737 | 0.066339 | -6.719124 | 0.0067*** |
| | D (REER (-1)) | 0.127592 | 0.075680 | 1.685952 | 0.1904 |
| | D (REER (-2)) | -0.370652 | 0.132662 | -2.793965 | 0.0682* |
| CointEq (-1) | -0.593062 | 0.172864 | -3.430803 | 0.0415** | |

Note: *** denotes significance at 1% level; ** 5% level of significance; * 10% level of significance

Based on the short-run coefficients in Table 6, the results are in correspondence with those reported for the long-run. Manufacturing employment seems to have been negatively affected by economic globalization and its lagging effects. Interestingly though, is that it seems to also attribute a negative influence on manufacturing output in the short-run, which is different from the results reported for the long-run. These findings lend credence to the fact that South Africa's economic integration has contributed to a premature deindustrialisation path (Andreoni & Tregenna, 2018). Whilst this contrasts to the long-run results, it does infer significant insight. Initial integration shocks seem to offset manufacturing output through enhanced competition, primarily from low wage and technologically advanced countries (Moyo, 2020). Though as enough time passes, and adaptation occurs, the structural change (greater use of technological inputs) allows the sector to grow. This however does seem to support the concerns that these changes come at the expense of labour inputs in the long-run, holding significant consequences for employment creation (Serumaga-Zake & van der Poll, 2021).

Finally, after viewing the results between an array of control and the dependent variables employed in the study, the estimates provide evidence that confirms the expected relationships. In this regard, the REER exhibits a negative influence on both MEMP and MVA. These findings are line with those presented by Boateng (2019). Here, exchange rate movements are said to have a significant influence on the sector, given the reliance on foreign inputs for countries such as South Africa (Mlambo, 2020).

4.5 Toda-Yamamoto Granger causality analysis

Subsequent to the short run analysis, Toda-Yamamoto granger causality analysis was employed. This was done on the basis of confirmation of co-integrated relationships which inferred the possible existence of causal effects (Granger, 1988). Table 7 below provides the results of the analysis. From these estimates, it suggests that there exist uni-directional relationships between LECG and LMVA as well as LECG and LMEMP, all emanating from greater levels of economic globalisation. These results suggest that changes relating to trade and financial liberalisation instil changes in the performance of South Africa’s manufacturing sector. The linkage in this regard can be explained by the sector’s relatively large exposure to foreign competition (Avenyo et al., 2021). While relatively low-cost import penetration has directly affected employment and output, the lack of the sector’s international competitiveness has inferred indirect consequences by reducing exports (Torreggiani & Andreoni, 2019).

Table 7: Toda-Yamamoto Granger causality results

| Variable | Dependent variable | | | | |
|----------|-------------------------|-----------------------|------------------------|-------------------------|----------------------|
| | LECG | LGNI | LMGVA | LMEMP | LREER |
| LECG | ---- | 1.618540 (0.6552) | 10.83045 (0.0127**) | 15.38337 (0.0015***) | 3.402323 (0.3337) |
| LGNI | 46.69846 (0.0000***) | ---- | 0.571848 (0.9028) | 0.681251 (0.8776) | 0.808244 (0.8475) |
| LMGVA | 3.485585 (0.3226) | 6.983079 (0.0724*) | ---- | 30.52499 (0.0000***) | 1.027747 (0.7945) |
| LMEMP | 1.895115 (0.5945) | 0.909821 (0.8231) | 2.701311 (0.4400) | ---- | 2.225520 (0.5269) |
| LREER | 11.51004 (0.0093***) | 0.123215 (0.9889) | 4.484385 (0.2137) | 2.384941 (0.4964) | ---- |

Note: () shows the p-values *** denotes significance at 1% level of significance; ** 5% level of significance; * 10% level of significance

Additionally, to this, changes in economic globalisation (LECG) in turn seem to be induced by augmentations in the levels of economic growth as well as the movements in the exchange rate. Both these results can be explained by the influence of favourable domestic conditions in facilitating cross border transactions (Habanabakize, 2020).

4.6 Diagnostic and stability tests

As the final step of the analysis the study employed an array of diagnostic tests to analyse the robustness of the short-run estimates. In this regard, the study tested for normality, heteroscedasticity, autocorrelation and multicollinearity. The results of the tests are reported in Table 8. Based on these estimates, residuals for both models were found to be normally distributed, there was no serial correlation whilst the aptness of the models’ functional form was also confirmed.

Table 8: Residual diagnostics and model stability results

| Item | Test | Model 1 | | Model 2 | |
|--------------------|-----------------------|---------|----------------------|---------|----------------------|
| | | p-value | Result | p-value | Result |
| Normality | Jarque-Bera | 0.4873 | Normally Distributed | 0.6069 | Normally Distributed |
| Heteroscedasticity | Breusch-Godfrey-Pagan | 0.4742 | Homoscedastic | 0.3942 | Homoscedastic |

| Item | Test | Model 1 | | Model 2 | |
|---------------------|----------------------------|---|-------------------------|---------|-------------------------|
| | | p-value | Result | p-value | Result |
| Serial correlation | Breusch-Godfrey | 0.2701 | No serial correlation | 0.7332 | No serial correlation |
| Model specification | Ramsey RESET test | 0.4596 | Functional form correct | 0.2457 | Functional form correct |
| Multicollinearity | Variance inflation factors | VIF values minimum of 1.2889 and maximum of 2.277 for all regressors. | | | |

5. CONCLUSION AND RECOMMENDATIONS

At its centre, this study had the main objective to analyse how South Africa's industrialisation has been affected by its integration into the global economy. Economic globalisation in this regard has been an overarching feature of modern processes that have come to influence the development paths of countries world-wide. Whilst it has offered several advantages in the form of knowledge spill overs, financial market development and greater efficiency through induced competition, so too has it withheld adverse consequences. For South Africa, arguably the most influential feature has been the performance of its manufacturing sector. The study's findings from this point view suggests that like most of its middle-income counterparts, economic globalisation has contributed to the premature deindustrialisation path the country currently finds itself on. Not only does it pertain to the sector's poor performance regarding its production, but more importantly, has negatively impacted on its ability to generate employment. The latter especially withholds important qualitative implications considering the country's struggles with pervasive levels of unemployment, poverty, and inequality.

In this regard, the findings of the study point to important considerations in understanding the challenges faced towards realising the potential of the manufacturing sector as an engine of growth. Amongst these, it seems that the relationship between SA's integration and industrialisation is shaped, both by exogenous and endogenous factors underlining the economic globalisation process. Internally, these challenges have emanated from South Africa's inability to compete globally, largely on the basis of high costs of production, low productivity levels as well as a lack of diversification. From an external perspective, the associated technological demands of the globalisation process have inferred significant skill biased technological change (SBTC), which in the face of a large supply of low-skilled labour has been detrimental to the sector's performance. These difficulties have also been expressed in the integration of the sector into a growing number of GVCs. This experience has been characterised particularly by large global power relationships and asymmetries, which have reflected the core-periphery dynamics between the North and South.

Based on the aforementioned, strategies seeking to propel industrial sector activity urgently need to be prioritised. The development of a strong manufacturing sector in this regard, necessitates the improvement of the local production system itself, if structural transformation is to be achieved. This requires a push towards the diversification of activity within the sector. Moreover, given the rapid changes in new digital applications across the world, public technology intermediaries promoting innovation must be made more responsive to the demands of the global economic landscape. Industrial policy from this perspective must seek to establish integrated supply chains in the local economy with a sustainable technological footprint. The latter should be aligned with a sound strategic framework which seeks to enhance labour capabilities, technological uptake and learning. Other key policy foci must also include, better industrial financing, regional partnership

formation whilst establishing sound public-private relationships that facilitate growth coalitions along the respective local, regional and global value chains. Whilst the study provides significant insight, it is not without its own limitations. This pertained the limited timeframe and sample size, to which panel studies with regional foci could potentially offer additional insight. Moreover, based on the holistic overview of the manufacturing sector, a more detailed analysis on the specific sub-sectors could also improve the body of knowledge surrounding the economic globalisation – industrialisation nexus.

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ICT ADOPTION AND POVERTY REDUCTION: A CASE OF COMESA REGION

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ABSTRACT

Trade can be very beneficial in diverse ways and member countries can experience diverse benefits such as increased exports, technological advancement, foreign currency generation, increased economic growth and ultimately economic development (poverty reduction). Globally, regional trading blocs such as ASEAN Economic Community and European Union have benefited through trade. However, the Common Market for Eastern and Southern Africa which has more than two decades of existence has a number of its member countries still suffering from high poverty levels. This quantitative study is aimed at examining how the Common Market for Eastern and Southern Africa can harness information and communication technology investment to alleviate the enormous poverty levels among the member states. Data were generated from the World Bank and International Telecommunication Union, for the period 1994 to 2021. A Panel Auto Regressive Distributed Lag was employed in the research. Empirical findings showed that an increase in information and communication technology will lead to an increase in the human development index in the long run thereby reducing poverty. Thus, information and communication technology positively aid in poverty reduction. It was realised that trade can lead to a decrease in poverty levels. These findings show that every expansionary activity in information and communication technology and trade in the COMESA region results in higher living standards or a higher human development index. Key policies that were suggested were, improvement in ICT policies, creation of a regional research hub, promoting increased usage in internet usage, and promoting high usage of mobile phone usage.

Keywords: Economic development; economic growth; economic integration; information and communication technology; investment; trade; poverty

1. INTRODUCTION

The Common Market for Eastern and Southern Africa (COMESA) was formed in 1994 with the main aim of promoting regional trade among the twenty-one (21) economies. The Global Competitiveness Index 4.0 (GCI 4.0) of the World Bank assesses the factors and characteristics that influence productive capacity, growth, and human development in the Fourth Industrial Revolution era and the GCI of COMESA has been low. In 2019, the COMESA region at large had a low GCI score of 49.0 and only six (6) member states were in the top 100 (COMESA, 2022). The low GCI index implies low productivity growth and the bulk of economies in the COMESA region remain plagued by dire and imminent poverty. Poverty can be defined as the complete absence of opportunities, coupled with high levels of undernourishment, hunger, illiteracy levels, lack of access to education, physical and mental diseases, and socio-economic instability (Beegle

2016). Apart from that, poverty is a multidimensional aspect and can be defined using various proxies such as access to nutritious food, shelter, water and sanitation, peace, and access to education and healthcare just to mention a few (Agboola & Balcilar 2012:1). A number of economies in the COMESA region that are still facing high levels of poverty in terms of the human development index are: Somalia with 0.42, Zambia has 0.59, Rwanda with 0.53, Sudan with 0.50, Madagascar with 0.52 as well as with Malawi 0.48 (United Nations, 2020). Apart from that the rate of information and communication technology adoption and diffusion among the COMESA region is also low. This is supported by the fact that 2% of the total population in Somalia have access to use the internet (World Bank, 2022). In Libya only 21% of the total population has access to the internet (World Bank, 2022). Apart from that, some member states of the COMESA trading block are plagued by colossal macro-economic challenges such as unemployment, high imports, and limited exports just to mention a few (Pufall, Eaton, Nyamukapa, Schur, Takaruzza, & Gregson, 2016): (Endale & Tadesse, 2020). For example, Zimbabwe exports the bulk of its raw minerals to foreign markets and gain low foreign currency due to the lack of modern technology for value beneficiation (Dzviti, Maganga & Mamina, 2020; Nyemba, Moyo, & Mbohwa, 2018).

1.1 Problem Statement

Research has shown that intra trade can yield more benefits among the trading partners (Herman, 2020). Some of the benefits can be in the form of increased productivity, improved efficiency and innovation by manufacturers, earning foreign currency, employment creation, exchange of skills just to mention a few (Geng & Kali, 2021). These benefits help to improve the quality of life or the standard of living of people. Globally, there are number of trading blocs such as European Union, North American Free Trade Agreement, Asia Pacific Economic Cooperation and ASEAN Economic Community among others. A key point to note is that robust technology is at the centre of the success of many trading blocs (Herman, 2020). Economies such as Hong Kong, South Korea and Singapore which fall under the Asia Pacific Economic Cooperation managed to record high economic growth levels as well as low poverty levels due to sound export policies, adoption and diffusion of information and communication technology (Shirley, 2014). If other trading blocs such as European Union and The Asia Pacific Economic Cooperation have harnessed information and communication technology (ICT) for enhancing regional trade and economic growth, where is the missing link in the COMESA region (Becker, Becker, Sulikowski, & Zdziebko, 2018)? The weak productive capacity in ICT is a key limiting factor that hinders meaningful growth and investment returns among affiliates of COMESA. And that negatively affects the standard of living in the economic integration. In the COMESA region economies such as Zambia, Malawi, Zimbabwe and Sudan are battling with high poverty levels (United Nations, 2020). Apart from that, in terms of ICT, the rate of usage is still very low in the COMESA region at large. For example, Rwanda, Zimbabwe, Malawi, DRC are some of the economies still lagging behind ICT wise (World Bank, 2022). This implies that, the COMESA region at large will take a long time to realise the benefits of ICT usage in the different sectors, due to the low rate of ICT usage (Awad, 2022). Thus, there is an opportunity for the region to tap into ICT and channel it towards the productive and manufacturing sectors for value beneficiation as well as enjoying myriad benefits. Some of these benefits include job creation, boosting entrepreneurship increased trade flows from the use of e-commerce just to mention but a few (Cuevas-Vargas & Parga-Montoya, 2021).

Thus, there is need for a panacea to solve the low rates of ICT usage and high poverty levels in the COMESA region. This research will examine ICT adoption and poverty reduction in the COMESA region.

Research Objectives

- To preview and describe the status of ICT and poverty in the COMESA region.
- To analyse characteristics of ICT and poverty in the COMESA region.
- To establish the relationship between ICT and poverty reduction in the COMESA region.

2. LITERATURE REVIEW

2.1 Theoretical / conceptual framework

The Neo-Classical Theory (NCT)

This theory of economic development is built on the assumption that information and communication technologies (ICTs) can help poor economies transition out of endemic poverty (Ofori, Armah, Taale, & Ofori, 2021). The Neo-Classical theory holds water especially in the case of some of the selected economies under The Asia Pacific Economic Cooperation as explained prior. The theory is germane to this research because there is a need to examine how ICT can be used by the COMESA region at large for the sole purpose of rescuing the millions of population suffering from the vicious jaws of dire and abject poverty (Masoud Asst, 2013). Other economies such as Hong Kong, and Taiwan have benefited from ICT adoption hence it will be prolific too if the COMESA region member economies experience similar benefits in form of increased economic growth and reduced poverty.

Sustainable Livelihoods Approach (SLA)

Fundamentally, the approach demonstrates how economic agents can pave way for themselves by utilizing the available resources or productive materials that they have at their disposal (Ofori et al., 2021). Thus, the SLA hinges on providing a fundamental view of poor people's financial aspects and poverty. ICTs, according to Gigler (2011), are a comprehensive set of modern assets that people can use to create an enabling environment for themselves by engaging in a variety of socio-economic activities.

ICT is incorporated into the framework as a result of this, as well as the flexibility of the SLA concept in analysing poverty vulnerability, intensity, and severity (Ofori et al., 2021). Less fortunate entrepreneurs may be able to use ICT to network or look for new contracts or business opportunities. Research has shown that 90% of Africa are entrepreneurs (African Development Bank, 2011). Therefore, those entrepreneurs falling under the COMESA region can benefit from ICT adoption for positive social impact. This theory helps to explain the supply side of ICT in line with poverty reduction.

Review of Recent Literature

Lapukeni (2015) carried out research on financial inclusion and the role of ICT in the COMESA region. The research employed dynamic panel data analysis. Research findings showed that increased use of the formal financial system and increased mobile phone penetration (a proxy for ICT development) had a positive and significant impact on intra-regional trade in COMESA

(Lapukeni, 2015). From these research findings, there is no pellucid explanation of how ICT development can be harnessed and be utilized to promote intra trade which in turn helps in poverty reduction through the multiplier effect.

Apart from that, the study used mobile phone subscriptions only as a proxy for ICT development. This research will use a composite index of ICT which will include mobile phone subscription, the internet usage as well as fixed telephone usage. This is crucial since trading in the modern world is also facilitated through internet or e-commerce platforms. This will be advantageous as ICT can be better proxied by adding the three aspects as explained (David, 2019).

Jiya, Sama and Ouedraogo (2020) researched on infrastructure, trade openness and economic transformation in the COMESA region. The study employed dynamic fixed effects methods. Research outcomes showed that COMESA member countries must implement more projects to improve and expand access to energy infrastructure, particularly electricity, and telecommunications infrastructure, in order to achieve economic transformation (Jiya et al., 2020). These research findings show that telecommunications infrastructure is key for expansion in economic activities.

However, the study emphasized the importance of project implementation, but there is no clarity on how such projects can thrive when there is no ICT adoption. The precursor to the implementation of the aforementioned projects should be robust and sophisticated ICT. Thus the current research seeks to examine how ICT can be adopted by COMESA member economies for poverty alleviation. Elbushra, Abdel Karim, & Suleiman, (2011) researched on the role of COMESA in promoting intra -regional agricultural trade between Sudan and COMESA. Research findings depicted that Sudan has the potential to increase its output from the agriculture to the COMESA region. The research further recommended increased productivity as a key to enhancing the Sudan's output. However, the research is silent on how productivity can be improved. As such there is a research gap since there is no clear transmission mechanism presented on ways of improving productivity. As such this paper seeks to examine how ICT can be used as a tool for effective poverty alleviation in the COMESA region at large. The use of ICT can be beneficial to enhance farming output due to use of modern farming machinery (Ayisi Nyarko & Kozári, 2021).

A research by Ogbuabor, Anthony-Orji, Manasseh& Orji (2020) which focused on the COMESA output connectedness with the global economy revealed that the COMESA region is most heavily influenced by the output of the USA, EU, Japan, China, Canada, Indonesia, and UK, and as a result, these countries have the capacity to propagate output shocks there (Anthony-Orji *et al* 2020). In addition, the outcomes demonstrated that COMESA's output connection with the rest of the globe is extremely significant, with a total connectedness index (TCI) of 73% (Anthony-Orji *et al* 2020). However, although the COMESA region has a high TCI it remains plagued by dire and imminent poverty and as such there is a need for a panacea for that. This research will present the solution required for COMESA to escape out of poverty and low ICT usage.

3. METHODOLOGY

This section presents the research methodology used in the study. A brief description of the variables used will be presented as well as the hypothesis.

Research Design

The study was quantitative in nature and used a PVAR techniques. Data from International Telecommunication Union and World Bank from 1992 to 2021 were used in the study.

Table 1: Summary of Data Set

| Variable | Indicator | Variable Description | Unit of measurement | Source of Data |
|----------|--------------------------------------|---|-------------------------|--|
| HDI | Human development Index | Proxy for poverty measurement which includes income per capita, access to education and long life. | Index | United Nations 2022 |
| ICT | Composite Index of Telecommunication | Principal component value of connected mobile phones, percentage of people with access to internet as well as penetration of fixed lines. | Index | Author Computation based on International Telecommunication Union (2022) |
| Le | Life expectancy | The number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. | Years | World Bank (2022) |
| Trade | Trade | The sum of exports and imports of goods and services measured as a share of gross domestic product | % of GDP | World Bank (2022) |
| UNE | Unemployment | Share of the labour force that is without work but available for and seeking employment. | % of total labour force | (World Bank 2022) |

Source: Researcher’s Construct (2022)

The hypothesis is specified below:

Hypothesis

Null Hypothesis: There is no relationship between ICT adoption and poverty alleviation.

Alternative Hypothesis: There is a relationship between ICT adoption and poverty alleviation.

MODEL

The research adopted the Panel Auto Regressive Distributed Lag. This model was used in the research because it helps to depict the true causal relationship between ICT and poverty. Apart from that, it was used because it helps to reduce the chances of spurious regression, (Gholami, Sang-Vong Tom & Heshmati, 2005). The model is specified below.

$$y_t = m + \alpha_1 y_{t-1} + \beta_0 x_t + \beta_1 x_{t-1} + u_t \dots \dots \dots 1$$

Where y_t and x_t represents stationary variables which are: poverty, ICT, and development aid, α_1 denotes the coefficients for long -run relationship, β_1 represents the coefficient for short run, u_t is white noise. Poverty was measured through the Human Development Index (HDI). Independent variables in the model were: ICT, unemployment (UNE), trade and life expectancy (LE).

These variables are important as far as poverty is concerned. This is justified by the fact that all these factors have a positive impact on human welfare, for example, trade can be useful for employment creation and tax from workers and business can be used by the state in providing

public and merit goods which in turn aid to improve the living standards or reduce poverty levels *ceteris paribus* (Das & Basu Roy, 2020).

ICT was measured as a composite index that included mobile telephone subscription per 100, internet usage as well as fixed telephone subscription per 100 people. Due to data unavailability Somalia was removed from the data collection. Missing data was calculated using interpolation and extrapolation techniques as suggested by (Zou, Guo, & Chen, 2018). Diagnostics tests are going to be carried out in this study and these include tests for multicollinearity, auto-correlation and heteroskedasticity.

4. PRESENTATION OF THE RESULTS AND DATA ANALYSIS

This section seeks to present the data analysis and interpretation.

Table 2: Descriptive Statistics

| | HDI | ICT | UNE | TRADE | LE |
|-----------------------|------------|------------|------------|--------------|-----------|
| Mean | 0.5091 | 14.83 | 9.117 | 72.16 | 60.65 |
| Median | 0.4900 | 8.253 | 5.84 | 59.46 | 60.95 |
| Maximum | 0.8000 | 82.11 | 29.02 | 347.99 | 77.24 |
| Minimum | 0.1700 | 0.013 | 0.465 | 0.17 | 27.73 |
| Std. Deviation | 0.1380 | 17.37 | 7.67 | 47.98 | 9.31 |
| Skewness | 0.2312 | 1.468 | 1.09 | 3.12 | -0.31 |
| Kurtosis | 2.457 | 4.790 | 3.12 | 9.57 | 2.45 |
| Jarque-Bera | 11.84 | 275.99 | 112 | 1427 | 16.82 |

Source: Researcher's Construct (2022)

The above table shows all the variables used in the study which are: ICT= Information communication technology index, HDI = human development index, UNE= unemployment, trade and LE=life expectancy. The mean for HDI was 0.5 and the maximum value was 0.8, while the standard deviation was 0.13 and the Jarque-Bera was 11.84. ICT had a mean of 14.83 and the maximum value was 82.11. The standard deviation was 17.23 and the Jarque-Bera was 275.99. UNE had a mean of 9.11 and the maximum value was 29.02, the standard deviation was 7.67 and Jarque-Bera was 112. Trade had a mean of 72.16, maximum value of 347, the standard deviation of 47.98 and Jarque-Bera was 1427. Lastly, LE had a mean of 60.65, a maximum value of 77.24, the standard deviation of 9.31 and Jarque-Bera was 16.82.

Information and Communication Technology (1994-2021)

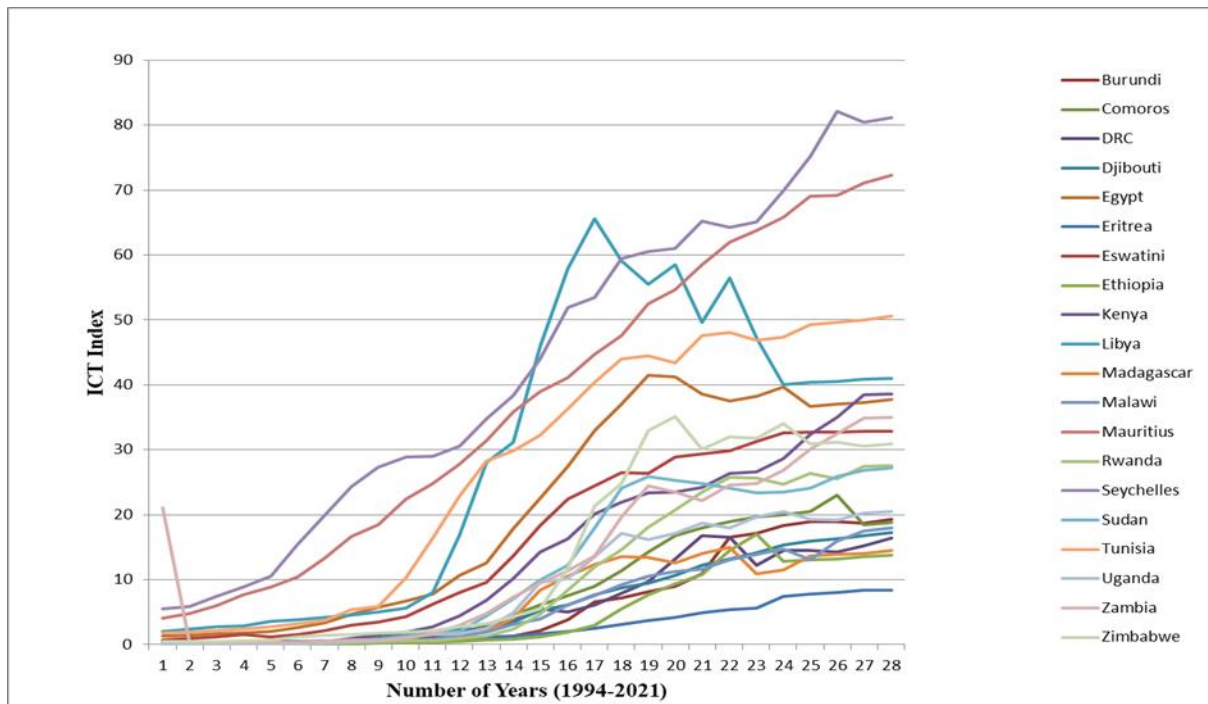


Figure 1: COMESA Information and Communication Technology (1994-2021)

Source: Researcher’s Construct (2022)

The above figure shows that from year 1 to year 10, bulk of the COMESA economies had low ICT index. This could be attributed to the low rate of usage of mobile phones, internet as well as fixed telephone lines. As such, the COMESA region at large experienced low ICT index in the first 10 years as the index was below 30%. From year 11 to year 20, there was a rise in the ICT index for bulk of the economies in the COMESA region. The highest recorded ICT index for some of the economies such as Mauritius and Egypt was over 50%. However, on the same period some economies such as Sudan and Zimbabwe had low ICT index of below 30%. Lastly, from year 21 to year 28, the majority of the COMESA members recorded fluctuating ICT index and only a few economies performed very well. Overall, for the period in question, the ICT index for the region was below 50%. This depicts the poor status and the characteristics of ICT in the COMESA region.

Human Development Index (1994-2021)

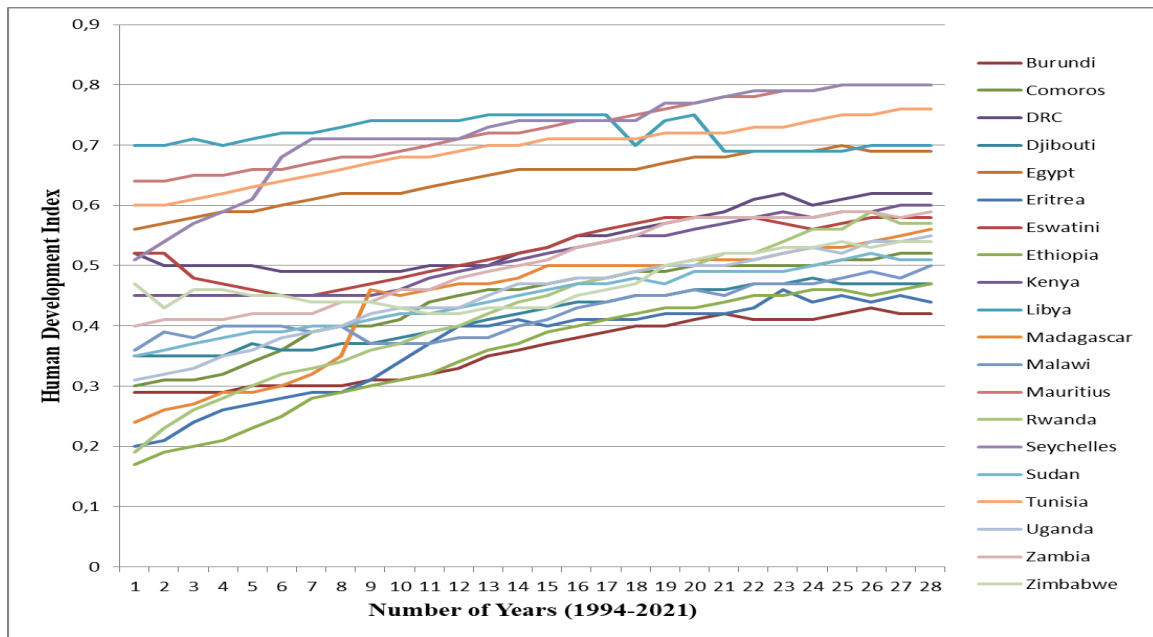


Figure 2: COMESA Human Development Index (1994-2021)

Source: Researcher’s Construct (2022)

Figure 2 shows the human development index trend for the COMESA region. From year 1 to year 10, bulk of the members of the COMESA region had an HDI below 0.5. This implies that these economies were experiencing poor life standards, low life expectancy as well as low per capita income. Madagascar, Djibouti and Egypt were some of the few economies that had a higher HDI value in the first 10 years. From year 11 to year 20, there was a fairly sharp increase in the HDI for the majority of the economies in the COMESA region. On average the HDI value was above 0.5. This implies that there was an improvement in the lives of people but the value of 0.5 is low which implies that the region at large is still plagued by high poverty levels. From year 21 to year 28, the region recorded a steady increase in the human development index. However, bulk of the economies had an HDI value below 0.6 and this signifies that the region still needs to address the poverty levels. Overall, it can be concluded that, the COMESA region at large recorded a fair increase in the HDI levels between 1994 and 2021 but there is evidence that poverty is still an anathema to be addressed.

Partial Correlation Analysis

The table below show the Partial Correlation Analysis

Table 3: Partial Correlation Analysis

| | HDI | ICT | UNE | TRADE | LE |
|-------|------|------|------|-------|----|
| HDI | 1 | | | | |
| ICT | 0.76 | 1 | | | |
| UNE | 0.24 | 0.13 | 1 | | |
| TRADE | 0.37 | 0.35 | 0.45 | 1 | |
| LE | 0.76 | 0.64 | 0.14 | 0.26 | 1 |

Source: Researcher’s Construct (2022)

Table 3 shows that the relationship between ICT and human development index was positive at 76% while with the relationship between UNE and HDI was positive at 24%. Trade was positively

associated with HDI at 37%. LE was positively associated with HDI at 76%. UNE and ICT were positively related at 13%. The relationship between Trade and ICT was positive at 35%. LE and ICT were positively related at 64%. The relationship between Trade and UNE was positive at 45%. LE and UNE had a positive relationship at a value of 14%. Finally, LE and Trade had a positive relationship at 26%. The rule of thumb outlines that a value above 0.75 depicts strong correlation, as such in this study LE and HDI as well as HDI and ICT were the only variables slight above 0.75 (Schober & Schwarte, 2018).

Panel Data Stationarity Results Analysis

The Levin–Lin–Chu test was used to test for stationarity. To test for stationarity in this research, the following hypothesis is used.

Null Hypothesis: Panel contains unit root.

Alternative Hypothesis: Panel does not contain unit root

Table 4: Unit root tests

| Variable | T-Statistic | Probability | Test |
|----------|-------------|-------------|----------------------------|
| ICT | -2.49 | 0.00 | 1 st difference |
| Le | -6.20 | 0.00 | Level |
| HDI | -6.29 | 0.00 | Level |
| Trade | -9.93 | 0.00 | 1 st difference |
| UNE | -1.30 | 0.00 | 1 st difference |

Source: Researcher’s Construct (2022)

The p- values of all the variables above were less than 0.05 hence it was concluded that the series was stationary. HDI and Le were stationary on level, while ICT, Trade, and were stationary after first difference.

Lag length Test

The table below shows the lag length test results.

Table 5: Lag length Test

| Lag | LogLR | LR | FPE | AIC | SC | HQ |
|-----|-----------|---------|--------|-------|-------|--------|
| 1 | -2000.87 | 7642.46 | 0.0176 | 10.15 | 10.45 | 10.27 |
| 2 | -18.51.21 | 291 | 0.0094 | 9.531 | 10.07 | 9.74 |
| 3 | -17.97.71 | 102.70 | 0.008 | 9.388 | 10.18 | 9.70 |
| 4 | -1751.10 | 88.33* | 0.007* | 9.28* | 10.32 | 9.696* |

Source: Researcher’s Construct (2022)

Table 5 shows the results of the lag length test and 4 was selected as the desirable lag in this research because it had lower values based on the Akaike information criterion.

PANEL COINTEGRATION RESULTS

Panel co-integration in this research was tested using the Johansen -Fisher Co-Integration Test. The test was performed to ascertain the long-run relationship among the variables used in the research. The hypothesis is specified below:

Null Hypothesis: There is no cointegration.

Alternative Hypothesis: There is cointegration

Below are the results for the cointegration tests.

Table 6: Panel Co-Integration Results

| Hypothesized No of Ce(s) | Fisher Stat (from trace test) | Prob | Fisher Stat (from max-Eigen test) | Prob |
|--------------------------|-------------------------------|------|-----------------------------------|------|
| None* | 1246 | 0.00 | 675.0 | 0.00 |
| At most 1 | 997.3 | 0.00 | 682.1 | 0.00 |
| At most 2 | 688.3 | 0.00 | 420.3 | 0.00 |
| At most 3 | 394.3 | 0.00 | 254.8 | 0.00 |
| At most 4 | 212.5 | 0.00 | 160.4 | 0.00 |
| At most 5 | 134.1 | 0.00 | 134.1 | 0.00 |

Source: Researcher’s construct (2022)

The above results above show that there is cointegration. This implies that there is a long-run relationship between ICT, development aid, remittances, unemployment, gross domestic product and human development index. In other words, even if in the short-run there are any shocks, there is high likelihood of a convergence of these factors in the long-run.

PANEL CAUSALITY RESULTS ANALYSIS

This section seeks to present the panel causality results analysis. The Dumitrescu and Hurlin (2012) Test was used.

This is an advanced form of Granger –causality analysis. This was used to examine the relationship between variables from the panel data.

Table 7: The Dumitrescu and Hurlin (2012) Test

| Null Hypothesis | W-Statistics | Probability |
|-------------------------------------|--------------|-------------|
| HDI does not homogenously cause ICT | 8.16 | 0.00 |
| ICT does not homogenously cause HDI | 6.63 | 9.E-16 |
| REM does not homogenously cause ICT | 5.51 | 2.E-09 |
| ICT does not homogenously cause REM | 6.02 | 4.E-12 |
| UNE does not homogenously cause ICT | 5.54 | 1.E-09 |
| ICT does not homogenously cause UNE | 8.18 | 0.00 |
| DA does not homogenously cause ICT | 4.53 | 2.E-05 |
| ICT does not homogenously cause DA | 5.68 | 2.E-10 |
| GDP does not homogenously cause ICT | 7.58 | 0.00 |
| ICT does not homogenously cause GDP | 7.34 | 0.00 |
| REM does not homogenously cause HDI | 2.92 | 0.19 |
| HDI does not homogenously cause REM | 6.13 | 9.E-13 |
| UNE does not homogenously cause HDI | 3.21 | 0.06 |
| HDI does not homogenously cause UNE | 5.15 | 8.E-08 |
| DA does not homogenously cause HDI | 3.32 | 0.04 |
| HDI does not homogenously cause DA | 4.27 | 0.00 |
| GDP does not homogenously cause HDI | 4.15 | 0.00 |
| HDI does not homogenously cause GDP | 5.81 | 6.E-11 |
| UNE does not homogenously cause REM | 79.57 | 0.00 |
| REM does not homogenously cause UNE | 12.04 | 0.00 |
| DA does not homogenously cause REM | 4.93 | 7.E-07 |
| REM does not homogenously cause DA | 4.01 | 0.00 |
| GDP does not homogenously cause REM | 4.97 | 5.E-07 |
| REM does not homogenously cause GDP | 4.21 | 0.00 |
| DA does not homogenously cause UNE | 4.01 | 0.00 |
| UNE does not homogenously cause DA | 23.67 | 0.00 |
| GDP does not homogenously cause UNE | 4.56 | 2.E-05 |
| UNE does not homogenously cause GDP | 3.27 | 0.05 |
| GDP does not homogenously cause DA | 1.13 | 0.00 |
| DA does not homogenously cause GDP | 3.90 | 0.00 |

Source: Researcher’s construct (2022)

On the first equations regarding ICT and HDI, the p-value is less than 5% for both, hence it can be concluded that the null hypothesis is rejected. HDI does homogenously cause ICT On the second equation the p value is above 5% hence it can be concluded that the null hypothesis is accepted. Overall, there is unidirectional causation between the two variables. On the second equation between REM and ICT, the p-values are above 5%, thus it can be concluded that the null hypothesis is accepted for both equations. REM does not homogenously cause ICT.

On the third equation, between UNE and ICT, on the first instance, the p value is above 5% thus the null hypothesis is accepted. On the second equation, the p-value is less than 5%, therefore ICT does homogenously cause UNE. Overall, there is unidirectional causation between the two variables. On the fourth equation between DA and ICT, the p-values are greater than 5%, thus it can be concluded that the null hypothesis is accepted for both equations. On the fifth equation between GDP and ICT, the p-values are below 5%, thus ICT does homogenously cause GDP and vice versa.

For REM and HDI, UNE and HDI the p-values are bigger than 5%, therefore it can be concluded that the null hypothesis is accepted for both equations. For DA and HDI, the p-values are below 5%, Therefore HDI does homogenously cause DA and vice-versa. For GDP and HDI, the first equation has a p-value below 5%, thus GDP does homogenously cause HDI. The second equation has a p-value greater than 5%, thus the null hypothesis is accepted. Overall, there is unidirectional causation between the two variables. For UNE and REM, the p values are below 5%, thus UNE does homogenously cause REM and vice versa. For DA and REM, the first equation has a p-value above 5%, thus it can be concluded that the null hypothesis is accepted. On the second equation, the p value is below 5%, thus, the null hypothesis is rejected. A uni-directional relationship exists between these variables.

For GDP and REM, the first equation has a p-value above 5%, thus it can be concluded that the null hypothesis is accepted. On the second equation, the p value is below 5%, thus, the null hypothesis is rejected. A uni-directional relationship exists between these variables. For DA and UNE the p values are below 5% on both equations, hence it can be concluded that DA does homogenously cause UNE. For GDP and UNE, the p value of the first equation is above 5% hence it can be concluded that the null hypothesis is accepted. However, the p value of the second equation is below 5% hence it can be concluded that the null hypothesis is rejected. On the last equations for GDP and DA, the p values are below 5% and it can be concluded that GDP does homogenously cause DA.

PANEL AUTO REGRESSIVE DISTRIBUTED LAG RESULTS

This section seeks to present the results of the Panel Auto Regressive Distributed Lag model.

Table 8: Panel Auto Regressive Distributed Lag Results: Long-run

| Variable | Coefficient | P-Value |
|-----------------|--------------------|----------------|
| ICT | 0.22 | 0.00 |
| UNE | 0.68 | 0.40 |
| TRADE | 0.64 | 0.00 |
| LE | 0.10 | 0.00 |

Source: Researcher's Construct (2022)

The results presented in Table 8 show that life expectancy, trade, and information and communication technology were significant at the 1% level. Unemployment was insignificant because their p-values were above 5% significance level.

In terms of the coefficients, a 1% increase in information and communication technology will lead to an increase in human development index by 0.22% in the long run. An increase in the human development index implies an improvement in living standards. These results conform to a priori expectations and the views of (Bohlin, Hanafizadez & Vu, 2020; Mushtaq & Bruneau, 2019). This further show a high usage of ICT will help to reduce the poverty levels in the COMESA region since there is a positive relationship between poverty and ICT. With regards to trade, a 1% increase in trade will lead to a 0.64% increase in human development index in the long-run. Lastly, a 1% increase in life expectancy will result in a 0.10% increase in the human development index in the long-run. The research findings showed that the COMESA region can effectively fight poverty through the use of ICT.

The table below shows the PARDL results for the short-run period.

Table 9: Panel Auto Regressive Distributed Lag Results: Short-run

| Variable | Coefficient | P-Value |
|----------|-------------|---------|
| HDI (-1) | -0.47 | 0.02 |
| ICT | -0.003 | 0.17 |
| UNE | -0.11 | 0.67 |
| TRADE | 0.06 | 0.05 |
| LE | 0.08 | 0.84 |

Source: Researcher's Construct (2022)

The short-run results above show that trade was statistically significant, and it had a positive coefficient. This implies that a 1% increase in trade will lead to a 6% increase in the human development index in the short run. Information and communication technology had a p-value of 0.17 and a negative coefficient, and it was not statistically significant at 10%. Life expectancy and unemployment were also not statistically significant in the short run period.

HETEROSCEDASTICITY AND SERIAL CORRELATION TEST

The Breusch-Pagan Test was used to test for heteroscedasticity in this research. Below are the results.

Table 10: Heteroscedasticity test

| Heteroscedasticity test | P-value |
|-------------------------|---------|
| Breusch-Pagan Test | 0.08 |

Source: Researcher's Construct (2022)

The results depicted the presence of homoscedasticity as the p-value of 0.08 was greater than 0.05. To test for serial correlation the Generalised least squares was used. The results proved that there was no autocorrelation in the research.

POST -ESTIMATION TEST

Normality Test

To test for normality, the Jarque-Bera test was used, and the results showed that the p-value of 0.682 was greater than the significance level of 5%. Therefore, the null hypothesis of having normal distribution was accepted. This implies that the data used was normally distributed.

5. CONCLUSION AND RECOMMENDATIONS

This study sought to examine the role of ICT in poverty reduction with a specific focus on the COMESA region. Based on the research findings it is clear that ICT is a useful tool that can be used for effective poverty reduction. Thus, the diffusion of ICT to productive sectors of the economy can be very effective in solving poverty through the multiplier effect. Use of ICT in productive sectors can create jobs, increase output, increase exports just to mention but a few. The following policy recommendations are suggested:

Promoting high usage of mobile phone usage

The COMESA region must improve and promote mobile phone usage. This can be accomplished by ensuring that all marginalized people who do not have access to mobile phones are provided with one. To achieve this, all member states' governments can devise effective policies that enable mobile phone manufacturers and suppliers to tap into the untapped market of people who do not have access to mobile phones. Another option is to incentivize or provide subsidies to such businesses so that the final price of mobile phones is affordable. This will enable the less fortunate to afford mobile phones and, in turn, to use them for economic activities, thereby raising the living standard

Promoting increased usage in internet usage

The governments of the COMESA region must encourage their citizens to use the internet. This can be accomplished by allowing more players into the telecommunications sector. More players will improve the sector's efficiency and, in turn, lower internet prices, *ceteris paribus*. Apart from that, the COMESA region must develop policies to promote internet usage, with a focus on affordability, particularly for COMESA's poorest communities. As a result, internet access will expose more COMESA citizens to economic and other commercial activities that can aid in the promotion of entrepreneurial activities. In a long-run this will aid to improve living standards as entrepreneurial activities can create job market expansion as well as improvement of living standards. Limited access to the internet implies that people will also have limited access to economic opportunities that can help to improve their living standards.

Creation Regional Research Hub

The COMESA trading bloc needs to set up a regional research hub. The research hub should be created with an aim of fostering research in diverse thematic areas that affect the region. Some of the areas are but are not limited to poverty, conflicts, ICT, and unemployment among others. Thus applied research will help as a tool for providing informed policies that tackle the problems faced by the region at large. The research hub will be useful in the cross-pollination of ideas and providing key panaceas to the most pressing issues in the COMESA region.

Implementing robust trade policies and trade agreements

The COMESA trading bloc must craft and implement robust trade policies. These policies should be tailor made to meet the member states trade needs. This will enable the flow of foreign currency within the COMESA region, create employment opportunities and allow for sharing of diverse human capital skills. However, caution should be taken to ensure that these policies are reviewed periodically since the macro environment is dynamic. Thus any significant changes in the micro-environment that affect trade should require policymakers to review existing trade policies. In the

long-run, robust and efficient trade policies will help in reducing poverty levels as more trading opportunities will benefit the member states.

Trade agreements should be designed by the COMESA region so that the trading block can trade with other trading parties such as the European Union, and ASEAN Economic Community just to mention but a few. This is essential, especially in harnessing some of the modern technology required by the COMESA region. Apart from that, this will also help in ensuring that all trading blocs gain from the exportation and importation of goods and services.

Improvement in ICT policies

ICT policies should be tailor made to ensure that both mobile telephone usage and internet usage are increased across the COMESA region populace at large. Thus, ICT should be prioritised at all levels and in different sectors of the economy. This can be in the small to medium enterprises sector, educational sector, government structures as well as the manufacturing sector. Apart from that, policies to be developed should ensure that digital illiteracy is eliminated so that all member states of COMESA can fully benefit from ICT usage.

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VALIDATING A FASHION LEADERSHIP SCALE WITHIN THE SOUTH AFRICAN CONTEXT

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ABSTRACT

Fashion leaders significantly contribute to an economy's clothing segment given the noteworthy role they play in influencing fashion followers to purchase fashion clothing. As such, it is key to comprehend the factors that influence fashion leadership. To this end, the purpose of this paper was to validate a fashion leadership scale within the South African context, which, based on a widespread search of online academic databases, lacks in South Africa. To validate fashion leadership as a six-factor structure, a total of 400 Generation Y male students completed a self-administered survey. A descriptive research design informed the methodology applied. Correlation analysis, multicollinearity and reliability measures, and confirmatory factor analysis using the maximum likelihood method made up the data analysis. The results obtained from the confirmatory factor analysis validated fashion leadership as a six-factor structure that consists of fashion leadership, product knowledge, decision-making confidence, fashion consciousness, mood enhancement and brand switching. The results also show that the measurement model exhibits internal consistency and composite reliability as well as the different types of validity, namely construct, convergent, discriminant and nomological validity. In addition, no signs of multicollinearity were evident between the factors of the measurement model. In terms of model fit, all fit indices, which included the IFI, TLI, CFI, SRMR and RMSEA returned values indicative of a good fitting model. This study concluded that this six-factor model is a reliable and valid instrument of fashion leadership and is the first validated fashion leadership scale within a South African context.

Keywords: Measurement model; confirmatory factor analysis; validation, fashion leadership; South Africa

1. INTRODUCTION

Marketing practitioners and researchers have been fascinated with fashion leadership and its ability to shape consumer behaviour (Goldsmith et al., 1991; Kang & Park-Poaps, 2010; Lang & Armstrong, 2018). This is because fashion retailers need to ensure that fashion innovations are diffused into the current market by positioning fashion items in a way that guarantees sales and increased profitability (Rahman et al., 2014). As such, product acceptance by fashion leaders is crucial, since fashion leaders are responsible for communicating fashion-related ideas to the next group of adopters, thereby assisting in new fashion clothing acceptance (Beaudoin et al., 2000; Kang & Park-Poaps, 2010; Lee & Workman, 2014; Lang & Armstrong, 2018), and also contributing to the economy.

Globally, the fashion industry has a market value of US\$ 3 trillion and accounts for two percent of global gross domestic product (GDP) (Fashion United, 2022). Major international consultancy agencies, such as McKinsey, Deloitte Group and the Boston Consulting Group, agree that today's

fashion retailers operate in an extremely competitive environment that is subject to unexpected changes and uncertainty (Gazzola et al., 2020). Technological advancements, which have a noteworthy impact on fast production methods and the consumption of fast fashion clothing items, are among some of the most dramatic changes witnessed by fashion retailers (Koksal, 2014). In addition, the fashion leadership tendencies of consumers are changing, effecting change in the fashion industry.

Fashion leadership is an internal characteristic that influences consumers' response to new fashion developments. Moreover, it is an essential concept to take into account in fashion consumption, since fashion leaders have a central role to play in the diffusion of fashion change (Goldsmith et al., 1993; Kim & Hong, 2011). In addition, fashion leaders are consumers who accelerate fashion change by being the very first people to shop for, acquire and consume the latest fashion clothing, subsequently convincing others to do the same. Furthermore, fashion leaders are concerned about their physical appearance and pay special attention to how others perceive them (Lee & Workman, 2014). As such, it is essential to note consumers' fashion leadership tendencies. To this end, a validated fashion leadership scale is required, which, based on a widespread search of online academic databases, lacks in South Africa. As such, this study's purpose was to validate fashion leadership as a six-factor structure that comprises fashion leadership, product knowledge, decision-making confidence, fashion consciousness, mood enhancement and brand switching.

2. LITERATURE REVIEW

Fashion may be viewed as a dual concept; firstly, fashion is continuously changing and is dynamic in nature, suggesting that fashion revolves around timeframes with changes in market tastes and needs, and secondly, the survival of fashion through time depends largely on society's acceptance of certain standards. Therefore, what is fashionable has a direct link to relevance, based on the consumers' attitude and perceptions at a specific time. Typically, the word fashion relates to clothing (Dlodlo, 2017). However, fashion can also refer to all the items that could possibly be placed on the body (Hourigan & Bougoure, 2012), such as bags, hats, shoes, sunglasses and clothes (Liu et al., 2021). Despite the wide scope of product items associated with this term, for this study's purpose, fashion relates to clothing. Clothing was specifically chosen as clothing is a dominant category of consumer products in South Africa's fashion industry with an expected revenue of US\$ 1.3 billion in 2025, compared to accessories and footwear with an expected revenue of US\$ 494 million and US\$ 102 million, respectively (Statista, 2022). In addition, the clothing segment is considered important for the global fashion industry (Castro & Ramirez, 2020).

Fashion is fundamentally changing the world and reshaping consumers' thinking (Naidu, 2018). As such, fashion retailers need to ensure that fashion innovations are diffused into the current market by positioning fashion products that guarantee improved profitability and sales (Rahman et al., 2014). Understanding fashion leadership behaviours will aid retailers and marketing practitioners to formulate valuable and successful marketing strategies and, ultimately, influence fashion leadership behaviour (Kang & Park-Poaps, 2010). In addition, it is essential to understand fashion leaders and their behaviours, because they influence non-fashion leaders to buy/use fashion clothing (Engelbrecht, 2016).

Fashion leadership is described as consumers who accept fashion trends early in the product lifecycle before the trend reaches the mass market (Goldsmith et al., 1993, as cited in Shephard et

al., 2016). Moreover, fashion leadership can be defined as “the adoption stage of fashion related items” (Goldsmith et al., 1993, as cited in Shephard et al., 2014:277). Fashion leadership represents the mass acceleration of the latest fashion trends, which include two major dimensions, namely fashion innovativeness and opinion leadership (Kang & Park-Poaps, 2010). Fashion innovativeness refers to “a personality trait towards adopting new fashion goods” (Park et al., 2007:204). “Opinion leadership is the idea that communication flows are segmented and that participants can be divided into different communicative roles, with some providing information or orientation and other following” (Schäfer & Taddicken, 2015:961). Collectively, the term fashion leadership can be explained as consumers who show an interest in fashion before other consumers, who are one of the first to purchase the latest fashions and who are more confident in their own taste. In addition, fashion leaders play an influential role on others to adopt and purchase the latest styles (Koksal, 2014).

Fashion leaders generally have a greater need for excitement and fun or enjoyment (Goldsmith et al., 1993); therefore, fashion leaders hold different value sets and psychological characteristics than average consumers do (Hahn et al., 2017). As indicated by the name, fashion leaders are typically the front-runners in searching for, purchasing and wearing the latest fashion before the fashion is accepted by other people (Dlodlo, 2017). Consequently, the “French label *avante garde* has been used to describe these individuals, meaning that fashion leaders are fashion forward” (Frings, 2005:54). Moreover, fashion leaders are confident in their fashion tastes because they depend heavily on the advice of fashion stylists regarding fashion trends (Dlodlo, 2017). Fashion leaders differ significantly from fashion followers in terms of personalities and information-seeking behaviour. This is because “fashion leaders are stimulated by achievement and need to express originality or uniqueness” (Frings, 2005:55). Fashion leaders are more inclined to acquire information through reading fashion magazines, going on a recreational shopping orientation, fashion shopping, purchasing the latest fashion items, being involved in fashion and impulsively purchasing products (Workman & Cho, 2012). In doing these activities, fashion leaders gain a wealth of information that they can convey to other people. Moreover, word-of-mouth communication is stimulated by individuals’ expressive behaviour and particularly by fashion leaders who, because of their high interest and involvement in fashion, are sensitive to the appearances of others. Fashion leaders not only provide information, but also reflect and communicate norms. Moreover, fashion leaders are characterised as individuals who have high fashion interest and high fashion involvement. As such, they participate in activities that provide abundant information (Lee & Workman, 2014). Taken together, fashion leaders are individuals who bring about fashion change as they are the first to purchase and wear the latest fashion clothing (i.e. fashion innovators), influence non-fashion leaders to purchase and wear the latest fashion clothing (i.e. fashion opinion leaders) or fulfil both roles (i.e. innovative communicators).

Fashion leaders, generally, are young (Quigley & Notarantonio, 2009), single and have higher education levels than other consumer groups (Viera, 2009). For this reason, this study used Generation Y students as the sample. Generation Y consumers, defined as “individuals born between 1986 and 2005” (Markert, 2004:21), are opinion leaders and trendsetters among their peers (Bevan-Dye & Akpojivi, 2016), egocentric and socially conscious (Coelho & Las Casas, 2013) and make up about 35 percent of South Africa’s population (Statistics South Africa, 2021), which render them an important market segment for any industry, including the fashion industry.

Generation Y consumers spend a large amount of their money purchasing clothes (Bakewell & Mitchell, 2003). Moreover, Generation Y supports fast fashion retailers such as H&M and Zara that offer sustainable clothing lines (Johansson et al., 2017), as these retailers adhere to this generation's personal, environmental and social value sets (Hwang & Griffiths 2017; Todeschini et al., 2017). Members who belong to this cohort perceive the activity of shopping for fashion products as consciously consuming, inevitably defining themselves and expressing their personality (Ordun, 2015). Consumers of this cohort find pleasure in shopping, value prestigious characteristics associated with purchased items and the quality of new, original and unusual fashion clothing (Williams & Page, 2011). As such, Generation Y members are extremely fashion and brand conscious clusters of consumers. Williams and Page (2011) indicate that Generation Y members are increasingly obsessed with fashion. Furthermore, Tee et al. (2013) assert that their spending patterns have positively impacted sales in the marketplace.

The lifestyle habits of the Generation Y cohort are different from those of the previous generations and their pace of life is relatively fast (Ladhari et al., 2019). For instance, their need for fashion can easily transition from daytime to evening wear. As such, it is no surprise that this cohort is the driving force behind current fashion trends (Gazzola et al., 2020). In terms of male fashion, Generation Y males have been socialised to perceive fashion in a more favourable light as opposed to generations of the past (Bakewell et al., 2006). The combined efforts of the media, commercial practice as well as the change in generational roles, have set up new cultural norms whereby Generation Y males tend to take more notice of fashion trends and are more likely than males of previous generations to be involved with fashion (Noh et al., 2015; Sung & Yan, 2020). As such, it is important that fashion retailers understand the factors that influence Generation Y consumers in general, and specifically Generation Y males' fashion leadership tendencies, as their fashion leadership could potentially have an influencing role on the purchasing behaviours of other consumer groups. To this end, a validated fashion leadership scale is necessary. Therefore, the purpose of the study is to answer the research question stated below:

Is fashion leadership among Generation Y male students a six-factor structure that consists of fashion leadership, product knowledge, decision-making confidence, fashion consciousness, mood enhancement and brand switching?

3. METHODOLOGY

3.1 Research design

Quantitative data was used to validate a fashion leadership scale; that is, a descriptive research design. In addition, a sample was selected from the interested population only once, making this a single cross-sectional study.

3.2 Sampling method

To select a sample of 500 Generation Y male students (18- to 24-year-old) registered at two HEIs in South Africa (250 per campus), a non-probability convenience sampling method was used. Judgement sampling was used to select the two HEIs from the 26 HEIs in South Africa.

3.3 Research instrument

Validated scales were used to develop a self-administered questionnaire. Each scale included three scale-response items, which were adapted from these validated scales. To measure fashion leadership, a scale validated by Goldsmith et al. (1993) was used, while product knowledge was measured using the scale developed by O’Cass (2004). Moreover, a scale validated by O’Cass (2000) was used to measure decision-making confidence, whereas fashion consciousness was measured using Nam et al.’s (2007) scale items. Mood enhancement was measured using the scale validated by Kwon (1992), and brand switching was measured using items from scales validated by Van Trijp et al. (1996) and Raju (1980). A Likert-type scale was used to measure the responses to the scaled items, and consisted of six points, namely strongly disagree, disagree, slightly disagree, slightly agree, agree and strongly agree.

Included as part of the questionnaire is a cover letter that explained the study in short as well as how the participant would be protected in terms of personal information. In addition, some demographic and fashion background information was requested.

3.4 Data collection

Before data collection commenced, ethics clearance was obtained from both HEIs to conduct the study. Thereafter, the study was discussed with participating university staff members at each HEI in order to finalise arrangements for dropping off the questionnaires. Two experienced fieldworkers assisted with the drop-off. The HEIs were notified that participants should willingly agree to partake in the study and that no participant will be forced to complete a questionnaire. In addition, it was explained to the HEIs that the data will only be used for statistical purposes, that all information enclosed in the questionnaire is guaranteed, and that no personal questions linking the participant to the specific questionnaire will be included. The same information was shared with those who participated in the study, in the form of a cover letter attached to the questionnaire.

3.5 Data analysis

Two statistical programs were used to analyse the obtained data, namely IBM SPSS and AMOS, Version 27. As part of the data analysis, various statistical methods were applied to the dataset, including descriptive statistics, measures of reliability and validity and correlation analysis. In addition, diagnostics were run to assess the multi-collinearity between the factors. Lastly, following the maximum likelihood approach, confirmatory factor analysis was run.

4. RESULTS AND DISCUSSION

4.1 Demographics and fashion background

This study produced a response rate of 80 percent, given that only 400 of the 500 questionnaires were eligible for analysis. Of the sample, the majority was aged 22 years, followed by 21-year-olds. The majority of the sample spoke Sesotho, followed by those who spoke Tshivenda. Participants who originate from Gauteng made up the largest share of the sample, whereas those who originally come from the Western Cape made up the smallest portion of the sample. Participants in their second year of study made up 35 percent of the sample, compared to only three percent who were on post-graduate level. The sample comprised more than half traditional

university students, compared to approximately 47 percent of the sample registered at a university of technology. In terms of fashion background information, more than half of the participants (52.5%) consider themselves fashion leaders, whereas 44.5 percent of the sample do not. The most preferred clothing brand purchased by the sample was Nike, followed by less purchased fashion brands, Uzzi and Adidas. The majority of the sample spends between R801 and R1 000 on fashion clothing, compared to those who spend in the range of R500 and R800 (29.8%) and R1 001 and R2 500 (21.8%). The data pertaining to the sample and the reported fashion background information is detailed in Table 1.

Table 1: Sample

| | % | | % | | % |
|-----------------------|------|-------------------------------|------|----------------------------|------|
| Age | | Language | | Province | |
| 18 | 3.3 | Afrikaans | 5.0 | Eastern Cape | 7.2 |
| 19 | 13.8 | English | 2.3 | Free State | 12.8 |
| 20 | 17.3 | isiNdebele | 2.5 | Gauteng | 27.5 |
| 21 | 20.8 | isiXhosa | 7.5 | KwaZulu-Natal | 5.0 |
| 22 | 21.5 | isiZulu | 14.2 | Limpopo | 25.8 |
| 23 | 15.0 | Sepedi | 5.8 | Mpumalanga | 6.5 |
| 24 | 8.5 | Sesotho | 21.0 | Northern Cape | 5.8 |
| Fashion leader | | Setswana | 9.5 | North West | 7.8 |
| Yes | 52.5 | SiSwati | 5.8 | Western Cape | 0.8 |
| No | 44.5 | Tshivenda | 14.8 | | |
| | | Xitsonga | 10.5 | | |
| Clothing brand | | Year of study | | HEI | |
| Adidas | 6.0 | 1 st -year student | 27.5 | Traditional | 53.5 |
| Daniel Hechter | 4.3 | 2 nd -year student | 35.0 | Technology | 46.5 |
| Identity | 5.5 | 3 rd -year student | 25.3 | Fashion expenditure | |
| Nike | 24.0 | 4 th -year student | 8.8 | R500-R800 | 29.8 |
| Rebat | 4.0 | Postgraduate student | 3.0 | R801-R1 000 | 48.5 |
| Relay Jeans | 3.8 | | | R1 001-R2 500 | 21.8 |
| Uzzi | 9.0 | | | | |
| Vans | 5.5 | | | | |

4.2 Descriptive statistics, reliability and validity and correlation analysis

To measure the degree of fashion leadership tendencies among Generation Y male students as well as their knowledge of and decision-making confidence in fashion clothing together with the extent of their fashion consciousness, them viewing fashion clothing as a mood enhancer and them engaging in brand switching behaviour, the mean (\bar{X}) and standard deviation (σ) were calculated for each factor. Owing to the Likert-type scale comprising six points, a higher mean value denotes greater agreement with the statements included in the factor being measured.

The validity and reliability of the scales were measured by calculating the mean inter-item correlation (MIIC) and Cronbach alpha (α) values, respectively. Clark and Watson (1995) recommend that the MIIC values should range between 0.15 and 0.50 for discriminant validity, whereas Cohen (1988) recommends a cut-off of 0.55. Zikmund and Babin (2013) suggest a Cronbach's alpha value of above 0.60 for internal-consistency reliability. In terms of the relationships between the factors and to evaluate the nomological validity of the proposed measurement theory, correlation analysis was done using Pearson's correlation. According to Malhotra (2010), nomological validity is evident when the relationship between each pair of factors is statistically significant. The output produced by SPSS concerning these statistics is outlined in Table 2.

Table 2: SPSS output

| Factor | \bar{X} | σ | MIIC | α | (1) | (2) | (3) | (4) | (5) |
|--------------------------------|-----------|----------|------|----------|-------|-------|-------|-------|-------|
| Fashion leadership (1) | 3.96 | 1.00 | 0.42 | 0.84 | | | | | |
| Product knowledge (2) | 3.94 | 1.03 | 0.48 | 0.79 | 0.74* | | | | |
| Decision-making confidence (3) | 4.63 | 1.00 | 0.57 | 0.80 | 0.43* | 0.47* | | | |
| Fashion consciousness (4) | 3.82 | 1.08 | 0.44 | 0.80 | 0.71* | 0.67* | 0.39* | | |
| Mood enhancement (5) | 4.21 | 1.00 | 0.40 | 0.73 | 0.60* | 0.58* | 0.34* | 0.60* | |
| Brand switching (6) | 4.21 | 1.04 | 0.38 | 0.72 | 0.58* | 0.45* | 0.35* | 0.52* | 0.51* |

Note: * Statistically significant at $p \leq 0.01$ (2-tailed)

The statistics in Table 2 reveal that all factors returned a mean value above 3.5, meaning that the participants view themselves as being fashion leaders, knowledgeable concerning fashion clothing as well as confident in making decisions regarding fashion clothing. Moreover, the participants' views suggest that they are fashion conscious, and that fashion clothing enhances their mood. Furthermore, evidence in the sample shows that the participants engage in brand switching behaviours.

The MIIC value for each factor exceeded 0.15, which suggests convergent validity of the items included in each scale. Although the MIIC value of the decision-making confidence scale slightly exceeded the 0.55 cut-off recommended by Cohen (1988), it is still reasonable to assert each of the scales' discriminant validity. Internal-consistency reliability of the scales is also evident, given the calculated Cronbach's alpha values for each factor above the cut-off of 0.60.

The relationships between each of the factors were statistically significant ($p \leq 0.01$), which implies the nomological validity of the measurement theory. The relationship between fashion leadership and product knowledge was the strongest ($r=0.74$, $p = 0.000 < 0.01$), whereas the weakest relationship was found between decision-making confidence and mood enhancement ($r = 0.34$, $p = 0.000 < 0.01$). Given that the strongest Pearson's correlation coefficient was below 0.90, the chances of multi-collinearity can be eliminated (Pallant, 2013). However, it is still advisable to test for more subtle forms of multi-collinearity.

4.3 Multi-collinearity diagnostics

Before confirmatory factor analysis was run, the independent factors were subject to a multi-collinearity check to assess more subtle forms of multi-collinearity. The dependent variable served as the subject number. For no serious multi-collinearity between the factors, Pallant (2010) recommends tolerance values above 0.10 and an average variance inflation factor lower than 10. The diagnostics for collinearity as calculated by SPSS are presented in Table 3.

Table 3: Diagnostics for collinearity

| Factor | Tolerance value | Variance inflation factor |
|----------------------------|-----------------|---------------------------|
| Product knowledge | 0.488 | 2.049 |
| Decision-making confidence | 0.829 | 1.207 |
| Fashion consciousness | 0.519 | 2.927 |
| Mood enhancement | 0.609 | 1.642 |
| Brand switching | 0.741 | 1.350 |

Constant = Dependent variable: Subject number

The diagnostics for collinearity, as presented in Table 2, indicate no serious multi-collinearity between the factors, with tolerance values between 0.519 and 0.829 and an average variance inflation factor of 1.835.

4.4 Measurement model

A six-factor measurement model was specified for confirmatory factor analysis using the maximum likelihood approach. This model consisted of fashion leadership, product knowledge, decision-making confidence, fashion consciousness, mood enhancement and brand switching, and each of these latent factors comprised three indicators. For model identification, each factor's first loading was fixed at 1. The notes for the model produced by AMOS indicate that there were 189 distinct sample moments and 69 distinct parameters to be estimated, producing 120 degrees of freedom (df) based on an over-identified model as well as chi-square (χ^2) of 328.687 ($p = 0.001$).

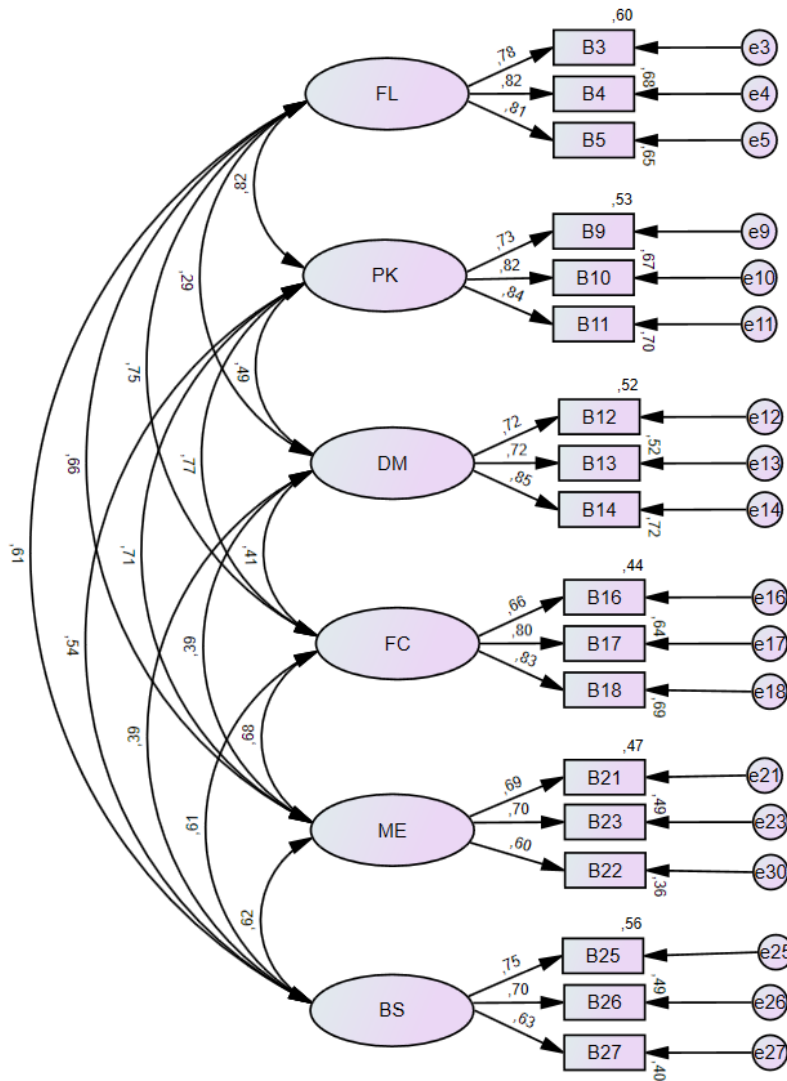
Hair et al. (2010) advise that a measurement model be assessed in terms of factor loadings exceeding 1 or that are below 1. In addition, it is important to assess the model in terms of negative error variances. These assessments were done to identify any potential problem estimates. The composite reliability (CR) and construct validity were determined by calculating the CR for each factor as well as the average variance extracted (AVE) and heterotrait-monotrait (HTMT) values. Malhotra (2010) suggests CR and AVE values above 0.70 and 0.50, respectively. However, Fornell and Larcker (1981) explain that an AVE value below 0.50 still suggests the convergent validity of the construct, if the composite reliability of the particular factor is above 0.60. For discriminant validity, Henseler et al. (2015) point out that the HTMT values should not exceed 0.85. Table 4 reports the estimates and the model reliability and validity, as well as the correlations for each factor and its observed variable.

Table 4: Confirmatory factor analysis.

| Latent factors | Standardised loading estimates | Error variance estimates | CR | AVE | HTMT | | | | |
|---------------------------------|--------------------------------|--------------------------|-------------|-------------|-------------|------|------|------|------|
| | | | | | F1 | F2 | F3 | F4 | F5 |
| Fashion leadership (F1) | 0.78 | 0.60 | 0.84 | 0.64 | | | | | |
| | 0.82 | 0.68 | | | | | | | |
| | 0.81 | 0.65 | | | | | | | |
| Product knowledge (F2) | 0.73 | 0.53 | 0.84 | 0.63 | 0.81 | | | | |
| | 0.82 | 0.67 | | | | | | | |
| | 0.84 | 0.70 | | | | | | | |
| Decision-making confidence (F3) | 0.72 | 0.52 | 0.81 | 0.58 | 0.30 | 0.52 | | | |
| | 0.72 | 0.52 | | | | | | | |
| | 0.85 | 0.72 | | | | | | | |
| Fashion consciousness (F4) | 0.66 | 0.44 | 0.81 | 0.59 | 0.77 | 0.81 | 0.41 | | |
| | 0.80 | 0.64 | | | | | | | |
| | 0.83 | 0.69 | | | | | | | |
| Mood enhancement (F5) | 0.69 | 0.47 | 0.70 | 0.44 | 0.65 | 0.70 | 0.43 | 0.69 | |
| | 0.70 | 0.49 | | | | | | | |
| | 0.60 | 0.36 | | | | | | | |
| | 0.75 | 0.56 | | | | | | | |
| Brand switching (F6) | 0.70 | 0.49 | 0.74 | 0.49 | 0.59 | 0.52 | 0.39 | 0.58 | 0.61 |
| | 0.63 | 0.40 | | | | | | | |
| | 0.75 | 0.56 | | | | | | | |
| | 0.70 | 0.49 | | | | | | | |
| Correlations | F1→F2: 0.82 | F1→F3: 0.29 | F1→F4: 0.75 | F1→F5: 0.66 | F1→F6: 0.61 | | | | |
| | F2→F3: 0.49 | F2→F4: 0.77 | F2→F5: 0.71 | F2→F6: 0.54 | F3→F4: 0.41 | | | | |
| | F3→F5: 0.39 | F3→F6: 0.39 | F4→F5: 0.68 | F4→F6: 0.61 | F5→F6: 0.62 | | | | |

The results in Table 4 show that there were no estimates above or below 1 as well as no negative error variances. In addition, the correlations in the table indicate a relationship ($p \leq 0.01$) between every latent factor and its observed variable. Each factor returned an acceptable CR value of 0.70 and above. While most factors calculated an AVE value of above 0.50, the factors of mood

enhancement and brand switching were slightly below at 0.44 and 0.49, respectively. However, because both of these factors' CR values were above 0.60, convergent validity is confirmed. Discriminant validity is also evident, given that none of the HTMT values exceeded 0.85. With convergent, discriminant as well as nomological validity confirmed, construct validity is verified. The measurement model is illustrated in Figure 1.



FL = Fashion leadership; PK = Product knowledge; DM = Decision-making confidence; FC = Fashion consciousness; ME = Mood enhancement; BS = Brand switching

Figure 1: Measurement model.

Having confirmed the measurement model's reliability and validity, model fit indices were calculated. The "incremental fit index (IFI), Tucker-Lewis index (TLI), comparative fit index (CFI), the standardised root mean residual (SRMR), the root mean square of approximation (RMSEA) and the chi-square statistic" (Van Deventer, 2018:191) were used to evaluate model fit. IFI, TLI and CFI values above 0.90 suggest acceptable model fit, whereas the computed RMSEA should equal 0.08 or less (Malhotra, 2010) and the SRMR 0.1 or less (Hair et al., 2010). Although a significant χ^2 was achieved, which suggests poor fit to the model (Byrne, 2010), the other model fit index values were indicative of acceptable model fit, with IFI equalling 0.94, TLI equalling 0.93, CFI equalling 0.94, SRMR equalling 0.047 and RMSEA equalling 0.063.

The measurement model results suggest that fashion leadership is a six-factor structure that demonstrates acceptable model fit, reliability as well as construct validity. Given the measurement model's validation, a structural model can be tested in accordance with theorised paths.

5. CONCLUSION

This study's purpose was to validate fashion leadership as a six-factor structure that consists of fashion leadership, product knowledge, decision-making confidence, fashion consciousness, mood enhancement and brand switching using a Generation Y male student sample. The latent factors exhibited internal-consistency reliability, CR and construct validity. In addition, the model fit indices used were indicative of a good model fit. Therefore, the study's results concluded that this six-factor structure is a valid and reliable measure of fashion leadership and is viewed as the first validated fashion leadership scale in South Africa. Insights gained from this study can assist fashion marketers and retailers to target their indented target market more effectively in their promotional efforts and gauge effective marketing strategies that will maximise sales and profits.

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DIFFERENCES IN SOUTH AFRICAN GENERATION Y BANKING CONSUMERS' BANK IDENTIFICATION AND SELECTED BRAND PERSONALITY DIMENSIONS

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ABSTRACT

Generation Y consumers, including banking consumers, generally display different levels of commitment and loyalty to a brand over the long run. As such, it is essential that retail banks create a brand that the Generation Y banking cohort can easily identify with. Retail banks that build a unique bank brand in terms of personality, particularly a brand personality that Generation Y consumers can relate to, will likely ensure loyalty towards the brand among this market segment, which is important for the retail bank's long-term success. Therefore, the purpose of this study was to determine whether there are differences in South African Generation Y banking consumers' bank identification and the brand personality dimensions of success, sophistication, sincerity, ruggedness, community driven and classic. A Generation Y banking consumer sample (N = 235) was conveniently selected from two Gauteng-based HEI campuses. A self-reporting questionnaire was used as a tool for collecting data and a descriptive research design was applied. To check for differences in the sample's bank identification and the selected brand personality dimensions, data analysis included an independent samples t-test as well as one-way analysis of variance (ANOVA). The results of the study suggest that males and females differ in their identification with their retail bank. In terms of brand personality, males and females associate the brand personality of community driven differently with their retail bank. However, no other differences were noted between males and females in terms of the personalities they associate with their retail bank. In addition, a difference was noted between bank identification and those participants who bank with Capitec and ABSA, while no differences were identified concerning the brand personality dimensions in this regard. Furthermore, consumers did not differ in their bank identification and brand personality in terms of the time period with their retail bank. Insights gained from this study could aid retail banks in better understanding the intended target market's degree of identification with the retail bank. In addition, retail banks can use the results of this study to determine whether the personality of the bank aligns with the characteristics of its consumers.

Keywords: Generation Y; banking; brand; bank identification; brand personality

1. INTRODUCTION

In South Africa, five retail banks mainly dominate the banking sector. These retail banks are Nedbank, Standard Bank, First National Bank (FNB), ABSA and Capitec (BusinssTech, 2019) and collectively, "they control nearly 90 percent of total banking sector assets" (Accenture, 2019). Although each of these retail banks offers financial services and products alike, they differ in terms of their distinct personality traits exhibited by the bank brand, otherwise known as brand personality, which Aaker (1997:347) describes as "a set of human characteristics associated with brands". Various authors agree that it is valuable to comprehend a brand's symbolic meanings

(Keller, 1993; Aaker, 1997; Carlson et al., 2009; Bang et al., 2014; Eren-Erdogmus et al., 2015), not only because brands play an influential role on the long-term sustainability of a business, but also because of its relationship building qualities with consumers (Tuškej et al., 2013). With insights gained from understanding a business's brand associations and meanings, a business can improve its performance financially. This increased financial performance stems from brand loyal consumers (Eren-Erdogmus et al., 2015), which holds many advantages for a business, such as lower marketing costs, favourable word-of-mouth, repeat purchases and a secured consumer base (Tsai, 2011). These brand loyalty benefits also hold true from a retail banking perspective. To take advantage of brand loyalty benefits, Koo and Kim (2013) suggest that businesses such as retail banks carefully consider displaying a brand personality that is not only robust, but also distinct. Furthermore, it is imperative that retail banks understand the factors that could influence their consumers' identification with the bank.

Within the context of retail banking, retail banks build brand personalities to set them apart from institutions that are similar in terms of their product and service offerings (Hopkins, 2017). According to Timerberlake (2013), retail banks might find it challenging to instil strong brand loyalty without having built a unique brand personality. A possible reason for this put forward by Moura (2021) as well as Wilson and Grant (2013) are that the personality of a brand connects and builds noteworthy associations, for example integrity and reliability, values and image with the bank. Therefore, Sung and Kim (2010) opine that a robust and healthy consumer-brand bond develops when there is alignment between the personality traits of the consumer and the bank brand. This alignment of personality traits, in turn, facilitates easier consumer identification with the bank, as explained by Carlson et al. (2009) and Moura (2021).

Identification with a brand, which, for the purpose of this study, is referred to as bank identification is described as consumers' "perceived oneness with the brand" (Stokburger-Sauer et al., 2013:6). From a brand management point of view, bank identification is essential, not only because consumers are increasingly sceptical about brands, but also because of the decreasing value in traditional media used to market brands (Tuškej et al., 2013). The literature concerning branding infers that there is an association between the personality of a brand and identification with a brand (Carlson et al., 2009). Taken from a retail bank's standpoint, this relationship means that if consumers can associate themselves with the personality of the bank brand, then the level with which they identify with the bank increases. As such, retail banks should not underestimate the value of understanding their consumers' degree of bank identification together with their perceptions about the brand personality of the bank, as this knowledge could give the retail bank direction in terms of their brand positioning, brand marketing and brand communication when targeting consumer cohorts in general, and specifically the Generation Y banking consumer cohort.

The Generation Y ["consumers born between 1986 and 2005" (Markert, 2004:21); also labelled the MTV Generation, youth, millennials and echo boomers (Rahman & Azhar, 2011)] banking segment is of particular importance to retail banks for a number of reasons. Firstly, these consumers represent nearly one third of the global population (Miller & Lu, 2018) and more than one third of South Africa's population (Statistics South Africa, 2021). As such, based on size, Generation Y is potentially a profitable consumer banking segment. The second reason why these consumers are important to retail banks can be explained in terms of the unique characteristics exhibited by these consumers. Generation Y influence the opinions of others (Werenowska &

Rzepka, 2020) and are in the forefront of setting trends (Friedmann, 2005; Doran, 2011; 3ManFactory, 2015). In addition, these egoistical, socially conscious (Coelho & Las Casas, 2013), technologically advanced and fickle (Osipow & Sheehan, 2014) consumers prefer to build strong relationships with brands that represent an image that is similar to the image they have of themselves and that is in line with their values (Lazarevic, 2012). Furthermore, Generation Y favour brands endorsed by celebrities and purchased by friends, influencers on social media and personalities in the media, and generally perceive brands as a token of prestige and a symbol of status (Osipow & Sheehan, 2014). The last reason why retail banks should focus on Generation Y as a consumer banking segment relates to their bank loyalty. It is difficult to predict Generation Y consumers' tendency to remain loyal to a brand (Lazarevic, 2012), given that these consumers' loyalty and commitment to one brand are generally short lived (Graywood, 2018). Grounded on these reasons, retail banks should differentiate their brand through creating a brand personality that enables easy identification with the bank among the indented target market such as Generation Y to untimely gain their long-term loyalty and commitment to the bank brand. As such, this study's purpose was to investigate whether Generation Y banking consumers differ in their identification with their bank and their perceived brand personality in terms of gender, banking institution and the time period with the bank.

2. LITERATURE REVIEW

Brands have been part of consumers' daily lives for years and are considered important for not only building consumer relationships, but also for the long-term sustainability of a business (Tuškej et al., 2013). As such, brand meanings and what they represent and symbolise captured the interest and attention of many scholars (Keller, 1993; Aaker, 1997; Carlson et al., 2009; Bang et al., 2014; Eren-Erdogmus et al., 2015). The personality of a brand is one of the symbolic meanings attached to a brand (Aaker, 1997). Consumers use the brand's personality to characterise themselves and articulate their self-perspective or self-identity (Aaker, 1997; Aaker & Biel, 2013; Ahmad & Thyagaraj, 2015; Srivastava & Sharma, 2016). From a practical perspective, the BMW automobile brand, for instance, is generally perceived by consumers as first-class, superior and elegant, whereas Jeep or Hummer is viewed as having opposite personalities such as tough, rugged and outdoorsy (Carlson et al., 2009). Therefore, the brand's personality shows the consumer the type of individual the brand is intending to be (Aaker & Biel, 2013).

In marketing, the most frequently applied brand personality scale is the one proposed by Jennifer Aaker (Moura, 2021). This scale is made up of five dimensions of personality, which include "ruggedness, sophistication, competence, excitement and sincerity" (Aaker, 1997:351, as cited in Eren-Erdogmus et al., 2015). Researchers from several countries have used this scale in many different markets. For example, in South Africa, a country with limited published brand personality studies, Sokhela (2015) applied Aaker's (1997) scale to high-end sedan car brands such as BMW, Mercedes-Benz and Audi, and found that Generation Y consumers associate the excitement, sophistication and competence personalities with these car brands. In his study, Shezi (2016) used the brand personality scale within a premier soccer league context and discovered that sophistication, ruggedness and sincerity are personalities that Generation Y students associate with their soccer team. Studies concerning the personalities of retail bank brands in South Africa could not be found. In terms of international studies, in the United States of America, this scale was applied within a restaurant context (Siguaw et al., 1999), apparel (Kim, 2000) and within a multiple

product category context (Monga & Lau-Gesk, 2007; Sung & Kim, 2010). In Australia, the brand personality scale was adopted and applied to the action sports clothing market (Buresti & Rosenberger, 2006), Formula 1 teams (Rosenberger & Donahay, 2008) and sponsors market (Donahay & Rosenberger, 2007) as well as the car market, in particular BMW and Volkswagen (Lau & Phau, 2007). Other international studies that applied this scale include Zentes et al. (2008) (country: Germany; application: retail brands), Balaji and Raghavan (2011) (country: India; application: corporate IT brands), Bouhleb et al. (2011) (country: North Africa; application: mobile phone brands) and Polyorat (2011) (country: Thailand; application: university brands).

Only three of Aaker's (1997) dimensions of brand personality were included in this study, namely ruggedness [tough and powerful brands (Mullan, 2020)], sincerity [brands that are truthful and down-to-earth (Mullan, 2020)] and sophistication [luxurious and superior brands (Eisend & Stokburger-Sauer, 2013)], together with three other personality traits, namely community driven [brands perceived to inspire and service consumers and their community (Braunstein & Ross, 2010)], classic [brands that are old school and old-style (Braunstein & Ross, 2010)] and successfulness [brand that are respected and effective (Braunstein & Ross, 2010)]. These specific brand personalities were tested given the uniqueness and dynamics of the banking industry in South Africa. In addition, after searching the internet and various academic databases, no brand personality study in a retail banking environment could be identified that included these six dimensions.

As mentioned in the introduction, it is key that retail banks create a profile of brand personalities with which their consumers can identify; that is, consumers' level of unity or belonging to the brand (Stokburger-Sauer et al., 2013). Brand identification (referred to as bank identification in this study) belongs to the theory of social identity (He et al., 2012) and takes place when the brand helps consumers to express their personalities, principles and views (Bhattacharya & Sen, 2003) and communicate their desires and status of oneself (Tuškej et al., 2013). For example, when a brand is successful or fails, consumers who have identified with the brand might also feel successful or feel like a failure. Therefore, brand identification represents the degree to which the identity of consumers is expressed and improved through the brand (Balaji et al., 2016). Literature suggests that the level of brand identification will determine consumers' level of pro-brand activity engagement such as how far they would be willing to go to protect the reputation of the brand, their level of support for the goals and products of the business, as well as their level of loyalty to the brand (He & Li, 2011). In addition, identification with a brand signifies a robust psychological connection with a brand, which can possibly last for a long period of time. Furthermore, consumers' identification with a brand is suggestive of their future behaviour (Rather, 2018). Taken from a retailing banking perspective, determining and having knowledge about brand identification are important for strong and long-lasting consumer-brand-relationships.

3. METHODOLOGY

3.1 Research design and sampling method

The research design that informed the methodology applied in this study was single cross-sectional and descriptive in nature. Two sampling methods were used to select the targeted population of 300 Generation Y banking consumers aged between 18 and 24 years at two of South Africa's

Gauteng-based higher education institution (HEI) campuses, namely non-probability convenience and judgement sampling. Convenience sampling was specifically chosen given time and cost constraints, and judgement sampling was employed to narrow down the 26 HEIs in South Africa to two campuses in Gauteng.

3.2 Research instrument

A questionnaire made up of two sections was developed for self-administration by the selected sample using validated scales. Accompanying the questionnaire was a cover letter. This cover letter explained the study and indicated that all information requested from the sample would be treated with utmost confidentiality and that the information provided will only be used for statistical analysis.

Section 1 of the questionnaire asked some demographics of the sample, as well as questions relating to their banking institution and the time period, they have been consumers of their bank. The questionnaire's second section included adapted scale items harvested from two validated studies. The first scale related to brand identification (Swanson et al., 2003) and was used to determine the extent to which the sample identifies with their chosen retail bank. The second scale used entailed selected brand personality dimensions (Braunstein & Ross, 2010) to determine the sample's perceptions about their chosen retail bank brand's personality. A Likert-type scale of measurement was used to scale the responses obtained from the sample. This scale comprised six rating points to measure the sample's agreement or disagreement with the statements included in the questionnaire [(1 = strongly disagree to (6) = strongly agree)].

3.3 Data collection

All ethical procedures, such as following the process for obtaining ethics clearance from both HEI campuses, were adhered to before collection of the data commenced. With ethics clearance obtained and the participating HEIs made aware of the study, what it entails and how data will be collected, fieldworkers were deployed to each campus to ask for voluntary questionnaire completion by the sampled participants. The mall-intercept survey method was used in this regard. The fieldworkers were asked to inform the sampled participants of the questionnaire's cover letter, which included important details pertaining to the anonymity of the provided information, purpose of the study as well as contact details of the researcher.

3.4 Data analysis

Version 27 of the IBM SPSS statistical program was employed to encapsulate and scrutinise the data collected from the sample. Several analysis tests were run in this program, including a one-sample t-test, an independent-sample t-test, correlation analysis, multi-collinearity analysis, one-way analysis of variance (ANOVA) as well as tests to obtain descriptive statistics of the captured data.

4. RESULTS AND DISCUSSION

4.1 Response rate, sample description and sample's banking background

Once the fieldwork was completed, the process of data cleaning commenced to ensure that only questionnaires completed by the specified target population were analysed. Only 235 of the 300 questionnaires could be analysed, giving this study a 78 percent response rate.

The sample was described in terms of the demographic data obtained. The sampled participants' ages ranged from 19 years of age to 24 years of age, which is in line with the defined population targeted. Moreover, the sample included somewhat more females than males. Furthermore, the Gauteng Province was identified as the province from which the majority of the sample originate, whereas the Northern Cape was represented the least in terms of the sample's province of origin. Lastly, the language most spoken by the sample was identified as isiXhosa, followed by Sesotho.

Concerning the sample's banking background information, most of the participants indicated Capitec as their banking institution, while Nedbank was identified as the least represented institution of banking by the sample. The duration the sampled participants have been with their chosen retail bank varied, with more than half of the sample indicating a time period of between one and three years with their retail bank, about 25% indicating less than one year and nearly 23% indicating that they have been banking with their retail bank for more than three years. The demographic and banking background data is tabled in Table 1.

Table 1: Demographics and banking background information.

| | % | | % |
|-----------------|------|----------------------------|------|
| Age | | Banking institution | |
| 20 | 21.7 | Capitec | 45.5 |
| 19 | 19.6 | ABSA | 19.6 |
| 21 | 18.7 | FNB | 15.3 |
| 18 | 15.7 | Standard Bank | 11.1 |
| 22 | 11.5 | Nedbank | 8.5 |
| 23 | 10.6 | Language | |
| 24 | 2.1 | isiXhosa | 23.8 |
| Gender | | Sesotho | 17.4 |
| Female | 50.6 | Afrikaans | 15.3 |
| Male | 49.4 | isiZulu | 10.6 |
| Province | | Sepedi | 7.7 |
| Gauteng | 40.9 | Xitsonga | 7.7 |
| Eastern Cape | 20.9 | Setswana | 7.2 |
| Limpopo | 16.2 | Tshivenda | 5.5 |
| Free State | 7.7 | SiSwati | 3.0 |
| Mpumalanga | 6.0 | English | 1.7 |
| North West | 4.3 | Duration with bank | |
| KwaZulu-Natal | 3.8 | 1-3 years | 52.3 |
| Northern Cape | 0.4 | Less than a year | 25.1 |
| | | More than 3 years | 22.6 |

4.2 Descriptive statistics, reliability and validity and correlation analysis

To measure the extent to which Generation Y banking consumers associate with their banking institution and consider their retail bank as successful, sophisticated, sincere, rugged, community driven and classical, a mean (\bar{X}) value and standard deviation (σ) were calculated for each construct. As previously mentioned, the Likert-type scale used consisted of six rating points, which

means that the higher the value of the mean, the greater agreement participants have with the statements included in the construct.

Two statistical measures were employed to test the internal-consistency reliability and discriminant and convergent validity of the scales, namely the Cronbach’s alpha (α) and the mean inter-item correlation coefficient (MIIC), respectively. For internal-consistency reliability, the “Cronbach alpha should exceed 0.60” (Zikmund & Babin, 2013). “For convergent and discriminant validity of the scale”, the MIICs should “range between 0.15 and 0.50” (Clark & Watson, 1995). These results, together with the descriptive statistics and the one-sample t-test results are presented in Table 2.

Table 2: Analysis test results.

| Construct | \bar{X} | σ | α | MIIC | t-values | p-values |
|---------------------|-----------|----------|----------|-------|----------|----------|
| Bank identification | 3.838 | 1.18 | 0.768 | 0.397 | 49.99 | 0.001* |
| Success | 4.975 | 0.66 | 0.910 | 0.430 | 115.89 | 0.001* |
| Sophistication | 4.899 | 0.69 | 0.849 | 0.415 | 108.48 | 0.001* |
| Sincerity | 4.911 | 0.73 | 0.801 | 0.449 | 102.97 | 0.001* |
| Rugged | 4.574 | 0.88 | 0.662 | 0.422 | 80.12 | 0.001* |
| Community driven | 4.701 | 0.86 | 0.640 | 0.381 | 83.52 | 0.001* |
| Classical | 3.647 | 1.01 | 0.600 | 0.291 | 55.26 | 0.001* |

*Significant at $p \leq 0.05$ (2-tailed)

The mean values highlighted in Table 2 were all above 3.5, which indicates that the participants agree with the statements included in the scale. More specifically, the Generation Y banking consumers associate themselves with their retail bank and view their bank brand as displaying personality traits such as great performance and efficiency (successfulness), trendy and innovative (sophistication), kind, authentic and honest (sincerity), daring and bold (ruggedness), inspiration and service orientation (community driven) as well as conservative and old-school (classical). In addition, the p-values derived from the one-sample t-test suggest that these means were all statistically significant ($p \leq 0.05$).

The lowest Cronbach’s alpha was recorded for the brand personality of community driven ($\alpha = 0.60$), while the highest α was recorded for successfulness at 0.91, thereby confirming the internal consistency of the scales used. In terms of validity, the MIICs were between 0.15 and 0.50, thereby warranting the scales’ convergent and discriminant validity.

To report on the relationships and multi-collinearity between the constructs, a Pearson’s product-moment correlation coefficient matrix was developed and the diagnostics for collinearity test was run, respectively. Table 3 reports on the results.

Table 3: Pearson’s product-moment correlation and multi-collinearity.

| Construct | Correlation matrix | | | | | | Collinearity diagnostics | |
|-------------------------|--------------------|--------|--------|--------|--------|--------|--------------------------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | TV | VIF |
| Bank identification (1) | 1 | | | | | | 0.420 | 2.380 |
| Successfulness (2) | 0.247* | 1 | | | | | 0.453 | 2.209 |
| Sophistication (3) | 0.205* | 0.624* | 1 | | | | 0.376 | 2.658 |
| Sincerity (4) | 0.220* | 0.690* | 0.691* | 1 | | | 0.639 | 1.566 |
| Ruggedness (5) | 0.156** | 0.472* | 0.511* | 0.538* | 1 | | 0.444 | 2.250 |
| Community driven (6) | 0.323* | 0.656* | 0.567* | 0.623* | 0.483* | 1 | 0.761 | 1.313 |
| Classic (7) | 0.133** | 0.315* | 0.246* | 0.346* | 0.330* | 0.463* | 0.453 | 2.209 |

* Significant at $p \leq 0.01$

** Significant at $p \leq 0.05$

The correlation matrix in Table 3 shows that there were statistically significant ($p \leq 0.01$; $p \leq 0.05$) relationships between each construct pair, inferring nomological validity (Malhotra, 2010). Interestingly, the two brand personalities that have the sturdiest relationship with bank identification among the Generation Y consumer banking sample were community driven ($r = 0.323$) and successfulness ($r = 0.247$). Although the highest correlation coefficient of 0.691 was below 0.90, which, according to Pallant (2013) eliminates the chances of multi-collinearity, the collinearity statistics were still computed to assess more subtle forms of multi-collinearity.

Tolerance values (TV) that are greater than 0.10 and an average variance inflation factor lower than 10 suggest no serious multi-collinearity (Pallant, 2010). The collinearity statistics in Table 3 suggest no serious multi-collinearity between the constructs, with the lowest TV of 0.376 being well above 0.10 and the VIF of 2.08 being well below 10.

4.3 Independent samples t-test

To evaluate whether Generation Y banking female and male consumers differed in their bank identification and perceived brand personality, an independent samples t-test was run. This test pointed out two differences that were statistically significant ($p \leq 0.05$) among females and males, one in terms of bank identification and one concerning the brand personality of community driven. Generation Y female banking consumers have a higher degree of identification with their retail bank compared to Generation Y male banking consumers. In addition, female banking consumers associate the brand personality of community driven more with their retail bank compared to their male counterpart. The results of the analysis are captured in Table 4.

Table 4: Differences in Generation Y banking female and male consumers' bank identification and perceived brand personality.

| Construct | Male (n=116) | | Female (n=119) | | t-value | p-value |
|---------------------|--------------|----------|----------------|----------|---------|---------|
| | \bar{X} | σ | \bar{X} | σ | | |
| Bank identification | 3.50 | 1.174 | 4.16 | 1.089 | -4.474 | 0.000* |
| Success | 4.92 | 0.680 | 5.03 | 0.633 | -1.361 | 0.175 |
| Sophistication | 4.83 | 0.727 | 4.97 | 0.653 | -1.491 | 0.137 |
| Sincerity | 4.84 | 0.823 | 4.97 | 0.625 | -1.360 | 0.175 |
| Rugged | 4.55 | 0.898 | 4.60 | 0.855 | -0.442 | 0.659 |
| Community driven | 4.55 | 0.958 | 4.85 | 0.731 | -2.743 | 0.007* |
| Classic | 3.59 | 1.110 | 3.70 | 0.907 | -0.861 | 0.390 |

*Statistically significant at the 0.05 level

4.4 ANOVA

One-way ANOVA was used to check whether Generation Y consumers who bank with different retail banks differ in their bank identification and perceived brand personality. These differences are indicated in Table 5.

Table 5: Differences in bank identification and perceived brand personality among Generation Y consumers who bank with different retail banks.

| Construct | | ANOVA | | | | |
|---------------------|----------------|----------------|-----|-------------|-------|---------|
| | | Sum of squares | df | Mean square | F | p-value |
| Bank identification | Between groups | 12.901 | 4 | 3.225 | 2.384 | 0.052* |
| | Within groups | 311.195 | 230 | 1.353 | | |
| | Total | 324.095 | 234 | | | |

| ANOVA | | | | | | |
|------------------|----------------|----------------|-----|-------------|-------|---------|
| Construct | | Sum of squares | df | Mean square | F | p-value |
| Successfulness | Between groups | 2.212 | 4 | 0.553 | 1.283 | 0.277 |
| | Within groups | 99.113 | 230 | 0.431 | | |
| | Total | 101.325 | 234 | | | |
| Sophistication | Between groups | 1.237 | 4 | 0.309 | 0.641 | 0.634 |
| | Within groups | 110.894 | 230 | 0.482 | | |
| | Total | 112.131 | 234 | | | |
| Sincerity | Between groups | 1.658 | 4 | 0.414 | 0.773 | 0.544 |
| | Within groups | 123.386 | 230 | 0.536 | | |
| | Total | 125.043 | 234 | | | |
| Ruggedness | Between groups | 0.649 | 4 | 0.162 | 0.209 | 0.933 |
| | Within groups | 178.576 | 230 | 0.776 | | |
| | Total | 179.225 | 234 | | | |
| Community driven | Between groups | 0.837 | 4 | 0.209 | 0.278 | 0.892 |
| | Within groups | 173.335 | 230 | 0.754 | | |
| | Total | 174.172 | 234 | | | |
| Classical | Between groups | 7.399 | 4 | 1.850 | 1.833 | 0.123 |
| | Within groups | 232.063 | 230 | 1.009 | | |
| | Total | 239.463 | 234 | | | |

Note: * Statistically significant at $p \leq 0.05$ (2-tailed)

As indicated in Table 5, there were no statistically significant differences between ABSA, Capitec, FNB, Nedbank and Standard Bank Generation Y consumers and the various brand personalities. However, a statistically significant difference ($p \leq 0.05$) was found between Generation Y consumers of the different retail banks and bank identification. As revealed by the Tukey HSD test, Capitec consumers exhibited a higher degree of bank identification ($\bar{X} = 4.07, \sigma = 1.24$) than ABSA consumers did ($\bar{X} = 3.47, \sigma = 1.16$).

ANOVA was also used to check whether Generation Y consumers differed in their bank identification and brand personality when taking the time with the retail bank into consideration. Interestingly, as indicated in Table 6, no statistically significant differences were found between Generation Y banking consumers' bank identification and brand personality and the time period with the retail bank.

Table 6: Differences in bank identification and perceived brand personality among Generation Y consumers in terms of the time period with their bank.

| ANOVA | | | | | | |
|---------------------|----------------|----------------|-----|-------------|-------|-------|
| Construct | | Sum of squares | df | Mean square | F | Sig. |
| Bank identification | Between groups | 7.170 | 2 | 3.585 | 2.624 | 0.075 |
| | Within groups | 316.925 | 232 | 1.366 | | |
| | Total | 324.095 | 234 | | | |
| Successfulness | Between groups | 0.079 | 2 | 0.040 | 0.091 | 0.913 |
| | Within groups | 101.246 | 232 | 0.436 | | |
| | Total | 101.325 | 234 | | | |
| Sophistication | Between groups | 0.544 | 2 | 0.272 | 0.565 | 0.569 |
| | Within groups | 111.587 | 232 | 0.481 | | |
| | Total | 112.131 | 234 | | | |
| Sincerity | Between groups | 0.420 | 2 | 0.210 | 0.391 | 0.677 |
| | Within groups | 124.623 | 232 | 0.537 | | |
| | Total | 125.043 | 234 | | | |
| Ruggedness | Between groups | 0.118 | 2 | 0.059 | 0.077 | 0.926 |
| | Within groups | 179.106 | 232 | 0.772 | | |
| | Total | 179.225 | 234 | | | |

| ANOVA | | | | | | |
|------------------|----------------|----------------|-----|-------------|-------|-------|
| Construct | | Sum of squares | df | Mean square | F | Sig. |
| Community driven | Between groups | 0.462 | 2 | 0.231 | 0.309 | 0.735 |
| | Within groups | 173.710 | 232 | 0.749 | | |
| | Total | 174.172 | 234 | | | |
| Classical | Between groups | 4.383 | 2 | 2.192 | 2.163 | 0.117 |
| | Within groups | 235.080 | 232 | 1.013 | | |
| | Total | 239.463 | 234 | | | |

Note: * Statistically significant at $p \leq 0.05$ (2-tailed)

5. LIMITATIONS AND FUTURE RESEARCH

The objective assessment of this study's findings was limited given the non-probability convenience sampling method used. Moreover, this study was limited to two university campuses in one particular region of South Africa. As such, the opportunity exists to duplicate this study on a larger scale by including more Generation Y consumers across several university campuses situated in various provinces of South Africa. In addition, longitudinal and comparative studies could be considered for future research.

6. CONCLUSION

Generation Y banking consumers' loyalty to brands, including their loyalty to retail bank brands, consistently fluctuates. To ensure improved levels of loyalty among this segment of consumers, retail banks are encouraged to continually evaluate their brand in terms of brand identification and personality to ensure that the intended target market can easily identify with the brand as well as associate with the brand's personality traits. As such, the aim of this study was to determine whether Generation Y banking consumers differed in their bank identification and perceived brand personalities in terms of gender, banking institution and time period with bank. This study concluded that Generation Y female and male banking consumers differ in their identification with their bank. More specifically, female consumers more easily identify with their retail bank than male consumers do. In addition, females associate the brand personality of community driven with their retail banks to a higher extent compared to males. Although this study concluded that the period that Generation Y consumer's bank with their retail bank played no role in their bank identification and perceived brand personality, this study found that Capitec consumers more easily associate themselves with their bank compared to ABSA consumers. Given these conclusions, retail banks are advised to use the results of this study to better understand the Generation Y banking segment's bank identification and perceived brand personality to ensure greater identification with the bank and improved acceptance of the brand to ensure increased brand loyalty.

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INTERPRETIVE STUDY OF COMMERCIALISATION OF MEDICINAL PLANTS IN SOUTH AFRICA: PROSPECTS AND CHALLENGES

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ABSTRACT

The aim of this study was to analyse the commercialisation of medicinal plants in South Africa, in order to identify existing commercialisation prospects and challenges. Notably, these plants can be used for primary health care and food, amongst others. This rationale stemmed from the associated effects imposed by unregulated local traders (*Muthi* shop owners, street vendors and suppliers) selling medicinal plants. As a result, the depletion of these plants is negatively witnessed due to this commercialisation. From a qualitative standpoint, this study adopted the interpretive research design to support to employed systematic review method. Seminal studies on this subject were purposively collected using keywords extracted from the research topic. Only sources of high academic standing, with integrated ideas, and not separate writings on this topic were reviewed. To offer relevance and trustworthiness to the current study, the researcher confined his literature review to recent studies that were not older than 10 years. However, other studies that fell outside this period, but could provide greater significance to the topic, were considered. The collected data was analysed using the inductive Textual Content Analysis (TCA) method.

The results of this study reveal that commercialisation of medicinal plants drastically affect their availability, as some of the local traders seem to lack adequate conservation methods to minimise their depletion. The majority of the reviewed literature indicates that conservation methods are not correctly incorrectly applied and largely ignored in some instances owing to high demands of medicinal plants. This high demand often leads to harvesters to neglecting the correct conservation methods and procedures as they hurry to collect them for the market. It is concluded that the demand for medicinal plants for trade markets poses a threat to their availability in the future. Therefore, local traders need to take the necessary precautionary measures while harvesting them. Equally, the concerned parties should be consistently exposed to the improved resources, advanced training and better education about the benefits and importance of these plants.

Keywords: Commercialisation, Interpretative study, Medicinal plants, Prospects (and challenges), South Africa

1. INTRODUCTION

The World Health Organisation (WHO) (Olsen, 1998) estimates that 70-80 percent of the population around the world use medicinal plants. In various developing countries, including South Africa, medicinal plants perform a significant role for primary health care purposes (Fullas, 2007). The large population of which are rural people, depend largely on the natural resources that are found near them for the purposes of fuel wood and for medicine (Kasagana & Karumuri, 2011). Mander *et al.* (2007) states that the African Health Care System of South Africa has always been dependent of medicinal plants. This led to many people seeing an opportunity to commercialise medicinal plants and to generate income (Moeng, 2010; Van Wyk, 2013). The majority of South

African rural communities still prefer the use of indigenous medicinal plants to meet their primary health care needs, in spite of the availability and accessibility of western medical care services provided by the government (Williams *et al.*, 2013). De Wet *et al.* (2013) concur that even though some of the South African population have access to western health care services, they still prefer the use of medicinal plants as the primary health care to cure various diseases. In South African history, medicinal plants were the only primary source of medicines (Van Wyk & Prinsloo, 2018). Most people who use traditional medicines prefer them because of they are affordable, easily accessible and culturally acceptable (Maroyi, 2013).

In South Africa various factors play an essential role in the development of the country's economy and in the fight against unemployment. Although the selling of medicinal plants plays an important role in the development of the country's economy, it is also a contributing factor of exploitation of the natural resources that are found in the floral kingdom (Street & Prinsloo, 2013). As the human population grows, the demand for medicinal plants also increases, leading to an imbalance between supply and demand. Thus, commercialisation of medicinal plants becomes the challenge to the effective management of the way in which people harvest these plants and the number of plants they can harvest (Godoy & Bawa 1993; Dovie *et al.* 2002; and Luoga *et al.* 2004). Overexploitation of medicinal plants through indiscriminate harvesting and because of high demand (Street & Prinsloo, 2013), as well as their destruction through uncontrolled deforestation (Chen *et al.* 2016), poses a danger to their existence.

The International Union for Conservation of Nature (IUCN) Red List assessments was completed in South Africa in 2009 and identified 20 456 indigenous vascular plant taxonomies (Williams *et al.* 2013). During the process of the IUCN Red List assessments, medicinal plants that are sold in 'Muthi' shops and by street vendors were identified to be at high risk of extinction due to overexploitation (Williams *et al.* 2013). The commercialisation of South African medicinal plants remains low, because of inadequacy of existing laws to conserve and promote them (Ndhlovu *et al.* 2021). The promotion of the cultivation of these medicinal plants can encourage the economy by providing employment to the underprivileged (Ndhlovu *et al.* 2021).

Commercialisation of indigenous plant species and related harvests in South Africa is predictable to generate at least 134 000 income opportunities, since it is also estimated that approximately 72 percent of the black South African population, including those that are living in urban areas, still prefers the use of medicinal plant for the purposes of their primary health care (Williams *et al.* 2013). In South Africa the trading of medicinal plants, particularly in the summer-rainfall regions, are done on a large scale (Williams *et al.* 2013).

2. LITERATURE REVIEW

2.1 Demand of medicinal plants

The demand for medicinal plants has been rising, resulting in increased pressure on wild plant populations. This, and the lessening of habitats in several parts of the country, means that South African indigenous plants are now facing extinction (Grunwald & Buttel, 1996). As people migrate from rural areas to urban cities, they start to have limited access to indigenous plants because of the distance. Therefore, they rely on street vendors and 'Muthi' shop to supply them with medicinal plants for their primary health purposes. As urbanisation increases, so is does the demand for

medicinal plants (Williams *et al.* 2013). People in rural and urban areas have high demand for medicinal plants as they still perceive it as the main ingredient in traditional medical system and an important source of human survival and well-being (Ndhlovu *et al.* 2021). Despite the fact that most of South African rural areas have access to mobile clinics and other medical facilities, the service delivered seems to be insufficient in order for it to accommodate everyone (Moeng, 2010). Moreover, individuals believe that indigenous medicine is still effective, and do not trust anything that is Western and non-African (Moeng, 2010).

In South Africa the traditional health care system is dependent on medicinal plants (Moeng, 2010). Approximately 20 000 tonnes of indigenous plant materials, in a period of around a year, are used by South Africans (Moeng & Potgieter, 2010). There is a large quantity of these indigenous plants that are being commercialised mostly in informal ‘Muthi’ shops and ‘Muthi’ markets, and are usually harvested (Moeng & Potgieter, 2010). Medicinal plants are gathered from an extensive variety of habitats throughout the country. These habitats are usually found on communal lands, farms and protected areas (Moeng & Potgieter, 2010). South Africa has the authority to assess the status of the conservation of their indigenous plant species by using the standard IUCN Red List Categories, because of their high demands from ‘Muthi’ marketplaces (Williams *et al.* 2013). Moreover, South Africa became the only country that has evaluated the conservation significances of its whole flora in the whole world, using the IUCN Red List guiding principles but with additional three categories, namely, Critically Rare, Rare and Declining (Williams *et al.* 2013).

2.2 Commercialisation of medicinal plants

According to Cunningham (1991), the commercialisation of medicinal plants contributes to the multimillion-rand ‘hidden economy’ in South Africa. The trade of indigenous plants is currently higher than it was in the past because of the indigenous values associated with medicinal plants, the high human population growth and rapid urbanisation (Wiersum *et al.* 2006). The challenge of trading in medicinal plants at local level and their exploitation has been documented in various parts of the country over the years (Moyo *et al.* 2015). As the demand for medicinal plants increase, so does their commercial demand, this also contributes to their destructions, based on gathering practices, as well as rising of hereditary exposures to natural disasters, further resulting in serious threats on availability and supply of medicinal plants (Street & Prinsloo, 2013). One valuable source of income in many South African households in different provinces comes is trading of medicinal plants (Rasethe *et al.* 2019). This implies that the sales of medicinal plants in South Africa contribute both directly or indirectly to the economy of rural households through providing welfare and economic status (Ndlhovu *et al.* 2021). Some traditional health practitioners and indigenous knowledge-holders have taken an advantage to commercialise medicinal plants outside of traditional settings (Ndlhovu *et al.* 2021).

Table 1: Ten (10) most commonly commercialised medicinal plants in order of frequency

| No | Name | Frequency of Citation | Part used | Use value | Conservation status | Scarce in Market |
|----|-----------------------|-----------------------|--------------|-----------|---------------------|------------------|
| 1 | <i>Fabaceae</i> | 0.07 | Roots | 0.07 | Least Concern | Yes |
| 2 | <i>Asphodelaceae</i> | 0.40 | Leaves | 0.27 | Endangered | No |
| 3 | <i>Orchidaceae</i> | 0.20 | Stem, leaves | 0.13 | Least Concern | Yes |
| 4 | <i>Phyllanthaceae</i> | 0.13 | Roots | 0.13 | Not threatened | Yes |
| 5 | <i>Euphorbiaceae</i> | 0.07 | Roots | 0.07 | Vulnerable | No |
| 6 | <i>Combretaceae</i> | 0.20 | Roots | 0.33 | Protected | Yes |

| No | Name | Frequency of Citation | Part used | Use value | Conservation status | Scarce in Market |
|----|---------------------|-----------------------|-----------|-----------|---------------------|------------------|
| 7 | <i>Linaceae</i> | 0.13 | Roots | 0.13 | Protected | Yes |
| 8 | <i>Bignoniaceae</i> | 0.07 | Fruits | 0.07 | Not threatened | Yes |
| 9 | <i>Loganiaceae</i> | 0.07 | Roots | 0.07 | Not threatened | No |
| 10 | <i>Moringaceae</i> | 0.40 | Leaves | 0.33 | Protected | No |

Source: Barbosa, Hlashwayo, Sevastyanov, Chichava, Mataveia, Boane and Cala (2020).

Drawing from Table 1, Moeng (2010) shares that when gatherers are harvesting medicinal plants, most plants, such as *Fabaceae*, *Phyllanthaceae*, *Euphorbiaceae*, *Combretaceae*, *Linaceae* were and *Loganiaceae* are dug up and the whole plant is removed for medical practices. This practice puts the survival of these plants in danger with a possibility of extinction. On the other hand, with plants such as *Asphodelaceae*, *Orchidaceae* and *Moringaceae* only a certain number of leaves are removed, which gives them a chance to grow again for future use. In plants such as *Sclerochiton ilicifolius*, several numbers of roots are removed during collection; whereas with trees such as *Orchidaceae* only the bark is stripped for medical use (Moeng, 2010). The traditional medicine industry is unregulated. It has an estimated contribution 2.9 billion South African Rands (ZAR) and (USD) (192,948,107 Dollars to the economy per annum (Ndlhovu *et al.* 2021). As a result, many rural communities resort to the use of traditional medicine as an alternative medicine, a trend that has been observed in urban areas where there are many 'Muthi' markets (Ndlhovu *et al.* 2021).

2.3 Conservation methods of medicinal plants

The essential part of plants survival is influenced by human existence; this was recognised through the starting point of the ecosystem up to its conservation (Van Wyka & Prinsloo, 2018). Plants conservation is aimed at supporting the sustainable development of natural resources that are implemented in order to preserve and protect these medicinal plants through employing in methods that do not put danger in the existence and availability of medicinal plants or methods that do not destroy the important habitants and ecosystem up until where they come into extinct (Kasagana & Karumuri, 2011). Gatherers of medicinal plants utilise different methods of harvesting of which some threaten the existence of these plants. Some of these methods are safe for the survival of medicinal plants. They include removing parts of the bulk, collection of roots, bulb, uprooting the whole plant, and cutting stems and leaves (Rasethe *et al.* 2019).

These harvesting methods are used by plant gatherers, who often collects large quantities of medicinal plants, their actions remain a negative conservation concern. In some cases, the plant collectors use collection methods that are illegal in protected areas which also place the ecosystems in danger (Rasethe *et al.* 2019). The targeted population of medicinal plants is rapidly declining, and most of them are facing extinction without their therapeutic potential being fulfilled (Rasethe *et al.* 2019). Conservation methods, which are used to protect the plants' genetic resources has been previously realised as a fundamental factor for biodiversity conservation. Moreover, the 'In-Situ & Ex-Situ' conservation are the two main methods for conservation of indigenous plant species (Kasagana & Karumuri, 2011). According to Kasagana and Karumuri (2011), in South Africa law enforcement approach was used for conservation of medicinal plants, however, the approach has evidently been unsuccessful. New, effective and participatory methods are needed to protect medicinal plants.

To answer to the overexploitation and threat of natural resources such as medicinal plants, numerous efforts have been implemented in attempt to conserve the multiplicity of medicinal plants. Moeng and Potgieter (2011) highlight that Community-Based Natural Resources Management (CBNRM) are responsible for the conservation of medicinal plants. According to Moeng (2010), “*Muthi*” shop owners and street vendors play important role on the trade of South African indigenous plant species, and it is important for them to develop strategies to prevent loss of these plants. The indigenous plants die and eventually become extinct when the bark, roots or the entire parts of the plant are harvested. However, the gathering of leaves, flowers, fruits and seeds are considered less damaging to the plants, although, severe pruning affects a plant's dynamism and reproductive potential and their future existence (Van Wyka & Prinsloo, 2018). The sustainable rate of harvesting is determined by category of vegetation that is being collected, from which kind of the plants or parts of the plants that are collected, their richness and growth rates (Van Wyka & Prinsloo, 2018).

3. METHODOLOGY

From a qualitative standpoint, this study adopted the interpretive research design to offer support to employed systematic review method. Dan (2017) states that this research design is meant to evaluate the improvement in a specific study field. Moreover, the aim of this research design is to recognise, assess and summarise the outcomes of the reviewed studies by making existing data more accessible to decision-makers (Yannascoli, Schenker & Baldwin, 2013; Bwanga, 2020). In this study, the researcher adopted purposive sampling, which is also known as judgmental, selective or subjective sampling. This is a sampling technique in which the researcher depends on their own judgment when selecting members of population to participate in the proposed study. When the researcher relies on their own judgement when choosing elements of the sample, it is called a non-probability sampling method or purposive sampling. Researchers often have faith in that they can gain illustrative sample by using a sound judgment, which resulted in saving time and money (Mokwena & Maluleke, 2020).

The seminal studies on this subject were purposively collected using keywords extracted from the research topic. Only sources of high academic standing, with integrated ideas, and not separate writings on this topic were reviewed. These studies were demarcated to recent studies (Not older than 10 years). However, other studies outside this projection provided greater significance to the research topic to offer relevance and trustworthiness (Mokwena, Motsepe, Maluleke & Shandu, 2020). Again, the researcher used the inductive TCA to analyse consulted textual materials and to collect as well as to categorise relevant data on this subject. Bryman (2012), Matthews and Ross (2010) and Maluleke (2020) agree that to achieve the TCA, the reviewed documents were regarded as something more than just a source of data, since it is possible to research documents in their own right as a ‘field’ of research.

4. STUDY FINDINGS AND DISCUSSIONS

Data that is presented in section 1 and 2.1 of this study, present the demand of medicinal plants in various levels of South Africa. Grunwald and Buttel (1996) (in section 2.1 of this study) stated that the demand for medicinal plants has been rising, which results in increased pressure on wild plant populations. This, and also the lessening of habitats in various parts of the country, means

that South African indigenous plants are now facing the risk of extinction on a local level. Fullas (2007) confirmed that, in various developing countries, including South Africa, medicinal plants play an important role for the primary health care purposes as presented in section 1 of this study. Williams *et al.* (2013) and De Wet *et al.* (2013) concurred that the majority of South African rural communities still prefer the use of medicinal plants for the purposes of their primary health care, in spite of the availability and accessibility of western medical care services provided by the government.

Williams *et al.* (2013) in section 2.1 of this study, further highlighted that people who migrate from rural areas to urban cities start to have limited access to indigenous plants. Therefore, they rely on street vendors and 'Muthi' shops to supply them with medicinal plants for their primary health purposes. It was also presented by Kasagana and Karumuri (2011) that the majority of people in rural areas depend largely on the natural resources that are found near them for the purposes of fuel wood and for medicine refer to section 1 of this study. It is also showcased by Ndhlovu *et al.* (2021) in section 2 of this study, that livelihoods of human population in rural and urban areas have a high demand for medicinal plants as they still perceive it as the main ingredient in traditional medical system and is an important source of human survival and well-being.

In section 1 of this study Van Wyk (2013) shared that approximately 50 percent of all pharmaceutical drugs around the world are produced from natural resource, and around 25 percent of them are medicinal plants. This, therefore, means that medicinal plants are used for different remedies. Moeng and Potgieter (2010) also stated that approximately 20 000 tonnes of indigenous plant materials, in a period of around a year, are used by South Africans as indicated in section 2.1 of this study. There are large quantities of these indigenous plants that are being commercialised mostly in informal 'Muthi' shops and 'Muthi' markets, which are usually harvested from wild populations. Furthermore, Van Wyk and Prinsloo (2018) in section 1 of this study hinted that in the history of South Africa, medicinal plants were the only primary source of medicines.

Maroyi (2013) in section 1 of this study also supported the notion that majority of people who use traditional medicines prefer them because of their affordability, easy accessibility and cultural acceptability. These authors (Bawa, 1993; Dovie *et al.*, 2002; Luoga *et al.* 2004) also stated in section 1 of this study that, when the human population grow the demand for medicinal plants also increases and the supply also attempt to compliment the demand. Thus, commercialisation of medicinal plants becomes the challenge of effectively managing the way in which people harvest these medicinal plants and the amount which they harvest and harvesters disregard conservation measures that are implemented for preservation of these.

It is also highlighted in section 2.1 of this study by Moeng (2010) that, despite the fact that most of South African rural areas have access to mobile clinics and other medical facilities, the service delivered seems to be insufficient in order for it to accommodate everyone and individuals believe that the usefulness of indigenous medicine is still effective, due to a natural distrust in anything that is Western and non-African. Furthermore, in section 1 and 2.2 of this study, data on the commercialisation of medicinal plants in South Africa is presented. Mander *et al.* (2007) presented that, the African Health Care System of South Africa has always been dependent of medicinal plants. On the other hand, Moeng (2010) also in section 1 of this study highlighted that this led to many people seeing a business opportunity to use these medicinal plants to generate income by commercialising them. Williams *et al.* (2013) showed that, during the process of the IUCN Red

List assessments, medicinal plants that were sold by ‘*Muthi*’ shops owners and street vendors were identified to be at high risk of becoming extinct as a result of this commercialisation.

In section 2.2 of this study Cunningham (1991) stated that the commercialisation of medicinal plants contributes to the multimillion-rand ‘hidden economy’ in southern Africa. Ndlhovu *et al.* (2021) concurs that the sales of medicinal plants in South Africa contribute both directly or indirectly to the economy of rural households through providing welfare and economic status. Furthermore, Wiersum *et al.* (2006) confirmed that the trade of medicinal plants is currently greater than it was in the past because of the important indigenous values associated with medicinal plants, the high human population growth and rapid urbanisation. Likewise, Moyo *et al.* (2015) indicated the challenge for medicinal plants for local trade and exploitation has been documented in different parts of the country over the years.

Section 2.1 of this study further provided that, as the demand of medicinal plants increase, so does the commercial demand (Street and Prinsloo, 2013). This also causes the destruction of medicinal plants gathering practices, and rising hereditary exposure to natural disasters, resulting in serious threat in the availability and supply of medicinal plants. It is also supported by Rasethu *et al.* (2019) that, one valuable source of income in many South African households in different provinces comes from trading of medicinal plants. Ndlhovu *et al.* (2021) in this case confirmed that some traditional health practitioners and indigenous knowledge-holders have taken an advantage to commercialise medicinal plants outside of traditional settings.

Additionally, Ndlhovu *et al.* (2021) opined that the commercialisation of medicinal plants in South Africa remains low, despite all the laws to conserve and promote the available medicinal plants. Ndlhovu *et al.* (2021) also shared that promotion of cultivation of medicinal plants under a participatory management action plan can stimulate the economy of the disadvantaged. Williams *et al.* (2013) in support mentioned that the commercialisation of medicinal plants and related products in South Africa is estimated to generate at least 134 000 income opportunities, since it is also estimated that approximately 72 percent of black South African population, including those that are living in urban areas still depend on medicinal plant to meet their primary health care needs while over 70 000 of medicinal plants are used per year in South Africa, this reads with section 2.2 of this study.

Williams *et al.* (2013) specified that, trading of medicinal plants are done through several large markets all over South Africa, particularly in the summer-rainfall regions. According to Ndlhovu *et al.* (2021) in section 2.2 of this study, the traditional medicine industry is unregulated, with an estimated contribution of the South African Rand [ZAR] 2.9 billion (United States Dollar - USD 192,948,107) to the economy per annum. Ndlhovu *et al.* (2021) also mentioned in section 2.2 of this study that, as a result, many rural communities resort to the use of traditional medicine as an alternative medicine, a trend that has been observed in urban areas where there are many ‘*Muthi*’ markets.

Section 1, 2.1 and 2.3 of this study corroboratively revealed that about the conservation of medicinal plants in relation to commercialisation is presented. Chen *et al.* (2016) in section 1 of this study confirmed that, overexploitation, indiscriminate collection of medicinal plants, high demand, as well as uncontrolled deforestation, affect their availability. Williams *et al.* (2013) in section 2.1 of this study stated that, South Africa became the only country that has evaluated the

conservation significances of its whole flora in the whole world, using the IUCN Red List guiding principles but with additional three more categories, namely, Critically Rare, Rare and Declining. According to Kasagana and Karumuri (2011), plant conservation is aimed at supporting the sustainable development of natural resources. It is that are implemented in order to preserve and protect these medicinal plants through employing methods that do not endanger the existence and availability of medicinal plants or methods that protect the important habitants and ecosystem from destruction.

Rasethé *et al.* (2019) in section of this study revealed that, gatherers of medicinal plant utilise different methods of harvesting of which some threaten the future existence of medicinal plants. Some of these methods are safe for the survival of medicinal plants. These methods include removing parts of the bulk, collection of roots, bulb, uprooting the whole plant, and cutting stems and leaves off. In section 2.3 of this study Rasethé *et al.* (2019) continued to state that, when the plant gatherers are collecting the large quantities of medicinal plants of conservation concern they use those harvesting methods. In some cases, they use methods of collection that are illegal in protected areas, and they critically place the ecosystems in danger.

Kasagana and Karumuri (2011) mentioned that, the '*In-Situ* and *Ex-Situ*' conservation are the two main methods for conservation of indigenous plant species. Kasagana and Karumuri (2011) contended in section 2.3 of this study that, in South Africa, the law enforcement approach was used for conservation of medicinal plants. However, this approach has failed evidently and that new, effective and participatory methods are required to protect medicinal plants. In response to the duty to respond to the overexploitation and threat of natural populations of medicinal plants, several efforts have recently been implemented to conserve the diversity of medicinal plants. Moeng and Potgieter (2011) in section 2.3 of this study pointed out that, Community-Based Natural Resources Management are responsible for the conservation of medicinal plants. Moeng (2010) continue to corroborate this statement by mentioning that, '*Muthi*' shop owners and street vendors play an important role in the trade of indigenous medicinal plants in South Africa, and it is important for them to develop strategies to prevent loss of these plants. In section 2.3 of this study, Van Wyka and Prinsloo (2018) supported that, the sustainable rate harvesting is determined by the category of the vegetation that is being collected, the kind of plants or parts of the plants that are collected, their richness and growth rates.

5. IDENTIFIED STUDY THEMES AND CHALLENGES

- **High demand for medicinal plants:** In section 2.1 of this study, Street and Prinsloo (2013), Chen *et al.* (2016), Williams *et al.* (2013) and Ndhlovu *et al.* (2021), collectively agreed that most communities depend on medicinal plants for survival, as well as to achieve their primary health care, and that this often increase demands of these plants, whether available on various markets, either legal or illegal.
- **Commercialisation of medicinal plants:** Street and Prinsloo (2013), in section 1 of this study, stated there are various factors contributing to growth of the South African economy, and that in an attempt to fight unemployment; selling of medicinal plants is touted as one of the active method to escape this reality. Therefore, thoroughly research on exploitation of natural resources found in the floral landscape is highly sought necessary, as indicated by Cunningham (1991) and Ndlhovu *et al.* (2021) in section 2.2 of this study.

- **Destruction of medicinal plants:** Chen *et al.* (2016) in section 1 of this study mentioned that habitat destructions [Destructions of medicinal plants] owing to the high demand for these plants affects their availability. Street and Prinsloo (2013) in section 2.2 of this study highlighted that; as the demands for these plants increase, so does their commercial demands, and the destructions of wild harvesting practices become a norm, and the vulnerability of these plant is commonly witnessed, owing to unregulated availability, supply and demands mechanisms.
- **Harvesting methods:** As indicated in section 2.2 of this study; Rasethe *et al.* (2019) supported that when ‘plant gatherers’ collect large quantities of medicinal plants for conservations, concerns are directed to harvesting methods, as in some cases the methods used are deemed to be illegal, as certain areas are protected and they are refereed as critically place for ecosystems, further posing a serious danger to the available medicinal plants, while, Street and Prinsloo (2013) in section 1 of this study also shared that overexploitation of these plants remains a serious threat to their availability due to current intensive harvesting processes relating to the existing high demands.

6. STUDY CONCLUSIONS AND RECOMMENDATIONS

The objective of this study was to interpret the commercialisation of medicinal plants in South Africa. This was done to reveal existing prospects and challenges. The study found that the majority of South African rural communities largely depends on the use of these plants for their primary health care purposes, positively leading to their high demands. This has consequently led to high rate of commercialisations. The findings of this study indicates two main reasons why people choose to commercialise medicinal plants. They are: 1) The high demand on their different valuable usage, and; 2) Opportunity to generate necessary income. In spite of western health care facilities available in South Africa, provided by the National government; the majority of individuals in rural communities continue to prefer the use of African medicinal plants for their primary health care. Lastly, due to the unemployment rate in South Africa, most of these individuals view the commercialisation of medicinal plants as an income generator.

It is hoped that this study can be used as a framework to educate relevant stakeholders and to also create awareness on the effects of commercialisation of medicinal plants. Furthermore, future research studies could be done relating to this subject to ensure preservations and protections of these plants. For the purposes of offering good practices of ensuring proper commercialisation methods of medicinal plants in South African rural communities.

Importantly, although an institution, such as the ‘CBNRM’ are introduced for the protection and preservation these plants, it is not always effective and successful in protecting some of the valuable plants. Studies on commercialisation of these plants strongly indicates that their commercialisations can endanger them, leading to extinctions. Subsequently, the issue of extinction of these plants is often recognised as a major problem across South African rural communities, as the issues surrounding commercialising these plants has been proven to be one of the existing threats to the availability of the remaining medicinal plants. As a resort, the following recommendations (Refer to Table 2) are made for possible implementations relevant stakeholders in this study field.

Table 2: Recommendations to improve study objective and the identified themes and challenges

| Study objective | Commercialisation of medicinal plants in South Africa |
|--|---|
| Identified study themes and challenges | Recommendations |
| High demands for medicinal plants | It is recommended that while recognising the high demands for medicinal plants in most South African rural communities, medicinal plants gatherers should not only focus on the associated profits; they should not neglect the importance of applying proper conservation methods. State what it is that they should do. |
| Commercialisation of medicinal plants | It is recommended that, responsible individuals should practice proper conservation methods, as proposed by the CBNRM. This can increase the prevention of loss of these plants and avoid future extinctions, which may subsequently lead to further losses of income. |
| Destruction of medicinal plants. | This study recommends that even though there are high demands of these plants, the medicinal plant gatherers should always use conservative ways of harvesting to prevent future and possible extinction. |
| Harvesting methods | This study recommends that medicinal plants gatherers should use proper harvesting methods that are safe in nature to ensure long survival of these plants, and to accomplish sustainable future usage. |

Source: Researchers' illustrations (2022)

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LEADERSHIP DEVELOPMENT AND SUCCESSION PLANNING IN MEDICAL FACULTIES: AN INTEGRATIVE LITERATURE REVIEW

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ABSTRACT

This article seeks to critically review the available literature on the challenges of leadership development (LD) and succession planning (SP); the essential personal, interpersonal, and cognitive capabilities; the content of LD; and the effectiveness and impact of coaching and mentoring programmes that should be incorporated into SP programmes. A hermeneutic framework was followed in this literature review study, where the study variables were searched, classified, mapped, and systematically analysed. The data gleaned from the sparsely available literature show the significance of mentoring and coaching programmes. These have a positive impact on faculties' performance, sharing of knowledge, decision-making, relationships among stakeholders and introduction of radical changes. A plethora of challenges triggered faculties to embark on LD and SP programmes, which seek to address structural inertia, inefficiencies in human resources (HR) departments and ineffectual leadership. The reviewed literature consistently suggests that personal, interpersonal, and cognitive abilities and the content that should be covered in medical faculties' LD programmes is meant to prepare existing or future leaders to ascend to leadership positions. This article paves the way for the HR practitioners and academic managers to understand the leadership challenges in medical faculties; the benefits of internal mentoring and coaching programmes; as well as illuminating the content, personal, interpersonal, and cognitive capabilities that need to be included in LD and SP programmes.

Keywords: Coaching; hermeneutic framework; leadership capability framework; leadership development; medical faculties; mentoring.

1. INTRODUCTION

Progressive universities across the globe have embarked on leadership development (LD) and succession planning (SP) programmes which have been influenced by the inevitable exodus of leaders, including the “baby boomers”, those approaching retirement age and millennials' high turnover (Azizollah et al. 2016; Figueron, O. 2015; Leibowitz et al. 2015; Viggiano, 2018). This presents difficulties in filling vacant leadership positions. In the meantime, the multifaceted challenges and leadership roles faced by academic leaders in medical schools have been acknowledged (Fernandez et al. 2020), with minimal effort to develop its prospective leadership pool (Gaur et al. 2020; Gigliotti & Ruben, 2017). This has been compounded by a lack of consensus on incorporating LD and management content in the curricula of medical qualifications. This has come about as a result of confusion on the modules and the learning outcomes to be included LD programme curriculum. The inadequacy of LD and SP programmes is evident as heads of department (HoDs) in the health fraternity have been recognised as being inept (Ngcamu, 2019).

As a result of the absence of buy-in from university leaders, the multifaceted nature of medical school departments requires skilled, adaptive, and prepared leaders to deliver pragmatic results. Furthermore, the leadership crisis in medical schools has been largely invisible to universities' leadership (Fernandez et al. 2020). This has been compounded by LD and SP programmes being unfocussed, with a tendency to proselytise. Consequently, Kiel (2015) terms LD as a specialised dimension of professional development which includes a host of competencies such as knowledge and skills that academic leaders need in ensuring there is effectiveness in the faculty. Succession planning, meanwhile, is regarded as a systematic method that includes forecasting, enabling talented leaders to be retained and developed to ensure leadership continuity and sufficient and efficient leaders for the future (Butler & Roche-Tarry, 2002; Fibuch & Van Way, 2012; Griffith & White, 2011). Nevertheless, LD and SP have not been simultaneously explored empirically in medical faculties, as proven by the dearth of research on this topic. The scarcity of credible research on these crucial variables on academic leaders was the motivation for the present study, to synthesise the existing but sparse body of accumulated literature. This area of research and practice needs a scholarly analysis to extend the existing literature; expose scholars to potential foundations; propose the development of a conceptual model; and identify areas of interest and focus for future researchers.

A host of challenges show more confidence in the lack of LD and SP programmes have manifested in medical schools (Ngcamu, 2019) across the globe, which includes an underinvestment in leaders (Dayan et al., 2014), with poor leadership having an impact on the poor coordination of programmes (Jooste et al., 2018). In addition, academic leaders in faculties lack support in terms of the development of essential skills and knowledge (Kiel, 2015) with competencies, skills and knowledge audits that are non-existent (Hargreaves, 2015). Little focus is given to medical academic HoDs (William et al., 2016: 465) and academic governance is inefficient (Bikmoradi et al., 2010). Previous perpetual conditions in medical faculties exist, with the full knowledge of university leaders that the HoDs who are employed in these crucial leadership positions are prominent academics. Nevertheless, they have minimal leadership and relevant management experience, with most of these HODs learning on the job (Detsky, 2011: 88; Garwe, 2014; Parrish, 2015). An investment perspective in LD has been suggested by Stephen et al. (2016), with an incremental return on the positive impacts of LD increasing performance. Spendlove (2007) suggests that SP should be intertwined with LD. Minimal empirical research has addressed this salient topic on LD and SP in medical schools, which calls for well-respected academics to examine the existing void in the literature. The background provided above sheds light on the significant association between LD and SP, which suggests that they cannot be explored separately.

Consequently, the objectives of the current study were achieved through the comprehensive analysis of 35 journal articles from credible electronic databases (PubMed, Emerald, SAGE, BMC Medicine, Taylor and Francis, Springer, and Wiley Online Library), in addition to a citation index in the discipline of medicine, education, social sciences and management. These articles were selected due to their high number of citations, with the articles having a total of 1818 citations. Essentially, broad literature associating LD and SP in medical faculties was researched. Once a faculty of interest was identified, an independent analyst classified journal articles that were within the scope of the study. Such research is essential since there is a scarcity of sound research on the

LD and SP of academic leaders in universities (Conger & Benjamin, 1999; McMurray et al. 2012; Ngcamu, 2019; Plavsic & Mulla, 2020).

2. METHODOLOGY

A hermeneutic framework (Boell & Cecez-Kecmanovic, 2014) was adopted to search, classify, map, and critically assess the literature where themes and arguments emerged. An MS Excel spreadsheet was developed where all the constructs were recoded for further screening, analysis, and screening assessment. The spreadsheet was perused to identify relevant studies that meet the literature review objectives of the study. The selected articles were then transferred to NVivo version 12, a qualitative analytical tool, for further analyses, coding, categorisation, and themes development, in the form of nodes to generate relevant patterns and themes. As the unit of analysis in this article focussed on LD and SP programmes in medical faculties of universities, the database search included these variables and were used interchangeably. Articles on LD strategies and succession plans for academic HoDs and deans were selected for analysis. Moreover, a simultaneous examination of the phenomenon being examined has implications for practice because university leaders will interchangeably incorporate LD programmes in succession plans. This in turn will yield positive results on the availability of leaders who have strong leadership traits in this tumultuous university context. Consequently, human resources (HR) practitioners will improve their systems, business processes and practices to ensure that leaders of calibre and talent are available during times of emergency and crisis in medical faculties.

Data search, capturing and analysis

The literature review followed an inductive grounded theory approach, leading to the search for relevant articles and official reports. This was followed by the codification, capture, and interpretation of the prevalent themes (McCann & Polacsek, 2021). The researchers pinpointed a host of relevant journal articles and some official reports that revolved around the objectives of the integrative literature study. This was produced from 88 articles, 8 book chapters and eight conference proceedings. The main keywords included were ‘leadership development’, ‘succession planning’ and ‘medical faculties in universities. This review study was theoretically grounded on empirical studies that focused on leadership development programmes and succession planning in universities. These journal articles and reports were retrieved mainly from the Google Scholar.

3. RESULTS

3.1 Leadership development framework

The institutional training evaluation model by Kirkpatrick (1996), adapted in this integrative literature review study, clarified the criteria and plans that are created by universities to assess the outcomes of LD programmes. Furthermore, it dissects the available literature on the feedback to internal and external stakeholders of leaders’ effectiveness post-training. The institutional training evaluation framework is divided into two parts: internal (reaction and learning) and external (behaviour and results) measurement criteria. The internal aspect focusses on what occurs during the training programme, whereas the external one focusses on changes outside of the training (Praslova, 2010: 220). The reaction criteria are critically evaluated in the LD discourse in medical

faculties in terms of participants' satisfaction after training programmes, their supervisors' evaluations, and self-reports.

This study further measures the learning outcomes for leaders (learning criteria) where various tests are used, including post-training measures of performance by their line managers and skills demonstration in the training context (Alliger et al., 1997). Moreover, the behavioural criteria measured on-the-job performance, the effects of training on work performance, and job outputs evaluated against set objectives (Arthur et al., 2003). The results criteria are followed where productivity gains, increased customer satisfaction, employee morale and an increase in the return on investment is evaluated in this study (Arthur et al., 2003). Under this ambit, the LD of participants is evaluated. This is done in terms of the impact on the employability of competent students who are responsible to local and global communities, as well as their contribution to the society (Sax, 2004).

3.2 Leadership development: Unpacking constraints

Medical faculties in universities across the globe have been faced with a multiplicity of challenges (Fernandez et al. 2020) which are largely attributed to its complex nature that requires multifaceted leaders who have multiple competencies and skills. Accordingly, leaders who are ill-prepared, with limited academic experience and inefficient leadership capabilities in faculties that offer LD programmes, are deemed unfocussed. The effects this has, also in addition to not being measured, are some of the challenges in medical faculties.

Collins-Nakai's (2006) perception of the Canadian Medical Association (CMA) on LD and whether there is a need for HoDs to be developed in medicine revealed that a need and a void do exist. In addition, Collins-Nakai's (2006) mentioned that the focus group members felt they are not equipped to ascend to leadership positions. These members felt they require leadership and management skills that are relevant and effective in their communities, professional associations and can influence policy.

According to Blumenthal et al., (2012), many clinicians are inadequately prepared to perform their clinical leadership responsibilities, and empirical evidence suggests that effective leadership yields better clinical outcomes. Jooste et al., (2018) mention the challenges that have been mostly attributed to the appointment of HoDs to leadership positions who have limited leadership experience. The university environment, however, is highly competitive, which requires strong leadership. This has been evidenced in different departments in medical faculties as physician leaders have insufficient knowledge and skills to lead (Dubinsky et al., 2015). Additionally, physician leaders have been found to lack understanding on how specialised schools are governed, led, and managed (Townsend et al., 2008) and leaders demonstrate a lack of formal education and leadership training (Evans, 2016; Hall, 2007).

Numerous researchers have observed the effects of poor leadership capabilities, which have led to the inability of organisations to optimise their quality, fundraising and other activities (Dubinsky et al., 2015) and a high turnover of employees (Evans, 2016). Dopson et al. (2016) have concluded that LD in medical faculties is unfocussed. These researchers suggest that the effectiveness of LD has not yet been explored empirically, compounded by difficulties in measuring its impacts. These authors further argue that the fields of measurement in university settings relating to LD is lacking,

with low reliable evidence and a theoretical base. These latter challenges are exacerbated by HR staff's lack of understanding of the critical cultures, time demands, academic structures and career trends (Cherry & Thorndyke, 2010). In addition, HR leaders tend to focus only on the LD of non-academic staff members.

3.3 Internal mentoring and coaching programmes in medical faculties

The results of fruitful internal mentoring and coaching programmes have been observed in medical faculties. Law et al. (2014) cited the Joint Council Task Force of the American Association of Colleges of Pharmacy (AACCP) on effective mentoring, which was responsible for collating information on best practices relating to the mentoring of existing and prospective leaders. The authors recommended that the roles and responsibilities of a mentor be clearly defined, discussed with the mentee, and expectations set at an initial phase. The mentorship approach should be formal and systematic, with junior staff members allocated internal mentors, and resources (time, technology, and funding) provided to staff members. Law et al. (2014) suggest that mentors considered in different stages of employees' careers and that data from previous programmatic assessments should be solicited to determine the success of a mentorship programme. One of the crucial LD methods is coaching (Tompson et al., 2008), which has been associated with the execution of rapid changes in faculties by leaders. Scott et al. (2008) further suggest that internal coaching practices contribute extensively to the development of employees, performance management and knowledge sharing. Internal coaching practices improved inclusive and transparent decision-making, with training and development being prioritised.

The ManpowerGroup Company (2012) has espoused a plethora of results brought about by coaching in organisations, which include improved relationships, teamwork, job satisfaction, and overall improved productivity and performance. Several researchers (Coutu & Kauffman, 2009; Hammoud et al. 2022; Gentry et al., 2008; McLeod & Steinert, 2009; Wolff et al. 2020; have shown the benefits of internal coaching that is incorporated with other LD programmes, showing measurable impacts that are positive, with many success stories. A coaching culture (Swensen et al., 2016), with effective managers who are capable of coaching leaders, have yielded positive results, including increased employee engagement and improved productivity and financial performance (Bersin, 2007). According to Swensen et al. (2016), strong coaching programmes result in improved organisational outcomes and teams that are agile. Kiel (2015) believes that leadership efforts for mid-level faculties can achieve a host of goals. These include:

- Succession planning
- The retention of minorities in faculties
- The break-down of silos
- Preventing problems
- Building relationships in the mid to senior level
- Implementing needed changes
- Increasing and fostering creativity and empowerment among mid-level managers
- Creating synergy in terms of the development of administrative leaders
- Encouraging dialogue.

Kiel (2015) further proposes that executive team-building strategies equip leaders with executive skills, something that should be implemented by university vice-chancellors. They should

introduce training for second-level leaders on institutional goals and ensure third-level departmental heads and directors receive training on coaching and facilitation services. Kiel (2015) suggests that the mode of instruction in these programmes should include a mix of simulations and assessments or face-to-face courses, webinars, and online programmes.

3.4 Strategies for leadership development and succession planning: A synergy

There are different perspectives and common themes regarding the association between LD and SP in university faculties. However, an advanced review of the literature sheds some light on the relationship between LD and SP by providing the benefits for an association. This has been noticed in a succession management (SM) project performed by McMurray et al. (2012). This study was conducted in a faculty of health academics in an Australian university, aimed at increasing stability in the university and equal opportunity goals, developing personal leadership capacity, promoting employee satisfaction, and providing motivation and mentoring opportunities. This programme covered pertinent topics such as decision-making, change management, communication, career development and self-management, and targeted employees who had an interest in occupying leadership positions. The programme consisted of weekly sessions. It followed Kirkpatrick's model to assess programme subjects' knowledge, change in behaviour, plans and reactions. McMurray et al. (2012) found at the end of the programme that the participants learned specific aspects of leadership knowledge (interpersonal skills and confidence) and observed changes in their perceptions of leadership roles going forward. These authors concluded that on-the-job-programmes on SM are more essential than ones conducted by independent consultants who do not have extensive knowledge of how universities function.

Accordingly, Dubisky et al. (2015) argue that healthcare organisations should offer LD programmes in collaboration with professional organisations and business schools to develop leadership concepts, skills, and competencies. Evans (2016) is of the opinion that proactive SP programmes play a crucial role in responding to the scarcity of leaders in the health fraternity, and nurse leaders are no exception. Evans (2016) suggests a succession committee as being pivotal in providing the continuity of leaders through SP. The author further claims that this is to prevent vacant positions and a high attrition rate; establish role competencies; develop methodologies to identify internal and external talent; and identify the tenure and turnover rate. The development of academic HoDs has been suggested by Jooste et al. (2018) to be conducted by professionals who are knowledgeable in formal and informal settings, with mentoring programmes and group meetings encouraged. These authors further recommend that leadership succession programmes should be context-specific, and the competent employees be selected to ascend to leadership positions.

Numerous studies in faculties of medicine have been performed on academic LD programmes. For instance, Loh (2016) conducted an inductive study by targeting 45 medical leaders, exploring their beliefs of the concept of the "dark side", and identifying the bottlenecks in such organisations. The research findings espoused the elements of the "dark side", which include a lack of managerial and clinical credibility, conflicts with clinicians and the complexities of medical leadership that is lacking among colleagues. In 40 medical schools in South Korea, a thematic research study was performed between 2007 and 2015 by Kim et al. (2017), which explored the characteristics that affect attendance at faculty development programmes. The themes that were identified included

cooperation, dealing with a changing future, and serving in various societies. A total of 30 deans were sampled in Canada, England, and Australia with nominated personal and positional attributes. These included having vision, passion, patience and courage, and the ability to facilitate, share and be supportive (personal attributes); and attributes that were positional (promoting nursing, strong management, role modelling and faculty development). A few factors were mentioned by Townsend et al. (2008) in leading effectively, including effective management, adequate and smooth communication, development, and motivation. Numerous recommendations were provided by the latter authors, such as the establishment of an advisory board in dental schools that focusses on leadership, management and governance, and an awareness of good communication.

Stephen et al. (2016) mention a strategy used to develop leaders at a Mayo Clinic. This included a central team-based development system, an egalitarian leader selection process, a patient-centred organisational design, and a collaborative leadership structure. A qualitative study by the same authors concluded that the foundations of leadership developed are organisational culture and design (Stephen et al., 2016).

A single qualitative case study was conducted by Ngcamu (2019) among nine HoDs in a faculty of medicine in a South African university. The aim of Ngcamu's (2019) study was to determine the challenges faced by HoDs, available succession plans, competence, and development programmes to develop future talent. The study findings revealed that leadership positions were dominated by employees at a post-retirement level, with competent and talented employees ascending to leadership positions aggravated by the non-existence of succession plans as well as developmental and mentoring programmes. The findings by Ngcamu (2019) further espoused the absence of the tools of the trade, structural fragmentations, and inefficiencies in the HR department. The author has drawn pertinent conclusions – that HoDs should be supported by the HR department, that broken HR processes be mainstreamed and that well-coordinated and structured development, mentoring and coaching programmes and succession plans be introduced.

A literature review study was conducted by VanVactor (2015) that afforded practising management professionals in a health fraternity with a model for SM and planning. This research expounded its impacts and provided the opportunity to mitigate organisational problems relating to attrition levels for leaders. This study has drawn some interesting conclusions about the costs, outcomes, processes, and procedures associated with healthcare organisations and relating to SM and planning. Ho (2016), O'Leonard (2014) and Schwartz et al., (2014) posit that skills development funding in organisations tends to be allocated to LD programmes, although such programmes are viewed by large organisations as being ineffective.

A synthesised literature review that was conducted with medical students on leadership and management competencies by Abbas et al. (2011) concluded that the subjects confirmed that LD education is essential and should be incorporated into their curriculum. VanVactor (2015) identified four seemingly intuitive aspects: the identification of leadership gaps and top talent, customisation development opportunities for employees who may be suitable for an organisation and the personalisation of onboarding practices. An inductive exploratory case study, conducted by Lieff et al. (2013) at the Canadian Faculty of Medicine on the intrinsic needs of HoDs, found that they required cultural and structural awareness to better understand the university and hospital

landscapes, employee support initiatives, exchange of information, strategy, infrastructure growth and development and improvements in both interpersonal and influence skills.

3.5 Leadership capability framework: Personal, interpersonal, and cognitive abilities

There are viewpoints from multiple perspectives on the leadership capabilities (personal, interpersonal, and cognitive) that are appropriate in the faculties of medical sciences in universities. The personal skills – which include emotional intelligence and support (Dubinsky et al., 2015; Lieff et al., 2013), effective communication (Dubinsky et al., 2015; Grigsby et al., 2009; Kiel, 2015), time management (Kiel, 2015), professionalism (Turner, 2018) and cultural awareness (Lieff et al., 2013) – are largely regarded as essential in LD programmes in medical faculties. In addition, Dubinsky et al. (2015) mention integrity, passion, judgement, and compassion as crucial traits, while Swensen et al. (2016) cite empathy, kindness, and support-engendering loyalty. The complexities and dynamics of medical faculties need leaders who have extremely strong interpersonal relationship skills as they deal with a myriad of sophisticated stakeholders with different interests and demands. A number of studies have suggested that leaders in such faculties should collaborate and network (Dubinsky et al., 2015; Grigsby et al., 2009; Kiel, 2016; Lieff et al., 2013). In addition, the following are also regarded as important: team orientation (Dubinsky et al., 2015), conflict resolution (Dubinsky et al., 2015; Grigsby et al., 2009; Kiel, 2016), emotional intelligence (Dubinsky et al., 2015; Lieff et al., 2013), communication (Dubinsky et al., 2015; Kiel, 2015; Grigsby et al., 2009), influential persuasiveness (Kiel, 2015; Lieff et al., 2013), mentoring (Dubinsky et al., 2015) and interaction with senior management (Scott et al., 2008). Leaders are supposed to be competent in core business skills, including clinical work (Dubinsky et al., 2015), and research and education (Dubinsky et al., 2015; Scott et al., 2008). There are also essential knowledge-focussed areas that leaders should know and practice. These include strategic thinking and planning (Dubinsky et al., 2015; Evans, 2016; Grigsby et al., 2009; Kiel, 2016; Lieff et al., 2013), building strategic partnerships (Dubinsky et al., 2015; Schwartz & Pogge, 2000; Schwartz & Souba, 2000), organisational awareness, management, dynamic industry knowledge (Dubinsky et al., 2015; Turner, 2018), and financial planning and budget monitoring (Dubinsky et al., 2015; Kiel, 2016; Scott et al., 2008). The following are crucial in LD programmes: innovation (Dubinsky et al., 2015); conceptualising and implementing innovative programmes (Dubinsky et al., 2015); being flexible and willing to adapt to change (Kiel, 2016; Swensen et al., 2016); managing performance, compliance, information technology and data security, and contracting and purchasing (Kiel, 2015); and having structural awareness (Grigsby et al., 2009; Lieff et al., 2013). Furthermore, diversity management, understanding large and small group systems (Kiel, 2015), cultural awareness, knowledge sharing and solving adaptive challenges (Grigsby et al., 2009; Lieff et al., 2013) are needed in dynamic academic medical faculties.

3.6 Content and effectiveness of leadership development programmes

The effectiveness of leadership training in organisations was questioned by Lacerenza et al. (2017) by performing a meta-analysis to estimate the effectiveness of training across four criteria: learning, behaviour, reaction, and result (Kirkpatrick 1959). Out of the 335 sampled respondents, the results showed leadership training as being more effective, which led to improvements in reactions. A study by Collins (2002), meanwhile, viewed a total of 83 studies that provided formal training interventions to leaders using a meta-analytic technique. The aim of Collins' (2002) study

was to determine the effectiveness of the interventions in improving their individual, team, group, or organisational performance, knowledge, and expertise. The commitment was seen in these organisations as strengthening their leaders through training on skills, perspectives, and competencies. The results of this study showed formal training programmes with knowledge outcomes to be highly effective (Collins, 2002). Another empirical study testing the relationship between team techniques and team outcomes, by Salas et al. (2008), found that interventions based on teams in organisations improve cognitive, effective team outcomes, and team processes and performance outcomes in organisations. Meanwhile, a systematic review study by Leskiw and Singh (2007) on the development and assessment of best practices in LD strategies and programmes found six key factors that were vital for LD effectiveness. These include a meticulous needs assessment, a suitably selected audience, the design of relevant infrastructure to support initiatives, the design and implementation of the entire learning systems, a credible evaluation system, rewards strategies to change, success and improvement deficiencies.

Consequently, several medical faculties have embarked on the development of academic leaders, although the content and focus areas vary. Wilkes et al. (2013) posit that LD programmes that are university-based and directed toward the faculty are gaining prominence in universities. The authors cited examples from LD programmes which have been initiated and implemented by a myriad of faculties of medicine in universities, including the University of California, the University of Minnesota Medical School, the University of Texas, the University of Washington, and the Cleveland Clinic Academy. These programmes, as per Wilkes et al. (2013), cover a host of pertinent topics related to leadership and which are relevant to leaders in the health fraternity.

On 4 April 2017, the Uniformed Services University of the Health Sciences (USA) LEAD team convened an inaugural Medical Student LEAD Summit and Working Group Meeting, with participants coming from both public and private medical schools involved in LD programmes. The rationale for the summit was to share opinions, experiences, and current practices regarding medical student LEAD programme (Grunberg et al., 2018). The participants agreed that LEAD is a significant component to be incorporated into an undergraduate medical education curriculum, but that the single best LEAD programme for all medical schools is non-existent. A clear purpose, goal philosophy and conceptual framework that is consistent with the mission and vision of each institution is essential. Research and scholarship, the assessment of students, and programmes and faculties must be incorporated as they are important in LEAD programmes.

Some researchers have considered a myriad of approaches in designing and implementing leadership programmes in the health sector. These include service design, business development, the patient experience, improving patient access, change readiness, leadership in primary care, primary care and programme or project methodology (Dubinsky et al., 2016). Swensen et al. (2016) recommend several LD approaches that involve assessments, programmes, stretch assignments or institutional projects, and coaching for physicians and leaders, which can enable the Mayo Clinic to live its mission and achieve its vision. Furthermore, the authors cite topics for LD at the Mayo Clinic, including overall strategy, lean six-sigma, change management, failure modes, effects analysis, project management and champions training. Grunberg et al. (2018) highlight a lack of consensus on the following aspects: the need to teach LD in medical degrees, unclear content to be covered, who teaches it and where it fits into the curriculum.

3.7 Generalisation of the main statements

The critically reviewed literature above on the development of leaders in faculties of medical sciences in universities focusses on a lack of leadership capabilities, which leaves a void in the literature. There are salient, relevant, and independent variables that have been overlooked by previous researchers, such as the role of university policies on training and development, university strategy and the performance management system's effect on providing relevant LD programmes in medical faculties. Furthermore, previous authors investigating the challenges brought about by internal or external mentoring and coaching or consultants, and internal versus external LD programmes, were blindfolded with less transfer and sharing of knowledge to the internal staff members and without any positive impacts seen. The capacity of HR practitioners to offer training and development functions and provide the relevant LD programmes that respond to the departmental, faculty and university strategic needs that address competency, skills and the knowledge gap have been overlooked by the previous researchers.

The sparse literature on the impacts of internal mentoring and coaching programmes in medical faculties have been critically reviewed; however, there is little evidence in the literature that cites medical faculties where such programmes have been implemented. Consequently, this leaves a serious gap in the literature which needs further exploration.

The literature reviewed in this study suggests that the available empirical data is largely qualitative, with no evidence of quantitative or mixed methods being used by previous authors. Gleaned from the synthesised literature above are similar challenges in both LD and SP, suggesting that the previous variables (LD and SP) cannot be explored or applied differently in medical faculties. The SP process encapsulates the attributes of LD. For instance, the literature reveals that both programmes are initiated and implemented because of a leadership vacuum in academic faculties, structural inertia and leaders being insufficiently prepared. Both LD and SP goals are to prepare prospective leaders through various training and developmental programmes. A critical analysis of the two variables has not been undertaken empirically, which confirms the need for this literature review study and to display this void. Nevertheless, the literature is absent in clearly linking leadership capabilities to LD and SP and its subsequent impact on leadership in medical faculties.

In addition, serious gaps have been noticed in the reviewed literature regarding the content that should be covered in LD programmes. For instance, an academic HoD should focus on strategy formulation and implementation for the department; they should manage performance and budget, ensure quality assurance, supervise reporting, M&E, and oversee mentoring and coaching, which are not mentioned by authors above. Furthermore, managerial competencies (soft and hard skills), which should be attained by leaders during LD, as well as knowledge of the business processes, systems, and structures, are a serious limitation in the previously published research studies.

4. DISCUSSION

The available (mostly qualitative) literature on LD and SP programmes in medical faculties in universities across the globe is contrary to Kirkpatrick's (1996) criterion to assess participants' reaction to learning and the outcomes of the latter programmes. The participants' reaction and learning during LD training and their behavioural changes towards their daily work activities post-

training is not evident. This is because the measurements are not followed as espoused in the literature above. The reviewed literature does not provide evidence on tests conducted with participants' line managers regarding the effects of LD programmes and improved productivity and performance. The research study's proposition – that leaders in faculties are not adequately prepared to occupy academic leadership positions in medical schools – agrees with a host of researchers who have observed this void in universities (Blumenthal et al., 2013; Collins-Nakai, 2006; Dubinsky et al., 2015; Evans, 2016). Consequently, the mentoring and coaching programmes in medical faculties have been associated with improved performance, knowledge sharing and radical changes by numerous researchers (Law et al., 2014; Scott et al., 2008; Swensen et al., 2016; Tomson et al., 2008). Furthermore, medical faculties that have embarked on succession plans have seen an improvement in interpersonal skills, confidence among leaders and positive change in behaviour, which has been supported by numerous scholars (Evans, 2016; McMurray et al., 2012).

However, some researchers (Dopson et al., 2016; Ho, 2016; Schwartz et al., 2014) have opined that significant funds have been invested in irrelevant and haphazard LD programmes, with less effect in operations in medical faculties. The personal, interpersonal, and cognitive capabilities that are mostly separately applied by leaders in universities have been cited by Lieff et al., (2013) Dubinsky et al., (2015), and Kiel (2016). to be central to leading medical faculties in universities. These authors further cite less anticipated capabilities, such as emotional intelligence, partnerships (with internal and external stakeholders), mentoring, and managing performance and compliance. Finally, LD programmes vary in universities, with researchers alluding to unique content in different medical faculties (Dubinsky et al., 2016; Swensen et al., 2016), with Grunberg et al. (2018) noting that there is no consensus in medical faculties on whether LD should be ingrained in the undergraduate curriculum.

5. CONCLUSION

The synthesised literature on LD and SP in faculties of medicine show that LD does not lead to improvements in reactions, learning and results (Kirkpatrick, 1959) since programmes are unfocussed and sporadic. Furthermore, the available LD programmes in faculties do not measure the impacts of training. There is limited reliable evidence showing a positive change in leaders regarding the performance of a team, faculty, and university, as well as satisfying both internal and external stakeholders. However, the literature on LD does meet the behavioural criteria (Kirkpatrick, 1959) as the benefits of coaching and mentoring in such complex faculties have yielded positive outcomes by measuring the effects of training (on-the-job) on work performance.

As a result, a myriad of themes have emerged in this synthesised literature study on the effectiveness and the impact of SP and LD programmes in medical faculties. The critically reviewed literature in this article demonstrates the similarities in the challenges facing medical faculties in initiating and implementing LD and SP programmes. It has been noticed in the literature that both LD and SP programmes have similar expected constraints, outputs, and benefits. This further suggests that future researchers should conduct empirical studies concurrently in medical faculties at different universities. This is because not much research has been conducted associating LD and SP as both programmes have similar characteristics and expected outcomes. Internal coaching in medical faculties has been considered to have brought

about multiple benefits to leaders, departments, and faculties. Therefore, few studies have been conducted to measure its impacts on faculty performance and change in organisational culture.

Furthermore, scholars have mentioned multiple capabilities leaders need to possess and which are specific to medical faculties. More in-depth reviews are essential in terms of detailing the personal, interpersonal, and cognitive capabilities critical faculties and its associated impacts on effectiveness and efficiencies. Both LD and SP programmes will continue to play a crucial role in medical faculties by identifying current or prospective leaders' deficiencies and managerial incompetence, while initiating and implementing responsive and focussed programmes. However, this can be achieved if quantitative research studies are conducted in these faculties by testing leadership capabilities. This is because previous and current studies that have been conducted and published are largely qualitative. A gap in existing literature suggests that future researchers should perform quantitative research studies in medical faculties by linking LD and SP as an emerging theme in health faculties. This study further provides a base to guide future researchers on the gap identified in the literature.

A skills leadership audit should be performed by qualified and accredited specialists where scientific tests are performed to identify suitable prospective leaders who can undergo blended leadership trainings. The faculty deans, together with training and development practitioners, should periodically assess and measure the impacts and outcomes of such trainings as it relates to the university business and the individual change in achieving the goals of the faculty and university. In view of the above, it is suggested that the faculties of medicine in universities blend various training strategies for current and future leaders. This they should do by combining LD, SP, coaching and mentoring programmes to improve organisational performance to society at large. The point of departure should be on developing systems to identify employees or leaders who can undergo blended training and be allocated managerial duties as a form of experiential learning.

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A SYSTEMATIC SYNTHESIS OF LITERATURE ON WOMEN'S WORK–LIFE BALANCE IN AFRICA

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ABSTRACT

Work–life balance among the female workforce is a novel and seminal topic in developed countries, something that is rarely studied in Africa and which is generally in its developing phase. Although this topical field is under-researched in Africa, extant literature has failed to unearth the effects of work–life imbalance on the quality of work life of women in the workforce. From the foregoing, this literature review study is geared towards synthesising the current literature published, dissecting the effects of the work–life imbalance on women's employment conditions (productivity, performance and their small scale businesses) and examining the sustainability of their families. A hermeneutic framework was followed to search, categorise/classify, map and assess the previously published literature on work-life balance and its effects on women's Quality of Work Life (QoWL) in African organisations. A total of 346 journal articles were retrieved from different databases; of these, 16 were aligned with the study's research objectives. These articles were analysed, and themes and patterns were generated.

Keywords: Adaptation strategies; productivity; stress levels; quality of work life.

1. INTRODUCTION

Women in Africa are struggling to balance their work and life roles due to the inherent and unreasonable demands which adversely affect both their Quality of Work Life (QoWL) and Quality of Life (QL). In the 21st century, workplaces in Africa are still male-dominant, patriarchal and inflexible to women's needs. This has created unfavourable working conditions. In addition, women tend to work long hours, adversely affecting their QoWL and exacerbating the work–home imbalance. This has been consistently observed in different sectors in Africa where women experience an overload at work and at home due to the inherent demands on them. They experience unreasonable time frames and home responsibilities, which include their function as caregivers to their children and extended family members, in addition to their role in societal events (such as funerals, weddings and traditional gatherings). This has had adverse impact on their performance and productivity at the workplace and has compromised their well-being. There is a void in the existing published literature on Work–Life Balance (WLB) among African women in a number of sectors. In addition, there has not been a published study that has critically synthesised WLB and its effects on African women's QoWL. This literature review article therefore examines the existing literature on WLB as a novel concept among African women in various sectors. The literature review is rudimentary in terms of closing the gap in existing literature. This it does by unearthing the themes, patterns and trends in the published literature on WLB and its effects on the QoWL of women in the workplace in Africa.

Women's successes in various sectors in Africa have been hampered by an institutionalised, biased patriarchy (Adisa et al. 2016). There are countries that are known to have a patriarchal society,

such as Ethiopia (Gudeta & Van Engen 2018) and Nigeria (Ogunsanya & Olorunfemi 2012). The latter authors mention that women in Nigeria are discriminated against, which poses unnecessary pressures at work.

Numerous researchers (Adame et al. 2016; Allen 2002; Nwagbara 2020; Voydanoff 2004) conceptualise WLB to be employees' satisfaction, well-being, sustainable employment, lower stress, balance and effectiveness in their role at work and in the family. These researchers allege that these factors are compatible and that the various roles can function harmoniously. Durodolu and Mamudu (2020) opine that a good WLB occurs in a situation where a balanced relationship is established between private and professional life, without one negatively affecting the other. Quality of Work Life, meanwhile, is conceptualised as conditions that enhance employees' satisfaction, rewards, job security and growth opportunities (Zhao et al. 2013). Ogundanya and Olorunfemi (2012) are of the opinion that the approach to the motivation of female employees is achieved through the implementation of QoWL programmes, which can improve productivity. A host of researchers (Durodolu & Mamudu 2020; Shaikh et al. 2019) believe that WLB has attracted focus due to economic, political and cultural value systems, work overload, protracted working hours, the utilisation of technology, and challenges in managing the family, thus increasing the emphasis on productivity and job satisfaction.

An imbalance between work and family life among women in the workforce can have an impact on the two conflicting roles and negatively spill over into their personal lives. This can lead to the disruption of spousal relationships, increased stress levels, burnout, loss of enjoyment, health problems and job exhaustion (Akuamoah-Boateng 2020; Dlamini, Shakantu & Kajimo-Shakantu 2013; Jamal 2007). A plethora of researchers (Abubakar 2018; Duxbury & Higgins 2015; Jackson & Fransman 2018; Mushfiqur et al. 2018) have observed that women in Africa have been overloaded at their workplaces due to their devotion to multiple and diverse non-work functions (including as caregivers to children and the aged, and their responsibility for domestic chores). Consequently, women in Africa are believed to work longer hours that exceeds the contractual agreement. This is because their respective countries' labour legislations are less likely to offer flexitime (Akuamoah-Boateng 2020; Ebbers and Piper 2017; Jackson & Fransman 2008; James, Rust & Kingma 2012).

Meanwhile, other researchers (Chimote & Srivastava 2013; Mušura, Koričan & Krajnović 2013) have associated WLB with job satisfaction, an increase in productivity, the retention of female staff, low absenteeism and turnover, a reduction in stress and an increase in loyalty, autonomy and image. Iyabode and Olayinka (2016) found that women of a younger age in Africa manifested a significantly higher level of turnover intention and absenteeism than working women who are more mature, which has led to a brain drain. In the most complex industries such as construction, James et al. (2012) have found WLB amongst women to have increased organisational effectiveness and individual performance. Fong and Kwork (2009) attest to this viewpoint – that the operations in the construction industry are complex, with difficult conditions: stressful, with unreasonable time frames and poor working relationships. There are also other complex and challenging professions such as the medical field where women (mostly doctors) experience job stress and are negatively affected by the inequalitarian culture caused by inherent demands and challenges in balancing work and non-work-related activities (Aslam, Jamil & Tariq 2014; Lewis & Humbert 2010; Mushfiqur et al. 2018). Furthermore, in competitive and volatile industries such

the banking sector, women in Africa playing significant dual roles at work and in the home poses some challenges (Oladayo & Leah 2014).

In addition, women in Africa are the driving force behind the informal sector (entrepreneurship) because it has influenced them in working in this sector due to its flexibility, allowing them to manage the work–life interface better (Tremblay & Genin 2008). Annink and Den Dulk (2012) opine that women who are self-employed realise the desired autonomy, flexibility and control. However, Brush, De Bruin and Welter (2009) posit that more extant research is needed on women’s entrepreneurship in Africa to include family and household dynamics. Inequality exists in job placement, promotion, decision-making, responsibilities and trade union activities. The World Bank Group (2019) reported that in Nigeria, more men are employed than women. This has been supported by the Nigerian Bureau of Statistics (2018) – that only 38% of women are employed compared to 62% of their male counterparts.

There are two literature review studies that the researcher came across that have been published on women in the workforce in Africa. One of the studies focused on the influence of organisational culture on WLB in the construction industry (Dlamini et al. 2013) and the other, by Vettori and Nicolaidis (2019), synthesised the pay discrimination in the hospitality industry in South Africa. The current study closes the existing gap on the scarce scholarly articles that have been published. This it does by synthesising the existing literature on women’s WLB in Africa, and challenges and interventions to improve the balance between work and family life. The article further dissects the causes of such imbalance and the influences it has on effectiveness, efficiencies, productivity and businesses owned by women.

2. METHODOLOGY

The systematic literature review was planned, carefully executed, and recorded according to the hermeneutic framework. The latter framework by Boell and Cecez-Kecmanovic (2014) was followed in this literature review study in the search for secondary data sources, where it was classified, mapped and assessed to generate themes, patterns and trends. The previously published journal articles (16) investigating the WLB and QoWL of women in various sectors in Africa was considered to be relevant and was selected for further analysis. Only published journal articles that measured the WLB effects on the QoWL of female staff members in different sectors in Africa were considered.

2.1 Search Strategy

The researcher for the current synthesis of the previously published literature on WLB was supported by an experienced librarian specialising in the management sciences discipline in search strategy development. A planned and systematic search was performed between 01 June and 28 August 2020. The journal articles were retrieved from a variety of electronic bibliographic databases, and databases from different disciplines and websites. These included Google Scholar, Elsevier, IUP Publications, Academic Journals, AOSIS, ASCE Library, Emerald Insight, Technium Science, Cambridge Scholars Publishing and ICERM. The keywords that were used in a search engine were “quality of work-life for women in Africa” and “work-life balance for women in Africa”.

These keywords and themes were identified and retrieved to generate insight into WLB effects on the QoWL. A spreadsheet in Microsoft Excel was created where relevant article titles and author names were codified for screening, analysis and screening assessment. Only published studies on the WLB and QoWL of women in the workplace in Africa were retrieved and downloaded. The available, relevant, peer-reviewed articles were published between 2000 and 2020 – technical reports and theses that had been written in English. There were journal articles that focused on the WLB and QoWL beyond the African continent, which were considered to be irrelevant and excluded. Furthermore, master's and doctoral theses were excluded in this study. The selected journal articles that were most cited, according to the high-impact factors, were scrutinised, analysed and categorised where themes, patterns and trends emerged.

3. FINDINGS

This section systematically reviews the literature according to three themes: WLB effects on the women's workforce in Africa; work–life imbalance on productivity; and businesses owned by women.

3.1 Study characteristics

The synthesis of the literature review recorded a total of 16 relevant, published, peer-reviewed journal articles from 346 studies. A total of nine journal articles were tested using deductive theory testing (quantitative) and five were tested using inductively theory generation (qualitative). There were only two literature review studies that did not solely focus on the WLB effects on women. The majority of countries that published and which were found in this study were from Nigeria (9), followed by Ghana (2), Ethiopia and South Africa. There were several different sectors in the sampled studies, some of which focused on higher education institutions, financial institutions, entrepreneurship, the police force and the medical field. The majority of the selected studies focused on the extent to which the female workforce balance work and their families in different organisations. There are very few studies that focused on their QoWL and the impact on WLB. There are empirical studies that have been cited in the present study which support the articles listed in Table 1 (see below). Some of the cited articles in the text did not fully meet the initial selection of research focusing on the WLB of women in Africa.

Table 1: The study characteristics.

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|-----------------------|-------------------------------------|--|---|--|---|
| Akuamoah-Boateng 2020 | Quantitative | Convenience sampling technique n = 32 (female staff members) University of Cape Coast, Ghana | The study ascertained the extent to which the female workforce of the College of Distance Education balanced the roles of work, home and personal life. | The tight work schedule enabled the female staff members to balance their work, family and personal life; women exceeded the legal working hours per day (eight); allowances for flexi-time are non-existent; there are no policies and programmes available to develop women in terms of their WLB; family challenges have interfered with women’s work activities, which has affected their performance and productivity; their family commitments have led to women being penalised during performance measurement periods; family responsibilities have disadvantaged women and led to them being overlooked for challenging work projects; and they are unable to fulfil their social lives (such as attending church, weddings and funerals, and pursuing leisure activities). | The university does not develop policies and programmes that support women; the institutional policies and programmes that are pro-women employees are recommended; the university should create a conducive environment that promotes a healthy work–life interface. |

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|-------------------------|-------------------------------------|--|--|---|---|
| Jackson & Fransman 2018 | Quantitative | Convenience sampling technique n = 252 (female support staff) University in the North West province, South Africa | To determine an association between financial well-being, flexitime and productivity; WLB and job satisfaction; employees' financial well-being, flexible work and work-life in terms of productivity; and job satisfaction and the mediating effects of productivity on the latter variables. | A strong association was found between financial well-being, WLB, and productivity and job satisfaction. | The main predictors of job satisfaction are financial well-being, WLB and salary increases for employees. Improving the WLB might result in a better understanding of the low levels of job satisfaction and result in fewer instances of low productivity. |
| Dlamini et al. 2013 | Literature review | n/a | Synthesis of the literature to determine the effects of organisational culture on WLB in the construction industry. | There is a strong association between the organisational culture and WLB for women; women are considered to work twice as hard as their male counterparts to prove their value and worth in the organisation; work-life conflict is possible among women; and the organisational culture prevents the effective implementation of WLB policies and practices. | Ordinary, illiterate and poverty-stricken women accept the conditions to satisfy their basic needs without recognising the significance of WLB; health policies should be formulated and executed in order to realise a healthy WLB. |

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|-------------------------------|-------------------------------------|--|--|--|--|
| Akanji, Mordi & Ajonbadi 2020 | Qualitative | In-depth interviews n = 52 (female medical doctors) Nigeria | The experiences of women's WLB, the causes of work-life imbalance, associated stress and adaptation strategies for medical doctors in Nigeria are assessed and informed by a spillover theory. | The work-home interference is aggravated by time pressure; sources of stress and work-family conflicts, which emanate from patriarchal proclivities and disparities in remuneration. | Female doctors cope with adverse WLB by developing individualistic coping strategies to mitigate the impacts; their inability to dedicate more time to their families is due to the organisational culture of rushing through their work, the associated stress and having limited time, which results from the job demands and long working hours; adverse work-family interference is attributed to poor infrastructure (poor roads); patriarchy; inadequate doctors; and inadequate medical facilities. |
| Adom et al. 2017 | Qualitative | Purposive sampling n = 25 (female entrepreneurs) Ghana | To evaluate how the female entrepreneur's work-family life influences business performance in Ghana. | The female entrepreneurs felt that their family roles and responsibilities have an adverse effect on their generated income and the willingness to expand their businesses. | Women strategically conduct their businesses in their homes or in close proximity or a combination thereof; women support their families through the income generated in these businesses; they are unable to expand or open other branches due to the needs of childcare and home management. |

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|----------------------------|-------------------------------------|---|---|--|---|
| Gudeta & Van Engen 2018 | Qualitative | In-depth interviews n = 31 (female entrepreneurs) Ethiopia | An exploratory study on understanding female entrepreneurs' challenges on combining work-life responsibilities. | A strategy on work-life boundary management – called integration – has been imposed on female entrepreneurs due to lofty expectations from other women to take care of family and social responsibilities; managing staff members at home demands that women combine their work and life roles and integrate more. | Women integrate their work-life social roles and eliminate the boundary between work and life; women's choice of boundary management style is not selectively influenced by normative societal expectations on them; they need to fulfil community obligations while managing and growing their business. |
| Iyabode & Olayinka 2016 | Quantitative | Descriptive and cross-sectional survey n = 265 Nigeria | A role conflict on women's QoWL and turnover intentions is examined in private organisations. | There is a strong correlation among the major variables of the study. For instance, a strong association was found between family-work conflict and QoWL, family-work conflict and turnover intentions, and work-family conflict and turnover conflict. | The results suggest that the low retention rate of women in the private sector workforce can lead to a brain drain; government initiatives and interventions in the form of policies to focus on women's welfare is required. |
| Oladayo & Leah 2014 | Quantitative | Descriptive cross-sectional survey n = 220 (female bankers) Lagos, Nigeria | It examines the effects of the work schedule on the family life of married female bankers in Nigeria. | These women are considered to be good dual career women; their WLB has directly and indirectly affected their active involvement in domestic and family functions; the balance between family and work is a major challenge for them and has created costs. | The married women spent a maximum of 15 hours per day at the workplace and less quality time with their family; they considered their work demands to be abnormal and were unable to balance work and home; there was a willingness to sacrifice their career in the interests of the family. |
| Ogunbamila & Idemudia 2016 | Quantitative | Cross-sectional survey n = 588 (193 females and 395 males) Nigeria | An investigation on the gender differences in QoWL for the police workforce. | The male police workforce had a better understanding of their QoWL as compared to their female counterparts. | Training was suggested for women in order to promote their QoWL. |

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|-----------------------------|-------------------------------------|--|--|---|--|
| Ogunsanya & Olorunfemi 2012 | Quantitative | Survey n = 3640 (senior women in four universities) Lagos, Nigeria | The organisational pressures of QoWL of women in Nigeria was investigated. | To improve the QoWL of women in universities, such institutions should focus on the factors, which create pressures and stress (absence of child care centres, extreme workload and unreasonable/long working hours); factors that increase women's dissatisfaction at the workplace should be considered; the marginalisation of women in decisions pertaining their well-being, limited access to the internet, insufficient healthcare facilities for them and their dependants and a lack of acknowledgement of their performance need to be addressed. | In order to improve productivity in universities, government and the executive committees of universities need to reduce organisational pressure and enhance the QoWL of the female workforce. |
| Person, May & Mayer 2016 | Qualitative | Semi-structured interviews n = 6 (women occupying senior positions and without children) South Africa | A study to understand what women attribute to their work in a South African context. | Once women experience autonomy at work, their meaning of life changes; working women reported a sense of identity and self-worth, meeting instrumental needs, achieving social relatedness and being of service to others. | The meaning of work is influenced by intrinsic satisfaction, a sense of power and authority. |

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|-------------------------------|-------------------------------------|--|---|---|--|
| Stella, Paul & Olubusayo 2014 | Quantitative | Comparative case studies in-depth case analysis n = 586 (managers and employees in the banking sector) n = 530 (education sector) n = 507 (power sector) Nigeria | The concept of WLB policies and practices has been investigated in three different sectors (banking, education and power); WLB initiatives have been unearthed and the hindrances in the implementation of WLB programmes identified. | There were diverse views on how the WLB concept is understood by the research participants; an extreme gap is observed between industries' understanding of WLB practices and the workforces' understanding of the concept. | Policies on WLB should be included in the organisational strategic plan; improving efficiencies and effectiveness, flexible working patterns should be provided by organisations; WLB programmes in the banking sector should be adopted, which has the potential to reduce the turnover rate. |
| Nwagbara 2020 | Qualitative | Interpretative approach semi-structured interviews n = 25 Nigeria | An association between WLB policies and practices as well as the challenges encountered by female employees in Nigeria is examined. | The unique institutional context and policies in Nigeria pose challenges to women; organisational and sociocultural pressures on women contribute to the women challenges | Institutional policies and practices favour patriarchy |
| Durodulu & Mamadu 2020 | Quantitative | Positivist research paradigm quantitative structured questionnaires n = 80 Nigeria | Research on the influence of WLB among the library staff members at the Kenneth Dike Library and the effects on the provision of information. | The research findings concluded that female librarians experienced a poorer WLB as compared to their male counterparts; their marriage status did influence their WLB on job-related activities. | The culture of prejudices against women (librarians) was confirmed in this study, which has adverse consequences on their productivity and career progression; even while women are as competent as their male counterparts, men receive more recognition |

| Article author/s | Design and methodology of the study | Study sampling and setting | Objectives | Results/Findings | Specific impacts on the well-being of women in the workplace |
|----------------------------|-------------------------------------|---|---|--|---|
| Vettori & Nicolaides 2019 | Qualitative | Literature review | The laws and the codes of practice as well as the applicable international laws regulating the pay discrimination are documented in this literature review article. | The hospitality industry is rife on gender pay discrimination; women are precluded from “breaking the ceilings” due to gender-based stereotypes and fallacious notions; the majority of women in the hospitality industry are women. | In the workplace, the female workforce should be supported in ensuring there is a balance between work and their personal lives; the hospitality industry should ensure that there are equal opportunities for upward mobility; interventions are needed to avert gender-based discrimination, lack of diversity and transformation; the South African Government has amended the Employment Equity Act to ensure that there is gender pay equality; the remuneration for equal value has been effected in the labour legislations amendments of 2015, which seeks to clarify the valid points for pay discrimination and processes to be followed to prevent and eliminate pay discrimination. |
| Ogungbamila & Olaseni 2019 | Quantitative | Cross-sectional survey design n = 944 (police) (429 females and 515 males) Lagos, Nigeria | The relationship between at which level is gender moderates the relationship between job demand and the police’s QoWL. | The research study revealed the significant decrease of the police’s QoWL due to job demand; gender was found to have an association between job demand and QoWL, where the female officers were shown to have better QoWL than their male counterparts. | Gender was considered as important in the police workforce; it was recommended that the police sector reward their workforce in order to balance the adverse effects of the demands of the job; the male workforce should be supported in order to improve their QoWL. |

WLB, work–life balance
QoWL, Quality of Working Life

3.2 Effects of work–life imbalance on women in Africa

The majority of empirical studies that have been published in Africa regarding the WLB of female employees have been mostly concentrated in Nigeria (see Table 1). This is reminiscent as the Nigerian society has been considered to be patriarchal and discriminatory against women in the workplace. This has been confirmed by the multiple research studies that have been conducted in different Nigerian organisations on women’s experiences of WLB, which yielded consistent findings and conclusions (Akanji et al. 2020; Durodulu & Mamadu 2020; Oladayo & Leah 2014; Stella et al. 2014). For instance, Akanji et al.’s (2020) study unearthed the causalities of the WLB imbalances, the stress associated with it and the adaptation strategies used by medical doctors in alleviating the impacts of such imbalances. The author traced the causes of work–life imbalance as it relates to stress, which is triggered by patriarchal attitudes in the home and disparities in salaries. Akanji et al. (2020) concluded that medical doctors in Nigeria have individual coping strategies because their organisations did not have systems and policies to assist them. Meanwhile, the (married) women who dominate the banking sector in Nigeria faced the negative effects of working long hours, which created an imbalance in their work and home activities. These authors mention that the demands of work led to them to focussing on their careers their careers and spending less time with their families. However, Stella et al. (2014) dissected WLB policies and practices in different sectors in Nigeria (including the financial sector), where policies were found to have been initiated although there were problems at the implementation stage. The authors found that different sectors have conflicting views on their understanding of WLB policies and practices and suggested that such initiatives should be incorporated into the organisational strategic plan in order to improve efficiencies and effectiveness. It was clear from Stella et al.’s (2014) findings that WLB programmes were unknown; it was recommended that such programmes be adopted in order to reduce the turnover of female staff. Women’s work–life imbalance is not only experienced in the banking sector, however; Durudulu and Mamadu (2020) mention that the female members of the Dike Library experienced adverse WLB, which had a detrimental influence on their marriages as well as work-related functions. The authors cited the toxic culture of discrimination against women in the library division, which negatively affected their productivity and upward mobility as compared to their male counterparts.

The synthesised literature above reveals the highest number of articles (8) published on WLB among Nigerian organisations. These studies paint a bleak picture of how women employees are ill-treated by pro-patriarchal organisations, with limited policies and practices to enhance a balance between their work and personal life. The studies suggest that the unfavourable conditions female employees have to work under in these organisations have destroyed their career paths, family structures and relationships. However, the published studies on WLB in Africa do not provide practical solutions, for instance, in terms of government’s legislation to deal with such a crisis in highly patriarchal countries. Furthermore, the studies are silent on the responsiveness and increase in ineffectiveness, efficiencies and productivity for those organisations that have enacted WLB policies and programmes. Also, the studies have failed to clearly show the adverse impacts of work–life imbalance on women’s psychological well-being in addition to their QoWL and QoL.

3.3 Effects of work–life imbalance on productivity

An imbalance between work and life of women in the academic sector has been observed among staff members in different African countries including Ghana, South Africa and Nigeria (see Table 1). A host of researchers (Akuamoh-Boateng 2020; Jackson & Fransman 2020; Ogunsanya & Olorunfemi 2012) have associated a work–life imbalance among female employees in universities with lower productivity. For instance, in Ghana, Akuamoah-Boateng (2020), in a study examining how women balance work and family, found that the unreasonable work schedule with often long working hours, the lack of flexible hours and the absence of policies and programmes to assist women with balancing work and life activities have adversely affected them during performance measurement periods. Another interesting empirical study by Ogunsanya and Olorufemi (2012), ascertaining an association between organisational pressures on women’s QoWL in Lagos (Nigeria), found that women work longer hours in universities, are marginalised in decision-making processes regarding their well-being and have inadequate access to healthcare facilities, which has directly hampered their productivity. Another fascinating study by Jackson and Fransman (2018), with a sample size of 252 (women) in one of the universities in South Africa, determined a correlation between female employees’ financial well-being, flexi-work and productivity. The authors revealed that financial well-being and WLB equate to women’s satisfaction at work; and that an increase in salary improves their WLB and productivity.

The reviewed but scant literature espouses how the imbalance on the relationship between women’s work and their personal lives in different sectors, including universities, has paralysed their productivity levels, putting them at a disadvantage during performance measurement sessions. However, the extent of lower productivity levels, which are the result of work–life imbalance, has not been measured empirically by scholars in the discipline.

3.4 Effects of work–life imbalance on businesses

The African women who are self-employed (entrepreneurs) also struggle to balance work and their personal lives (see Table 1). There are few inductive theory generation studies (Adom et al. 2018; Gudeta & Van Engen 2018) that have focused their research on unearthing the predicaments faced by female entrepreneurs in balancing their work and home life. In Ghana, for instance, Adom et al. (2018) purposively targeted female entrepreneurs to determine how their WLB influences their business performance. The sampled 25 women felt that their family responsibilities had a negative effect on the income generated and indicated that they have their businesses in their homes as a coping strategy. In Ethiopia, a total of 31 female entrepreneurs were selected in a study examining the challenges they face in balancing work–life responsibilities (Gudeta & Van Engen 2018). The authors found that a strategy on the WLB boundary was imposed on women and that the management of staff, family responsibilities and chores were greater demands. In private organisations, Iyabode and Olayinka (2016) have investigated the role of conflict on 265 Nigerian women’s QoWL and turnover intentions. The authors observed a close association between family–work conflict and their QoWL. Iyabode and Olayinka (2016) concluded that these organisations’ failure to retain their female workforce might result in a brain drain. Meanwhile, in Nigeria the socio-cultural pressures on women in the workplace has been found to be at the centre of challenges faced by them and that institutional policies are pro-patriarchy (Nwagbara 2020). Another intriguing research study conducted with six women (Person et al. 2016), in an attempt to

understand their contribution to work in South African organisations, revealed that autonomy at work changes their identity and self-worth and they are intrinsically satisfied. The effects of QoWL have also been experienced in the police force in Nigeria, with the opposing viewpoints for both men and women. For instance, a cross-sectional survey conducted by Ogungbamila and Idemudia (2016), where 193 women and 395 men were interviewed, resulted in an interesting finding: the male workforce had a deeper understanding of their QoWL as compared to their female counterparts. Furthermore, Ugungbamilla and Olaseni (2019) targeted 529 women and 515 men to ascertain the relationship between job demand and the police force's QoWL. The research findings showed the female police workforce as having a lower QoWL compared to the men.

The systematically synthesised literature review further reveals that the women who are entrepreneurs are negatively affected by an imbalance between their work and personal life. Women are shown in the literature to have difficulties coping with both work and family demands. The empirical studies, however, shed little light on the coping or adaptation strategies that can be utilised by self-employed women to ensure they effectively and efficiently manage their family responsibilities in addition to the staff members of their business. There is also a void in the literature that concerns the sustainability of the coping strategies used by female entrepreneurs. The interesting findings in the literature is a disjuncture between the male and female workforce's understanding of QoWL, where women have been observed to have a lower QoWL compared to their male counterparts. The imbalance between work and life and women's poor QoWL have increased their attrition percentage. Researchers have failed to determine the underlying causes and the retention strategies that are distinctive to the African context, and to respond to career women in particular.

4. CONCLUSION

There are two major themes that emerged from this literature review study: that the WLB is directly affected by unreasonable demands; and discrimination against women is present in both the home and the workplace. The abnormal work demands that have adversely and significantly affected women's QOWL and the imbalance in terms of work and home includes unsustainable work, institutionalised patriarchy, remuneration inequality, the lack of policies and interventions to mitigate or eradicate the imbalance, and longer working hours. The abnormal home and societal conditions being overloaded at home, women's role as caregivers, societal responsibilities, home chores and patriarchal attitudes directed at them. Both work and family systems do not have adequate coping and adaptation mechanisms. This has led to the increase in stress levels among women, lower productivity, ineffectiveness and inefficiencies.

The reviewed literature shows that there are limited countries in Africa where the WLB among women has been investigated, with Nigeria leading, followed by Ghana. What was noteworthy in the study was the nature and causes of work-life imbalance among women – including work overload, demands, long working hours, institutionalised patriarchy, low salaries and the absence of the wellness policies and programmes – which have lowered their performance and productivity. Apart from the patriarchal society, which is prevalent in many organisations in African countries, the socio-cultural pressures, complex family duties and chores, and societal responsibilities have negatively interfered with women's work activities. The imbalance in the relationship between work and home among African women has also been observed in those

women who are self-employed (entrepreneurs), where their family responsibilities have interfered with their business. This study concludes that the ineffectiveness between work and family roles leads to high stress levels among women and compromises their careers and families.

This article is geared towards unveiling the known gaps in the existing literature in terms of the impact work-life imbalance has on women in organisations in Africa, and which has received limited interest from researchers. This study has the potential to contribute to the theory as the article identifies existing gaps in the literature by advising future researchers to explore this unexplored topical issue. It also influences organisations in Africa to implement policies for women's wellness in order to increase their productivity. The change agents and human resource practitioners are advised through this article to focus on this overlooked dimension and implement responsive interventions to improve the balance of work and home in the lives of women in Africa.

The literature reviewed clearly depicts serious limitations and a gap in research studies on the effects on policies, systems and available programmes to improve WLB among women in organisations. The literature is also scarce on the response strategies of organisations and the systems that could enable women to adapt and mitigate the impacts of the imbalance between their work and home lives. It is therefore recommended that future researchers explore how organisations can incorporate strategies to ensure there is a balance between work and home in line managers' key performance areas (KPIs). There is a dire need for future studies to investigate the extent to which WLB in organisations can improve effectiveness and efficiencies for women in Africa. The study's limitation is methodological as it samples only the targeted female workforce; future researchers should include their male counterparts.

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GENERATION Y STUDENTS' WEARABLE ACTIVITY-TRACKER USAGE INTENTIONS: MODEL VALIDATION

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ABSTRACT

Wearable technology has transformed the way in which users process their health and well-being, where consumers are able to use the data generated by these devices to monitor sedentary behaviour to blood-oxygen levels, advanced heart-rate data and share this information with connections by means of a smart connected device. This technology has become accepted globally, as reflected by the projected 105.3 million units to ship by 2024. However, merely 13 percent of South African households owned such devices in 2018. Fortunately, this country is noted as the next big market for both smartwatches and fitness trackers, where Generation Y consumers, those born between 1986 and 2005, have been identified as those most likely to use fitness wearables. Despite this, and compared to global studies, there is a lack of empirical research regarding wearable activity tracker adoption in South Africa. This paper serves as a point of departure in addressing this gap in the marketing literature and reports on the validation of a model of wearable activity-tracker usage intentions amongst Generation Y students. This study collected data from 462 voluntary university students enrolled at three different public higher education institutions using a self-administered questionnaire. The measurement instrument comprised the latent factors of perceived ease of use, perceived usefulness, subjective norms, attitude and usage intentions to construct and validate a model. Data analysis procedures were performed using SPSS and AMOS version 27.0 and included reliability, validity and CFA analyses. This resulted in a validated five-factor model that can be used to measure Generation Y students' wearable activity-tracker usage intentions. This model provides marketing professionals and wearable technology device brands with a departure point for understanding Generation Y students' activity-tracker usage intentions.

Keywords: Consumer attitudes, Generation Y students, model validation, theory of reasoned action, technology acceptance model, usage intention, wearable activity trackers, South Africa

1. INTRODUCTION

The wearables industry has been thriving since 2009, especially the wearable activity tracker (WAT) market, which includes products such as basic to advanced pedometers; wrist-based fitness watches and bands; smartwatches, smart clothing like vests, socks, insoles and shoes; smart jewellery including heart-rate capable rings; smart headphones; and heart-rate-based chest, head and arm straps (Muller, 2019). With the exclusion of the smartwatch as a market on its own, the wearable activity tracker market accounted for the largest wearables category by unit sales with a projected sales income of US\$48.2 billion by 2023 (P&S Market Research, 2018). Revenue generated in 2021 is estimated at US\$134 million for the WAT market specifically (Statista, 2021). The global success of this market can partly be attributed to the vast number of benefits they offer including tracking basic health-related metrics such as heart-rate data, steps taken, calories burnt, to more advanced information like sleep patterns and quality, various sports activities including

walking, running, cycling and swimming. Since recognising that wearable fitness technology has successfully diffused throughout many consumer segments, especially in developed nations comprising the United States, Spain, Singapore and Switzerland (Ipsos, 2018), most wearable tracker brands are attempting to add as many features as possible to their entry-level up to flagship devices to remain competitive and provide value for money to their users. This approach entails adding more sensors including a combination or limitation to GPS (Glonass and/or Galileo), optical heart rate, barometric altimeter, compass, thermometer, gyroscope, and pulse oximeters to measure blood oxygen saturation, with flagship devices having an integrated solar panel. The competitive advantage, however, lies with not only manufacturing well-specified devices, but rather what they offer in addition to the technology, for example, the statistics generated by the sensors and simplifying its presentation in an application for the user to interpret without difficulty. Some brands also differentiate their position in the market by offering a digital reward system such as badges and achievements that reward users for reaching goals and foster user-communities on social media sites.

Considering the global distribution, South Africa does not share the same level of success, presenting as a nation with between 13 and 21 percent ownership of wearable technology, compared to the upper limit of more than 37 percent in other countries (Ipsos, 2018). Furthermore, data from Statista (2020) shows a wearable fitness tracker penetration rate of 7.24 percent among South Africans in 2020, with a projected decline to 6.04 percent by 2024, which can be attributed to financial and accessibility constraints due to the global pandemic. Despite this prediction, South Africa ranked 18th in terms of worldwide revenue generated and 17th in terms of user penetration in 2020 (Statista, 2020). Therefore, it is sensible to label South Africa among the top five marketers, along with Jordan, Kuwait, Indonesia and Egypt, with the greatest sales potential for wearable activity trackers (Ipsos, 2018). While being considered an emerging market for wearable fitness devices, research regarding WAT adoption behaviour in South Africa is limited.

Data show that the majority (32%) of new users of wearable technology are aged between 25 to 34 years (Ericsson Consumerlab, 2016). Statista's (2020) data show that the South African WAT segment is driven by individuals aged between 18 and 34 years. The adult portion of these consumers, born between 1986 and 2005, belong to the Generation Y cohort (Markert, 2004). Members of the Generation Y cohort have been accredited as being innovative, technologically astute and usually those who adopt new technology sooner than other generations. The student portion of this cohort was subsequently the focus of this study since these individuals, pursuing tertiary education, are regarded as future trendsetters and most likely to be employed with disposable income to spend on new technology (Bevan-Dye & Surujlal, 2011). Therefore, wearable activity tracker brands, marketing practitioners, academics and resellers can benefit from having access to a model that can be used to understand Generation Y students' WAT device usage intentions. This will enable these stakeholders to design more appropriate and targeted marketing communication and extend this foundational model in other developing nations.

To this end, this study validates a model of Generation Y students' wearable activity tracking device usage intentions in the South African context by combining two renowned models, namely the theory of reasoned action and the technology acceptance model.

2. THEORETICAL FRAMEWORK

2.1 Theory of reasoned action (TRA)

This study combined the theory of reasoned action (TRA) model and technology acceptance model (TAM) to validate a unified model of Generation Y students' wearable activity-tracker usage intentions.

The TRA, developed by Fishbein and Ajzen (1975), is one of the earliest theories to explain the adoption of technology by means of specific influencing factors, namely attitude, subjective norms and behavioural intention. The model is depicted in Figure 1.

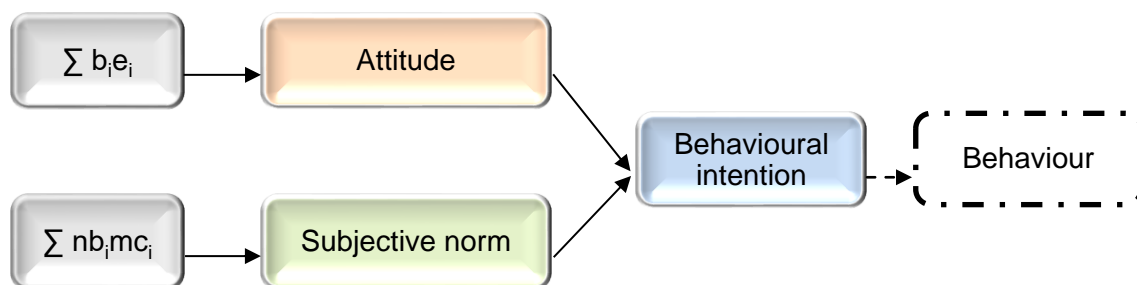


Figure 1: Theory of reasoned action (TRA) Reconstructed from Taylor & Todd, 1995:138.

When integrated with the focus of this study, wearable activity tracker purchase and usage behaviour is reflected by the behaviour component, which is theorised to be driven by behavioural intention, namely consumers' intention to use a device in the near future. This behavioural intention to use a WAT is directed by the sum of their attitudes towards wearable activity trackers and the influence of subjective norms in relation to whether relevant others think they should use these devices (Fishbein & Ajzen, 1975). First, attitudes are formed by means of the consumer's beliefs and evaluations ($\sum b_i e_i$) (Davis *et al.*, 1989:984; Taylor & Todd, 1995:138), where beliefs (b_i) are defined as "the individual's subjective probability that performing the target behaviour will result in consequence (i)" and evaluations (e_i) as "an implicit evaluative response to the consequence (i)" (Fishbein & Ajzen 1975:29). Next, subjective norms are the sum of normative beliefs and motivation to comply ($\sum nb_i mc_i$) and described as social pressures to perform a particular behaviour (Fishbein & Ajzen, 1975). That is, subjective norms are directed by consumers' normative beliefs (nb_i), which stem from the consumers' perceived expectations of specific reference groups or individuals, including peers, colleagues, friends and family and their subsequent motivation to comply (mc_i) to these expectations (Fishbein & Ajzen, 1975). Ultimately, this model suggests that a positive attitude towards WAT devices and subjective norms in favour of using these devices ought to lead to a positive intention to use the devices and, in due course, actual usage.

The TRA was deemed a suitable model to use in this study given the successful use of this model to investigate similar wearable technologies (Lin *et al.*, 2020; Hsiao & Chen, 2018)

2.2 Technology acceptance model (TAM)

While the TRA is applicable to virtually any human behaviour across different situations (Ajzen & Fishbein 1980), it does not consider perception of technology usefulness and ease of use, which is important considering that WATs are still relatively new to most South African consumers. Therefore, this study integrated the TAM to combine with the TRA into a unified, five-factor model. Davis (1986) introduced the notion that two separate salient internal belief systems, namely perceived usefulness (PU) and perceived ease of use (PEOU) have a significant influence on consumers' attitude and behavioural intention towards the acquisition and usage of new technologies (Davis, 1989). This model is shown in Figure 2.

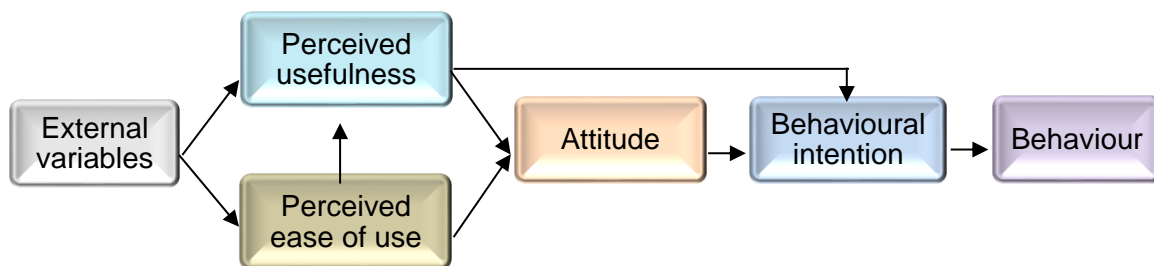


Figure 2: Technology acceptance model (TAM) Reconstructed from Davis *et al.*, 1989:985.

When integrated with the focus of this study, wearable activity tracker purchase and usage behaviour is likewise reflected by the behaviour component, which is theorised to be driven by behavioural intention, namely consumers' intention to use a device in the near future. In accordance with the TRA, this behavioural intention to use a wearable activity tracker is directed by their attitude towards WAT devices. The TAM, alternatively, suggests that consumers' attitude towards WAT devices are, in turn, determined by the perceived usefulness and perceived ease of use of the technology, where perceived ease of use has a direct influence on the degree of perceived usefulness, which, in turn, can directly lead to behavioural intentions. In essence, if wearable activity tracking devices are perceived as being easy to use and generate useful metrics, then consumers ought to have a positive attitude towards and subsequent usage intention and, ultimately, purchase such a device.

The TAM was deemed a suitable model to use in this study given the successful use of this model to investigate relevant technologies (Felea *et al.*, 2021; Cheung *et al.*, 2020; Azharshaheen *et al.*, 2020; Lunney *et al.*, 2016; Choi & Kim, 2016; Kim & Shin, 2015).

The TRA and TAM were combined to validate whether these models can be used to measure Generation Y students' wearable activity tracker usage intentions.

3. METHODOLOGY

A descriptive research design with a single cross-sectional sampling approach guided this study

3.1 Sampling and data collection

In accordance with the primary objective of this study, the target population was defined as Generation Y university students aged between 18 and 24 years, registered at South African public

universities. The sampling frame was limited to the 26 publicly registered South African universities. Based on a non-probability, judgement sampling method, three of these universities were selected, which included one traditional university, one comprehensive university and one university of technology situated in the country's Gauteng province. This selection criterion ensured student representation from each of the country's categories of higher education institutions.

Data collection comprised following a mall-intercept type approach and 600 self-administered surveys were distributed to a non-probability convenience sample on the three campuses (200 per campus).

3.2 Research instrument

The self-administered survey included: A cover letter that explained the nature and purpose of the research and guaranteed participants anonymity; a section asking for informed consent; a section for capturing demographic data; and a section containing the scaled-response items from previously validated and published research. These scales included attitude and usage intentions as adapted from Kim and Shin (2015) and perceived ease of use as adapted from Nor and Pearson (2008). The perceived usefulness scale was retrieved and adapted from Yang *et al.* (2016) and subjective norms from the work of Lee (2009). The responses to these 18 scaled items were measured on a six-point Likert-type scale (1=strongly disagree to 6=strongly agree).

3.3 Data analysis

The gathered data were analysed using version 27.0 of IBMs Statistical Package for Social Sciences (SPSS) and Analysis- of Moment Structures (AMOS). Data analysis comprised frequencies, collinearity diagnostics, bivariate correlation analysis, validity analysis (nomological, convergent and discriminant), confirmatory factor analysis (CFA), internal consistency and composite reliability analysis.

A screening for multicollinearity issues by means of collinearity diagnostics was first performed to eliminate the possibility of excessively high correlation between the latent factors, since this would cause problems when interpreting the results of multivariate statistical analysis methods (Hair *et al.*, 2019) and cause the latent factors to not present as unique and independent. The analysis comprised of calculating the tolerance values (TV) and the variance inflation factors (VIF). Pallant (2013) indicates that TV below 0.10 and an average VIF above 10 are indicative of multicollinearity issues in the dataset. After ensuring the data adhered to these parameters, a matrix of Pearson's product-moment correlation coefficients was computed to assert the nomological validity of the data. Hair *et al.* (2019) claim that nomological validity is inferred in the presence of statistically significant relationships in the theoretically correct direction between the sets of latent factors to be included in the model. CFA was subsequently performed, using the maximum likelihood method to specify a five-factor model for testing. The first loading on each of the five latent factors was fixed at 1.0, resulting in 171 distinct sample moments and 46 distinct parameters to be estimated, equating to 125 degrees of freedom (df) based on an overestimated model and a chi-square value of 314.461, with a probability level equalling 0.000. While the chi-square statistic forms the basis for most other goodness-of-fit (GIF) indices in a model (Hair *et al.*, 2019), a statistically significant chi-square value would be indicative of poor model fit since this statistic is

sensitive to sample size and the number of observed variables (Malhotra *et al.*, 2012). As such, other model fit indices should be calculated to determine model fit. The model fit indices that were calculated to validate the model for this study consisted of the GFI, the incremental-fit index (IFI), the Tucker-Lewis index (TLI), the standardised root mean square residual (SRMR) and the root mean square error of approximation (RMSEA). According to Hair *et al.* (2019) GFI, IFI and TLI values above 0.90, together with SRMR and RMSEA values below 0.08 are indicative of acceptable model fit. Convergent validity is established with latent factor loading estimates and average variance extracted (AVE) values of 0.50 or higher, whilst discriminant validity necessitates that the square root of the AVE values exceeds the correlation estimates between the relevant latent factors and that the maximum shared variance (MSV) values are smaller than the AVE values (Hair *et al.*, 2019). Reliability was tested using Cronbach’s alpha (α) and composite reliability (CR), where values of 0.70 and above are indicative of acceptable reliability (Malhotra *et al.*, 2012). The level of statistical significance was set at $p < 0.01$ throughout.

4. RESULTS AND DISCUSSION

There was a 77 percent response rate after 462 out of the 480 returned and 600 distributed questionnaires were suitable for analysis following a Mahalanobis distance test to assess the data for multivariate outliers (Tabachnick & Fidell, 2013). There were more females (59.7%) than males (39.8%) in the sample and most were black African students between the ages of 18 and 21 years. Although the sampling was limited to Gauteng campuses, undergraduates from all but one province, Northern Cape, were represented by the sample. The proportion of responses from the traditional university and the university of technology was at the same level, whereas that from the comprehensive university was lower.

The measurement model proposed in this study was that Generation Y students’ wearable activity tracker adoption intention is a five-factor model consisting of perceived usefulness, perceived ease of use, subjective norms, attitude and wearable activity tracker adoption intention. Before constructing and testing this measurement model, a matrix of Pearson’s product-moment correlation coefficients was first constructed to test the nomological validity of the data. Following this, conventional to multivariate statistical analysis, collinearity diagnostics, which include calculating the tolerance values (TV) and variance inflation factor (VIF), was performed, thereby confirming that the model and latent factors are free of multicollinearity issues. The resulting bivariate correlation analysis and collinearity diagnostics are reported in Table 1.

Table 1: Bivariate correlation analysis and collinearity diagnostic results

| Latent factors | PU | PEOU | SN | ATT | TV | VIF |
|------------------------------|---------------|--------|--------|---------------|-------|-------|
| Perceived usefulness (PU) | | | | | 0.618 | 1.618 |
| Perceived ease of use (PEOU) | 0.322* | | | | 0.836 | 1.196 |
| Subjective norms (SN) | 0.364* | 0.153* | | | 0.839 | 1.192 |
| Attitude (ATT) | 0.523* | 0.363* | 0.283* | | 0.599 | 1.671 |
| Usage intention (UI) | 0.467* | 0.148* | 0.309* | 0.500* | 0.673 | 1.486 |

*Significant at $p < 0.01$

It is evident from Table 1 that there are statistically significant relationships ($p < 0.01$) between each of the pairs of latent factors in the correct direction, thereby indicating the nomological validity of the factors specified for inclusion in the measurement model. Furthermore, there are no multicollinearity issues since the tolerance values range from 0.599 to 0.836 and the VIF values average 1.432. The next step was to perform a CFA of the measurement model as part of validating

that the TRA and TAM can be combined to measure Generation Y students' wearable activity tracker usage intentions. This model was generated using AMOS, specifically the maximum likelihood method. Table 2 reports the correlations between the latent factors.

Table 2: Correlations between the latent factors in the measurement model

| Latent factors | Estimate |
|-----------------|--------------|
| UI ↔ ATT | 0.575 |
| UI ↔ PU | 0.511 |
| UI ↔ PEOU | 0.175 |
| UI ↔ SN | 0.330 |
| ATT ↔ PU | 0.602 |
| ATT ↔ PEOU | 0.442 |
| ATT ↔ SN | 0.304 |
| PU ↔ PEOU | 0.385 |
| PU ↔ SN | 0.378 |
| PEOU ↔ SN | 0.192 |

Similar to Table 1, it is evident that the strongest relationships were recorded between attitude and perceived usefulness and attitude and usage intentions, meaning that if Generation Y students perceive wearable activity trackers as useful, their attitudes towards these devices strengthen. Similarly, the stronger Generation Y students' attitudes towards WAT devices, the more likely they are to use them. Generation Y students' wearable activity tracker usage intentions also strongly relate to the perceived usefulness of the device and also whether their reference groups think they should use them. Perceived ease of use had the weakest relation to usage intentions, perhaps because of their tech-savvy nature, Generation Y students believe any technology is easy to use and, therefore, not such an important factor that would lead to usage intentions, as with the other factors in the model. There was also a weak relationship between subjective norms and perceived ease of use. This suggests that even if Generation Y students believe their relevant others want them to use WAT devices, this belief has no relation to whether WAT devices are easy to use.

Table 3 reports the estimates for this measurement model, including the latent factor items, the standardised loading estimates, the error variance estimates, the Cronbach alpha (α) values per factor, composite reliability CR values, the AVE and the square root of AVE values.

The Cronbach alpha value for the five-factor, 18-item model was 0.893 and with the alpha and CR values for each of the latent factors exceeding 0.70 ($p < 0.01$), it indicates the model's internal consistency and composite reliability. All the standardised loading estimates and AVE values exceed 0.50, which indicates the model's convergent validity. The model's discriminant validity is evident in that the square root of AVE for each of the latent factors exceeds its corresponding correlation coefficients and the maximum shared variance for each latent factor is smaller than its respective AVE value. With the reliability and validity of the measurement model established, the fit indices should be interpreted. The execution of the model resulted in indices indicative of acceptable model fit with a GFI of 0.924, an IFI of 0.962, a TLI of 0.953, a SRMR of 0.0435 and a RMSEA of 0.057.

Table 3: Estimates for the measurement model

| Latent factors & items | Source | Standardised loading estimates | Error variance estimates | α | CR | MSV | AVE | \sqrt{AVE} |
|--|--|--------------------------------|--------------------------|--------------|--------------|-------------|-------------|--------------|
| Perceived usefulness (PU) | Yang <i>et al.</i> (2016), as adapted from Davis (1989) | | | 0.848 | 0.852 | 0.36 | 0.54 | 0.73 |
| “An activity-tracking device is useful to your life in general.” | | 0.617 | 0.381 | | | | | |
| “An activity-tracking device provides you with useful information about your physical activity.” | | 0.721 | 0.519 | | | | | |
| “An activity-tracking device improves the quality of your physical activity.” | | 0.827 | 0.685 | | | | | |
| “An activity-tracking device increases your level of physical activity.” | | 0.746 | 0.556 | | | | | |
| “An activity-tracking device enhances the effectiveness of your physical activity.” | | 0.737 | 0.543 | | | | | |
| Perceived ease of use (PEOU) | Nor & Pearson (2008) | | | 0.755 | 0.762 | 0.20 | 0.52 | 0.72 |
| “Learning how to use an activity-tracking device is easy.” | | 0.638 | 0.408 | | | | | |
| “It is easy to use an activity-tracking device to track your daily activity.” | | 0.827 | 0.684 | | | | | |
| “It is easy to remember how to use an activity-tracking device.” | | 0.684 | 0.468 | | | | | |
| Subjective norms (SN) | Lee (2009) as adapted from Wu and Chen (2005) | | | 0.946 | 0.947 | 0.14 | 0.86 | 0.93 |
| “People who are important to me think I should use an activity-tracking device.” | | 0.914 | 0.835 | | | | | |
| “People whose opinions I value think I should use an activity-tracking device.” | | 0.964 | 0.929 | | | | | |
| “People who influence my decisions think that I should use an activity-tracking device.” | | 0.896 | 0.802 | | | | | |
| Attitude (ATT) | Kim and Shin (2015) as adapted from Venkatesh <i>et al.</i> (2003) | | | 0.828 | 0.832 | 0.36 | 0.56 | 0.75 |
| “Using an activity-tracking device is a good idea.” | | 0.700 | 0.491 | | | | | |
| “Generally, I have a favourable attitude towards using an activity-tracking device.” | | 0.649 | 0.421 | | | | | |
| “I like the idea of using an activity-tracking device.” | | 0.831 | 0.690 | | | | | |
| “Overall, I think using an activity-tracking device is beneficial.” | | 0.786 | 0.618 | | | | | |
| Usage intention (UI) | Kim and Shin (2015) as adapted from Venkatesh <i>et al.</i> (2003) | | | 0.919 | 0.920 | 0.33 | 0.79 | 0.89 |
| “I intend to use an activity-tracking device in the future.” | | 0.875 | 0.766 | | | | | |
| “I predict I will use an activity-tracking device in the future.” | | 0.911 | 0.830 | | | | | |
| “I plan to use an activity-tracking device in the future.” | | 0.884 | 0.781 | | | | | |

With all the indices' values considered, this suggests that Generation Y students' wearable activity tracker usage intentions is a five-factor model, presented in Figure 3, that exhibits construct validity, reliability and acceptable model fit. The measurement model depicted in Figure 3 shows the standardised model.

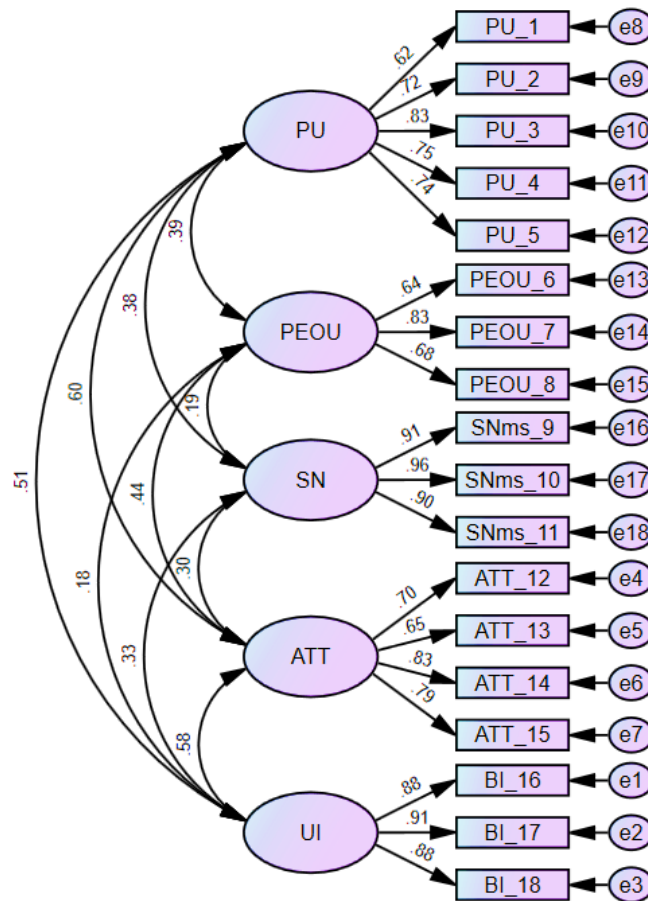


Figure 3: Validated model of Generation Y students' wearable activity tracker usage intentions

5. CONCLUSION

The purpose of this study was to validate a model of Generation Y students' wearable activity-tracking device usage intentions in the South African context. Given the growth of the wearables market, specifically that of wearable activity trackers among Generation Y consumers, it is vital that marketers have a model to measure and understand their usage intentions of these devices. The results of this study suggest that the TRA and TAM can be combined into a five-factor model consisting of perceived usefulness, perceived ease of use, subjective norms, attitude and usage intentions in the context of measuring WAT adoption behaviour. The measurement model tested showed no multicollinearity issues, construct validity relating to nomological, convergent and discriminant validity, both internal consistency and composite reliability and acceptable model fit.

All the factors had a significant relation to Generation Y students' wearable activity trackers usage intentions, with attitude having the strongest and perceived ease of use the weakest relation to their usage intentions. However, it is vital to conduct path analyses for all the latent factors to isolate the exact influence the factors have on usage intentions to make more accurate predictions of wearable activity tracking device adoption behaviour.

Hence, from a practical perspective, this model can be used as a foundation for wearable activity tracker device manufacturers or brands, marketing practitioners and academics to investigate Generation Y consumers' wearable activity tracker device usage intentions. Knowing this cohort's usage intentions would be useful to grow the wearable market in the country and perhaps, internationally.

For this model to be implemented to predict behaviour based on the factors in the model, future research is needed and should focus on the paths and influence of perceived usefulness, perceived ease of use, subjective norms and attitude on usage intentions, which would ultimately forecast actual behaviour. Once the effect of these variables is investigated, brands and marketing practitioners can integrate relevant strategies to attract a larger consumer base and also develop appropriate marketing communication that aligns with these factors.

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APPLICATION OF JUST-IN-TIME APPROACH AT A SELECTED TELECOMMUNICATION CORPORATION

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ABSTRACT

Materials and operations managers within the Materials Management section of Telkom South Africa in Gauteng Province were of the view that the company is losing considerable money due to inventory costs. Inventories were ordered in bulk, which resulted in some inventories becoming obsolete before being used. Inventories amounting to millions of Rand were also lost and some became defective. This study was prompted by the inventory cost challenges experienced by the Materials Management section of Telkom South Africa in Gauteng Province. Using a quantitative approach and cross-sectional survey research design, a self-administered survey questionnaire was emailed to 60 selected employees. Descriptive statistics were employed to analyse data about the profiles of participating respondents. Results of the study showed that staff were aware of the inventory costs incurred and were aware that the JIT approach is the technique that can eliminate these inventory costs. Staff were optimistic that the JIT approach is the technique that can improve financial performance and materials delivery. Staff also indicated that the JIT approach is the technique that can eliminate materials problems. Staff perceived the JIT approach as the technique that can improve service delivery and overall performance. Results also revealed that the Materials Management section of Telkom South Africa in Gauteng Province did not use the JIT approach in ordering materials and, therefore, incurred unnecessary inventory costs. In view of the study results, it is recommended that the Materials Management section of Telkom South Africa in Gauteng Province adopt the JIT philosophy. By doing so, it will benefit by eliminating unnecessary inventory costs. It is also recommended that the Materials Management section of Telkom South Africa in Gauteng Province should work on implementing the JIT approach to enhance its inventory levels. It is further recommended that this study be conducted in other state-owned enterprises as well.

Keywords: Materials, Inventory, Just-in-time, Inventory costs, Materials Management

1. INTRODUCTION

Telkom South Africa is a leading information and communications technology (ICT) service provider in South Africa. Its offering includes fixed-line, mobile and data services and information technology (IT) services. Telkom South Africa is listed on the Johannesburg Stock Exchange (JSE). The South African government owns 40.5 percent of Telkom South Africa and 51.6 percent of the shares are held by institutional shareholders (Telkom South Africa, 2020). Telkom South Africa's purpose is to connect its customers to a better life seamlessly (Telkom South Africa, 2020).

Materials and operations managers within the Materials Management section of Telkom South Africa in Gauteng Province were of the view that the company is losing considerable money due to inventory costs. Inventories were ordered in bulk, which resulted in some inventories becoming

obsolete before being used. Inventories amounting to millions of Rand were also lost and some became defective. This study was prompted by the inventory cost challenges experienced by the Materials Management section of Telkom South Africa in Gauteng Province.

These inventory cost challenges resulted in the company retrenching some employees and some were forced to take early retirement. Some sections within the Materials Management section of the Telkom South Africa in Gauteng Province were forced to shut down due to these financial losses.

Materials and operations managers within the Materials Management section of Telkom South Africa in Gauteng Province did not use the just-in-time (JIT) approach to order materials. As a result, the Materials Management section of Telkom South Africa in Gauteng Province incurred unnecessary inventory costs, which resulted in the above financial challenges. This study is of paramount importance as there are no previous studies conducted in this specific subject field.

2. PURPOSE OF THE STUDY

The purpose of the study was to explore the extent to which the Materials Management section of Telkom South Africa in Gauteng Province applies the JIT approach in order to eliminate waste and avoid unnecessary inventory costs.

3. PROBLEM INVESTIGATED

The application of JIT approach within the Materials Management section of Telkom South Africa in Gauteng Province was investigated, as well as the unnecessary inventory costs incurred.

4. RESEARCH OBJECTIVES

The following theoretical objectives were formulated:

- (i) To provide a theoretical overview of various inventory costs.
- (ii) To carry out a literature study on the importance of the JIT approach.

The theoretical objectives were supported by the following empirical objectives:

- (i) To identify problems associated with materials handling at the Materials Management section of Telkom South Africa in Gauteng Province.
- (ii) To highlight areas that operations managers can focus on as priorities to improve materials management at Telkom South Africa in Gauteng Province.
- (iii) To demonstrate how the Materials Management section of Telkom South Africa in Gauteng Province can embrace the JIT approach as a philosophy with a view to improving materials management.

5. LIRETATURE REVIEW

5.1 Just-In-Time (JIT) Approach Philosophy

Although precisely defining the JIT approach continues to be perplexing, the JIT approach is generally referred to as a manufacturing system for achieving excellence through continuous quality improvements. With regards to productivity, rework of manufactured products and waste has a direct impact on the profits of a company (Van Wyk & Naidoo, 2016). According to Mankazana and Mukwakungu (2018), the JIT approach is a materials management approach of

delivering the exact amounts of materials, at the exact times, when needed. According to a study undertaken between 1981 and 2000 in the US, it was found that manufacturing companies with less materials in the warehouse are more efficient than those with more materials in the warehouse. Thus, it was found that an organisation that keeps moderate materials in the warehouse can successfully eliminate unnecessary inventory costs.

Franco and Rubha (2017) indicate that the JIT approach is both a philosophy and set of methods for manufacturing. According to this concept, materials are supplied to the workstation just at the time that they are required for use. Mukwakungu, Mabasa, Mankazana, Mzileni and Burakeye (2019) state that JIT approach is a philosophy that relates to the manufacturing industry, which plans to dispose of waste, as waste is or results from any action that adds cost to the process of production without essentially increasing the value of the item being produced.

5.1.1 Objectives and Advantages of JIT Approach

According to Mankazana and Mukwakungu (2018), the objectives of JIT approach are to deliver the goods at the right time for them to be sold, to deliver the sub-assemblies at the right time for them to be turned into a finished product, to deliver the fabricated parts at the right time for them to be turned into sub-assemblies and to deliver purchased materials at the right time, at the right place. Mankazana and Mukwakungu (2018) indicate that JIT approach result in the reduced amount of space that the company will need. That space which is now available can be utilised for other profitable business activities. A faster dispatch of inventory by employing JIT approach prevents the material becoming damaged and turning into waste. This again decreases costs by preventing investment in unnecessary stock and reducing the need to replace unused damaged stock. The JIT approach helps companies not to make major investments in materials, as materials will only be ordered and delivered when needed.

5.2 The Concept of Materials Management

Materials management is defined as a set of predetermined activities of an institution, which consist of planning, sourcing, purchasing, transporting, storing, utilising, controlling and disposal or recycling of materials in an optimum manner, with the aim to provide quality care with affordable costs to the customers without any interruption of service (Kaur, 2016). According to Jobin (2019), management of necessary materials without wasting money, time and effort is of vital importance in society, as the world faces a shortage of resources today.

Materials management is related to planning, procuring, storing and providing the appropriate material of right quality, right quantity at the right place and at the right time (Kaur, 2016). Proper materials management prevents the wastage of time, plays a vital role in increasing the profit of the organisation, ensures the quality of materials, increases productivity of the employees and minimises waste (Jobin, 2019).

6. RESEARCH METHODOLOGY

6.1 Study Design

A quantitative approach and cross-sectional survey research design was used in this study. This involved the administration of a self-administered survey questionnaire to the sample at just one point in time, which provides a snapshot of what was happening in that group at that particular

time (Saunders, Lewis & Thornhill, 2016). The study used a quantitative research approach because it intended to produce comparable results that can be generalised to the telecommunications industry in other environments apart from Gauteng Province

6.2 Study Population and Sampling Strategy

For this study, Telkom South Africa Materials Management, Access Turf Management, Inventory Management and Contract Management sections within Gauteng Province were the study population. The size of this study population was 600 employees. These comprised project administrators, Project Coordinators, Operations Project Managers, Operations Managers, Senior Contract Representatives and Managers from the designated areas.

Purposive sampling was used in this study. According to Etikan, Musa and Alkassim (2016), the purposive sampling technique, also called judgmental sampling, is the deliberate choice of a participant due to the qualities the participant possesses. It is a non-random technique that does not need underlying theories or a set number of participants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience. Purposive sampling techniques was appropriate for this study because researcher deliberately chose the participant due to the qualities they possess.

A sampling frame is a list of the actual cases from which sample will be drawn. The sampling frame must be representative of the population (Taherdoost, 2016). The sampling frame for this study was the list of all employees at Telkom South Africa Materials Management, Access Turf Management, Inventory Management and Contract Management sections within Gauteng Province.

A sample size that is too small could lower the sensitivity of the experiment to identify significant differences; whereas a sample that is too large could waste time, cost and resources or important investigational endpoint. In the latter case, a trade-off may often occur between the cost-effectiveness and detecting power. As such, it is difficult to determine the sample size for studies, especially in confirmatory studies (Ko & Lim, 2021). Based on these, the sample size for this study, which was randomly selected respondents, was $n=60$. The sample size used is in line with similar studies conducted by Lekhanya (2016).

6.3 Data Collection

Self-administered survey questionnaires are an important data collection tool in clinical practice, public health research and epidemiology. They are ideal for achieving a wide geographic coverage of the target population, dealing with sensitive topics and are less resource intensive than other data collection methods. These survey questionnaires can be delivered electronically, which can maximise the scalability and speed of data collection while reducing cost (Belisario, Jamsek, Huckvale, O'Donoghue, Morrison & Car, 2015).

A self-administered survey questionnaire was used to collect data from the sample. For the purpose of this study, great care was undertaken in the development of the self-administered survey questionnaire, to ensure that questions were clear, simple and unambiguous. Reliability and validity were applied to ensure the accuracy of measurement scales.

Reliability refers to the consistency of test results (Akib, Najib & Ghafar, 2015). Reliability concerns the extent to which a measurement of a phenomenon provides stable and consistent results. Reliability is also concerned with repeatability. A scale or test is said to be reliable if repeat measurement made by it under constant conditions will give the same result. Testing for reliability is important as it refers to the consistency across the parts of a measuring instrument (Taherdoost, 2016).

Validity explains how well the collected data covers the actual area of investigation. Validity basically means “measure what is intended to be measured” (Taherdoost, 2016). Two types of validity were tested in this study. The first was face validity, which was ascertained through the review of the self-administered survey questionnaire by a panel consisting of academics at my university. The second type of validity tested in this study is content validity. This was ascertained through a pilot study of the self-administered survey questionnaire, using a conveniently selected sample of 10 management staff. These management staff were excluded from participating in the final survey. Feedback from the review panel was used to effect minor changes to the self-administered survey questionnaire to ensure that questions were simpler, more direct and terms used were non-technical. After analysis of the pilot study results, items that had low factor loadings were removed, and the self-administered survey questionnaire was shortened to avoid respondent boredom, which could have resulted in unanswered questions.

Self-administered survey questionnaire was e-mailed to 60 elements of the sample who were selected according to their vast experience in materials management. After a few days, the same self-administered survey questionnaire was e-mailed again to encourage a higher response rate. A follow-up was done by delivering self-administered survey questionnaires by hand to some of the individuals who did not respond. As a result, 47 self-administered survey questionnaires were received, which is a response rate of 78 percent. This response rate indicated a reliable, valid and good response rate for data analysis. According to Nguegan Nguegan and Mafini (2017), this response rate was reliable for analysis and interpretation because it is above the 50 percent minimum threshold.

Researchers need to target populations that are more likely to be interested in the study to increase the response rate for their surveys (Saleh & Bista, 2017). In this study, the employees involved in Materials Management Section of Telkom South Africa in Gauteng Province were targeted. It was assumed that they would be interested in the study results. This could be the reason that the response rate for this survey was 78 percent.

6.4 Data Analysis

The first step in analysing the collected data was to screen the self-administered survey questionnaires and eliminate the unusable ones. The following step was to code the data on a Microsoft Excel spreadsheet, followed by cleaning the data to identify and rectify missing entries. The next step was to import the data into the Statistical Package for Social Sciences (SPSS version 24). After that, descriptive statistics were employed to analyse data about the profiles of participating respondents.

6.5 Ethical Considerations

In this study, several ethical principles were considered. First, permission was obtained from participants who were employed at Telkom South Africa Materials Management, Access Turf Management, Inventory Management and Contract Management sections within Gauteng Province to conduct the survey. Secondly, respondents were under no obligation to complete the self-administered survey questionnaires. A potential respondent who refused to participate in the research was excused and the next qualifying individual was approached to participate. This ensured that respondents' rights to non-participation were observed. Thirdly, all respondents were adequately informed about the purpose of the study to secure their informed consent. Finally, anonymity and confidentiality of respondents were protected throughout the study. Anything learnt about respondents during their involvement in the study was maintained in confidence.

7. RESULTS

The following table indicates the staff's awareness of inventory costs incurred by Telkom South Africa in Gauteng Province.

Table 1: Staff's awareness of inventory costs incurred

| | Frequency | Percentage | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| Yes | 23 | 46.9 | 47.9 | 47.9 |
| No | 15 | 30.6 | 31.3 | 79.2 |
| Do not know | 10 | 20.4 | 20.8 | 100.0 |

As indicated in Table 1, 46.9 percent (n = 23) of staff were aware of the inventory costs incurred by the Materials Management section of Telkom South Africa in Gauteng Province.

Table 2: The technique that staff think can eliminate inventory costs

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| JIT | 12 | 24.5 | 41.4 | 41.4 |
| MRP | 7 | 14.3 | 24.1 | 65.5 |
| Forecasting | 9 | 18.4 | 31.0 | 96.6 |
| Other | 1 | 2.0 | 3.4 | 100.0 |

Table 2 shows that 24.5 percent (n = 12) believed that the JIT approach is the technique that can eliminate these costs.

Table 3: The technique that staff think can improve financial performance

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| JIT | 15 | 30.6 | 33.3 | 33.3 |
| MRP | 12 | 24.5 | 26.7 | 60.0 |
| Forecasting | 13 | 26.5 | 28.9 | 88.9 |
| Other | 5 | 10.2 | 11.1 | 100.0 |

Table 3 indicates that 30.6 percent (n = 15) were optimistic that the JIT approach is the technique that can improve financial performance within the Materials Management section of Telkom South Africa in Gauteng Province. In the abovementioned tables (tables 1–3), it is evident that the JIT approach was the most preferred technique compared to other techniques.

Table 4: The system that staff think can improve material delivery

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| JIT | 11 | 22.4 | 25.0 | 25.0 |
| MRP | 13 | 26.5 | 29.5 | 54.5 |
| Forecasting | 11 | 22.4 | 25.0 | 79.5 |
| Other | 9 | 18.4 | 20.5 | 100.0 |

It is shown in Table 4 that 22.4 percent (n = 11) of staff thought that the JIT approach is the technique that can improve materials delivery.

Table 5: The technique that staff think can eliminate materials problems

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| JIT | 12 | 24.5 | 27.3 | 27.3 |
| MRP | 16 | 32.7 | 36.4 | 63.6 |
| Forecasting | 13 | 26.5 | 29.5 | 93.2 |
| Other | 3 | 6.1 | 6.8 | 100.0 |

In Table 5, 24.5 percent (n = 12) of staff indicated that the JIT approach is the technique that can eliminate materials problems.

Table 6: The technique that staff think can improve service delivery

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| JIT | 13 | 26.5 | 28.3 | 28.3 |
| MRP | 14 | 28.6 | 30.4 | 58.7 |
| Forecasting | 13 | 26.5 | 28.3 | 87.0 |
| Other | 6 | 12.2 | 13.0 | 100.0 |

Table 6 shows that 26.5 percent (n = 13) of staff perceived the JIT approach as the technique that can improve service delivery within the Materials Management section of Telkom South Africa in Gauteng Province.

Table 7: The technique that staff think can improve overall performance

| | Frequency | Percent | Valid percent | Cumulative percent |
|-------------|-----------|-------------|---------------|--------------------|
| JIT | 13 | 26.5 | 29.5 | 29.5 |
| MRP | 15 | 30.6 | 34.1 | 63.6 |
| Forecasting | 11 | 22.4 | 25.0 | 88.6 |
| Other | 5 | 10.2 | 11.4 | 100.0 |

Table 7 shows the technique that staff think will improve overall performance within the Materials Management section of Telkom South Africa in Gauteng Province. Table 7 shows that 26.5 percent (n = 13) of staff indicated that the JIT approach is the system that can improve the overall performance within the materials management section of Telkom South Africa in Gauteng Province. The JIT approach was chosen less often in the abovementioned four tables (tables 4–7). Nevertheless, the overall results show that JIT approach was the most favoured technique.

Results of the study showed that staff were aware of the inventory costs incurred and were aware that the JIT approach is the technique that can eliminate these inventory costs. Staff were optimistic that the JIT approach is the technique that can improve financial performance and materials delivery. Staff also indicated that the JIT approach is the technique that can eliminate materials problems. Staff perceived the JIT approach as the technique that can improve service delivery and overall performance. Results also revealed that the Materials Management section of Telkom South Africa in Gauteng Province did not use the JIT approach in ordering materials and, therefore, incurred unnecessary inventory costs.

8. CONCLUSIONS

The study concludes that the JIT approach can contribute positively towards optimal inventory levels in the Materials Management section of Telkom South Africa in Gauteng Province. The JIT approach can assist organisations in improving overall productivity and eliminating waste. It can provide for the cost-effective production and delivery of only the necessary quantity of parts of

the right quality at the right time and place, while using the minimum amounts of facilities, equipment, materials and human resources.

9. MANAGERIAL IMPLICATIONS

In the light of the results of this study, several managerial implications may be put forward. To maintain satisfactory levels of inventory, the Materials Management section of Telkom South Africa in Gauteng Province should adopt technology-driven systems such as JIT, value analysis, concurrent engineering and modular design systems. Future technology investments should be directed to investing in upgrading production, information and inventory management systems to meet international standards.

In view of the study results, it is recommended that the Materials Management section of Telkom South Africa in Gauteng Province adopt the JIT philosophy. By doing so, it will benefit by eliminating unnecessary inventory costs. It is also recommended that the Materials Management section of Telkom South Africa in Gauteng Province should work on implementing the JIT approach to enhance its inventory levels. It is further recommended that this study be carried out in all state-owned enterprises (SOEs) as well.

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FACTORS INFLUENCING GENERATION Y CONSUMERS PURCHASE BEHAVIOURS OF ORGANIC PRODUCTS

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ABSTRACT

The modern-day consumer is constantly overwhelmed by numerous environmental issues currently grasping the environment and the natural world. Global warming, deforestation, overpopulation and pollution among many other concerns are constantly highlighted, resulting in consumers altering the way they purchase their products. Not only are consumers buying products to aid in the environmental war, but they are purchasing food products that are better for their own health. Food products that have been manufactured in an organic fashion are said to be healthier than traditional food products, as organic products are made free from pesticides, hormone stimulants and processed chemicals. There are various factors that may influence a consumer to purchase an organic product. The question that begs to be asked is, are consumers purchasing organic food products more for environmental preservation, self-health reasons or the status-quo of friends and family? The primary objective of this study is to identify which factors explain the recent upsurge of organic food product purchases of the Generation Y cohort in South Africa. The sample for this study comprised 500 Generation Y consumers drawn from across South Africa. The data were collected by a specialist data collecting organisation. The target market consisted of South African citizens, ranging in age from 18 to 35 years. The collected data were analysed using descriptive statistics, Pearson's product-moment correlation coefficient, regression analysis and an independent samples t-test. The results indicate that Generation Y consumers display positive intentions towards organic food purchase behaviour. Various factors such as the physical ability to attain organic products and the perceptions of friends and family regarding the purchasing of organic food products played a significant role in the purchase thereof. The results from this study will aid both business practitioners and marketing academics in forming a better understanding of the Generation Y consumer in terms of their organic food purchase behaviours. Furthermore, this study outlines marketing strategies geared towards effective green pricing policies.

Keywords: Organic food; purchase behaviour; Generation Y; South Africa

1. INTRODUCTION

Given the increased hazardous issues that consumers face in the current environment, environmental awareness has become increasingly prevalent. Changes in the way consumers make decisions regarding food purchases have led to an increase in the attention consumers pay towards organic food products, where consumers are more inclined to consume organic products compared to traditional food products. This change in consumer consumption is ascribed to factors, including environmental issues, health concerns, future preservation and natural taste. Research shows that

these organic food choices are a result of consumers wanting to make lifestyle changes, which include being more environmentally conscious or loyal to pro-environmental causes. For the purpose of this study, Padmaja and Parashar (2018) articulate organic products as food products that have undergone minimal processing, in an effort to produce food products that maintain the integrity of food, without the use of preservatives, artificial ingredients or irradiation. Sing and Verma (2017), Watson (2017) and Paul and Rana (2012) add that organic products are developed by employing the use of environmentally friendly processes and the use of cultivation techniques, which are concerned with both the attributes of the final product being produced, as well as the production process undertaken.

Specific standards must be adhered to when producing products related to organic agriculture if organisations wish to produce products that can be classified as “organic”. These include production, processing, transport, packaging and distribution standards (Sing & Verma, 2017; Paul & Rana, 2012). In South Africa, organic farming constitutes the production of food crops and livestock in a manner that is harmonious with nature. Consequently, organisations involved in organic food production and farming need to ensure that they preserve the natural resources of South Africa as much as possible. Some of the preservation measures that can be employed are the use of soil quality improvement, water-wise crops, the humane management of livestock and the most economical ways in which to use water (South Africa Online, 2021).

According to Bhalla (2020), there has been a significant increase in the demand for organic foods across the world in recent years. With regard to organic food and environmentalism in its entirety, the demand from South African consumers for organic products and safer sustainable business practices is becoming increasingly prevalent. For businesses that wish to stay relevant in the ever-changing consumer market, it is imperative that they heed to the potential influence of this environmental movement, highlighting the importance of complying with this new demand. In comparison to traditional products, organic product prices are perceived as being more expensive, which directly influences the purchase decision of a product. As the demand for organic products increases, prices should begin to decrease, which will, in turn, encourage consumers to make more purchases. Other factors, such as subjective norms, health consciousness, attitudes and overall purchase behaviour may also influence the purchase decision of organic products. Consequently, the question then posed is, what factors influence the South African Generation Y consumer to purchase organic products.

This paper includes a literature review on subjective norms, health consciousness, attitudes towards organic food, purchase intention and actual buyer behaviour and the Generation Y cohort. Furthermore, the paper highlights the research methodology used, including the sampling and data collection methods and the research instrument employed. The results are then discussed, followed by the conclusion, including the recommendations, study limitations and future study directions.

2. LITERATURE REVIEW

Subjective norms

Subjective norms may be defined as the views of significant others that individuals use in an advisory capacity regarding how to perform or not to perform specific behaviours and motivations, in addition to a willingness to undertake or not undertake a particular task that is deemed important (Utami, Bernardus & Sintha, 2017). Conner and Armitage (1998) define significant others as

individuals whose preferences regarding a particular behaviour are held in high esteem by an individual. According to Al-Debei, Al-Lozi and Papazafeiropoulou (2013), individuals tend to behave in a way that is accepted and encouraged by the individuals they deem as significant others.

Although previous research has alluded to the fact that one of the pitfalls of the theory of planned behaviour is the significantly weak relationship that exists between subjective norms and intentions, Ajzen (1991) explains that intentions are significantly influenced by personal factors, including attitudes and perceived behavioural control. Ham, Jeger and Ivkovi (2015) propose that the confirmed correlation between descriptive norms and intentions implies the possibility of the predictive power of this variable, which provides a strong motivation for further research in this area. Descriptive norms are defined as real-life activities and behaviours that individuals are engaged in. Furthermore, social norms refer to the perception of other individuals' opinions on how an individual should behave. As such, both descriptive and social norms are combined to form the subjective norms factor (Unicef, 2021).

According to Hansen, Sørensenb and Eriksenc (2018), an individual's identity is significantly associated with social consciousness towards behavioural intention with regard to the purchasing of organic foods. Ossowski (2001) indicates that social consciousness is the term used to describe a set of common characteristics that individuals who belong to a particular social environment may possess, which is reinforced in the consciousness of particular individuals through mutual suggestion and by the conviction that these characteristics are shared by other individuals within the same group. This may lead to consumers feeling pressured into identifying as being environmentally friendly individuals who are concerned with the quality and safety of the food products they purchase and ultimately consume.

Health consciousness

According to Afable (2019), health consciousness is the term used to define an individual's cognisance of the extent to which their diet and lifestyle may be viewed as healthy. Phan and Mai (2016) add that health consciousness is the subjective intent or motivation of consumers to improve their health. Wolfson (2019) argues that organic food products are free from chemicals and are not only beneficial in their ability to enhance health through consumption, but through the simultaneous improvement of the environment. Consequently, consumers with an increased level of concern regarding food safety possess positive attitudes towards organic food products (Tandon *et al.*, 2021).

Asare-Bediako (2015) postulates that the most prevalent influencing factor of consumer behaviour associated with the purchasing of organic products is health consciousness. The health concerns of individual consumers are more widespread in the influence on organic purchases, compared to those concerning the environment and the protection of biodiversity (Xie *et al.*, 2015; Paul & Rana, 2012). Antioxidants, which are found in conventional soil, provide organic crops and foods with nutritional superiority, which become even healthier due to the absence of pesticides and chemicals. In addition, organic products tend to have lower levels of the metal, known as cadmium (Wolfson, 2019).

Attitudes towards organic food, purchase intention and actual buyer behaviour

According to the theory of planned behaviour (Ajzen, 1991), the more positive an individual's attitude towards engaging in a behaviour is, the more inclined an individual will be to engage in

that specific behaviour. As such, positive consumer attitudes towards organic food products tend to result in positive consumer attitudes towards the actual purchase of organic food products. Liang (2016) predicts that as a result, consumers become more inclined to develop an intention to purchase organic food products.

Based on the increase in consumers' health consciousness and environmental preservation, the demand for organic products has increased (Xie *et al.*, 2015; Dunn *et al.*, 2014). Therefore, consumers' concerns regarding health and environmental safety are contributing factors to consumers' buying behaviours pertaining to organic products (Bizcommunity, 2017; Xie *et al.*, 2015; Magnusson *et al.*, 2001). This has led to an alteration in the purchase patterns and purchase behaviours of consumers (Lim *et al.*, 2014).

Generation Y cohort

As of 2019, 37 percent of South Africa's population constituted Generation Y individuals who were considered ecologically aware (Statistics South Africa, 2019; Eastman & Liu, 2012). For the purpose of this study, the Generation Y cohort comprises individuals who were born between 1986 and 2005, making this cohort aged between 17 and 36 years in 2022. The individuals of the Generation Y cohort, who possess a tertiary education, are viewed as trendsetters and influencers, who are opinionated and able to secure jobs that have higher than average earning power, which has led to a significant increase in the disposable incomes of these individuals (Bevan-Dye & Surujlal, 2011). When investigating the environmental movement, it is evident that the individuals of the Generation Y cohort are the forerunners of this phenomenon (Eastman & Liu, 2012). The purchasing patterns of the individuals of the Generation Y cohort, highlight the inclination these individuals have to invest in an environmentally sustainable lifestyle (Huh & Chang, 2017; Rogers, 2013). For these individuals, supporting socially responsible organisations, which are known to give back to the community, who actively get involved with environmental conservation and who endeavour to incorporate sustainability programmes into organisational operations, is key (Huh & Chang, 2017; Smith, 2012; Thieme *et al.*, 2015). Consequently, organisations should strive to develop sustainable marketing strategies targeted towards the Generation Y cohort, while simultaneously developing a deeper understanding of the environmental Generational Y consumer, as these individuals represent both the future consumer and the future of the environmental movement (Taufique & Vaithianathan, 2018; Kanchanapibul *et al.*, 2014).

3. METHODOLOGY

3.1 Research design

The research design for this study was descriptive in nature. Moreover, the study implemented a single cross-sectional analysis. This research design entails collecting data from subjects at a single point in time, as opposed to a longitudinal study which records multiple responses of the same subjects on various occasions (Shukla, 2010:38).

3.2 Target population

The target population for this was the South African Generation Y consumer aged between 18 and 35 years. The components of the target population are as follows:

- Element: South African consumers

- Sampling unit: Market research panel
- Extent: South Africa
- Period: 2021

3.3 Sampling technique and data collection

To gather the required data for this study, a convenience sampling technique was carried out. The researchers made use of an internationally renowned market research company to acquire the data. The marketing research company has a panellist data set consisting of roughly 40 000 participants from across Southern Africa. As the research company has such a vast pool of respondents, the response rate is then normally 100% of the sample size. The age parameters were set to the range between 18 and 35 over a three-day collection time period.

3.4 Sample size

The sample size for this study was based on previous studies similar in nature. As such, the sample size of 500 participants was deemed as viable for the purpose of this study. Previous studies include: Hansmann *et al.* (2020:1) (sample size: 620); Wang *et al.* (2020:1) (sample size: 518); Liang (2016:183) (sample size: 507) and Yin *et al.* (2010:1361) (sample size: 432).

3.5 Measuring instrument and data collection technique

The research company IPOS made use of their FastFacts method to collect the data for this study. The FastFacts program requires participants to undertake a structured self-administered online questionnaire. The measuring instrument was adapted from various published and validated research. The questionnaire was split into two sections namely Section A, which included all relevant demographical data and Section B, which measured the factors influencing Generation Y consumers' intentions to purchase organic products. To determine Generation Y consumers' level of subjective norms, the validated scale of Fielding *et al.* (2008) was used, while, health consciousness was taken from the study of Tarkianen and Sundqvist (2005). Generation Y consumers' purchase intentions and purchase behaviours were measured using the adapted validated scales from Mostafa (2007) and Lee (2008), respectively. A Likert scale based on a six-point range was the chosen tool for capturing the responses of participants, where the scale ranged from strongly disagree (1) to strongly agree (6). Before respondents answered any questions they were shown a cover letter, which explained the purpose of the study, which provided all relevant contact information of the researchers and also assured participants that their information would remain anonymous and all data would only be used in a statistical nature.

The FastFacts questionnaire program ensures that participants cannot move from one section of the questionnaire to the next before completing every item in the section they are busy with. The time frame for the questionnaire was twofold, first the availability of the questionnaire was set at a maximum of three days and second the questionnaire would no longer be available if 500 responses were reached before the time limit had expired. This study reached the 500 target well before the three-day time limit. As such, the response rate was then 100 percent.

4. RESULTS AND DISCUSSION

IBM SPSS Statistics 27 was used to identify and analyse the captured data. Various statistical techniques were employed to achieve the objectives of the study. The statistical techniques included outlier statistics, internal-consistency reliability, descriptive statistics, correlation analysis, regression analyses and an independent sample t-test.

Case subjects that appear out of the “norm” are those that are either above or below the general consensus, these are outliers that can have adverse effects on statistical results (Hair, Black, Babin & Anderson, 2010:65; Pallant, 2013:127-128). To detect if any outliers were present in this data set the Mahalanobis statistic was computed. This study comprised four variable constructs, as such any Mahalanobis statistic larger than 18.467 (chi-square value for $\alpha = 0.001$ at 4 df) was considered to be an outlier and would consequently be liable for removal from the data set. The constructs were set as independent variables, while the classifying case numbers were set as a dummy dependent variable. Once computed, IBM SPSS Statistics 27 produced the 10 highest Mahalanobis distance statistics of the data set. These figures can be seen in Table 1 below.

Table 1: Outlier statistics

| | Case Number | Statistic |
|-----------------|-------------|------------|
| Mahal. Distance | 1 | 6 |
| | 2 | 179 |
| | 3 | 364 |
| | 4 | 84 |
| | 5 | 290 |
| | 6 | 493 |
| | 7 | 453 |
| | 8 | 156 |
| | 9 | 152 |
| | 10 | 227 |

Note: Bold cases were deleted

As Table 1 indicates, 8 of the top 10 Mahalanobis statistic values were greater than that of 18.467 (chi-square value for $\alpha=0.001$ at 4 df). As such, these 8 cases exceeded the cut-off level, they were subsequently deleted from the data set. This left 492 viable case responses for statistical analysis.

4.1 Internal-consistency reliability

To test the reliability of the measuring constructs the Cronbach’s alpha statistic was used. Cronbach’s alpha values equal to or greater than 0.70 indicate good to excellent reliability, while values below 0.50 are considered unacceptable (Zikmund & Babin, 2013:257; Malhotra, 2010:319). The results of the Cronbach’s alpha analysis can be found in Table 2.

Table 2: Reliability analysis

| | Items (n) | Cronbach’s alpha |
|----------------------|-----------|------------------|
| Subjective norms | 3 | 0.81 |
| Health consciousness | 3 | 0.86 |
| Purchase intention | 3 | 0.90 |
| Purchase behaviour | 4 | 0.85 |

The measuring constructs all produced Cronbach’s alpha values of above the recommended level of 0.70, indicating excellent reliability. Purchase intentions of organic food products recorded the highest score of 0.90, while the remaining constructs all achieved Cronbach’s alpha values above

0.80. Thus, it can be inferred that the measuring instrument displays a good internal-consistency reliability.

4.2 Descriptive statistics

The data sets' descriptive statistics were computed simultaneously with a sample t-test. This was conducted in order to assert both the data's characteristics and the significance of the construct means. The captured data were measured using a 6-point Likert scale, as such the expected mean was set at a level of 3.00. The significance level was set at the conventional $\alpha = 0.05$. The results are shown in Table 3 below.

Table 3: Descriptive statistics

| | N | Means | SD | t-value | p-value | Skewness | Kurtosis |
|----------------------|-----|-------|------|---------|---------|----------|----------|
| Subjective norms | 492 | 4.74 | 0.98 | 108.21 | 0.000 | -0.97 | 1.25 |
| Health consciousness | 492 | 4.74 | 1.01 | 103.34 | 0.000 | -0.89 | 0.77 |
| Purchase intention | 492 | 4.73 | 0.98 | 107.52 | 0.000 | -1.04 | 1.85 |
| Purchase behaviour | 492 | 4.40 | 1.05 | 92.51 | 0.000 | -0.73 | 0.36 |

p-value: two-tailed significance

As Table 3 shows, measuring constructs achieved a mean greater than that of 3.00 and each construct's mean was statistically significant at the $p \leq 0.05$ level. These results imply that Generation Y consumers heed the opinions of their peers in a significant manner. Moreover, these consumers are health conscious in terms of the type of food they purchase. In terms of Generation Y consumers' organic food purchase intentions and behaviour it can be noted that these individuals display both positive future intentions and purchase behaviour towards organically grown products.

The data sets distribution or normality fell within the recommended range of -2 and +2 for skewness, as well as between -7 and +7 for kurtosis (Kalkbrenner, 2022; Berndt & Petzer, 2011). As such, there were causes of concern regarding the data's distribution.

4.3 Correlations analysis

To determine if any relationships were present between the measuring construct's variables, a Pearson's product-moment coefficient was conducted. The relationship strengths were identified using the average means, which ranged from 0 to 1. Identification of strength included a Pearson value (r) of $r \geq .50$, which represents a strong associating relationship, $r \geq .30$, which indicates a fair relationship and $r \geq .10$ which infers a weak relationship between construct variables (Pallant, 2016:150; Pallant, 2013:139). The correlation matrix is displayed in Table 4.

Table 4: Correlation matrix

| Constructs | 1 | 2 | 3 | 4 |
|----------------------|---------|---------|---------|---|
| Subjective norms | 1 | | | |
| Health consciousness | .553**S | 1 | | |
| Purchase intention | .534**S | .659**S | 1 | |
| Purchase behaviour | .582**S | .678**S | .782**S | 1 |

**Correlation is significant at the 0.01 level (2-tailed)

W = Weak relationship; M = Moderate relationship; S = Strong relationship

The results in Table 4 show that all construct variables had a statistically significant positive relationship amongst each other. Furthermore, each variable relationship was a strong associated relationship as all Pearson coefficients exceeded 0.50 ($r \geq .50$). The weakest yet still strong relationships were between subjective norms and purchase intention ($r = 0.534$, $p = 0.000 < 0.01$),

health consciousness ($r = 0.553$, $p = 0.000 < 0.01$) and purchase behaviour ($r = 0.582$, $p = 0.000 < 0.01$). The strongest associated relationship was found between purchase intention and purchase behaviour ($r = 0.782$, $p = 0.000 < 0.01$). This association is to be expected as these constructs are closely related in the literature (Greaves *et al.*, 2013:111; Kim *et al.*, 2013:258; Chan & Bishop, 2013:96; Mostafa, 2007:448). The results indicate that Generation Y consumers' organic product buying behaviours are favourable and these consumers show a strong affection to their peers acknowledging a healthier lifestyle. This is evident by the showcase of the strong relationships between the independent construct variables and the dependent variable purchase behaviour.

No concerns for multicollinearity were present as none of the correlation coefficients exceeded 0.90. Furthermore, each pair of latent factors displayed a significant correlation at the 0.01 level, this implies that the data has nomological validity (Malhotra, 2010:321).

4.4 Regression analysis

A regression analysis was employed to determine how much predictability the factors of subjective norms, health consciousness and purchase intentions of organic products have towards organic product purchase behaviour. The regression analysis results are presented in Table 5.

Table 5: Regression analysis

| | Standardised Beta | Adjusted R ² | t-value | Significance level |
|---|-------------------|-------------------------|---------|--------------------|
| Dependent variable: Purchase behaviour | | | | |
| Independent variables: | | | | |
| Subjective norms | 0.166 | | 5.168 | 0.000* |
| Health consciousness | 0.288 | | 6.327 | 0.000* |
| Purchase intentions | 0.543 | 0.674 | 15.267 | 0.000* |

*Significance at the 0.05 level (2-tailed)

As Table 5 depicts, Generation Y consumers' purchase behaviour is significantly positively influenced by subjective norms ($\beta = 0.166$, $p = 0.000 < 0.05$), health consciousness ($\beta = 0.288$, $p = 0.000 < 0.05$) and purchase intentions ($\beta = 0.543$, $p = 0.000 < 0.05$). It is noteworthy to point out that purchase intentions had the largest contributing effect to purchase behaviour with a β value 0.543, these results are prevalent within current literature (Greaves *et al.*, 2013:111; Kim *et al.*, 2013:258; Chan & Bishop, 2013:96; Mostafa, 2007:448). The three independent variables together explained 67 percent of the variance in purchase behaviour. As such, it is evident that the independent factors successfully predict Generation Y consumer organic product purchase behaviour.

4.5 Independent samples t-test

Environmental issues are often prone to gender bias, that being females are generally considered to be the more environmentally concerned gender. This sentiment echoes as females are often associated with doing household food purchases, such as organic food purchases. Therefore, to determine if there were gender differences present in Generation Y consumers' organic food purchases, an independent samples t-test was implemented on the data set. The results can be found in Table 6.

Table 6: Gender difference

| Constructs | Gender differences | | | | t- value | p-value | Cohen's d | |
|----------------------|----------------------------|--------------|------------|----------------|----------|---------|-----------|--------------|
| | Male n=241 Female n=249 | Male Mean | Male SD | Female Mean | | | | Female SD |
| Subjective norms | | 4.751 | 0.973 | 4.733 | 0.973 | 0.198 | 0.757 | ***** |
| Health consciousness | | 4.755 | 1.048 | 4.730 | 0.989 | 0.263 | 0.479 | ***** |
| Purchase intention | | 4.673 | 1.037 | 4.800 | 0.916 | -1.437 | 0.160 | ***** |
| Purchase behaviour | | 4.461 | 1.057 | 4.336 | 1.053 | 1.313 | 0.744 | ***** |

* Statistically significant at $p < 0.05$
 ** Small effect, practically non-significant
 *** Medium effect and moving towards practical significance
 **** Large effect, practically significant
 ***** Cohen's d statistic not calculated as the variable was not statistically significant

Table 6 shows that there were no statistical differences between male and female respondents for all the constructs, as each construct's p-value was greater than 0.05. As a result, there was no need to calculate Cohen's d statistic. These results are indicative that both male and female Generation Y consumers view the same level of importance with regard to organic food products.

5. CONCLUSION

The physical well-being of the environment will continue to have a profound effect on future consumers' purchase patterns and views. Environmental concern experienced by consumers support this fact, regardless of the motive of change in purchase behaviour. As environmental problems are generally complex and large-scaled problems, including climate change, fuel emissions, forest degradation and the like, the easiest way for consumers to make a change/difference would be to purchase environmentally friendly products on a small scale. Furthermore, these purchases serve a double purpose, one is the physical well-being of the environment and two is the health benefits for the consumer. As such, the organic food market has become an industry to take note of, especially among the youth of South Africa. Currently, the Generation Y cohort holds major economic control, their social needs for a better, cleaner, "greener" lifestyle will shape the future direction of consumerism. Therefore, it is imperative to understand what factors drive this cohort in terms of their food purchase decisions.

This study showcases the blatant concern the Generation Y cohort has towards consuming organic products. Their social status, opinions of loved ones and health concerns over their food purchases are prevalent in the South African market. Therefore, it may be concluded that this generation displays a positive intent to not only purchase organic foods but also adopt a healthier lifestyle for themselves and future generations. Consequently, the organic food market in South Africa must consider expanding the current organic market offerings. Similarly, food producers must reconsider their own business practices in terms of where they source and how they source their food products in order to capture this new eco-friendly market.

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THE RELATIONSHIP BETWEEN ORGANISATIONAL CULTURE AND AFFECTIVE COMMITMENT WITHIN AN AGRICULTURAL ORGANISATION

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ABSTRACT

The South African agricultural sector is vital to the economy and the overall welfare of the country. The primary agricultural sector, as a consequence, must function effectively and efficiently. Private agricultural retail organisations are indispensable, especially in many of our predominantly rural areas. However, the importance of these organisations does not preclude them from adverse employee behaviour. Thus, this study investigated organisational culture to help come to an understanding of how it can contribute to Organisational Commitment in enhancing the contributions of organisations to the economy. Information was obtained by means of a questionnaire developed to measure organisational culture and affective commitment dimensions. The questionnaire was applied in a cross-sectional survey to a sample of 277 employees of a private agricultural retail organisation. The study aimed to determine whether cultural dimensions can predict Affective Organisational Commitment (which contributes to the overall Organisational Commitment of staff). Cultural dimensions such as Coordination, Growth and involvement, and Autonomy were identified to have contributed to adverse employee behaviour. Moreover, these respective cultural dimensions contributed significantly to the prediction of Affective Commitment. This study contributes to the contextual knowledge regarding the relationships between organisational culture and affective commitment. Furthermore, effective human resource management practices increased staff commitment, specifically through affective commitment in (agricultural retail) organisations. It would thus be prudent for agricultural organisations to develop and adapt their human resource management processes to enhance relevant dimensions of organisational culture such as Coordination, Growth and Involvement, and Autonomy, which showed viability in predicting affective organisational commitment.

1. INTRODUCTION

Organisational culture significantly impacts employee retention; as such, the analysis and its effect on employees' Organisational Commitment are of utmost importance (Wentong et al., 2021:10-11; Anitha & Begum, 2016). The resource management model explains how the effective management of organisational human and other resources contributes to the collective organisational commitment of employees and ultimately enhances the organisation's performance (Aboramadan et al., 2019:165; Barrick et al., 2015). Thus, employees need to be conscious of the fact that they are contractually obliged to meet organisational goals once employed by an organisation. Employees, similarly, usually harbour certain expectations towards the organisation

itself. For this reason, organisations should clarify what they expect and concomitantly determine what employees expect.

Expectancy theory states that individuals are more motivated when their expectations are met (Baciu, 2017:147; Greenberg & Baron, 2003). These expected returns may relate to an individual's needs, as is evident from Abraham Maslow's needs hierarchy (Baciu, 2017:147; Bratton et al., 2005) which illuminates the variety of interrelated needs: Sustenance, safety, belonging, affection, and personal growth. Some of these needs can be met (and employees can be motivated) through remuneration, but others cannot. Here, human resource (HR) management practices and processes can develop integrated strategies aimed at acquiring, retaining, and adequately motivating employees intrinsically and extrinsically (Miško et al., 2021:1059; Dale, 2003) that will assist the organisation in realising its goals (Habib et al., 2018:65; Seunghoo et al., 2017:106; Greene, 2011). However, incorrectly implemented human resource strategies may contribute to failures within the organisation (Ogbonnaya & Messersmith, 2019:512; Watty-Benjamin & Udechukwu, 2014; Gurbuz & Mert, 2011). A thorough analysis and understanding of the HR practices are therefore vital. These practices may influence staff commitment (Roper, 2011; Rowley & Jackson, 2011) or contribute to staff turnover (Hans, 2021:382; Allen et al., 2010).

Extensive research regarding the associations between HR activities and organisational commitment exists. Numerous scholars (Hans, 2021:382; Steyn et al., 2017; Bashir & Long, 2015; Coetzee et al., 2014; Renaud et al., 2014; Nujjoo & Meyer, 2012; Yang, 2010) have identified positive links between effective HR practices such as high-involvement and capability development practices which includes training and fair rewards (specifically intrinsic reward) and Affective Commitment to the organisation. Furthermore, managerial actions, job characteristics, and facets of compensation are aspects that members of organisations interpret (Ashkanasy et al., 2011). Whether negative or positive, these interpretations may influence employee behaviour. Thus, when analogous interpretations of human resource management and other managerial practices implemented within the different organisational groups are made, the dimensions of organisational culture are shaped (Abdullah et al., 2022:8).

Research regarding organisational culture and affective commitment within agricultural organisations seems to be limited. International scholars (Patricia et al., 2017:170; Howell et al., 2012) found that organisational values play an essential role in affective commitment outcomes. Local evidence indicates that employees remain committed to the organisation when they are satisfied with their jobs (Mafini & Dlodlo, 2014). Moreover, Lee et al. (2018:1195) and Manetje and Martins (2009) indicated that organisational culture influences affective organisational commitment. According to Tashtoush and Eyupoglu (2020:2) and Fisher (2014:724), emotional reactions to work practices may influence employee behaviour. Therefore, an organisation can positively influence employee retention, increase productive behaviour, and enhance well-being through affective commitment (Samuel & Engelbrecht, 2021:7; Manetje & Martins, 2009:109). Employee well-being can thus aid in staff retention and lower staff turnover, which is a net positive for an organisation.

Staff retention is a critical component of a successful organisation as there are consequences of a high staff turnover such as loss of skills and experience, a decrease in competitiveness, and extra recruitment expenses (Barnard et al., 2012; Allen et al., 2010; Local Government Sector Education and Training Authority [LGSETA], 2019:54). These factors may threaten the long-term existence

and profitability of the organisation. According to Mashile et al. (2021: 391) and Neelam et al. (2013), one of the main reasons for high staff turnover is the inability of employees to tolerate the prevailing organisational culture.

This study attempts to determine whether correlations exist between organisational culture and affective commitment within the agricultural organisation. This is to determine whether such dimensions of culture could be used to predict organisational commitment. Moreover, the present study does not focus on identifying the elements of culture or on diagnosing the types of culture that exist, as extensive research has been conducted by scholars such as Abbaspour and Noghreh (2015), Denison et al. (2014), Dwivedi et al. (2013), Asmawi and Mohan (2011) and Lok et al. (2005). Instead, the study will attempt to identify the weaknesses within an organisational culture that contribute to lower staff commitment levels and higher staff turnover and it furthermore analyses organisational culture and affective commitment to provide possible reasons for high staff turnover.

2. LITERATURE REVIEW

2.1 Conceptual framework

Organisational culture and cultural dimensions

In the extant literature, key elements defining organisational culture include uniform moral values, customs, principles, and behaviours that establish a general background for all deeds and thoughts within the organisation (Liu et al., 2022:4; Jain, 2015:2; Asmawi & Mohan, 2011; Mullins, 2010; Keyton, 2005). It is a spontaneous, shared approach to identifying what unites and influences how employees self-reflect (Wagner & Hollenbeck, 2005). According to Alverson (cited by Ashkanasy et al., 2011), the type of culture that exists within an organisation should: reflect mutual views, symbols, and beliefs within the group; provide simple rules and beliefs to which its employees are devoted; and direct employees on how feelings and affections ought to be communicated. Therefore, the organisational culture within the present study will be viewed as “principles and behaviours that establish a general background for all deeds and thoughts within the organisation that influence how employees self-reflect” (Asmawi & Mohan, 2011). This study will explore the organisation’s expectations of employee behaviour and how these expectations influence how employees self-reflect. According to Mashile et al. (2021:386), if an organisation’s expectations make an employee feel undervalued, it might contribute to the employee’s negative interpretations, resulting in less commitment and even resignation. The agricultural organisation that participated in this study experienced negative employee behaviour and high turnover, highlighting the importance of and need to understand the reasons for such outcomes.

Cultural dimensions and affective commitment

The most common dimensions of organisational culture (which have been isolated in various previous studies) were considered for analysis. Originally eight of these dimensions, as identified in a study by Dwivedi et al. (2013), were considered. However, after exploratory factor analysis, only three were deemed viable.

Coordination: Wendry et al. (2022:2) and Denison et al. (2014) defined coordination as the collective effort of diverse operations and divisions within an organisation to accomplish shared

objectives. According to Asmawi and Mohan (2011), coordination entails the involvement of different organisational divisions to direct cooperation. Quinn and Worline (cited by Cameron & Spreitzer, 2012) concluded that there is a relation between coordination and shared cultural identity among individuals in an organisation.

Growth and involvement: Denison et al. (2014) referred to growth and involvement as the continuous commitment of organisations to improving their employees' capabilities to remain competitive and the individual's engagement with organisational staff. By engaging employees, organisations can assist individuals with personal growth. Employees become involved when requested to improve the organisation's strategy and decision-making (Asmawi & Mohan, 2011). Thus, the management of employees can be facilitated through involvement (Neelam et al., 2013), and involvement can revive their commitment to the organisation (Imran & Ismail, 2022:3382; Kraus, 2014). Furthermore, Singh and Gupta (2015) stated that individuals with high levels of participation in their occupations become emotionally attached to the organisation.

Autonomy: According to Dwivedi et al. (2013), an experience of autonomy means that employees feel a sense of independence to function in their domain. This will enhance their enthusiasm for their duties and encourage them to fearlessly exercise their authority while assisting others to do the same. Autonomy may reduce the pressure employees experience in the working environment (Havermans et al., 2017:2) and revive or lead to staff commitment (Kraus, 2014; Sekhar, 2011). Neelam et al. (2015) indicated that the cultural element of perceived autonomy impacts an employee's level of emotional attachment to the organisation.

The implications of the Affective Commitment outcome

There are different ways in which staff members may manifest or demonstrate their commitment to an organisation. When employees are normatively committed to the organisation, they work for it because they feel ethically obliged to do so (Usman et al., 2021:209; Choo et al., 2016; Dwivedi et al., 2013). In terms of continuance commitment, employees continue working for an organisation because they consider the cost of resigning too high (Usman et al., 2021:209; Dwivedi et al., 2013; O'Driscoll & Randall, 1999). However, organisations should strive for affective commitment as employees remain at organisations when they are passionate about their jobs (Usman et al., 2021:209; Dwivedi et al., 2013; Pierro et al., 2013; Simintiras et al., 2012; O'Driscoll & Randall, 1999). Irrespective of any prevailing conditions, this commitment will make the organisation emotionally difficult to leave or neglect (Usman et al., 2021:209). However, if employees feel emotionally drained, their level of commitment might be low, increasing their intention to resign (Ladebo, 2009). Human resource management (HRM) practices that accommodate employees' values might contribute to a higher emotional commitment from employees (Mullins, 2010). According to Greenberg and Baron (2003), it is unlikely that dedicated employees will resign from an organisation. Hence, in the present study, the hypothesis is that there is a relationship between cultural dimensions and affective commitment. Furthermore, the degree of affective commitment will indicate employees' intentions of resigning, as elements of organisational commitment were the most accurate predictors of intention to resign (Allen et al., 2010).

3. METHODOLOGY

3.1 Research design

The agricultural organisation used in this study initially operated as a single venture for most of its existence. However, it transitioned and became part of a cooperative society. In such societies, various organisations join forces in owning and managing an organisation for a common goal, which is most often monetary, social, and ethos gains (Anonymous, 2016). As the newly joined team of managers may possess different skills, this type of society may also give rise to challenges such as a deficiency in managerial skills (e.g., interactive human skills) (Anonymous, 2016), which in its turn may discourage good performance and synergy amongst employees. Therefore, it was important for this study to identify the challenges that employees face that may be management specific. This required that the biographical information of respondents, HRM practices, and outcomes be analysed and compared as some of the information obtained and the existing research may also be sector specific. The differences exist in employee information and its role in terms of what employees value and expect. In order to measure the various relevant variables related to these concepts, participants completed a questionnaire in a cross-sectional survey; thus, a quantitative research approach was followed.

3.2 Sampling method

The study was conducted in a private organisation comprising six business units (abattoirs, agricultural products trade, building material trade, consultation and administration, motor vehicle trade, and petroleum trade) distributed throughout one of the South African provinces. The population was clustered in regional areas, and the clusters were selected to represent the six business units. A sample of 277 participants was drawn from a population of 760 staff members (i.e., a 36% sample – see Table 1), and the business units were also adequately represented by similar percentages (see Table 1). This sample should represent the population adequately in terms of a rule of thumb (a 30% sample from a relatively small population) noted by Terre Blanche et al. (2006).

3.3 Research instrument

The initial instrument was developed for a broader study. The full version of the questionnaire consisted of Sections A-E (see Borchardt, 2016; Annexure A). The sections important to this article include a questionnaire to elicit responses regarding biographical details in Section A (Table 1). Section B (Borchardt, 2016) was developed with questions regarding HRM practices implemented by managers relative to the 8 OCTOPACE dimensions of culture (Dwivedi et al., 2013). Section D contained questions to determine the affective levels of Commitment (Greenberg & Baron, 2003). Five-point Likert-type interval scales (strongly disagree to neutral to strongly agree) were used in Sections B and D. All subscale items were phrased positively to facilitate comprehension for respondents with low levels of schooling. To this end, items were also translated from English into the home language of the majority of respondents.

3.4 Data collection

A questionnaire was developed to measure the variables as indicated above. Examples of the questions for the amended questionnaire can be found in Appendix A. Consent to survey employees was obtained from top management, who informed all staff members. A letter to

explain the research project’s purpose was sent to the different business units. Regional clusters were identified to represent the population of staff members, suitable venues were booked, and the individuals were informed by their business unit management when and where to present themselves to participate in the survey. Participants were assured that their participation was voluntary, that their anonymity was assured, and that the data gathered would be confidential. To this end, each participant was invited to sign a consent form. Printed versions of the questionnaires were presented to participants during the group sessions to complete individually, and the researcher and an assistant attended to queries. The researcher obtained ethical clearance from the Ethical Committee of the North-West University to conduct the study.

3.5 Data analysis

Data analysis was conducted using SPSS for Windows. Data was tested using factor analysis and tested for validity and reliability. Moreover, descriptive analytics were conducted as well as regression analysis.

4. RESULTS AND DISCUSSION

4.1 Results

Demographic analysis

Demographic analysis was conducted, testing for age, qualifications, position, tenure, and business unit. The following table shows the findings of the demographic analysis, followed by a discussion of the data presented in Table 1.

Table 1: Demographic characteristics of participants

| Variables | Characteristics | Frequency | Percentage |
|-----------------------------------|---------------------------|-----------|------------|
| Age groups | 16 – 27 | 85 | 30.7 |
| | 28 – 37 | 79 | 28.5 |
| | 38 – 47 | 65 | 23.4 |
| | 48 – 57 | 33 | 12 |
| | 58 – 67 | 13 | 4.7 |
| | Missing | 2 | 0.7 |
| Qualification levels | No schooling | 5 | 1.8 |
| | Primary school | 33 | 12 |
| | Secondary school | 200 | 73 |
| | College credit, no degree | 22 | 8 |
| | University degrees | 13 | 4.7 |
| | Missing | 4 | 1.4 |
| Positions | Intern/casual | 4 | 1.5 |
| | Entry-level/permanent | 243 | 89 |
| | First-line management | 15 | 5.5 |
| | Middle management | 11 | 4 |
| | Top Management | 0 | 0 |
| | Missing | 4 | 1.4 |
| Tenure in current position | < 1 month | 1 | 0.4 |
| | 1 – 6 months | 43 | 15.5 |
| | 7 – 12 months | 45 | 16.2 |
| | 1 – 2 years | 56 | 20.2 |
| | 2 – 4 years | 53 | 19.1 |
| | 4 – 7 years | 28 | 10.1 |
| | 7 – 10 years | 15 | 5.4 |
| | 10 – 20 years | 22 | 7.9 |
| | > 20 years | 8 | 2.9 |
| | Missing | 5 | 1.8 |

| Variables | Characteristics | Frequency | Percentage |
|----------------|------------------------------|-----------|------------|
| Business units | Abattoirs | 40 | 36 |
| | Agricultural products | 111 | 38 |
| | Building materials | 30 | 35 |
| | Consultation, administration | 16 | 36 |
| | Motor vehicle trade | 31 | 36 |
| | Petroleum trade | 50 | 35 |

N = 277

The mean age of participants was 35 years (SD = 11.5; Median = 34), and 85 participants (30.7%) and 79 participants (28.5%) were from the 16 – 27 and 28 – 37 age groups, respectively (see Table 1). The relatively high percentage of employees (52.3%) who have been in their current position less than two years (see Table 1) attested to the high staff turnover rate experienced by the organisation.

It is also evident from Table 1 that most of the participants (86%) received secondary, primary or no schooling. Furthermore, very few participants (9%) were managerial staff (top management did not participate in the study), while most (89%) were entry-level/permanent non-managerial staff (see Table 1).

Factor analysis

To investigate the construct validity of the subscales, an exploratory factor analysis (EFA) was conducted through a principal component analysis with varimax rotation to facilitate the identification and interpretation of factors (see Field, 2009).

TABLE 2: Number of items, range of factor loadings

| Subscales | Items | Range factor loadings |
|----------------------|-------|-----------------------|
| Autonomy | 5 | 0.563 – 0.737 |
| Coordination | 6 | 0.458 – 0.703 |
| Growth & Involvement | 7 | 0.604 – 0.710 |
| Affective Commitment | 5 | 0.699 – 0.784 |

N = 277

A Kaiser-Meyer-Olkin (KMO) measure = 0.616 verified the sampling adequacy as “mediocre” but acceptable (KMO > 0.5) (Field, 2005), and Bartlett’s test of sphericity with $\chi^2(277) = 0.622$ $p = 0.00$ indicated that the correlations among items were high enough for the EFA (Field, 2005). Kaiser’s criterion of eigenvalues > 1 was used to identify 18 factors (Table 2). The relatively high factor loadings (all > or close to 0.5) of the different subscales and items measuring them (Table 2) attested to the construct validity of the subscales. Three dimensions of culture were identified: autonomy, cooperation, and growth and involvement. Subscale items with factor loadings higher than 0.40 were considered for interpretation in the study (Wiid & Diggins, 2013). From Table 2, the respective factor loadings provide sufficient evidence of the construct validity (Clow & James, 2014) of the relevant subscales. Similarly, the construct validity of the affective = commitment subscale was investigated, and the factor loadings of the five identified subscale items ranged from 0.699 to 0.784 (see Table 2), supporting the construct validity of this subscale.

4.2 Descriptive statistics

The following table shows the mean, standard deviation, skewness and Cronbach’s alpha for the variable’s autonomy, Coordination, growth and involvement, and affective commitment.

TABLE 3: Descriptive statistics for the subscales of three dimensions of Culture – Autonomy, Coordination, and Growth and Involvement

| Statistics | Mean | Standard deviation | Skewness | Cronbach's α |
|----------------------|-------|--------------------|----------|---------------------|
| Autonomy | 3.130 | 1.080 | -0.310 | 0.800 |
| Coordination | 3.760 | 0.980 | -0.600 | 0.830 |
| Growth & Involvement | 3.590 | 1.050 | -0.580 | 0.860 |
| Affective commitment | 3.260 | 1.220 | -0.300 | 0.910 |

N = 272

Autonomy

The mean of 3.13 (SD = 1.08) of the Autonomy scale falls in the 'neutral' category (ranging from 2.5 to 3.49) of the 5-point Likert scale, and the skewness = -0.31 indicates a slight build-up of values greater than the mean in the upper tail of the distribution. Sufficient Cronbach's alpha was achieved at 0.800.

Coordination

The mean of 3.76 (SD = 0.98) of the Coordination scale falls in the 'agree' category (ranging from 3.5 to 4.49) of the 5-point Likert scale, and the skewness = -0.60 indicates a slight build-up of values greater than the mean in the upper tail of the distribution. Sufficient Cronbach's alpha was achieved at 0.830.

Growth and Involvement

The mean of 3.59 (SD = 1.05) of the Growth and Involvement scale falls in the 'agree' category (ranging from 3.5 to 4.49) of the 5-point Likert scale, and the skewness = -0.58 indicates a slight build-up of values greater than the mean in the upper tail of the distribution. Sufficient Cronbach's alpha was achieved at 0.910.

Affective Commitment

The mean of 3.26 (SD = 1.22) of the Affective Commitment scale falls in the 'neutral' category (ranging from 2.5 to 3.49) of the 5-point Likert scale, and the skewness = -0.30 indicates a slight build-up of values greater than the mean in the upper tail of the distribution. Sufficient Cronbach's alpha was achieved at 0.800.

Predicting Affective Commitment based on cultural dimensions Autonomy, Coordination, and Growth and Involvement

A stepwise multiple regression analysis was conducted to determine whether the predictor variables (Autonomy, Coordination, and Growth and Involvement) could be used to predict the outcome/dependent variable, Affective Commitment.

TABLE 4: Regression model summary: Predicting Affective Commitment based on Autonomy, Coordination, and Growth and Involvement

| Model | R | R ² | R ² adj. | Std Error Est | Change statistics | | | | Durbin-Watson |
|----------------|-----|----------------|---------------------|---------------|-------------------|--------|---------|------|---------------|
| | | | | | R ² | F | Df: 1:2 | P | |
| 1 ^a | .61 | .38 | .37 | 4.85 | .38 | 163.81 | 1;273 | .00 | |
| 2 ^b | .65 | .42 | .41 | .41 | .04 | 19.13 | 1;272 | .00 | 2.04 |
| 3 ^c | .66 | .43 | .43 | .43 | .02 | 8.64 | 1;271 | .004 | |

a. Predictors: (constant), Coordination

b. Predictors: (constant), Coordination, Growth and involvement

- c. Predictors: (constant), Coordination, Growth and Involvement, Autonomy
- d. Dependent variable: Affective Commitment

From the regression model summary in Table 5, the constant plus predictor variable Coordination (38%; $F(1,273) = 163.81, p = .00$), Coordination plus Growth and Involvement (42%, $F(1,272) = 19.13, p = .00$) and Coordination plus Growth and Involvement plus Autonomy (43%, $F(1,271) = 8.64, p = .004$) contribute statistically significantly (a total of 43%) to the prediction of the dependent variable, Affective Commitment.

The R^2 and adjusted R^2 in model 3 (see Table 5) do not differ; therefore, the implication is that the model can be generalised to the population and the Durbin-Watson value of 2.04 implies that residuals are independent (i.e., errors are uncorrelated).

The average variance inflation factor (VIF) of 1.67 for model 3 is well below 10, and none of the tolerance values is below 2; thus, multicollinearity is not indicated (Field, 2009:242). It is evident from the above statistics that model 3 (see Table 5) is adequate in predicting affective commitment based on predictor variables coordination, growth and involvement, and autonomy.

5. DISCUSSION

According to Neelam et al. (2013), an intolerable culture is the main reason employees resign, and according to Anitha and Begum (2016), the organisational culture has a significant impact on the retention of employees. The results show that the coordination dimension contributed 38 per cent to the prediction of affective commitment. Therefore, employees from the different divisions worked well together to reach a common goal, making them feel more committed to the organisation. The participants' mean score on coordination was 3.76, which is relatively low on a 5-point scale. This result implies room for improvement of the employees' coordination, as coordination contributes the most to their level of affective commitment. Such an improvement in coordination will, in turn, also enhance commitment to the organisation substantially and decrease staff turnover proportionately.

The research results indicate that the growth and involvement dimension contributed 4 per cent – representing the second-highest contribution – to the prediction of affective commitment. Thus, granting employees growth and involvement opportunities increase their commitment to the organisation. The participants' mean score on growth and involvement was 3.59, which is also relatively low on a 5-point scale. This result implies some room for improvement in the organisation's Growth and Involvement efforts, which will also enhance their commitment to the organisation and potentially decrease staff turnover.

The cultural dimension of autonomy contributed 2 per cent – representing a minor contribution – to the prediction of Affective Commitment. This implies that the more autonomy employees experience, the more committed they feel toward the organisation. The participants' mean score on autonomy was 3.13, which is also relatively low on a 5-point scale. This result implies that there is room for improvement of the employees' feeling of autonomy, enhancing their commitment to the organisation and decreasing staff turnover.

Overall, it is evident that the organisation implements coordination initiatives for its human resources to work towards a common goal. However, there is still room for improvement in these efforts. Furthermore, when employees achieve the organisational goals, they might have some

expectations from the organisation's management in showing that they are valued. This does not only have to be shown in monetary terms, i.e., wages or salaries. The organisation can show the employees that they are valued by providing employees with opportunities for growth and more challenging work (Usman et al., 2021:209; Erasmus et al., 2015; Strydom, 2011). Fulfilling such expectations would be beneficial to the organisation, but more so for the employees, as it would improve their experience and skills to progress in their jobs and ultimately benefit the organisation. The demographic characteristics of the participants indicate that most employees (86%) hold no tertiary qualification, which highlights the need for growth opportunities. Most have worked for the organisation for more than one year, some for up to 20 years, but very few occupy managerial positions (9%). Also, most employees are between the ages of 16 and 37 years and who can still apply for other job opportunities to meet their experience and skills needs, should the agricultural organisation not be willing or able to assist them.

6. CONCLUSIONS

The present study strengthens the existing knowledge of researchers such as Ogbonnaya and Messersmith (2019:521) regarding the influence of specific dimensions of organisational culture on employees' levels of affective commitment to the organisation. It also highlighted the weak organisational culture dimensions that need improvement, such as coordination, training and involvement and autonomy initiatives to increase employees' affective commitment. However, these results contrast with the findings of Newman and Sheikh (2012), which revealed that autonomy and development initiatives did not significantly influence affective commitment among their Chinese respondents. This may be due to the difference in the political landscape of the two countries involved, namely China as opposed to South Africa. South Africa functions under a democracy. Employees, especially those from previously disadvantaged backgrounds, may view growth opportunities and autonomous practices as enabling and valuable.

Although coordination is evident within the organisation, respondents did not fully agree on its existence. However, since it is the most prominent reason employees are affectively committed and may eventually stay, it may reduce staff turnover. The agricultural organisation can improve its coordination initiatives by ensuring that clear authority and responsibility lines exist. The organisation can reward employees by providing more growth and involvement opportunities and training and development to enrich and enhance their jobs. These training and development initiatives will lead to greater levels of affective staff commitment (Bashir & Long, 2015; Coetzee et al., 2014; Yang, 2012). Furthermore, the organisation can also allow those who underwent training more ownership of their jobs, e.g., allowing them to make minor alterations in the way they carry out their jobs and thereby enhancing their feelings of autonomy. These efforts may very well assist the organisation in increasing its employees' level of affective commitment to the organisation, which should reduce the high staff-turnover level.

The study focused solely on an agricultural organisation in one of South Africa's nine provinces; any generalisations as regards the state of the agricultural industry in the country as a whole thus require a measure of caution. Moreover, only three dimensions of culture were isolated in the study and correlated with affective commitment. Numerous other dimensions could be explored in future research, strengthening the findings. Lastly, the study did not consider any reasons why an

employee may choose to terminate their employment and likewise did not provide any information on their reasons for leaving.

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EXPLORING ENTREPRENEURSHIP MOTIVATIONAL FACTORS IN HIGHER EDUCATION SOUTH AFRICA

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ABSTRACT

The 4th Industrial Revolution is creating jobs and increasing unemployment simultaneously. Thus, Higher Education Institutions (HEIs) must demonstrate efforts to embrace and cultivate an entrepreneurial spirit among students, as they are the future of a country's prosperity. In South Africa, the entrepreneurial activity of the exiting cohort students within our HEIs is somewhat low. This creates concerns for the success of entrepreneurship development in the South African context. This study aimed to determine the factors that will motivate students at a South African Higher Education Institution (HEI) toward entrepreneurship. A self-administered questionnaire was distributed to collect the necessary and relevant data. This was done to explore the factors motivating Business Management students at a South African HEI towards entrepreneurial activity. Overall, 338 questionnaires were distributed for data collection, of which 319 questionnaires were completed and found suitable for data analysis. This effort signifies a response rate of 94 percent. The results indicated that greater business attainment, available entrepreneurial opportunities, job security, and independence were the main factors motivating Business Management students toward entrepreneurship. The findings are associated with previous research studies conducted on similar topics. The benefits of entrepreneurial activity, with specific reference to these four factors, can be highlighted by the HEI throughout the undergraduate studies of these students, and opportunities can be created for them to actively partake in entrepreneurial activities during their studies to start a business. Once they graduate, this will enable them to become job creators rather than job seekers. This specific HEI needs to reconsider the strategies for creating awareness of entrepreneurship as a career option. Furthermore, it is imperative to create ample opportunities for students to purposefully develop the skill to identify viable entrepreneurial opportunities, act on these opportunities, and manage the successful implementation of these opportunities within the South African context.

Keywords: Motivations; entrepreneurs; business management; students; South Africa

1. INTRODUCTION

It is an unquestionable fact that entrepreneurship contributes significantly to the economic growth of any country. This is evident in the well-documented literature on entrepreneurship and its importance (Matho and McDowell 2018; Örnek and Danyal 2015; Peng, Lu, and Kang 2012; West 2012; Kaushik 2013; Toma, Gregore, and Marinescu 2014; Khosla 2015). Entrepreneurship is considered a practice of constructing and capturing value for entrepreneurs that will ultimately underwrite economic and social prosperity in a country (Peng, Lu, and Kang 2012). Consequently, entrepreneurship has become an essential driver for job creation and achieving wealth among

individuals within a particular context (Barba-Sánchez and Atienza-Sahuquillo 2018). The global economic crisis in recent years has caused startlingly high unemployment rates (Barba-Sánchez and Atienza-Sahuquillo 2018). However, because there has been an intensification in creating awareness of entrepreneurship and the significant impact entrepreneurs have on economic development, policymakers now appreciate the importance of creating and endorsing a conducive entrepreneurial environment (Matho and McDowell, 2018; Ho et al., 2018).

Furthermore, it has also become apparent that many youths are interested in becoming entrepreneurs (Matho and McDowell 2018; Schøtt, Kew, and Cherangi 2015). Suppose the aim is to utilize entrepreneurship to its full potential in contributing to economic growth. In that case, it is of utmost importance to realize that the promotion of entrepreneurship exceeds efforts to assist and support entrepreneurs and business owners, but even more so to embrace and cultivate an entrepreneurial spirit among the youth in a country, as they will produce the upsurge of enterprises in the near future (Ho et al. 2018).

The Global Entrepreneurship Monitor highlights that South Africa exhibits low levels of business activity among all demographic groups and ages within their society (Herrington, Kew, and Mwanga 2017). However, a promising outcome of recent research found that the proportion of South African entrepreneurs with education at a tertiary level has progressively increased over the last couple of years (Herrington, Kew, and Mwanga 2017). Thus, the assumption can be made that education and training contribute significantly to management knowledge and the development of essential skills and behaviors of entrepreneurs (Paço et al., 2013). Because graduates will enter an environment functioning within the 4th Industrial Revolution, it is even more critical for HEIs to capitalise on opportunities to develop entrepreneurial intent and behaviour among students.

2. PROBLEM STATEMENT AND OBJECTIVES

When considering the fact that the 4th Industrial Revolution (4IR) is a significant role player in the business world, Higher Education Institutions must ask the question: *Are graduates prepared for the future as the 4IR is changing lives and economies rapidly?*

It is general knowledge that the 4IR is not only changing everyday lives, but it also changes how business is done. The 4IR implies an interchangeable relationship between individuals in the labour market, the business, and emerging technologies that remains inseparable from the 4IR. Thus, for graduates to endure this context and compete with these changes, academic knowledge is not adequate (Teng et al. 2019). Foo and Turner (2019) state that HEIs have an immense responsibility to ensure that graduates are equipped with the necessary skills and knowledge to function in and adapt to changes within the 4IR context. However, even though it is imperative to instill soft skills to ensure employable graduates, the high unemployment rate within the South African context remains a concern. Thus, HEI plays a vital role in preparing students as graduates within the 4IR but also equipping these students to become entrepreneurs actively seeking entrepreneurial opportunities in this specific context.

Students face numerous challenges within a uniquely South African context and now also need to consider the impact and effects of the 4IR. The 4IR simultaneously creates jobs and contributes to unemployment through technology's increased influence (Teng et al. 2019). Thus, students are increasingly confronted with the option of becoming job seekers or job creators. If HEIs can effectively identify the factors that motivate students toward entrepreneurial activity, they can

actively develop strategies for graduate job creators. The primary objective of this study was to explore the factors which motivate Generation Y students at a South African HEI toward entrepreneurial activity.

3. LITERATURE REVIEW

It is unmistakable that entrepreneurship is considered a fundamental instrument for economic growth and, even more so, development (Matho and McDowell 2018; Örnek and Danyal 2015; Peng et al. 2012; West 2012; Kaushik 2013; Toma et al. 2014; Khosla 2015; Balaraman et al. 2016). The Global Entrepreneurship Monitor stipulates that entrepreneurs contribute on at least three levels in their societies: job creation, employment, and well-being (Bosma and Kelley 2019). Furthermore, when considering the total entrepreneurial activity (TEA) rates (where the percentage of the adult populace that is progressing towards starting a new business or who have started a business in the previous three years is measured), the highest rate in 2018 was found in Angola (41%) which is regarded a low-income economy (Bosma and Kelley 2019).

Recent research also found that the primary age group of entrepreneurs ranged between 25-34 and 35-44. These entrepreneurs possibly have tertiary education and have the advantage of some work experience (Bosma and Kelley 2019). Even though this might be the case, high rates of entrepreneurship among youth (people between the ages of 18-24) were also apparent. Bosma and Kelley (2019) state that the fact that youth have the energy and motivation to become entrepreneurs, are encouraged by peers, and operates in an environment that reveals entrepreneurial prosperity, might underwrite this finding

3.1 Entrepreneurship in the South African Context

South Africa is considered an efficiency-driven economy, with a significant escalation in the number of individuals who have viewed entrepreneurship as a rewarding career choice since 2010 (Herrington et al. 2017). South African society indicated high measurement levels concerning entrepreneurship as a good career choice, high status to successful entrepreneurs, and the media attention entrepreneurship receives, representing a strongly affirmative societal attitude towards entrepreneurship (Herrington et al. 2017). However, granting the positive societal attitude towards entrepreneurship in South Africa, the Global Entrepreneurship Monitor found a persistent tendency of low entrepreneurial intention is still present (with entrepreneurial intention decreasing by more than one-third compared to 2013), which creates matters of great concern (Herrington et al. 2017). The concern is linked to the fact that entrepreneurship is seen as a driver of job creation and decreasing unemployment, but in the case of South Africa, the actual entrepreneurial intention is declining; thus the opportunity to contribute to economic prosperity through entrepreneurship is not optimally utilised. Furthermore, the GEM report also states that early-stage entrepreneurial activity proves to be somewhat low among the Generation Y cohort (individuals aged between 18-24 years), which adds to the concerns experienced for the success of entrepreneurship development in the South African context.

Unemployment rates within this cohort have increased from 32.7 % in 2008 to 36.1% in 2011 and were measured at 38.2% in 2018 (Herrington et al. 2017; Stats SA 2018). It is imperative to realise that the potential human resources and talents that individuals in the Generation Y cohort exhibit are currently underutilised and that it will have an undesirable influence on the future growth

prospects of South African society if it is not addressed (Herrington et al. 2017). Thus, after carefully considering those mentioned earlier, it is crucial to determine the factors motivating youth to engage in entrepreneurial activity to ensure a positive contribution to economic development and prosperity within the South African context.

3.2 Motivations for entrepreneurial activity and the role of Higher Education Institutions

According to Farhangmehr, Gonçalves, and Sarmento (2016), Higher Education Institutions (HEIs) specifically focus on educating students in entrepreneurship and business management, which permits them to become active participants within their regions that contribute to economic and social development. Thus, these HEIs have an imperative role in collectively developing the skills and competencies that will ultimately motivate the students towards active entrepreneurial activity (Farhangmehr, Gonçalves, and Sarmento 2016).

For HEIs to successfully contribute to an entrepreneurial culture among its students, it is essential to consider the impact of the factors that motivates them to consider entrepreneurship (Pruett et al. 2008). Pruett et al. (2008) have identified money status, lifestyle (free time), independence, creativity (sense of personal creative accomplishments), and equity-opportunity (resolving concerns about career, satisfaction, and fairness) as factors that motivate students to become entrepreneurs. Furthermore, research conducted by Eijdenberg and Masurel (2013) characterised motivation into push factors and pull factors, where aspects such as recognition (respect earned from friends), drive (willingness to put forth the effort), refugee effect (awareness of high rates of unemployment), inability to find paid work (cannot find a paid job), redundancy (person lost the previous job), and necessity (starting a business to satisfy basic needs) are viewed as push factors. The need for achievement (personal commitment to succeed), locus of control (a belief that personal actions directly affect the outcome), desire for independence, passion, goal-setting, self-efficacy, risk-taking, financial success, role models, innovation, and entrepreneurial effect are considered pull factors. Stefanovic, Prokic, and Rankovic (2010) stated that greater business achievement, independence, intrinsic factors, and job security are the primary motivators for entrepreneurs. More recently, Seun et al. (2017) found that achievement motives, desire for independence, entrepreneurial passion, tangible rewards, family/friends support, identified regulations, career options, risk-taking, ability to explore, and willingness to invest (which were categorised as intrinsic and extrinsic motives) are more specific factors that motivate youth towards entrepreneurship.

Obtaining insights into the factors that will motivate students in HEIs towards entrepreneurship will ultimately assist HEIs and policymakers in developing students' necessary skills and abilities to become successful entrepreneurs within their society. Consequently, this paper aims to explore the factors that motivate students, more specifically Business Management students, as they directly gain entrepreneurship education at a specific HEI in the South African context toward entrepreneurship.

4. RESEARCH METHODOLOGY

The research aimed to provide an overview of the factors that motivate Business Management students at a South African HEI towards increased entrepreneurial intention and activity. The research is of a descriptive nature, with a single cross-sectional approach. Students registered full-

time for Business Management modules, within the Faculty of Economic and Management Sciences at a South African HEI were identified and utilized as the target population for this research study. The sample frame consisted of one campus located in the Gauteng Province. The non-probability convenience sample for the main study consisted of 338 responses. A quantitative approach was followed, and a positivist approach was embraced to ensure the researcher remained objective towards the study, data collection, and actual research.

A semi-structured, self-administered questionnaire was distributed to collect the necessary and relevant data. This was done to explore the factors motivating Business Management students at a South African HEI towards entrepreneurial activity. The applicable sections of the questionnaire collected data on respondents' opinions regarding their perception of the influence of certain factors on their motivations to become entrepreneurs. In total, 14 items were analyzed for entrepreneurial motivation. This was determined on a four-point Likert scale, where respondents had to indicate the level to which they completely disagree (1), ranging to completely agree (4), with the scale items. The four-point Likert scale with the absence of a neutral item was used to provoke commitment to either a negative or positive opinion (Croasmun & Ostrom, 2011:20). In order to determine the reliability of the constructs within the questionnaire, a pilot was conducted with a convenience sample of 56 students. After the ethical clearance was obtained, the questionnaire was distributed to the students.

Overall, 338 questionnaires were distributed for data collection, of which 319 questionnaires were completed and found suitable for data analysis. This effort signifies a response rate of 94 percent. The results indicated that the sample included both male (38.0%) and female (62.0%) participants. In order to interpret and present a demographic profile of the respondents, descriptive statistics were used. Additionally, exploratory factor analysis was used to interpret and explore the factors that motivate students to increase entrepreneurial activity. Respondents' participation in this study was entirely voluntary, and the privacy and identity of the respondents were protected by guaranteeing that no personal information, including their names, was disclosed.

4.1 Data Analysis

The data collected from the completed, useful questionnaires were captured in Microsoft Excel. Statistical Package for Social Sciences (IBM SPSS), Version 25 for Windows, was used to process and analyse the captured data. For the entire scale measuring students' motivation for entrepreneurial activity, a Cronbach Alpha value of 0.836 was computed. This exceeds the recommended value of 0.70 (Brace et al. 2012) and therefore provides evidence of internal consistency reliability. The inter-item correlation mean of 0.282 provides further proof of reliability, which is also within the recommended range of 0.15 to 0.50 (Clark and Watson, 1995). Convergent and discriminant validity of the scale measuring the motivating factors for entrepreneurial activity is thus suggested.

4.2 Results and Discussion

The following sections provide an overview of the results relating to the demographic profile, respondents' intent to become entrepreneurs, and the motivating factors for entrepreneurship identified through exploratory factor analysis.

4.2.1 Demographic Profile of Respondents

This section explains the demographical results of the items within the questionnaire. Table 1 summarises the demographic profile of the respondents (percentages).

Table 1: Demographic Profile of Respondents

| Gender | | Age | | Race | | Years of Study | |
|------------|------|------------|------|------------|------|-----------------|------|
| Item Label | % | Item Label | % | Item Label | % | Item Label | % |
| Male | 38.0 | 18 | 4.8 | African | 83.5 | 1 st | 77.4 |
| Female | 62.0 | 19 | 20.6 | Coloured | 3.0 | 2 nd | 11.3 |
| | | 20 | 28.1 | Asian | 0.6 | 3 rd | 8.5 |
| | | 21 | 20.3 | White | 12.9 | 4 th | 0.9 |
| | | 22 | 12.6 | | | Hons | 1.9 |

Source: Author's compilation

From Table 1 it is evident that the majority of the respondents were females (62.0%), 20 years of age (28.1%), and of African race (83.5%). Concerning the current year of study, most students were in their first year of study (77.4%).

4.2.2 Respondents' Intent to Start a Business

In addition to this information, respondents were also asked to indicate whether or not they plan to start their own businesses. Table 2 provides an overview of the responses recorded.

Table 2: Intent to start your own business

| Item Label | Frequency | % |
|------------|-----------|------|
| Yes | 263 | 79.7 |
| No | 67 | 20.3 |

Source: Author's own compilation

Seventy-nine percent (79.9%) of the respondents reacted positively regarding their intent. Although the more significant number of the Business Management students partaking in this research study intend to start their own business, it remains imperative for the HEIs to capitalize on the motivations that will drive their ambition to actively pursue entrepreneurial opportunities, thus engaging in increased entrepreneurial activity.

Respondents were also asked to indicate their level of agreement with the statement relating to entrepreneurship and starting their own businesses. Table 3 provides an overview of the descriptive results relating to students' responses to each statement.

Table 3: Students' level of agreement with statements relating to entrepreneurship and starting their own business

| Item | Completely disagree (%) | Disagree (%) | Agree (%) | Completely agree (%) |
|---|-------------------------|--------------|-----------|----------------------|
| Have seriously considered entrepreneurship as a highly desirable career option. | 5.1 | 16.3 | 47.0 | 31.6 |
| Have never thought of entrepreneurship as a career choice. | 36.1 | 35.5 | 20.6 | 7.9 |
| Have already begun the planning for opening a new venture. | 18.8 | 38.5 | 32.1 | 10.6 |
| Will not start a new business because it is too risky. | 40.8 | 41.7 | 14.1 | 3.4 |
| Will not start a business because of fear of failure. | 45.9 | 37.7 | 12.8 | 3.6 |
| Could easily pursue a career involving self-employment if I wanted to. | 1.8 | 18.4 | 50.6 | 29.2 |

| Item | Completely disagree (%) | Disagree (%) | Agree (%) | Completely agree (%) |
|--|-------------------------|--------------|-----------|----------------------|
| Care what my closest family/friends think about my employment decision. | 22.5 | 32.1 | 35.4 | 9.9 |
| Believe that my closest family/friends think that I should become self-employed. | 13.0 | 37.0 | 36. | 12.4 |
| Care what my lecturers think about my employment decision. | 29.0 | 36.9 | 27.5 | 6.6 |
| I am interested in business because my family/friends are in business. | 33.4 | 44.6 | 16.6 | 5.4 |

Source: Author's own compilation

From the above table (table 3), it is evident that most respondents agree that they have seriously considered entrepreneurship as a career option (78.6%). They also indicated that aspects such as risk (82.5%) and fear of failure (83.6%) would not prevent them from starting their own business. Although most respondents indicated that they have seriously considered entrepreneurship a career option, only 42.7% of respondents agreed that they have already begun planning to open a new venture.

4.2.3 Motivational factors for entrepreneurship in higher education institutions

The study's main objective was to explore the motivating factors for entrepreneurship among Business Management students at a South African HEI. An exploratory factor analysis was used to measure the aforementioned. The Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett test of sphericity were examined and used for the purpose of the analysis. This was done to determine the suitability of the principal component analysis. The Kaiser-Meyer-Olkin measure for this particular study was .891. According to Field (2009), this measure was acceptable.

Furthermore, the Bartlett test ($9 < .00001$) was also significant. Thus, reducing data through the principal component is justifiable (Pallant 2016). Four factors for the motivation of students to engage in entrepreneurial activity exist. A factor analysis with varimax rotation was performed on these four factors. This was used due to little correlation between the factors. Loadings of 0.45 were used for item inclusion, and an eigenvalue of 1 was used for factor extraction criteria, which resulted in the said four factors. The four factors were labeled as Greater Business Attainment (Factor 1), Available Entrepreneurial Opportunities (Factor 2), Job Security (Factor 3), and Independence (Factor 4). The eigenvalues for these four factors ranged from 0.785 to 5.108. For reliability analysis of the data, Cronbach's coefficients were examined for each factor, which also served as a measure of internal consistency. The value of a Cronbach Alpha should remain above 0.7 to be deemed acceptable (Field, 2009). The values of Factors 1 and 2 were above 0.7, indicating acceptable levels of internal consistency, thus, reliable. Table 4 provides an overview of the exploratory factor analysis for the motivational drivers toward entrepreneurship among Business Management students at a South African HEI.

Table 4: Factor analysis for the motivational drivers toward entrepreneurship

| Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|--|----------|----------|----------|----------|
| I want to become an independent person | 0.858 | | | |
| I want to be the creator of new ideas and innovation | 0.766 | | | |
| I want to act out the capability and skills I was taught at the University | 0.696 | | | |
| I possibly want to explore new market opportunities | 0.665 | | | |
| I have identified a gap in the market | | 0.804 | | |

| Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|--|--------------|--------------|--------------|--------------|
| I already have clients that will support my business | | 0.783 | | |
| I have a serious interest in the subject of entrepreneurship | | 0.589 | | |
| I am afraid of being unemployed | | | 0.763 | |
| I cannot find another job. | | | 0.705 | |
| I potentially want to earn a large salary | | | | 0.883 |
| I want to make my parents proud | | | | 0.717 |
| I want to be my own boss | | | | 0.642 |
| Cronbach's Alpha | 0.819 | 0.731 | 0.321 | 0.679 |
| Inter-Item Correlation Mean | 0.532 | 0.475 | 0.202 | 0.413 |
| Mean Values and Standard Deviation | 13.44 | 8.09 | 4.54 | 10.39 |

Source: Author's own compilation

For the first factor (mean value: 13.44), four items demonstrated similar characteristics according to the statistics of the analyzed data. The items labeled *Greater Business Attainment* included becoming an independent person, being the creator of new ideas, acting out capabilities and skills, and exploring new market opportunities. This was also found in research conducted by Eijdenberg and Masurel (2013), Stefanovic et al. (2010), and Seun et al. (2017).

Factor 2 produced a mean value of 8.09 and included items such as the student having identified a gap in the market, already having clients that will support their business, and having a serious interest in entrepreneurship. This factor was labeled *Availability of Entrepreneurial Opportunities*. This signifies results from Seun et al. (2017) and Stefanovic et al. (2010), which indicated that the availability of entrepreneurial opportunities would significantly impact youth entrepreneurs' readiness to start a business.

Factor 3 (Job Security) yielded a mean value of 4.54, and Factor 4 (Independence) yielded a mean value of 10.39. However, Cronbach's Alpha for these two factors was below the acceptable 0.70 and, therefore, does not prove reliable.

Thus, this specific HEI in the South African context needs to realize that students' perception of greater business attainment plays the most significant role in motivating them to engage in entrepreneurial activity. Therefore, strategies and contingency plans could be developed to equip these students with the necessary skills to generate innovative business ideas, explore and identify feasible and attractive market opportunities, and act on these newly acquired skills to become an independent and successful entrepreneur. Should students gain these skills throughout the course of their undergraduate studies, it might enable them to explore and act on entrepreneurial opportunities well before they graduate. Adding to this, the second most crucial motivational driver is the availability of entrepreneurial opportunities. Should students consider themselves adequately equipped with the skills mentioned above, they will be able to successfully identify gaps in a particular market and build on a client base that will support their business. These students are already registered for degrees in Business Management, where they will gain the skills and knowledge needed to manage a business effectively. However, if they can simultaneously gain and develop practical skills to start their own business, it would contribute to motivating them toward entrepreneurial activity. If they consider this the ultimate result, it will ensure that these students become active entrepreneurs who contribute to economic development and social prosperity within their immediate South African context. Thus, the HEI will succeed in graduating job creators rather than job seekers.

5. RECOMMENDATIONS

This specific HEI needs to reconsider the strategies for creating awareness of entrepreneurship as a career option. This might indirectly influence students' entrepreneurial activity, as they now realise the possibilities yielded by entrepreneurship as a career choice. Furthermore, it is imperative to create ample opportunities for students to purposefully develop the skill to identify viable entrepreneurial opportunities, act on them, and manage the successful implementation of these opportunities within the South African context.

The onus is also on the HEI to ensure that students understand what the 4IR entails and how it impacts the business environment. Considering the immense effect of the 4IR, it would also be critical to assist students in developing the ability to adapt to the changes (such as the use and integration of technology and the speed at which products and services are being offered) based on the impact of the 4IR as entrepreneurs, in order to remain competitive in the marketplace.

6. LIMITATIONS AND FUTURE RESEARCH

This study only focused on students at one HEI in South Africa, where Business Management modules were identified as core modules within the degrees they are registered for. The assumption can be made that these students are already inclined toward business, mainly pursuing a degree within the Faculty of Economic and Management Sciences.

However, conducting this study among students in other faculties and at other HEIs might provide valuable insights regarding whether generic strategies can be developed and implemented with a "one-size-fits-all"-approach or if HEIs should consider customised strategies to develop entrepreneurs based on a field of study and general interests.

7. CONCLUSION

This research aimed to explore the motivational drivers of entrepreneurship among South African Business Management students. Of the four factors identified, only two of these factors were deemed significant and reliable enough to motivate these Business Management students toward becoming active entrepreneurs. These two factors were identified as "Greater Business Attainment" and "Available Entrepreneurial Opportunities," and the results were similar to the finding of previous research studies (Eijdenberg and Masurel 2013; Stefanovic et al. 2010; Seun et al. 2017). This study concludes that it is not enough to focus efforts on assisting students in gaining the necessary knowledge and skill to manage a business successfully, but if the aim is to motivate these students to complete their Business Management degrees towards entrepreneurship as a career choice, education regarding and focus on skills for greater business achievement, as well as exploring and acting on available entrepreneurial opportunities should become deliberate practice not only for the student but also from the perspective of the HEI. Future research opportunities include determining whether the motivational drivers for female and male students differ. Knowledge regarding this will assist the HEI in determining the necessity of developing generic or customized strategic efforts to increase the total entrepreneurial activity among Business Management students.

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IMPACT OF REAL EXCHANGE RATE ON ECONOMIC GROWTH IN SOUTH AFRICA

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ABSTRACT

South Africa's Gross Domestic Product (GDP) has been declining over time due to a variety of economic and non-economic variables. Statistics reveal that this drop has been on a consistent downward trend since 2011, following the recovery from the global recession of 2009. However, the links between the exchange rate, inflation, and economic growth are crucial, and any ambiguity or uncertainty in the relationship signals a negative outcome. As a result, this article investigates the impact of the exchange rate on the South African economy. The VECM approach and the Johansen (1995) cointegration technique are used to analyze data from 1990 to 2016. The Johansen test is used to detect whether or not there is long-run cointegration between variables, allowing the Vector Error Correction Model to be implemented (VECM). The variables had a unit root at the level and became stationary at the first difference, according to the data. A 1% depreciation in the Real Exchange Rate (RER) reduces GDP by 14.61 percent over time, according to the data. In the short run, the exchange rate has a negative influence on GDP and inhibits economic growth. A rise in the RER can alter trade surpluses, and a depreciation of the Rand boosts exports in the short run, increasing GDP. Consequently, it will increase foreign reserves, improves employment and output, and conversely improves trade balances. Economic growth increased by approximately **0.261%** caused by a **1%** increase in Real Interest Rate [RIR]. Inflation hurts investment by creating uncertainty; it also affects the balance of payments, making exports more expensive. Our findings suggest that monetary authorities should establish a programme that will follow the prudent monetary policy while simultaneously fostering a favorable climate for economic growth. This will aid in the stabilization of the actual exchange rate and the advancement of South Africa's economy. Because the findings indicate that government expenditure has a significant impact on all variables, it is vital that government spending does not increase at an unsustainable rate if the real exchange rate scale falls in the future. Furthermore, the government's spending should be steady while also paying attention to other economic factors to an equilibrium that does not disrupt importation and other vital economic activities.

Keywords: Cointegration, Economic Growth, Exchange Rate, GDP, South Africa.

1. INTRODUCTION

Before South Africa's democratic transition in 1994, sanctions were applied. South Africa benefited from the sanctions because it was compelled to manufacture goods and services that could not be imported. Domestic markets were supplied by the manufacturing industry. South Africa's economy was closed during the apartheid era, and trade with foreign countries was minimal. Strict procedures were put in place to prevent the inflow of money into the country,

resulting in the country having little money circulating in the economy. The gravity of this consequence compelled South Africa to establish a strong banking system. For the past 25 years, the South African economy has been experiencing slow growth and stagnating prosperity. The challenge of slow growth is that population growth is more than economic growth, which leads the citizen of South Africa to become impoverished over the period. From 1994 to 1999 the first democratic government, the South African economy manifested the massive growth of Foreign Direct Investment (FDI). With the confidence of investors and the sanctions withdrawn, foreign businesses could reinvest. FDI caused a demand increase for domestic currency, which caused an upward shift in exports and international trade as sanctions were lifted. The South African economy increased by an average of 2.5% and inflation averaged 8% per year. Between 1997 and 2010, the South African economy grew at a constant rate thanks to the democratic system. This rate of development, despite its low level, was the outcome of a few macroeconomic policies adopted in South Africa, especially GEAR, ASGISA, and NGP. These macroeconomic policies have played an essential part in sustaining economic development that also actually led to a rise in the South African GDP (Mtonga, 2011; Stan et al. 2007).

However, despite this consistent growth from 1997 to 2010, it has been noted that South Africa's GDP has been growing at a decreasing rate for the previous decade due to various economic and non-economic factors. Statistics indicate this decrease has been on a consistent path from 2011 to date after the resurgence from the recession of 2009, which had a detrimental effect on most economies. Nonetheless, scholars contend that weakening macroeconomic aggregates have a stronger negative push effect on economic growth. As a result, it has become clear that the traditional variables that have been the focus of macroeconomic policies should no longer be the only focus of policymakers. The actual exchange rate problem is expected to influence economic growth. However, in the South African economy, the relationships between the RER, INF, and GDP are important. A depreciated real exchange rate causes aggregate demand to shift from trade to non-traded products, necessitating an increase in interest rates to maintain internal balance (Montiel and Servén, 2008). According to Bernanke (1983), when the exchange rate rises, so do private investments. Furthermore, as the rand falls further, imports become more expensive, capital and worker productivity both diminish, and potential output is reduced. Empirical research on the impact of currency rate fluctuation on exports in South Africa includes Todani and Ganyaupfu (2013); and Edwards and Garlick (2007). According to these studies, exchange rate fluctuation hurts South African exports. In recent years, foreign direct investment (FDI) has been declining, while economic development has been slow.

However, an exchange rate, at which one currency can be traded for another, plays an important role in price stability and economic growth (European Central Bank 2016). The fact that South Africa adopted a flexible exchange rate regime in 2000 means that the economy is facing complications due to currency movements. As reported by the International Monetary Fund (IMF) (2015), despite the seemingly increasing trade in this country during the last decade, net exports have decreased. Furthermore, it is possible that the exchange rate regime adopted in South Africa (Free floating exchange rate in the system) as the cause of this drastic decrease in net exports. These opposing viewpoints have fuelled an ongoing debate about what may be the root cause of South Africa's poor international trade and how low or high exchange rates can be used to improve trade in South Africa.

Only a few studies have attempted to explain the relationship between macroeconomic indicators and economic growth in South Africa. Most studies on economic growth concentrate on a single variable. The argument of a slowly adjusting nominal exchange rate, and high and rising inflation creates a typical problem, which, the central bank manages to preserve price constancy. The ambiguity of overvaluation of RER has a drawback in export improvements and makes possible future growth not to be realized. The appreciation of the domestic currency drives the willingness of foreign investors into a country.

However, other factors determine the exchange rate, and it turns out to make a conducive environment for economic growth. The overall purpose of this article is to investigate the influence of the RER on South Africa's GDP. It's critical to understand how the exchange rate influences South Africa's economic growth. The sanctions that were imposed before 1994 on South Africa have resulted in a little inflow of Foreign Direct Investment, and thus resulted in the slow growth of the economy. Studies reveal that depreciation has a positive effect on economic growth. The concept is commonly known as the traditional view. The view that devaluation positively affects GDP is obvious in that devaluation of the money further increases trade balances, lightens the equilibrium of instalment intricacies, and therefore grows productivity and business (Acar, 2000). The justification for devaluation is that by lowering exchange rates, a country's value intensity on exchanges, which is a part of GDP, improves. The traditional perspective of exchange rates holds that they influence financial development via two key channels: total factor productivity growth and capital aggregation.

The lack of substantial evidence to support the use of either a weak or strong currency as a stimulus for competitive trade has made this a highly contentious issue that needs further investigation. The debate on policy implementation to weaken or strengthen currencies under a floating exchange rate regime has been a grim task in the monetary policy fraternity, in South Africa. There is no clear and comprehensive understanding to date, of whether to advocate a weak or strong currency in developing economies. This debate has divided the Monetary Policy fraternity, especially in emerging or transition economies. Dani (2007) posits that economists around the globe have long discovered that poorly managed exchange rates can be disastrous for economic growth. Furthermore, Habib, Mileva, and Stracca (2016) mention that the persistent debate among various economic agencies and politicians on maintaining a weak or strong currency is fast becoming a major concern that needs immediate consensus, as finding an answer would have far-reaching implications on trade as an instrument of economic growth (Habib et al. 2016). As a result, it is vital to assess the impact of exchange rates on economic growth in developing economies such as South Africa. South Africa is an interesting case study because, despite being one of Africa's most developed economies, the country is plagued with an unstable currency.

2. BRIEF REVIEW OF RELATED LITERATURE

According to Dabla-Norris and Floerkemeier (2006), currency rate fluctuations affect aggregate demand by enhancing international affordability and net exports. In other words, when the Rand falls in value relative to foreign currencies, residents choose domestic goods, enhancing economic performance in the manufacturing sector. The country, on the other hand, sells more and imports less, resulting in a net export surplus. According to Ngandu and Gebreselasie (2006), an increase in exported commodities increases aggregate demand due to the multiplier effect, resulting in a

decline in local manufacturing and unemployment. Depreciation causes inflation, or a general rise in the price level, which results in a decline in the real wage, increased output, and higher unemployment. However, the Total Factor Productivity Growth Channel is criticized for failing to describe how it works in detail, instead relying on assumptions. Furthermore, there is no empirical support for it. Mbaye (2012), for example, stresses the lack of a practical assessment of the impact of exchange rate undervaluation on GDP via the TFP transmission channel. The classic approach's subsequent channel, which appears to be significant, is embraced by policies that link lower exchange rates with higher growth via the impact of local savings rates (Montiel and Serven, 2008). This scenario raises the local saving rate, which in turn raises the capital rate. According to the capital accumulation theory, currency rates influence economic growth by affecting savings. According to this theory, real exchange rate undervaluation boosts growth by increasing the economy's capital stock (Mbaye, 2012). A weakness in this approach is that a depreciated exchange rate tends to boost local saving rates. Depreciation causes people to save more money, which promotes GDP by increasing capital accumulation.

According to Montiel and Serven (2008), there is no specific idea that depicts how the channel effect occurs. However, policymakers understand savings are the transmission channel. Depreciated exchange rates are thought to improve local savings, leading to increased growth through capital accumulation. Tarawalie (2015) used econometric methodologies and quarterly data to investigate the impact of real effective exchange rates on Sierra Leone's economic growth. To determine the causation between the real exchange rate and economic performance, he employed a bivariate Granger causality test. The findings show that the real effective exchange rate has a positive relationship with economic growth, with statistically significant coefficients.

The Balassa-Samuelson hypothesis supports these findings, which show a positive link between real effective exchange rate and GDP. The findings are consistent with those of Ito and Krueger (1999), who discovered a positive relationship between the exchange rate and GDP in Japan and Chile. Ndlela (2013) investigated the effects of real exchange rate misalignment in developing nations, with a particular focus on Zimbabwe's growth. The ARDL cointegration approach was employed in this investigation (autoregressive distributed lag). The ARDL method can be used for variables that are $I(0)$, $I(1)$, or fractionally integrated. The main findings indicate that exchange rate misalignment has a negative and statistically significant impact on growth. Furthermore, the findings support the idea that real exchange rate overvaluation played a key role in Zimbabwe's economic downturn after 2000. Masunda (2010) looked into the impact of misaligned currency rates on Zimbabwean sectoral output. The generalized least squares panel data techniques were used to achieve this, with data from 1980 to 2003 and a sample of Zimbabwean sectors. Mining, manufacturing, and agriculture were among the industries examined in the study. The study discovered that real exchange rate mismatches hurt sectoral production. Even though exchange rate overvaluation has a negative and significant influence on industry output, the study indicated that appreciation has hurt sectoral output. Between 1970 and 1996, McPherson et al. (2010) investigated the direct and indirect links between real and nominal exchange rates and GDP growth in Kenya. Single equation regressions, a system of simultaneous equations, a VAR model test, and cointegration approaches were all used in the research. According to the data, there is no statistically significant direct relationship between changes in exchange rates and GDP. Fiscal, monetary, and foreign aid policies, on the other hand, have an impact on growth. This investigation's findings support the theories outlined in the preceding section. Acar (2014)

explored the impact of currency depreciation on the output growth of emerging countries (LDCs). Panel data were used in the study in 18 different countries. Countries were divided into two groups, each with two regressions. According to the findings, a reduction in the real exchange rate reduces output in the first few years but has an expansionary effect in the following years. Chen (2012) explored the impact of China's real exchange rate on economic growth as well as the convergence of growth rates across provinces. The generalized method of moments (GMM) was used in this investigation. Between 1992 and 2008, a dynamic panel data estimate was used for 28 Chinese regions. The study's findings indicate that actual exchange rate appreciation boosts economic growth in some places. On finite samples, the GMM approach utilized in this work predicts improved performance. The strength of this GMM, according to Bond et al. (2001), is that it can yield constant parameter estimators even when measurement error and endogenous variables are present. The study confirms the Balassa-Samuelson Hypothesis, which argues that the real exchange rate and economic growth are related. On the other hand, his findings do not match Rodrick's (2008). According to the latter, who used data for developing countries encompassing 184 nations and five years for a period of eleven times from 1950-1954 to 2000-2004 for emerging economies, depreciations are expansionary to growth. From 1971 to 2007, Jaussaud and Rey (2009) investigated the long-term determinants of Japanese exports to China and the United States. The ARCH (Autoregressive Conditional Heteroscedasticity) and GARCH (Generalized ARCH) models were used in the study. The findings revealed that actual exchange rate volatility and global demand influence Japanese exports to China and the United States (Gross Domestic Product of the country of destination). The conclusions of this study back the common wisdom that currency depreciation boosts exports and thus GDP, and vice versa. Furthermore, the findings of the study back up Edwards and Garlick's (2007) claim that real exchange rate variations influence trade volumes.

To investigate the Balassa-Samuelson Hypothesis, Ito and Krueger (1999) looked at the relationship between growth rates and real exchange rate fluctuations in (APEC) economies. Economic growth and exchange rate appreciation, both aspects of the Balassa-Samuelson hypothesis, had a beneficial impact on growth in Japan, but not in Chile, according to the study. Malaysia and Thailand have had higher growth rates as a result of the exchange rate depreciation. The conclusions of Jaussaud and Rey (2009), Ito, and Krueger (1999) differ in Japan and Chile, but they coincide in Thailand and Malaysia. Razin and Collins (2007) examined actual exchange rate misalignments and growth for a diverse group of developed and developing countries. According to the research, currency appreciation slows economic growth while depreciation promotes rapid growth. The findings of the study support the conventional theory of exchange rates, which holds that depreciations are associated with rapid growth. Kalyoncu et al. (2008), for example, looked at the long and short-run effects of real exchange rate depreciation on output levels in OECD nations. The outcomes were starkly opposed and, in the end, not the same. In Austria, Poland, and Switzerland, the depreciation of the currency hurt output growth, whereas it had a positive impact on Finland, Sweden, and Germany. Depreciation hurts output in Finland in the short term but has a positive impact on production growth in Switzerland and Hungary.

Vieira and MacDonald (2010) examined the relationship between real exchange rate misalignment and long-run economic development in 100 countries using panel data. The coefficients of the two-step system GMM panel growth models on real exchange misalignment were statistically significant and beneficial in different models and samples, according to the findings. A decline in

the exchange rate improves economic growth in the long run. The coefficients were statistically significant in developing and emerging economies. The impact of exchange rates on economic growth in developed countries has been a source of debate. The impact of real exchange rates on economic progress in industrialized countries has been studied empirically, and the results are mixed. For example, Chen (2012) agreed with the Balassa-Samuelson theory that exchange rates boost economic growth. According to Razin and Collins (1997), exchange overvaluations are associated with slower growth, which is consistent with the traditional understanding of exchange rates. The previous strategy was also backed by Jaussaud and Rey (2009), who discovered that as the Japanese yen appreciated, so did Japanese exports to China and the US. As a result, growth was hampered.

Greater real exchange rate depreciation, according to Vieira and MacDonald (2010), is advantageous to future growth. Despite the lack of agreement, some research has linked currency overvaluations to slower economic development. Aguirre and Calderon (2005) explored the growth consequences of RER misalignments and their instability. Actual exchange rate departures from equilibrium were used to calculate real exchange rate misalignments. Real exchange misalignments diminish growth, but the effects are non-linear; for example, growth declines are greater in direct proportion to size misalignments. The study covered the period 1965-2003 for 60 nations using panel and time series cointegration methods. According to Bond et al. (2001), an increase in the exchange rate boosts economic growth and verifies the Balassa-Samuelson Hypothesis, which argues that the real exchange rate and economic growth are linked. Rodrick's (2008) results, on the other hand, aren't usually constant. The latter discovered that depreciations are expansionary for growth using data for emerging countries containing 184 nations and five years for a span of eleven times from 1950-1954 to 2000-2004. According to the capital accumulation theory, exchange rates influence economic growth by changing savings. There is no unique theory that illustrates how the channel effect happens, according to Montiel and Servén (2008). Policymakers, on the other hand, are fully aware that savings are the transmission channel. Nonetheless, exchange rate depreciation is expected to increase local savings rates, which enhances GDP by increasing capital accumulation.

There are two sources of capital accumulation represented in the capital accumulation channel. Tarawalie (2015) investigated the effects of real effective exchange rates on Sierra Leone's economic growth using econometric approaches and quarterly data. To determine the causation between the real exchange rate and financial performance, he utilized a bivariate Granger causality test. The findings reveal that the real effective exchange rate has a statistically significant positive link with economic growth. These findings support the Balassa-Samuelson hypothesis, revealing a positive relationship between the real effective exchange rate and GDP. Ito and Krueger (1999) observed a positive association between the exchange rate and GDP in Japan and Chile, and their findings are similar. As a result of the currency depreciation, global and domestic demand for exported goods will rise, thereby, increasing exports. According to the theory that depreciation has a positive impact on GDP (Acar, 2000), depreciation improves trade balances, reduces the balance of payments concerns, and hence boosts productivity and employment. Tarawalie (2015) used econometric methodologies and quarterly data to explore the effects of real effective exchange rates on Sierra Leone's economic growth. He examined the relationship between the real exchange rate and economic performance using a bivariate Granger causality test. The findings reveal that the real effective exchange rate and economic growth have a statistically significant positive

association. This finding is supported by the Balassa-Samuelson (2013) hypothesis evaluation, which demonstrates a positive relationship between the real effective exchange rate and GDP.

3. DATA AND METHODS

3.1 Research Technique

The VECM method and the Johansen (1995) cointegration technique are used in the analysis. To accomplish this, the unit root was deployed to see whether data sets are stationary. A VECM is used for non-stationary series that are known to be cointegrated. According to Brooks (2008), the VECM specification includes cointegration relations, which limit endogenous variables' long-run behavior to converge to their co-integrating connections while allowing for short-run adjustment dynamics. According to Brooks (2008), the cointegration component is also known as the correction term because the departure from long-run equilibrium is gradually corrected through a series of approximated partial short-run corrections. As a result, the vector error correction model (VECM) specification requires the presence of a cointegration connection (s). The Engle-Granger approach, which is based on residuals, and the Johansen and Julius (1990) strategy, which is based on a maximum likelihood estimate on a VAR system, are two approaches for testing for cointegration. Simultaneous equation bias, the inability to test hypotheses about the genuine cointegration connection, and a lack of power in the unit root test are all weaknesses in the Engle-Granger approach (Brooks, 2008). Because the Engle-Granger method has flaws, this study applies Johansen's vector error correction modeling (VECM) (1991). The purpose of this method is to estimate the long- and short-run determinants of a model's dependent variable using determined probability estimation in a vector error correction (VEC) model. This approach also provides the speed of adjustment coefficient, which quantifies how quickly the Gross Domestic Product rebounds to equilibrium after a short-term shock to the system (Gujarati, 2004). We may interpret long-term and short-term equations using VECM. However, the number of co-integrating relationships must be determined. The advantage of using VECM over VAR is that the generated VAR has more efficient coefficient estimates. The VECM also looks for the presence of a long-run link between variables. The primary advantage of VECM is that it interprets long-term and short-term equations well. In theory, VECM is nothing more than a representation of cointegrated VAR. Granger's representation theorem is responsible for this representation. As a result, if you have a cointegrated VAR, it has VECM representation and vice versa.

3.2 Model Specification

The model in this study is based on the methodology by Azid et al. (2005) as they examined the impact of exchange rate volatility on growth and economic performance, in a case study of Pakistan from 1973-to 2003. The model was estimated using Vector Auto-Regression (VAR). The equation for this model was specified as follows.

$$GDP(Y) = \beta_0 + \beta_1 RER + \beta_2 EX + \beta_3 IM + \beta_4 RM \dots\dots\dots (1)$$

Where:

β_0 , = constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ = are the coefficient of the parameters

RER= Real exchange rate

EX= Exports

IM = Imports

RM= Real Money Supply

The study's goal is to find out how real exchange rate performance affects economic growth (GDP). Economic growth (GDP) is the dependent variable in this study, which is explained by changes in the real exchange rate (RER), real interest rate (RIR), and trade openness (TRD). The model is specified as follows

$$GDP = \beta_0 + \beta_1 RER + \beta_2 RIR + \beta_3 EXP + \beta_4 IMP + \varepsilon_t \dots \dots \dots (2)$$

Where:

- β_0 =Constant term
- $\beta_1 - \beta_4$ =Slope of the parameters
- GDP* = National Gross Domestic Product
- RER* =Real Exchange Rate
- RIR* =Real Interest Rates
- TRD* =Trade openness
- INF* =Inflation
- ε =error term
- t* =time series

The empirical model is estimated with the econometric software E-views 9.5

Table 1: Definition of variables and Data sources

| S/N | Variables | Definitions |
|-----|-------------------------------|--|
| 1. | Gross Domestic Product | South Africa's Gross Domestic Product is measured in billions of Rands, and this illustrates the percentage change in GDP from the preceding measurement cycle. |
| 2. | Real Exchange Rate | RER is the nominal exchange rate that takes inflation differences between countries into account and uses as a competitiveness indicator in a country's foreign commerce. |
| 3. | Real Interest Rates | The real interest rate is the nominal interest rate adjusted for predicted inflation, and it measures the difference between the nominal and expected interest rate increases. |
| 4. | Trade Openness | The ratio of imports and exports to gross domestic product is known as trade openness. |
| 5. | Inflation | Inflation is a general increase in the prices of goods and services in an economy. When the general price level rises, each unit of currency buys fewer goods and services; consequently, inflation corresponds to a reduction in the purchasing power of money. |

Justification of Variables in the Model

The interest rate affects inflation indirectly through domestic demand for goods and services, as well as through its effect on the exchange rate. Saving becomes less profitable for families when interest rates fall, and they will thus increase their consumption now rather than later. Furthermore, inflation affects every sector of the economy, including consumer spending, corporate investment, and labor rates, as well as government programs, tax policies, and interest rates. Inflation is important for investors to understand because it has the potential to reduce the value of investment returns. Aside from interest rates and inflation, the currency exchange rate is one of the most important drivers of a country's relative economic health. Exchange rates are critical to a country's trade volume, which is critical to almost every free market economy on the planet. Furthermore, trade openness has been shown to potentially boost long-term economic growth by providing

access to goods and services, increasing resource allocation efficiency, and increasing total factor productivity through technological diffusion and knowledge dissemination.

3.3 Preliminary Tests

Stationarity

The quality of a process in which the statistical characteristics (mean and standard deviation) remain constant across time is known as stationarity. The distance or gap between the times, not the actual time at which the covariance is computed, determines the covariance values between the two periods (Gujarati, 2004). The autocorrelation function (ACF) of a stationarity process is solely dependent on lag and does not modify the time in which the service was generated. Both the dependent and independent variables must be stationary, and the errors must have a zero mean and bounded variance, according to the traditional regression assumption (Brooks, 2008).

The following are some of the reasons why data should be checked for stationarity:

- First, series can have a big impact on its behavior and qualities; second, it can cause a misleading regression problem, which happens when two variables are trending in the same direction over time.
- A regression of one variable on the other could have a high R squared even though the two variables are unrelated.
- Third, the traditional assumption of asymptotic analysis will be incorrect. As a result, the conventional t-ratio will not follow a t-distribution, and the F-statistic will not follow an F-distribution, rendering a regression parameter hypothesis test invalid (Brook, 2008).

Augmented Dickey-Fuller (ADF) Test

The Dickey-Fuller test is used to determine the order of integration (Gujarati, 2004). A unit root test can be used to determine whether a time series is stationary. The most commonly used unit root tests are the Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF). ADF theory aimed to test the hypothesis that $\phi=1$ in

$$Y_t = \phi (y_{t-1}) + \mu_t \dots\dots\dots 4.3$$

Thus, the assumption is formulated:

H₀: Series contains a unit root

H₁: Series is stationary

The rejection of the null hypothesis under these tests means that the series does not have a unit root problem. The standard ADF test estimates

$$Y_t = \beta_1 + \beta_2 \Delta Y_{t-1} + \mu_t \dots\dots\dots 4.4$$

Where μ_t is the relevant time series, Δ is the first difference operator, t is a linear trend, and ϵ_t is the error term. Normality, constant error variance, and independent error terms should all be met by the error term. Gujarati (2004) claims that if the error terms in equation (4.4) are not separated, the Dickey-Fuller tests will be biased. If there is autocorrelation in the regression of the dependent variable (y_t), the Dickey-Fuller test is valid only if (t) is assumed and not autocorrelated. As a result, the test would be 'oversized,' meaning that its real size would be larger than the nominal size. The solution to this shortfall is to use the ADF. The alternative model in the ADF case can be written as:

$$\Delta y_t = \beta_1 + \beta_2 t + \delta y_{t-1} + \sum_{i=1}^m \alpha_i \Delta y_{t-i} + u_t \dots \dots \dots 4.5$$

Where there is a pure white noise error term and where $\Delta y_{(t-1)} = (y_{(t-1)} - y_{(t-2)})$, $y_{(t-2)} = (y_{(t-2)} - y_{(t-3)})$, etc. The number of lagged difference terms to include is often set empirically, according to Gujarati (2004); the goal is to include enough terms so that the error term in (4.5) is serially uncorrelated. The test is whether $\delta = 0$ in both ADF and DF, and the ADF test follow the same asymptotic distribution as the DF statistic, allowing for the usage of the same critical values. If the estimated value is greater than the significant value, the null hypothesis that the series has a unit root is rejected, suggesting that the series is stationary. A crucial assumption of the DF test, according to Gujarati (2004), is that the error terms (t) are distributed independently and identically. The ADF test extends the DF test to account for any serial correlation in the error terms by adding the lagged difference terms of the regression (t). As with any other unit root test, the Dickey-Fuller test contains flaws.

Nonetheless, the DF test has a fault in that it disregards the potential of error term autocorrelation (t). According to Clemente et al. (1998), a well-known problem of the Dickey-Fuller style unit root test with I(1) as the null hypothesis is the risk of misinterpreting structural breaks in the series as evidence of non-stationarity. The Dickey-Fuller test also has a fault, according to Blungmart (2000), in that it does not account for possible autocorrelation in the error process (t). The OLS coefficient estimates will be wasteful if t is auto-correlated, and t-ratios will be skewed. In response to the aforementioned shortcomings, the Augmented Dickey-Fuller test was devised, and it is now preferred over the Dickey-Fuller test.

Cointegration test (Johansen and Julius technique)

Johansen and Julius (1990) devised a technique based on the maximum likelihood estimate for a VAR system. This method is used to find a long-run equilibrium connection and has the benefit of identifying all cointegration vectors inside a given set of variables. Testing the sequence of integration of the variables under consideration is required when using the Johansen procedure. All variables should be integrated in the same order before completing the cointegration test. Johansen and Juselius propose critical values for the two statistics (1990). The distribution of the test statistic is non-standard, and the significance is high. The procedure is specified as follows with a Vector autoregressive (VAR) model representation of order k:

$$y_t = \Pi_1 Y_{t-1} + \Pi_2 Y_{t-2} + \dots + \Pi_k Y_{t-k} + u_t$$

Where y_t is a -vector of non-stationary I (1) variables, kt is a D-vector of deterministic variables and u_t is a vector of innovations. To practice the Johansen test, the VAR (4.1) above needs to be turned into a VECM specification (Brooks, 2008). We may rewrite this VAR

The VAR model of equation 4.1 above is transformed into a VECM of the following form:

$$\Delta y_t = \mu + \pi_k Y_{t-k} + \sum_{i=0}^q \Gamma_i \Delta Y_{t=i} + \mu_t$$

Where $q=k-1$, ΔY_t is all I (0), Γ is n x n coefficient matrices which represent the short-run coefficients. π is the matrix whose rank r determines the number of cointegration vectors among the variables. The Johansen test is based on the examination of the π matrices. If $r=0$ then there are no cointegration vectors. According to (Gujarati, 2004) if for instance π has a reduced rank ($r \leq (n-1)$), this implies that it can be decomposed as follows:

$$\Pi = \alpha \beta$$

Where α is an $n \times r$ matrices of error correction or speed of adjustment parameters and β , is the long-run coefficients. Estimates of β are found by solving the eigenvalue problem so that the eigenvectors corresponding to the r largest eigenvalues form the estimated β matrix. The size of the eigenvalues shows a measure of how high the correlation between the cointegration relationship and the stationary part of the model is. The next step is to begin how many cointegration vectors exist for each of the relationships. Two test statistics are employed, the λ max statistic and the λ trace statistic. The λ max statistic is of the form:

$$\lambda_{\max}(r+1) = -T \ln(\lambda_{(r+1)})$$

$$\text{and } \lambda_{\text{trace}}(r) = -T \sum_{i=r+1}^g (\ln(1-\lambda_i))$$

Where r is the number of cointegration vectors under the null hypothesis and λ_i is the estimated value for the i^{th} ordered eigenvalue from the matrix. Intuitively, the larger is λ_i , the larger and more negative will be $\ln(1-\lambda_i)$, and hence the larger will be the test statistic. Each eigenvalue will have its cointegration vector, which will be made up of eigenvectors. A significant cointegration vector is indicated by a non-zero eigenvalue. λ_{\max} conducts separate tests on each eigenvalue and has as its null hypothesis that the number of cointegration vectors is r against an alternative of $r+1$. λ_{trace} is a joint test where the null is that the number of cointegration vectors is less than or equal to r against an unspecified or general alternative that there are more than r . It starts with p eigenvalues, and then successively the largest is removed. $\lambda_{\text{trace}} = 0$ when all the $\lambda_i = 0$, for $i = 1, \dots, g$.

4 RESULTS AND DISCUSSION

For stationarity, all the deterministic trend assumptions of Constant, Constant with the trend, and None were verified. Because the value of t-statistics is smaller (less detrimental) than the crucial Mackinnon values for all deterministic trend assumptions, the variables have a unit root in levels, as indicated in the table below. As a result, the unit root null hypothesis is accepted. After first differencing, the t-statistics become more significant (more negatives) than the crucial Mackinnon values for all deterministic trend assumptions. The null hypotheses including unit roots are thus rejected, but the alternative hypothesis involving no unit root in the series is supported.

Table 2: Stationarity Test Results

| Augmented Dickey-Fuller | | | | | |
|-------------------------|----|----------|------------------|---------|----------------------|
| Variables | | Constant | Constant & trend | None | Order of integration |
| LGDP | | -0.0372 | -0.1789 | -1.3734 | I(0) |
| LXR | | -0.9990 | -2.2594 | -2.2594 | I(0) |
| LRIR | | -1.8300 | -3.1435 | -0.7133 | I(0) |
| LINF | | -3.3271 | -3.4617 | -0.9725 | I(0) |
| LTRD | | -1.9281 | -3.0123 | 0.9638 | I(0) |
| DLGDP | | -5.3913 | -5.6890 | -5.2304 | I(1) |
| DLXR | | -2.7321 | -2.7095 | -2.0896 | I(1) |
| DLRIR | | -3.7030 | -3.7429 | -3.5152 | I(1) |
| DLINF | | -5.5341 | -3.6088 | -2.5578 | I(1) |
| DLTRD | | -3.9581 | -4.0121 | -2.8186 | I(1) |
| Critical Value | 1% | -3.4956 | -4.0505 | -2.5878 | |
| | 5% | -2.8900 | -3.4544 | -1.9440 | |

Source: Own computation using EViews Econometric Software

*represents a stationarity variable at a 1% level of significance

**represents a stationarity variable at a 5% level of significance

Pair-wise correlation

In this study, the Pair-wise correlation Matrix is utilized to discover the exact link between the six variables. The table shows the results of the pair-wise correlation matrix.

Table 3: Pair-wise Correlation Results

| Variables | DLGDP | DLINF | DLRIR | DLTRD | DLXR |
|--------------|-----------|-----------|-----------|-----------|-----------|
| DLGDP | 1.000000 | -0.153602 | -0.161320 | 0.061631 | -0.054803 |
| DLINF | -0.153602 | 1.000000 | 0.085471 | 0.301994 | 0.305747 |
| DLRIR | -0.161320 | 0.085471 | 1.000000 | -0.364098 | -0.275097 |
| DLTRD | 0.061631 | 0.301994 | -0.364098 | 1.000000 | 0.600936 |
| DLXR | -0.054803 | 0.305747 | -0.275097 | 0.600936 | 1.000000 |

Source: Own table with data from EViews econometric Software

All components are positively related to the dependent variable DLGDP, according to the pair-wise correlation statistics presented above. The connection between DLTRD and DLGDP is stronger than the others. The fact that both variables have a positive association lends credence to the theoretical framework. According to the theory, increasing trade openness should promote economic growth. According to theoretical assumptions (Appleyard and Field, 2005), high-interest rates and real exchange rates generate a negative relationship between the variables by discouraging investment and exports, resulting in lower economic growth. The finding also demonstrates that multicollinearity among variables is not an issue. This supports the claim that all variables correlate with DLGDP and that no single variable corresponds to all variables, implying that the multicollinearity problem is unlikely. In this regard, DLGDP agrees with the proposed explanatory elements.

Cointegration

Cointegration indicates that the variables have a long-run relationship. When variables are cointegrated, they integrate in the same order; however, when at least one or more variables are linearly combined, they integrate into order I. (0). The Johansen test must be used to establish an appropriate lag-order criterion. It eliminates serial correlation from the residuals and identifies the deterministic trend assumption in the VAR model. Table 4 shows how different information factors influence lag-order selection. The Johansen (Maximum likelihood) cointegration technique is used to determine the presence of cointegration and the number of cointegration vectors (Johansen 1988, 1991). The method comprises determining the optimal lag length and choosing the deterministic assumption that the Johansen test requires. The table below shows the lag duration requirements obtained from the unrestricted VAR. The appropriate lag time should result in residuals that are uncorrelated and homoscedastic. To resolve the differences, sophisticated diagnostics were used to consider all lags as well as lag duration. Lag 2 is the ideal lag for this data collection. As a result, the Johansen cointegration test is done with two delays for the VAR and a constant in the series.

Table 4: Lag Order Selection Criterion

| Lag | VAR Lag Order Selection Criteria | | | | | |
|-----|----------------------------------|-----------|-----------|------------|------------|------------|
| | LogL | LR | FPE | AIC | SC | HQ |
| 0 | -96.44118 | NA | 7.93e-06 | 2.444366 | 2.590079 | 2.502905 |
| 1 | 480.7783 | 1070.986 | 1.32e-11 | -10.86213 | -9.987849 | -10.51089 |
| 2 | 554.4989 | 127.9007* | 4.11e-12* | -12.03612* | -10.43327* | -11.39218* |
| 3 | 560.1946 | 9.195507 | 6.65e-12 | -11.57095 | -9.239541 | -10.63432 |
| 4 | 568.3668 | 12.20912 | 1.03e-11 | -11.16547 | -8.105487 | -9.936137 |

* indicates lag order selected by the criterion
 LR: sequential modified LR test statistic (each test at 5% level)
 FPE: Final prediction error
 AIC: Akaike information criterion
 SC: Schwarz information criterion
 HQ: Hannan-Quinn information criterion

The results of the Johansen cointegration technique are reported in the table below.

Table 5: Cointegration rank test results

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---------------------------|------------|-----------------|---------------------|---------|
| None * | 0.554569 | 120.3796 | 69.81889 | 0.0000 |
| At most 1 * | 0.373862 | 54.87395 | 47.85613 | 0.0095 |
| At most 2 | 0.151579 | 16.95101 | 29.79707 | 0.6437 |
| At most 3 | 0.041610 | 3.636411 | 15.49471 | 0.9307 |
| At most 4 | 0.002391 | 0.193880 | 3.841466 | 0.6597 |

According to Table 5, the findings of the trace test indicate that cointegrated equations exist at a 5% level of significance. The null hypothesis of no cointegrating vectors is rejected since the trace test statistics of 120.37 are greater than the threshold of 69.82 at a level of significance of 5%. Because the trace test value of roughly 54.87 is greater than the needed 47.85 at the 5% level of significance, the null hypothesis that there is only one cointegration vector can be rejected. Because the trace statistic of roughly 16.95 is less than the crucial value of 29.78 at 5% significance, the null hypothesis that there are only two cointegration vectors can be accepted, as can the null hypothesis that there are only three. Vector Error Correction Model (VECM)

The results show that there is a cointegration equation, which implies that a VECM model can be used.

Long run and short run cointegration equation

In an econometric analysis, time series variables that are cointegrated with error-correlation representatives must reflect a short-run adjustments mechanism. The following section shows the relationship between short-run and long-run dynamics, which is the cointegration vector.

Table 6: Long-run and Short-run Cointegration Equation

| Short-run Analysis | | | |
|--------------------|-------------|----------------|-------------|
| Variables | Coefficient | Standard error | t-statistic |
| Constant | -0.030535 | - | - |
| DLGDP | 1.000000 | - | - |
| DLINF | -1.424798 | 0.68517 | -2.07948 |
| DLRIR | -2.120526 | 0.64942 | -3.26526 |
| DLXR | -3.796998 | 1.65710 | -2.29135 |
| DLTRD | -0.191582 | 3.74617 | -0.05114 |
| Long-run Analysis | | | |
| Variables | Coefficient | Standard error | t-statistic |
| DLGDP | 0.862636 | 0.13957 | 6.18050 |
| DLINF | -0.069999 | 0.17416 | -0.40191 |
| DLRIR | 0.261365 | 0.18737 | 1.39490 |
| DLXR | -1.460937 | 1.21756 | -5.40191 |
| DLTRD | 2.627216 | 1.85748 | 1.41440 |

Table 6 shows the long-run influence of real exchange rates XR, INF, RIR, and TRD on GDP. The cointegration vector reveals that DLGDP, real exchange rate, real interest rate, inflation, and trade openness have a stable long-run connection. The real exchange rate exhibits a substantial negative long-run connection with the dependent variable GDP, as seen in Table 6. All other variables were also significant and had the correct sign. The coefficient of DLGDP is 0.8626 in the table above,

indicating that the rate of adjustment is around 86.26 percent. This means that if a divergence from equilibrium occurs, only 86.26 percent of the error is rectified in quarter one as the variable approaches equilibrium. This means that whenever there is a disturbance, there is tremendous pressure on economic growth to restore long-run equilibrium. With an absolute t-value of roughly -6.180, this rate of adjustment is statistically significant. Economic growth's rapid adjustment may indicate that the model is well-fitted.

According to the data, a 1% increase in the real exchange rate leads GDP to decline by 14.61 percent in the long run, which is a significant effect. This is confirmed by the analogy that an increase in the currency rate or a depreciation of the rand against the dollar will affect the supply and demand of imported goods. Table 6 shows that the exchange rate hurts economic growth in the short term. A 1% increase in the real exchange rate results in a 3.79 percent reduction in economic growth. An increase in the real exchange rate affects the trade surplus, while a depreciation of the rand reduces exports in the short run, lowering GDP. In the long run, a 1% increase in RIR reduces economic growth by about 0.261 percent. In the long run, a low real interest rate will attract foreign direct investment, particularly portfolio investments that will help to strengthen South Africa's balance of payments accounts, so boosting economic growth. In the short run, real interest rates hurt growth. RIR increases reduce growth by about 21.20 percent, which is statistically significant. An increase in real interest rates is expected to result in a decrease in economic growth due to the inverse relationship between investments and interest rates. In the short run, a 1% increase in TRD slows economic growth by 19.15 percent, according to the data. On the other hand, trade openness has a long-term positive and significant impact on economic growth. Exports of higher grades increased by about 26.27 percent.

High-quality exports, according to Hausmann et al., (2007), increase economic growth. A 1% increase in inflation, according to the research, will influence economic growth. A drop in inflation is expected to enhance GDP by 14.24 percent in the short term and 0.6 percent in the long run. This is reinforced by the fact that lower prices increase purchasing power, which aids economic growth. Furthermore, inflationary pressures influence investment because of uncertainty, as well as the balance of payments since exports become more expensive. However, fiscal policy can be used more effectively to stabilize the domestic economy following a price shock. It also indicates that government expenditure should be allocated efficiently to successfully regulate local pricing (CPI) and balance payment difficulties, such as import levels.

Diagnostic Test Results

The economic growth model has been thoroughly tested. Normality, serial correlation, autoregressive conditional heteroscedasticity, and stability were all examined in the model. Diagnostic checks were performed on the model to ensure that the parameter evaluation of the model's outputs was proper. Any issues with the estimated model's residuals will render the model inefficient, and the estimated parameters will be skewed. The null hypothesis states that there is no serial correlation in the LM test, no normalcy in the Jarque-Bera test, and no heteroscedasticity in the Jarque-Bera test.

Table 7: Diagnostic Test Results

| Test | Null hypothesis | t-statistic | Probability |
|--------------------------|-----------------------------------|-------------|-------------|
| Lagrange multiplier (LM) | No serial correlation | 24.15221 | 0.5106 |
| White (CH-sq) | No conditional heteroscedasticity | 489.3051 | 0.3745 |
| Residual Normality | Normal distribution | 58.45 | 0.0000 |

Heteroscedasticity

The white test with no cross-terms was employed to test for heteroscedasticity in Table 7, providing a Ch-sq of 489.3051 at a probability of 0.3745, suggesting that the null hypothesis of no heteroscedasticity was accepted. According to the findings, the residuals are homoscedastic.

Langrage Multiplier (LM) test

In Table 7, the LM statistic for serial correlation was 24.15221 with a probability of 0.5106, indicating that the null hypothesis could not be rejected.

Normality test

To determine residual normality, the Jarque-Bera (J-B) test was utilized. Based on the results of table 7, the Jarque-Bera statistics of 58.45 with a probability of 0.0000 indicate that the null hypothesis is accepted at the 5% level. The residuals appear to be regularly distributed as a result.

Impulse Response Analysis

The generalized impulse response functions represent the dependent variable's reaction to shocks to each of the variables in the VECM. Each equation's inaccuracy is assigned a unit shock, and the effects on the VECM system are tracked for 15 years. Our primary purpose, however, is to analyze the influence of the exchange rate on the South African economy. Only the GDP, the dependent variable, is evaluated for responsiveness. Because this study focuses on the impact of real exchange rate volatility on economic growth, only the responses of economic growth to the real exchange rate and the responses of economic growth to explanatory variables are provided. These impulse response functions show the dynamic response of economic development to a one-period standard deviation shock to the system's innovations, as well as the directions and durability of the responses across ten quarters. The impulse response functions mainly follow the expected pattern and back up the conclusions of the short-run relationship analysis.

All the variables are subjected to strong shocks, but they are brief. Except for the fifth and eighth quarters, actual exchange rates begin to decline in the first quarter. Except for the fourth and eighth quarters, gross inflation was positive in the first quarter. However, there is a favourable correlation between economic advances in all other quarters. The real exchange rate will be positive from the first to the tenth quarters, except the third and eighth quarters, which will be negative, and the interest rate will be negative from the first to the tenth quarters, except the fourth and fifth quarters, which will be positive.

Variance Decomposition Analysis

It determines how much volatility in a variable's forecast error may be explained by innovations and other factors. Using variance decompositions on the VECM, the ratio of movements in the dependent variables attributed to their "own" shocks vs. shocks to the other variables is computed (Brooks, 2008). According to Brooks, the majority of a VAR's forecast error variation is accounted for by its series of shocks. The same factorization approach and information are used in the variance decompositions as in the estimate of impulse responses. The variance decomposition

technique is used to determine the relative importance of the dependent variable in explaining variation in the explanatory factors. Variance decomposition is a tool for determining the relative importance of actual exchange rate shocks in explaining economic fluctuations. Table 8 presents the variance decomposition results over 10 quarters.

Table 8: Variance Decomposition of GDP

| Periods | S. E | GDP | INFL | TRD | RER | RIR |
|---------|----------|----------|----------|----------|----------|----------|
| 1 | 0.010564 | 100.0000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 2 | 0.015234 | 96.36342 | 1.783953 | 0.475691 | 0.058925 | 1.318008 |
| 3 | 0.016030 | 87.27163 | 1.973813 | 7.544311 | 0.053583 | 3.156667 |
| 4 | 0.016429 | 83.08426 | 1.977719 | 7.720680 | 0.661651 | 6.555695 |
| 5 | 0.018952 | 84.84720 | 1.868866 | 6.618728 | 1.069738 | 5.595470 |
| 6 | 0.021611 | 84.23713 | 3.291618 | 5.151754 | 1.057605 | 6.261891 |
| 7 | 0.022032 | 81.25870 | 3.813547 | 7.391321 | 1.170221 | 6.366212 |
| 8 | 0.022276 | 79.49986 | 3.922246 | 8.158348 | 1.500454 | 6.919093 |
| 9 | 0.024155 | 81.90014 | 3.626512 | 7.102958 | 1.421198 | 5.949192 |
| 10 | 0.026100 | 82.82777 | 3.880602 | 6.088053 | 1.245798 | 5.957773 |

The study allows for a ten-quarter variance decomposition to identify the effects when the causes can have a long-term impact on economic growth. According to Brooks (2008), their invention in the first-year accounts for all GDP discrepancies (2008). For the upcoming fifth quarter, GDP accounts for around 85 percent of the difference in prediction error variance, while the remaining elements account for approximately 15 percent. Inflation accounted for 1.87 percent of total expenditure, trade for 6.62 percent, RER for 1.07 percent, and RIR for 5.60 percent. However, after ten quarters, economic growth accounted for roughly 83 percent of the difference, with other factors accounting for the remaining 17 percent. The influence of the exchange rate increased by approximately 3.88 percent, whereas INF decreased to around 6.09 percent. RER increased to 1.25 percent, and RIR increased to 5.96 percent. Similar to the findings of the impulse response analysis, all of the components have a significant short-term impact on economic growth. Most of the fluctuations are explained by economic growth, followed by inflation and real interest rates. Furthermore, the real exchange rate does not indicate anything about economic development swings.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The primary goal of the study was to examine the influence of real exchange rate performance on economic development between 1990 and 2016 using a concrete approach and a review of relevant literature. In the results, the stationary test demonstrates that the variables have a unit root at the level and that the variables become stationary at the first difference. The Johansen-Juselius model required the usage of the VECM. The model demonstrates that the real exchange rate influences both long-term and short-term economic growth. The residuals were subjected to diagnostic tests. To test the responsiveness of the dependent variable, the impulse response was used to assess the shocks to each of the other variables. Although the factors were substantial, they did not all produce shocks in other variables and were not persistent. The variance decomposition sought to identify the causes responsible for the bulk of the changes in the dependent variable. Most of its movements are explained by GDP, followed by the exchange rate. The null hypothesis in this study was that the real exchange rate hurt South Africa's economic growth. Based on the regression results, the null hypothesis is accepted. Monetary policy and fiscal policy are the two policy options for dealing with the economy's real exchange rate. The SARB uses interest rates to impact

monetary policy through inflation targeting (Repo). The flexible inflation-targeting system is overseen by the Monetary Policy Committee (MPC), which also conducts and implements monetary policy. It enables the regulation of inflation within a specific range. Exchange rate shocks often cause inflationary pressures. In times of rising inflation, the central bank's action may be laudable. However, depending entirely on monetary policy to manage inflation during goods price shocks may have unintended consequences, such as rand depreciation, which increases the cost of importing commodities. Government spending should not be increased so quickly that it becomes unsustainable if the real exchange rate falls. Because an exchange rate shock could come at any time while the government spends more on other operations, the government's spending and other economic activities must be consistent to maintain a balance that does not disrupt importation or other strategic economic activity. A scenario like this would have a significant economic impact since the government would be forced to prioritize goods imports to keep the economy afloat. Because of improved speculative conditions as a result of WTO expansion, it appears reasonable to expect that the country will need to develop its primary businesses and increase the intensity of non-energy segments by attracting FDI from other countries. In addition to monetary and fiscal policy initiatives, regional integration must be promoted.

Although the foundations and assumptions of the various theories examined in this study differed, the basic premise in most of them was that policymakers might use real exchange rates as a tool to attain high levels of economic growth over time rather than in the short term. The study was limited to quarterly data from 1990 to 2016 and did not include any data before South Africa implements an inflation-targeting program. Future research should evaluate the impact of the exchange rate before and after South Africa implements its inflation-targeting policy.

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VALIDITY OF DEBT ACCUMULATION FOR ECONOMIC AND SUSTAINABLE DEVELOPMENT: EVIDENCE FROM NIGERIA

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ABSTRACT

This research investigates the impact of government debt on economic development in Nigeria between 2000 and 2020. The link and degree of significance were determined using data on economic development proxies. Because it allows for more than one co-integrating association among the variables, the Johansen maximum likelihood regression strategy was used. The correlation between debt accumulation, and economic and sustainable development has received extensive consideration in development literature. While some analysts support the debt accumulation and economic transformation nexus, others maintained that the bond between debt accumulation and economic transformation is not enduring along a country's growth path. The findings imply that Gross Domestic Product (GDP) per capita and total debt profile has a favorable relationship. The literacy rate and total debt and population of the population beneath the poverty line and total debt were not statistically significant within the study period. During the study period, debt hurt the country's economic and long-term growth. The findings also instruct that the Nigerian government explores the causes of public debt not contributing to the country's GDP per capita to identify and correct bottlenecks. This study suggests that transformations aimed at improving policy and institutional performance, particularly in the areas of economics and debt management, be examined. Further, stronger fiscal positions and better financing arrangements from creditors were equally advocated for.

Keywords: Debt, development, economic, GDP Nigeria

1. INTRODUCTION

In the development literature, the relationship between debt accumulation and economic and sustainable development has garnered a lot of attention. Although available pieces of evidence linked the nexus between debt accumulation with economic growth, debate on how much to borrow and how to manage such debt coupled with the long-term repercussions of such debt still rages (Fosu, 2007; Minea and Parent, 2012; Senadza et al., 2018; Omodero et al., 2020; Ekor et al., 2021; Yusuf & Mohd, 2021). According to research, the United States of America is the world's largest debtor country, however, despite the global economic downturn, the country has seen significant economic growth and success (Blakely & Leigh, 2009). Nevertheless, the negative effect of debt maintenance on economic growth especially in African countries is attributable to the decline of public spending because of debt-induced liquidity restraints (Taylor, 1993; Ndulu and O'Connell, 2021). The budget could be swayed away from public investment due to liquidity constraints inferred from debt-servicing conditions. This is important to consider because government spending is expected to be a major driver of economic activity in many areas (Fosu,

2007; Festus and Saibu, 2019; Yusuf and Mohd, 2021). However, Nigeria has been exploiting both external and domestic debt to the extent that the debt servicing is leading to a welfare loss for the citizenry (Ohiomu 2020). Adedoyin et al. (2016) and Yusuf and Mohd (2021) argued that 'crowding out and the 'debt overhang' influence of debt maintenance appears to describe, to a large extent, the Nigerian economy's low level of investment. This has constituted a serious infrastructural gap in all tiers of government as it interrupts the steady flow of capital to the public treasury. Regardless of the expanding nature of the debt stock, particularly from 2015 to the year 2020, Nigeria's economic progress is not encouraging, especially when considering essential aspects such as job creation, poverty reduction, and other socio-economic difficulties the country faces (Ekor et al., 2021).

The "debt overhang" effect lowers economic performance by leading to tax disincentives and macroeconomic instability (Abdullahi et al., 2016; Shkolnyk and Koilo, 2018). Effects of macroeconomic instability include rising fiscal deficits, uncertainty resulting from unconventional financing, potential monetary expansion, depreciation of currencies, and anticipated inflation (Ohiomu, 2020; Yusuf & Mohd 2021). "The burden connected with debt service in Nigeria hampered and aggravated her rapid economic growth and social issues," claims Ohiomu (2020) in his debt overhang hypothesis. Because of a lack of funds, major institutions' ability to provide services aimed at improving the living conditions of the poor has been limited. The government appears to have hampered private sector investment and growth by reducing social and economic infrastructure spending due to market failures. Because public investment accounts for a large portion of total investment in the country, total investment has decreased and welfare loss has increased.

This paper was motivated by the observed disparity between the volume of the debt stock and economic realities, such that human development indicators in Nigeria continue to show negative signs in the face of unabated socioeconomic challenges. Nigeria has continued to accumulate debt, both external and domestic, often at extremely low-interest rates. Increased debt accumulation entails increased economic activity and infrastructure development. If total debt is increasing, questions must be raised as to why this is not reflected in an improvement in Nigerians' standard of living. For instance, between 2004 and 2010, the poverty level increased from 54.7% to 60.9% (Jaiyeola and Bayat 2019) and further increased to 64.61% (Lawanson and Umar 2021) by the end of 2017. As of the end of 2020 and going by the World Bank income threshold of \$3.20 per day, the poverty rate was put at 71% (NNBC 2021).

This article examines how debt stock and service signals affect the annual growth rate of output. When the statements of the debt Laffer curve are re-examined, the link between the debt Laffer curve and non-linearity in the effect of debt becomes obvious. The nonlinear curve links debt stock to repayment abilities (i.e., expected value of repayment). The inverted U-shaped curve depicts how repayment ability declines as the debt stock grows. In other words, after a certain point, efficient debt stock usage drops, and additional debt acquisition leads to a decline in productivity. Nonetheless, the choice of Nigeria for the analysis stems from the fact that apart from being the giant of Africa, her role in regional and continental integration cannot be underestimated. As observed by Eke and Akujuobi (2021), Nigeria's efforts at reducing the poverty level in sub-Saharan Africa speaks volume as contained by Senadza et al. (2018). Above raised fundamental questions about the validity of debt accumulation for economic transformation:

- How far has Nigeria progressed economically in terms of GDP per capita, poverty reduction, life expectancy at birth, literacy rate, and the unemployment rate as more debt is accumulated? and
- Has the level of debt accumulation drastically impacted the economic transformation of Nigeria during the year under review?

This paper uses a holistic measure of sustainable development, considering its multi-dimensional nature, to review Nigeria's debt profile; and examine Nigeria's experiences in terms of debt accumulation viz-a-viz economic transformation in the recent past.

2. LITERATURE REVIEW

Kourtellos, Stengos, and Tan (2012) challenged the idea that the debt-growth link is either consistent across countries or varies significantly with debt levels. They discovered that the hypothesized relationship between public debt and economic development is influenced by institutional quality, but that debt thresholds do not exist. To address the difficulties of unobserved heterogeneity and cross-sectional dependency, Eberhardt and Presbitero (2013) applied novel econometric techniques. Their findings cast doubt on most studies that analyze the empirical relationship between debt and growth using a pooled modeling technique. According to Panizza and Presbitero (2013), OECD countries' average gross debt was close to 110 percent of GDP by the end of 2012, but the net debt was almost 40%. Although net debt is typically lower than gross debt, debt ratios that reflect the government's future implicit liabilities would be significantly higher. Minea and Parent (2012) used the Panel Smooth Threshold Regressions model given by Gonzalez, Terasvirta, and van Dijk (2005), as well as data from Maddison (2007) and the IMF Public Debt Database, to study the relationship between debt and growth (Abbas, Belhocine, El-Ganainy, and Horton, 2011). They discovered that when the debt-to-GDP ratio is greater than 90% but less than 115%, public debt is inversely related to growth. When transitioning from one regime to the next, this approach allows for a progressive shift in the regression coefficient. When debt hits 115 percent of GDP, however, the debt-growth relationship turns positive, according to the researchers. While their findings should not be construed as an endorsement for wasteful spending, they did hint at the existence of complicated non-linearities that exogenous threshold models may not capture.

Similarly, Afonso and Jalles (2013) discovered that throughout the period 1970–2008, the average growth rates of countries with low debt (debt-to-GDP ratio of 30%) were equal to those of countries with high debt (debt-to-GDP ratio > 90%). Reinhart and Rogoff's (2010b) sample is extended back to 1790 by Egert (2012). Using an endogenous threshold model, he discovers a small negative association between debt and growth, as well as some evidence of a non-linear relationship between debt and growth. On the other hand, anticipated endogenous debt-to-GDP thresholds are often far lower than 90%. This entry was published on August 1, 2010. According to the study, minor adjustments in nation coverage, data frequency, and assumptions on the minimum number of observations included in each regime have little effect on the presence and level of the thresholds. A comprehensive analysis of debt growth in Nigeria found that continuing debt accumulation harmed economic growth and so had no bearing on the country's economic transition. According to Adedoyin et al. (2016), there is a significant link between debt and economic growth, but no evidence of Granger causality. The Autoregressive-Distributed Lag's

(ARDL) findings also advised that to minimize the problem of debt overhang, the Nigerian government should set and maintain a maximum debt limit. The same ARDL forms the basis of the investigation by Yusuf and Mohd (2021) where external debt depicted a positive influence on economic growth in the long run but a harmful repercussion in the short run. Hence, governments at all levels were advised to take solace from external borrowing against external financial obligations. Omodero et al. (2020) scrutinized the extent to which external financial obligations in Nigeria affect the general living standard of the people and concluded that borrowed funds did not improve the living standard of Nigerians but rather aided the rising living costs. Not only that, but it was also further observed that the essence of contracting debt has no significant consequence on the living costs of the people because *ab initio*, the purpose was being undermined for lack of political will. In the same way, the outcome of the ARDL bound test by Ohiomo (2020) submitted that both the debt overhang and crowding-out effects variables in his study depressed investment level in Nigeria. Iliya and Tahir (2017) hypothesized external debt and economic growth in a time-series study spanning 1980 to 2014, using the instrument of the Newey-West Heteroskedasticity and Autocorrelation-consistent (HAC) estimator. It was shown that the debt-serving index affects economic growth negatively and significantly. Festus and Saibu (2019) and Ekor et al. (2021) provided further evidence for the debt-growth hypothesis and supported existing findings that the effect of debt on economic growth in Nigeria remained negative. It was further strengthened in the time-series studies that employed ARDL that debt should be channeled solely into productive ventures that will aid the exportation of local outputs.

However, Oyaromade et al. (2021) documented a statistically insignificant relationship between external financial obligation and economic growth in Nigeria. On the impact of debt-bridging resources in Nigeria, Onakoya and Ogunade (2017) postulated institutional checks and balances on government finances if the benefits of external borrowing are to be fully achieved. The outcome of the ARDL estimation method further confirmed that the relationship between debts and economic growth in Nigeria is negative. A similar result was observed by Anderu et al. (2019) where external debt exerted a negative influence on economic growth in Nigeria. The time-series study which employed the same ARDL estimation method for the period 1980 to 2016 suggested a long-term policy that will account for both long- and short-term external debt. There was a mixture of external debt and debt servicing burden in the study by Ndubuisi (2017) where the error correction test showed that the debt servicing effect on economic growth in Nigeria was insignificant whereas, debt has a pronounced implication on economic growth. On the contrary, both external debt and debt servicing were shown as having negative and significant consequences on economic growth in Nigeria in another study by George-Anokwuru and Inimino (2020). Amassoma (2011) posits that internal debt, not external debt, will aid Nigeria's economic growth. This is because repaying the internal debt principal and interest is a reinvestment in the local economy, which would normally have an impact on chain investment. Foreign debt, on the other hand, will necessitate additional resources to repay and service the loan, diminishing the debt's favorable influence on economic growth. As a result, rather than relying on external debt to stimulate the economy, the government should rely on internal debt.

After showing the presence of a negative relationship between debt and growth, Cecchetti, et al. (2012) explored non-linearities. In standard regressions and group comparisons, they identified no indication of a threshold effect. Nonetheless, they stated that evidence from more advanced econometric approaches indicated the presence of such an effect. From 1970 to 2007, Kumar and

Woo (2010) explore the relationship between debt and growth in a sample of 30 advanced and developing market nations. They tested various estimate methods and discovered that the system GMME helps them deal with endogeneity. A 10% increase in the initial debt-to-GDP ratio is related to a 20% slow in yearly real per capita GDP growth (Cecchetti et al. 2012). This data should be treated with caution. Difference and system GMM estimators were designed for microdata and are therefore ineffective for macroeconomic datasets with a small number of cross-sectional units (Bond, 2002). From 1970 to 2008, Checherita-Westphal and Rother (2012) compare a country's debt-to-GDP ratio to the average debt-to-GDP ratio of the other 11 euro-area nations at the same time. Using this method, the authors establish a non-linear hump-shaped relationship between debt and growth. Growth peaks when the debt-to-GDP ratio is between 90 and 100 percent, according to their calculations. Checherita-Westphal and Rother's instrument have two flaws (2012). The tool is only viable if "there is no strong association between debt levels in other euro area countries and the per-capita GDP growth rate in a single country" (Checherita-Westphal and Rother, 2012). This assumption is tough to refute. If debt hurts a country's growth, claiming that debt levels in other euro-area countries have no impact on growth in the excluded country is equivalent to claiming that GDP growth in the euro area (as calculated by excluding a specific country from the group) has no impact on GDP growth in the excluded country. It is significantly more difficult to justify such an argument during a crisis when there is convincing evidence of massive cross-country spillover effects (De Santis, 2012). Second, like the GMM estimations discussed above, Checherita-Westphal and Rother (2012) use instrumental variables to get results that are quite close to those of OLS regressions. This could indicate that the debt is not endogenous or that the instrument is malfunctioning. Panizza and Presbitero (2012) employ the same specification as Cecchetti, Mohanty, and Zampolli (2012), but factor in the value implications of foreign currency debt and exchange rate fluctuations. The paper shows that the instrument is useful (as indicated by a satisfactory first-stage correlation and a battery of weak instrument tests), but it is unable to assess the validity of the exclusion constraint since the model is not explicitly described.

However, most studies focus on the relationship between public debt and economic growth, while studies using Johansens' cointegration technique applied to public borrowing, economic, and sustainable development in Nigeria are still scanty. The purpose of this article is to apply the technique to inform policymakers about whether or not public borrowing helps economic and sustainable growth in Nigeria. This will help the government allocate resources from the public debt to other important sectors of the economy.

2.1 Theoretical Framework

There are numerous economic growth theories. The theories are essentially diverse in that they make various behavioral assumptions, employ different ideas and categories, explain the development process differently, and propose different strategies (Mookherjee & Ray, 2001). The Economic Base Theory is one of the economic development theories that consider economic development to be the pace of local economic growth as measured by changes in output, income, or employment. The core sector's response to international demand for local exports, which fosters local growth, is the idea's primary dynamic. Acceptance as a foundation for understanding economic progress in North America, as well as its simplicity as a hypothesis or instrument for prediction, are two of the idea's main attributes (Malizia and Feser, 1999). Its main flaw is that it is insufficient as a theory for comprehending economic development, particularly over long

periods. According to economic theory, enticing the sector through recruitment and location marketing is a good strategy.

The staple idea is another economic growth hypothesis. This concept's main assumption is industrial sectors. Long-term sustainable growth is described as economic progress (Ray, 1998). Two of the theory's main strengths are its historical connection to North American economic development and its emphasis on understanding the region's economic history. Its fundamental problem is that it describes rather than explains the development process (Hoff and Stiglitz, 1999). As part of the economic growth process, this idea was developed. The globe is divided into three categories: primary, secondary, and tertiary (Aghion & Bolton, 1997). Sectoral diversity, with a focus on the tertiary sector, as well as labor productivity, determines the level of development. The basic, secondary, and tertiary categories are too crude to be effective in practice, even though Sector Theory may be applied and tested empirically (Todaro & Smith, 2009). The most essential application is that for long-term growth, sectors that create income-elastic goods must be prioritized. In the classical liberal approach, economic development is characterized as economic growth and capital formation. Capital production, according to this idea, is the cornerstone of the economic growth of large-scale infrastructure projects and international aid funds were emphasized as a result (Fields, 1981). In social theories of economic development, the importance of human capital has been emphasized. Economic growth is influenced by factors such as education, health, and fertility. They moved their focus from total economic growth to poverty, inequality, urbanization, and other social problems (Ferreira et al. 2010).

The conditions unique to Third World countries are highlighted in economic structural theories. Recognizing that the European model could be duplicated in former colonies was crucial to economic success (Ray, 1998). Under the idea, concerns were shifted to "import substitution," high tariffs, and government protectionism. Neo-classical economic development theories emphasize the negative consequences of development. Economic prosperity depends on free markets. They shifted the focus of structural theories away from the government and toward private investment and market efficiency. Currently, this is the most widely utilized set of hypotheses (Mookherjee & Ray, 2001; Malizia & Feser, 1999). Other economic development theories include the growth pole theory, interregional theory, product-cycle theory, entrepreneurship theory, and flexible production theory. The Classical Liberal and Social theories are chosen in this study because they identify and incorporate human capital into the definition and assessment of economic progress. Using Human Development Index (HDI) factors, the study compared Nigeria's economic advancement to the country's overall public debt. The HDI has been widely used by UN agencies and other international organizations to analyze both economic and human progress since 1990. HDI is gaining popularity among development economists (Nagel, 2007).

Sachs (1989) developed a theoretical model known as the "debt overhang for developing countries," which proved that debt forgiveness might raise the value of future debtor country repayments while preserving the current market value of debt instruments. This is especially true when a country borrows excessively and is forced to face the debt-servicing load. When a country's debt becomes too large, it loses its ability to finance it, increasing the danger of default. Creditors consider those factors when calculating the expected value of repayments they can expect from a sovereign, and if that value is less than the face value of the debt, it may be the case that lowering

the face value of the debt reduces the likelihood of a country defaulting on interest or principal payments, and thus increases the expected value of repayments to creditors, as explained later. The possibility of market-based debt reduction measures is explained by Krugman (1989), who also provides Sachs' idea on a formal basis. When a country's debt exceeds its ability to pay, or "when a country's responsibilities exceed the amount it is likely to be able to pay," these obligations act as a high marginal tax rate on the country: if it does better than expected, the main benefits will accrue to its creditors, not the country. Because all of the advantages will go to the creditors rather than the country, the domestic government will be discouraged from doing well and improving its economic performance. The debt, on the other hand, must be repaid by domestic taxpayers, mostly through capital taxes, which would dissuade investment even more. Krugman then goes on to explain the debt Laffer curve's underlying logic, as seen in Figure 1, pointing out that the relationship between the debt's face value and its market value is one-to-one up to a point. When the face value of a security exceeds this level, the market value begins to rise more slowly. The reason for this mismatch is that as the debt develops, financing becomes more difficult due to larger service commitments, which effectively act as a tax on investment, policy reforms, and other activities that require upfront costs in exchange for future benefits (Epaphra and Mesiet 2021). The total market value of debt declines as more debt is accumulated, and the marginal return on debt to the right of point A begins to decline, while the total market value of debt rises. When debt levels exceed a particular threshold, the absolute growth in face value is insufficient to offset the marginal decline in market value, the country is said to have a "debt overhang":

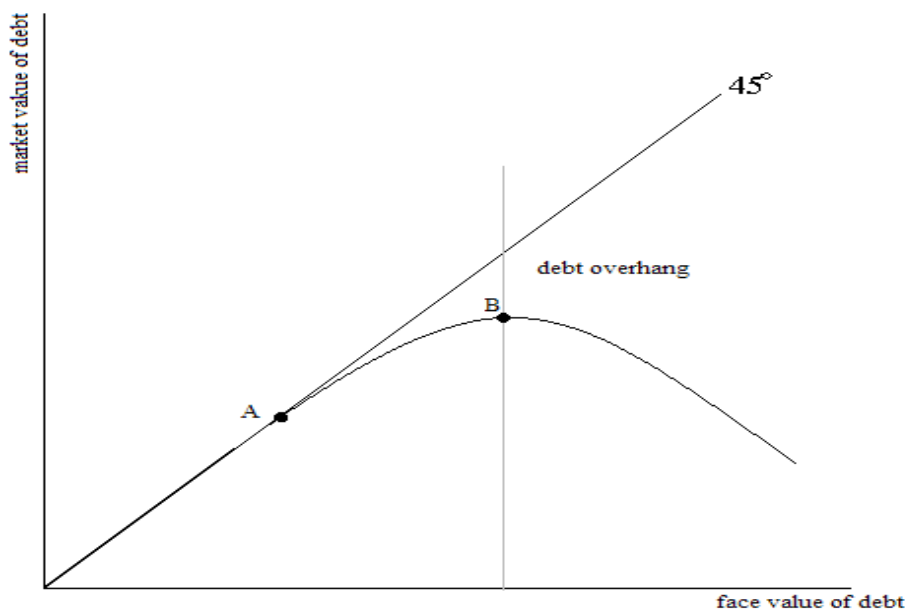


Figure 1: Debt Relief Laffer Curve

When a country's debt level at face value is related to a lower market value, there are two options: the country is either on the left or right side of point B. Point B represents the maximum market value of a country's debt. If a country's debt level correlates to a location on the debt Laffer curve between A and B, it is considered to be on the "right" side of the debt Laffer curve. In this case, debt forgiveness will not result in a higher market value for the debt. If, on the other hand, a country's debt level corresponds to a point on the curve to the right of point B, the country is said to be on the "wrong" side of the Laffer curve, i.e., it has a debt overhang. In this situation, debt

forgiveness will lower the face value of a country's debt while increasing the market value of that debt.

3. METHODOLOGY

There is ambiguity in the measure of sustainable and inclusive development (Rauniyar & Kanbur, 2009). Several studies have used different measures such as poverty, educational indicators, and HDI to proxy sustainable development. In recent times, studies are beginning to use the growth-elasticity of poverty as a measure of economic development and sustainability (Klasen & Misselhom, 2008; Habilo, 2009). In our analysis, we take cognizance of the fact that economic development and sustainable development are about the expansion of human capabilities for economic productivity.

Our methodology encompasses both theoretical and econometric analysis. The theoretical analysis is used to assess Nigeria's debt profile, which is the first objective of the study. Using empirical evidence, the study investigated looked into the relationship between Nigerian debt and economic development, and how the former influenced the latter. The study covers the period between the years 2000 and 2020. The choice of this period coincides with the beginning of the present democratic rule in the country cum the significance attached to economic growth and development by various governments. The economic and sustainable development is broken down into proxies namely: GDP per capita (GDPpc), Literacy Rate (LITRT), Population Rate below Poverty Level (PPL), and Total Debt (TDT). They were selected in line with the principles of the UNDP approach to inclusive development. The *a priori* expectation is that as total debt stock increases, GDPpc, and LITRT would have positive signs while PPL is expected to reduce. The analysis was done using the E-Views Software. There are various approaches to estimating cointegration regressions. However, this paper adopts Johansen's cointegration method because, like others, it allows for more than one cointegrating relationship. Moreover, recent Monte Carlo evidence strongly favors Johansen Maximum Likelihood Method (JML) over the Engle-Granger method (De Jong, 1992 cited in Ogujiuba et al, 2004). The hypothesis is that if the variables are cointegrated, they share a long-run relationship and will move closer together over time.

Cointegration analysis is used to obtain information about the long-term equilibrium relationship of the model. Initially, economists used linear regression on non-stationary time series data, but following Granger and Newbold (1974), it is now widely accepted that most economic time series are non-stationary in their levels; and using such data sets may produce spurious regressions. This assumes that the means and variances are time-dependent and that such variables are first-order integrated. As a result, all statistics in a model based on these series vary over time, and these variables fail to converge to their true values as the sample size grows (Rao, 1994). To avoid spurious regression, the Augmented Dickey-Fuller would be employed to test for the presence of unit roots. The presence of a unit root is the null hypothesis, while the absence of a unit root is the alternative hypothesis. Granger (1981) and Engle and Granger (1987) argue that the presence of cointegration must be taken into account when testing the relationship between two variables that have unit roots. To do this, the standard procedure is to conduct an ordinary least square regression after differencing the data. The presence of a unit root justifies the estimation of the equations within a cointegration framework. However, cointegration analysis is more appropriate when the data sets are of limited strength which is peculiar to time series analysis as in this case.

In line with a study by Olamide and Maredza (2021), the equation of the study is expressed as:

Total Debt and GDP per Capita: Long-run relationships

$$GDP_{pc_t} = \alpha + \beta TDT_t + \mu_t \dots\dots\dots (1)$$

Total Debt and Literacy Rate: Long-run relationships

$$LITRT_t = \alpha + \beta TDT_t + \mu_t \dots\dots\dots (2)$$

Total Debt and Population below Poverty Line: Long-run relationships

$$PPL_t = \alpha - \beta TDT_t + \mu_t \dots\dots\dots (3)$$

Where:

- TDT Total Debt
- GDP_{pc} GDP per Capita
- LITRT Literacy Rate
- PPL Population below Poverty Line
- α The Intercept
- β - Beta Coefficient of the Independent Variable
- μ Standard Error of the Estimate

3.1 Sources of Data

As stated above, data on economic progress was split down into proxies and sourced from the Statistical Bulletin of the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS), the International Monetary Fund (IMF), and the World Bank Economic Statistics, respectively.

4. RESULTS AND DISCUSSION

Objective 1: Stylized Facts of Nigeria’s Debt Profile

In a study published in 2013, World Economic Outlook determined a provisional threshold of 50% for total public debt to GDP for emerging markets. Table 1 shows that Nigeria's ratios were above that threshold before the Paris Club debt settlement in 2005. The entire public debt/GDP ratio declined to 12.39 percent at the end of 2006 after quitting both the Paris and London Club debt obligations, while the total public debt stock fell to 2,239.11 billion Naira (US\$ 17, 349.69 million). In 2007, this ratio fell to 11.67 percent, 8.53 percent in 2008, 6.49 percent in 2009, 6.38 percent in 2010, and 5.74 percent in 2011. However, the ratio started rising again from 22.9% in 2014 to 23.41% in 2016 and 35% in 2020. This marked the beginning of the rising debt profile of the country after the initial cancellation by the Obasanjo administration.

Table 1: Trends in Nigeria’s debt profile 2000-2020

| Year | GDP GDP (Naira Bn) | Total Public Debt (Naira Bn) | TDP/GDP (Naira Bn) |
|------|-----------------------|---------------------------------|-----------------------|
| 2000 | 6.9 | 4,210.96 | 61.07 |
| 2002 | 7.8 | 5,155.72 | 66.13 |
| 2004 | 11.4 | 6,147.88 | 53.88 |
| 2006 | 18.1 | 2,239.11 | 12.39 |
| 2008 | 24.3 | 2,848.84 | 8.53 |
| 2010 | 34.0 | 5,323.46 | 6.38 |
| 2012 | 45.5 | 8,013.22 | 20.24% |
| 2014 | 54.7 | 9,465.98 | 22.9% |
| 2016 | 44.7 | 10,876.45 | 23.41% |

| Year | GDP (Naira Bn) | Total Public Debt (Naira Bn) | TDP/GDP (Naira Bn) |
|------|----------------|------------------------------|--------------------|
| 2018 | 57.2 | 16,352.31 | 27.69% |
| 2020 | 72.3 | 22,769.69 | 35% |

Source: CBN, DMO

Nigeria's external debt stock was US\$5.6 billion as of December 31, 2012, down from US\$6.3 billion the previous year. The debt stock increased from US\$ 3.0 billion (representing 83.6 percent) in 2001 to roughly US\$ 18 billion in 2005 (representing 83.6 percent). Although the Non-Paris Club's debt stock declined steadily from 2001 to 2004, it skyrocketed in 2005 due to increased disbursements of Chinese loans. However, the implementation of Phases I and II of the Paris Club debt arrangement resulted in a drop to US\$2.4 billion in 2006. Between 2007 and 2008, the external debt stock dropped even further, to US\$2.1 billion and US\$2.0 billion, respectively. However, between 2014 and 2020, the debt stock has risen astronomically beyond the acceptable threshold.

| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 | 2016 | 2018 | 2020 |
|------------------------|-------|-------|-------|------|------|------|------|------|------|-------|-------|
| External Debt (USD\$b) | 28.27 | 23.51 | 28.22 | 2.13 | 2.06 | 2.58 | 3.82 | 6.45 | 7.84 | 21.04 | 28.57 |

Source: CBN, DMO.

Note Exchange rate – Naira (N) per US\$: 2000 – N100.6, 2002 – N126.9, 2004 – N132.3, 2006 -N127, 2008 - N131.3, 2010 – N149.2, 2012 – N157.5, 2014-N158.6, 2016-N253.5, 2018-N307, 2020-N381.

Since 2000, the accumulation of arrears, the country's debt portfolio's foreign exchange exposure, and the depreciation of Nigeria's external debt reporting currency have all contributed to the rise of Nigeria's external debt stock (Table 2). From 2003 to -2004, Nigeria's foreign debt to EU countries was consolidated into Euro, and the Euro's subsequent appreciation against the US Dollar was a major factor in the country's debt stock increasing. Between 2000 and 2004, the external debt stock increased by US\$1.6 billion. (According to DMO, 2009).

Table 2: Total Domestic Debt Stock

| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 | 2016 | 2018 | 2020 |
|---------------------|---------|--------|--------|--------|--------|--------|--------|-------|---------|---------|---------|
| Domestic Debt (NTn) | 0.898tr | 1.67tr | 1,37tr | 1,75tr | 2,32tr | 4.55tr | 6.54tr | 7.9tr | 11.06tr | 12.77tr | 16.02tr |

Source: DMO, Budget Office, CBN 2021.

The composition of Nigeria's domestic debt by instruments includes Federal Government of Nigeria bonds, Treasury Bills, Treasury bonds, development stocks, and Promissory Notes.

The domestic debt stock in Nigeria increased from N0.898tr to N6.5tr over the period 2000–2012. Between 2010 and 2012 alone, it increased by 22.08%, representing an increase of N1.99tr. Since 2000, the accumulation of arrears, the country's debt portfolio's foreign exchange exposure, and the depreciation of Nigeria's external debt reporting currency have all led to an increase in Nigeria's external debt stock (Table 2). Nigeria's foreign debt to EU countries was consolidated into Euro in 2003-2004, and the Euro's subsequent appreciation against the US Dollar was a major contributor to the country's rising debt stock. Between 2000 and 2004, the stock of external debt increased by US\$1.6 billion. (For more information, see DMO, 2009). Between 2014 and 2018, Nigeria's debt increased from 7.9tr to 12.77tr and 16.02tr by the end of Dec 2020. Responsible for this largely was the fall in global commodity prices compounded by the Covid-19 global pandemic.

Table 3: Components of Domestic Public Debt by Instruments

| | 2007 (N 'B) | 2008 (N 'B) | 2009 (N 'B) | 2010 (N 'B) | 2011 (N 'B) | 2015 (N 'B) | 2019 (N 'B) |
|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Treasury bills | 574.9 | 471.9 | 797.5 | 1,277.1 | 1,727.9 | 2,346.5 | 2,875.4 |
| Treasury bonds | 407.9 | 402.3 | 392.1 | 372.9 | 353.7 | 385.3 | 425.6 |
| Development stocks | 0.6 | 0.5 | 0.5 | 0.2 | - | 0.6 | 0.7 |
| FGN Bonds | 1,007.7 | 1,445.6 | 1,974.9 | 2,901.6 | 353.7 | 2,801.6 | 3,401.6 |
| Special FGN Bonds | 178.4 | - | - | - | - | - | - |
| Promissory Notes | - | - | 63.0 | - | - | - | - |

Source: CBN

Table 4 and Figure 1 show the composition of domestic debt by instrument between the end of 2007 and 2011. Treasury bills stood at N574.9 billion in 2007. It declined to N471.9 billion in 2008. It increased sharply to N797.5 billion in 2009, N1, 277.1 billion in 2010, and N1, and 727.9 billion in 2011, respectively.

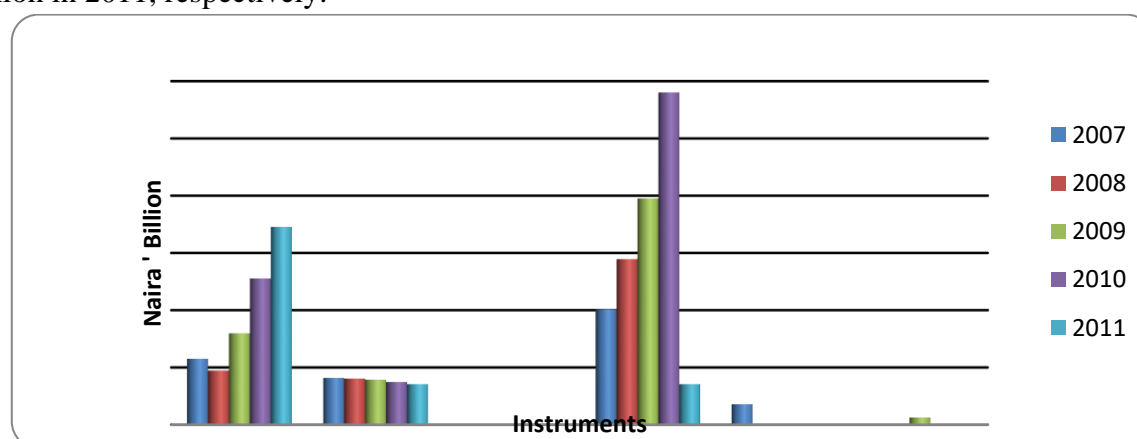


Figure 2: Components of Domestic Public Debt by Instru

Treasury bonds declined from N407.9 billion in 2007 to N353.7 billion in 2011. Development stock recorded 0.6, 0.5, 0.5 and 0.2 per cents in 2007, 2008, 2009 and 2010. FGN bonds amounted to N178.4 billion in 2007 and promissory notes N63 billion in 2009. Between 2015 and 2019, the values of the components of public debt instruments have risen astronomically.

Table 4: Debt Solvency Indicators

| Item | Actual | | | | Thresholds |
|--------------------------|--------|------|------|------|------------|
| | 2009 | 2011 | 2015 | 2018 | |
| Total debt to GDP | 15.40 | 18 | 20 | 25 | 40 |
| External Debt to Exports | 8.50 | 14 | 28 | 42 | 100 |
| Total Debt to Revenue | 144.30 | 195 | 200 | 220 | 250 |
| Debt service to Revenue | 20.60 | 22 | 23 | 26 | 30 |
| Debt service to Exports | NA | NA | NA | NA | 20 |

Sources: CBN Annual Report and Statement of Account 2010; 2015; 2018 Debt Sustainability Analysis Report and National Institute for Legislative Studies Reports

Current debt and debt-service ratios show worrisome results, vis-a-vis the current thresholds of the federal government Debt Sustainability Analysis (DSAs). The DSAs report by the DMO in 2010 and the Debt Management Framework for 2009-2018 prescribed the following ratios: Total debt to GDP 40%; External debt to Exports 100%; Total Debt to Revenue 250%; Debt service to Revenue 30%; and Debt service to Exports 20% (see Table 5).

Between 2009 and 2020, the total debt-to-revenue and deficit-to-revenue ratios are expected to rise. Given that the federal government has no plans to outsource external debt other than domestic debt, traditional indicators of a country's ability to repay debt, such as GDP, exports, and fiscal revenue, are expected to rise. The negative consequences of the global financial crisis between 2007 and 2009, the economic breakdown from 2014 to 2017, and the COVID-19 pandemic on most low-income countries' economic activity could have been imagined rather than real. In Nigeria, these scenarios have resulted in humongous debt accumulation without much impact on the socio-economic status of the country just as the security challenges facing the country have continued unabated. This suggests that the debt threshold of the country must have gone beyond the manageable level. Therefore, more stringent ratios are required to reduce debt susceptibility and fortified fiscal revenue. Nigeria's disposition to borrow pointed to the fact that external debt has been harmful to growth either because these loans were channeled to unproductive elephant ventures, or they find their way out of the country through corrupt practices (Eke & Akujuobi 2021; Rotimi et al., 2021). Olamide and Maredza (2021) in South Africa confirmed the negative impact of external debt on the country's economic growth. Using the ARDL estimating approach, it was also discovered that corruption had a regressive and harmful impact on the country's development goals. The debt-growth debate in Africa has revealed a negative link (Senadza et al. 2018, Mwakalila 2019). However, Epaphra and Mesiet (2021) concluded that a moderate level of debt-growth ratio helps boost the economic growth of the region just as Bett (2018) opined that foreign borrowing exposes the borrower to external interference by the lender. On the contrary, Elwasila (2018) concluded that external debt had a beneficial effect on economic growth in Sudan from 1969 to 2015. Shkolnyk and Koilo (2018) found that rising debt levels paired with macroeconomic instability stymies economic change in Ukraine, citing the government's debt management problem as the source of the country's macroeconomic instability. Debt also aggravates growth in Bangladesh according to a study by Dey and Tareque (2019).

Objective II:

Our second objective investigates the long-run relationship between debt accumulation and economic and sustainable development. Then Akaike information criterion (AIC) is used to specify the lag as depicted in table 5. Accordingly, the results suggest that VAR at lag 1 1 is more suitable.

Table 5: Lag Order Selection

| Lag | Logl | LR | FPE | AIC | SC | HQ |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 | -1439.271 | NA | 5.39e+33 | 94.0184 | 94.11530 | 94.0782 |
| 1 | -1321.867 | 183.0264* | 7.09e+29* | 95.31365* | 88.14796* | 86.52254* |
| 2 | -1312.714 | 6.201430 | 0.69e+34 | 96.03846 | 88.63852 | 87.49931 |

Source: Authors' computation using E-View

The next step is to apply the Johansen maximum likelihood approach to determine whether the variables have a long-term relationship. Table 6 shows the test findings, which compare the null hypothesis of no co-integration with the alternative hypothesis of the presence of co-integration, using maximal-eigenvalue statistics. In this method, the co-integrating vector is considered to stay constant during the study period. The government's current reform attempt may impact the long-run linkages between the underlying factors. This is particularly true if the sampling interval is long.

Table 6: Johansen Maximum Likelihood Co-Integration Tests

| | Eigen Value | Likelihood Ratio | 5% Critical Value | 1% Critical Value | Hypothesized |
|--------------------|-------------|------------------|-------------------|-------------------|--------------|
| For GDP TDT | 0.914508 | 34.04149 | 15.41 | 20.04 | None ** |
| | 0.314402 | 4.529564 | 3.76 | 6.65 | At most 1 * |
| For LITRT | 0.558696 | 11.32670 | 15.41 | 6.65 | None |
| TDT | 0.118271 | 1.510449 | 3.76 | | At most 1 |
| For PPL TDT | 0.828655 | 16.36043 | 15.41 | 20.04 | None ** |
| | 0.233541 | 1.191693 | 3.76 | 6.65 | At most 1 |

*(**) denotes rejection of the hypothesis at a 1% (5%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

The statistical result in Table 6 indicates that a positive relationship exists between GDP and the total debt profile of the federal government. The hypothesis is positively significant at 5% and 1% critical values. However, it reveals two co-integrating equations at a 5% significant level. It has however been argued that Nigeria's economy is debt-dependent and therefore susceptible to domestic shocks (Yusuf and Mohd 2021).

There was no indication of a long-term relationship between literacy and total state debt in Nigeria in table 6. At a 5% significance level, the long run rejects any co-integration. At both the 5% and 1% significant levels, the null hypothesis of the likelihood ratio is accepted. According to the data, there was no impact of public debt on literacy rates throughout the period studied. At both the 5% and 1% significance levels, the max-eigenvalue statistics in the Table above indicate rejection of the hypothesis, as well as acceptance that the long-run test reveals one co-integrating equation at the 5% significance level. According to the findings, there is no link between poverty and overall governmental debt. Available statistics indicate that the Population below the Poverty Line rate increased from 34.1% in 1999 to 60% in 2000. The rate remained at 60% between 2000 and 2009. It increased to 70% from 2010-to 2012. During the same period, the real GDP growth rate did not follow a particular pattern. For instance, it stood at 2.7% in 1999, 3.5% in 2000, 3.5% in 2001, 3.0% in 2002, 7.1% in 2003, 6.2% in 2004, 6.9% in 2005, 5.3% in 2006, 6.4% in 2007, 5.3% in 2008, 5.6% in 2009, 8.4% in 2010, 10.2% in 2015, 15% in 2018 and more than 20% in 2020

Diagnostic Tests

Three post-estimation tests were performed to ensure the fitness and reliability of our model. Table 7 below gives details.

Table 7: Model Fitness and Reliability Results

| Serial Correlation [Null hypothesis: no serial correlation] | | | | | | |
|---|----------|------------------|----------|-------------|------------|--------|
| Lag | LRE*Stat | df | Prob. | Rao- F-Test | Df | Prob. |
| 1 | 2.835774 | 4 | 0.4016 | 0.980142 | (4, 213.0) | 0.4016 |
| 2 | 3.763765 | 4 | 0.3401 | 1.215398 | (4, 213.0) | 0.3401 |
| Jarque-Bera Normality test | | | | | | |
| | | Jarque-Bera Stat | Prob. | | | |
| | | 2.386418 | 0.321029 | | | |
| Breusch-Pagan-Godfrey Heteroskedasticity Test | | | | | | |
| F-Statistics | 0.005461 | Prob. F (1, 109) | 0.9501 | | | |
| Obs*R-Square | 0.005573 | Prob. Chi-Square | 0.9491 | | | |
| Explained SS | 0.003298 | Prob. Chi-Square | 0.5108 | | | |

Source: Authors' compilation using EViews

The VAR residual serial correlation LM test was used to generate Table 7. Because the p-values exceed the 5% benchmark, we cannot reject but must accept the null hypothesis of no serial association. The Jarque-Bera test yielded a statistic value of 2.386418 and a corresponding p-value of 0.321029, which is higher than the 5% threshold. As a result, the model's residuals can be assumed to be regularly distributed. As a result, the null hypothesis of the non-normal distribution of the residuals is rejected, whereas the alternative hypothesis of the normal distribution is accepted. It can be concluded from Table 7 above that the model is not heteroskedasticity but homoskedasticity since the p-values are more than the 5% benchmark. Therefore, the model's residuals have constant variance and are good for the study.

Table 8: Variance decomposition

| Period | Variance Decomposition for LGDPpc | | |
|----------------------------------|-----------------------------------|-----------|-----------|
| | Std Error | LGDPpc | TDT |
| 1 | 0.012053 | 100.00000 | 0.000000 |
| 2 | 0.017428 | 89.84034 | 0.017738 |
| 3 | 0.021204 | 89.82416 | 0.048749 |
| 4 | 0.024123 | 89.80603 | 0.152441 |
| Variance Decomposition of TDT | | | |
| 1 | 1.206034 | 18.114392 | 83.647244 |
| 2 | 1.714048 | 17.482941 | 84.104201 |
| 3 | 2.201047 | 17.346719 | 84.048244 |
| 4 | 2.740614 | 16.949196 | 83.899496 |
| Ordering of Cholesky: LGDPpc TDT | | | |

Source: Authors' compilation using EViews

From table 8 above, it is indicative that apart from shock to itself, the effects of shock from gross domestic product per capital on TDT became noticeable by the fourth period with a value of 15.24%. Any shock from GDPpc has no effect during the first period but recorded a small effect of 4% by the third period. However, the effects of shocks from TDT on the gross domestic product were more felt in the first and second quarters of the period under investigation. These effects reduced marginally to 17.35% and 16.95% during the third and fourth periods respectively. Economically, this seems reasonable since total debt is not the only variable that can shock GDPpc.

5. CONCLUSION

Debt has a short-term favorable impact on growth, but it has a long-term negative impact. Massive public debt may not have an immediate influence on economic growth, but if used properly, it has the potential to be a huge positive in the long run. Nigeria's entire public debt, according to the data, has hurt its economic and sustainable development efforts during the study period. Classic liberal and social theories were embraced because they identified and integrated human capital into the concept and evaluation of economic success. Human Development Index (HDI) proxies such as literacy rate, population below the poverty line, and GDP per capita were utilized in the study. With governmental debt borrowing (both external and domestic debt), the study variables were expected to improve, however, the opposite proved true. According to the findings, there is a link between GDP per capita and the federal government's total debt profile. During the study period, the literacy rate, total debt, population below the poverty line, and total debt were all statistically insignificant. Nigeria is accruing a new level of financial burden, according to statistics. If the debt level climbs above a particular threshold, the absolute gain in face value will not be enough to compensate for the marginal decline in market value, and the government would face a future "debt overhang." This study supports the Debt Relief Laffer Curve if Nigeria

continues to build her debt profile without physical development to justify the borrowings. Generally, in managing public debt, attempts must be made at ensuring fiscal sustainability with adequate concern to ensure that the debt profile does not exceed the discounted value of its expected net revenue.

5.1 Recommendations

Based on the study's findings and conclusions, it is suggested that:

- i. The Nigerian government should investigate the reasons for the non-contribution of public debts to human development indices to identify and eliminate bottlenecks. This could be due to poor administration, corruption, greater financing costs, or a failure to target the relevant population segment.
- ii. Debts are intended to boost the debtor country's economic growth and development, as well as the citizens' standard of living. As a result, the Nigerian government should always regard indebtedness as a means to long-term economic and sustainable development, rather than only as a method to solve short-term problems.
- iii. Reforms targeted at strengthening policy and institutional performance, notably in the areas of economics and debt management, should be bolstered.
- iv. It is necessary to examine stronger fiscal positions and better financing terms from donors/creditors.

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ENHANCING TEACHING AND LEARNING THROUGH EDUCATIONAL TECHNOLOGIES IN SOUTH AFRICA'S HISTORICALLY DISADVANTAGED INSTITUTIONS

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ABSTRACT

After the outbreak of the COVID-19 pandemic, the majority of historically disadvantaged institutions (HDIs) in South Africa approved and adopted educational technologies to continue teaching and learning activities. Although this was a move in the right direction, very little is known in research as to whether HDI educators are effective in the use of educational technologies. Quantitative data was collected from students who were asked to evaluate the effectiveness of educators on four dimensions of online teaching and learning, namely virtual interaction, unit content migration, online course alignment, and web-based module structure. This study is descriptive by design. Descriptive statistics were used to make meaning of the data. The results reveal that HDI educators are effective with regard to four dimensions of online teaching and learning, namely virtual interaction, unit content migration, online course alignment and web-based module structure. Although literature points out that prior to the COVID-19 outbreak, HDI educators had little experience in the use of online educational technologies, the study's findings reveal that HDI educators are capable of making use of educational technologies for the purposes of online teaching and learning. To ensure that online teaching and learning is enhanced within HDIs, this study recommends that stakeholders in the higher education sector should work together to reduce the digital divide gap as it hinders students from harnessing the full potential of e-learning.

Keywords: Historically disadvantaged institutions; educational technologies; teaching and learning; university graduates; employment.

1. INTRODUCTION

South Africa's historically disadvantaged institutions (HDIs) still battle to establish themselves as universities of choice when compared to their affluent counterparts. The resources divided among South African institutions of higher learning play a critical role when it comes to graduate absorption in the labour market. It is widely perceived that graduates from affluent universities find work relatively easier than graduates from HDIs. This study argues that HDIs have the opportunity to perform at the same level and enhance their graduates' employability perception by effectively utilising online educational technologies that are widely and primarily used by South Africa's affluent universities.

In the year 2019, the Internet of Things (IoT), Machine Learning and Big Data were the major educational, technological movements. One year down the line, COVID-19 came about and changed how teaching and learning are practised (Mbhiza, 2021). Since the world came to a better understanding of the COVID-19 virus after its widespread outbreak, distance learning became the major trend as authorities across the globe implemented lockdowns to prevent further spread of

the deadly virus (Maringe, 2020). Distance learning became the major movement owing to social distancing implications. Most South African institutions have teaching and learning facilities that accommodate a limited number of learners. With the implementation of social distancing regulations, conducting lectures in the classroom became impossible. In other words, most public agencies could not execute their mandate in South Africa (Haffejee & Levine, 2020), and globally (Fallon, McGhee, Davies, MacLeod, Clarke & Sinclair, 2020).

To ensure that teaching and learning continued smoothly, blended learning was adopted by all South African universities including the HDIs. Blended learning incorporates the traditional and online teaching and learning approaches. On the one hand, traditional teaching refers to teaching activities in a given facility where both the educator and the learner are physically present. On the other hand, online teaching and learning refer to a scenario whereby teaching and learning take place virtually as aided by educational technologies.

HDIs in South Africa are primarily found in rural areas and or in small towns where the infrastructure needed to support good Internet connectivity is very poor, the so-called digital divide (Dube, 2020). Research by Van Deursen and Van Dijk (2019) explained the digital divide gap as the gap between those who have access to computers and the Internet and those who do not. With reference to the digital divide gap in South Africa's higher education sector, they pointed out that this gap is huge, and it negatively affects the feasibility of online teaching and learning. Mpungose (2020) observed that the digital divide in South Africa's higher education sector is hindering students from realising the full potential of online teaching and learning. Du Plessis and Mestry (2019) described rural areas as secluded and poorly developed. The other challenge is that HDIs have a smaller financial muscle than the affluent and formerly whites only universities, the so-called resources divide (Mabokela & King, 2001). Poor Internet connectivity supporting infrastructure and insufficient financial resources are perennial problems, which have affected HDIs and contribute immensely to poor graduate employability as most of their graduates lack exposure and work-integrated learning experience (Nyahodza & Higgs, 2017; Tapfumaneyi & Rupande, 2013).

Most of the HDIs have curriculums developed to allow them to continue functioning despite the poor financial resources, for example, by having little practical and no work-integrated learning component for most of the qualifications on offer (Singh, 2004). Resultantly, HDIs were the main users of the traditional teaching and learning approach where learners would gather in a lecture room with a lecturer facilitating the learning activities for the day. This approach highly accommodated their financial and technological infrastructure circumstances (Lipowsky & Rzejak, 2015). HDIs' over-reliance on the traditional approach resulted in them temporarily shutting down learning activities after the outbreak of the pandemic owing to inadequate technological infrastructure to support fully the demands of the online teaching and learning (Mhlanga & Moloi, 2020). On the resources divide debate, Maringe (2020) concluded that HDIs do not have sufficient infrastructure to support the demands of online and teaching activities.

Although legislation has been passed and funding from the government increased with a view to bridging the historical gaps between affluent universities and HDIs (Bunting, 2006; Mzangwa, 2019), history continues to detect how institutions of higher learning position themselves concerning the adoption and utilisation of educational technologies (Ng'ambi et al. 2016). Given the advent of educational technologies, HDIs do stand a chance to enhance their educational

experience and enhance the attractiveness of their graduates in the labour market. Empirical evidence supports this notion, as research by Shava (2022) found that online teaching and learning predicts graduate employability in South Africa's rural universities.

Research further argues that if educators are highly effective and innovative in their adoption and implementation of educational technologies, various skills of learners befitting the 21st working environment could be enhanced leading to their improved graduate employability perception (Edmunds, Thorpe, & Conole, 2012).

Conversely, evidence suggests that educational technologies per se are not an issue, instead, the challenges lie in educators' abilities to embrace the available technology for online teaching and learning (Watty, McKay & Ngo, 2016). In the same vein, Mayberry et al. (2012) observed that the correct application of educational technologies for the purposes of online teaching and learning is a daunting task for many educators in universities. Van Duersen and van Dijk (2019) refer to the described phenomena as the second digital divide, where the right attitude and skills for the correct use and application of online educational technologies is more like a permanent problem in the South African context. Maringe (2020) noted that for effective online teaching and learning to take place, universities should consider retraining educators and possibly recruit additional educators whose competencies in the context of the new delivery mode is beyond questionable. Mbhiza (2021) concurred with the above notion and pointed out that after the Covid-19 outbreak, South African educators and learners had to rely on online teaching and learning, yet most had little knowledge, skills and training on how to utilise such technologies. In the case of HDIs, the majority of both educators and learners had to adopt a hands-on approach, that is, learn by doing to get the work done (Dube, 2020). Research concurs and points out that owing to resource scarcity in HDIs and poverty among African and Coloured students, access to educational technologies remains a challenge in South Africa (Dube, 2020; Mhlanga & Moloji, 2020).

Given the mentioned background, research focusing on educator effectiveness in the use of online educational technologies from the context of HDIs in South Africa is of paramount importance. Conversely, research showing that learners have been utilising educational technologies for knowledge sharing and learning in South Africa's rural universities does exist (Shava & Chinyamurindi, 2018; Shava, Chinyamurindi & Somdyala, 2016). However, not much research has been undertaken to investigate educators' effectiveness in utilising online technologies. This study fills this void and the conclusions are drawn from students' perception of the performance of educators across four dimensions of online teaching and learning.

Research on this subject is critical given that technological innovation within South Africa's higher education sector has a transformational effect on teaching and learning and therefore, educator effectiveness in the use of educational technologies cannot be overlooked (Mayberry et al. 2012; Zarei, Kheiri, & Yazdgerdi, 2014). Mbhiza (2021) emphasized that effective online teaching and learning are required across all South Africa's schooling levels. More importantly, Mhlanga and Moloji (2020) observed that the changes seen in the education sector, triggered by the pandemic, have the potential of moving educational activities to the Fourth Industrial Revolution (4IR), where teaching and learning activities will be predominantly digital as opposed to face-to-face.

Further, this research will therefore contribute to the mentioned gap by paving a path for an online teaching and learning intervention mechanism to be designed and assist where online teaching and

learning is failing to yield the desired outcomes owing to educator ineffectiveness. The following sections review literature on educational technologies and their application in higher education. Thereafter, the research methodology, results, discussion and conclusion of the study respectively are presented.

2. LITERATURE REVIEW

The literature review section is divided into the theoretical background where the information processing model is discussed in relation to online teaching and learning. Thereafter, a discussion is provided on educational technologies and their role in higher education.

2.1 Theoretical background

This study sought to examine educator effectiveness in the use of educational technologies in South Africa's HDIs. Educators' poor use of educational technologies could result in learners failing to engage meaningfully with the learning content, thus defeating the whole idea of active learning. Active learning requires learners to engage, make sense of and apply the learning content to enrich their education experience (Powner & Allendoerfer, 2008). Active learning techniques vary; however, when using educational technologies, learners are required to utilise online platforms to complete learning tasks and other learning-related activities. Active learning stems from the Information Processing (IP) model, a theory of human cognitive processing. The human cognitive processing theory assumes that information is received, stored in the sub-conscious and retrieved when needed (Schunk, 1996).

Traditionally, the IP model is also known as the two-store or dual-memory model (Atkinson & Shiffrin, 1971). The most important issue highlighted by the IP model is a situation when the learner makes a comparison between a new stimulus residing in the short memory versus what the learner already knows that which resides in the long-term memory and then makes the decision whether to add the new stimulus into the long-term memory. Active learning is critical in the sense that it manipulates the manner in which the learner will view the new stimuli, thereby increasing the chances of it being passed on to the long-term memory.

The examination of teacher effectiveness in the use of educational technologies is critical, given the role it plays towards active learning within HDIs. Effective utilisation of educational technologies by educators in HDIs will enrich learner experience, making it easier to compare a new stimulus (new knowledge) versus what the learner already knows, and making the decision to add new knowledge in the long-term memory. The ability to absorb new knowledge, store it, and rely on it for academic purposes is critical if the learner is to achieve the desired learning outcomes. Hence, effective utilisation of online technologies by educators within HDIs is critical to enhance graduate employability prospects of learners. Bester and Brand (2013) concurred and pointed out that learners are able to develop new ideas, create new knowledge, and link emerging information to the real-world circumstances. Such capabilities of learners arguably can contribute towards effective learning that is if the online and teaching platform is well utilised by the educator.

2.2 Educational technologies and higher education

HDIs owned some of the educational technologies that were readily available in the market before the Covid-19 pandemic. However, very few faculty members took the initiative to utilise these

educational technologies during classroom activities until blended learning was enforced through institutional policies after the outbreak of the COVID-19 pandemic. Such reluctance could be attributed to lack of instruction on how faculty members could incorporate educational technologies in classroom settings (Mayberry et al. 2012).

In addition, HDIs trusted the traditional approach to teaching and learning as opposed to virtual classes and this could be attributed to the resource divide which negatively affects tuition at HDIs (Shava, 2022). To determine whether educators within HDIs were effective in the use of educational technologies, four dimensions of online teaching and learning were examined, namely: virtual interaction, unit content migration, online course alignment, and web-based module structure. The paragraphs to follow unpack the mentioned dimensions.

2.3 Virtual interaction

In the domain of online teaching and learning, interaction is a broad term but in simplicity, interaction refers to a direct involvement with someone or something. In the context of this study, this interaction is assumed to be taking place on a virtual online teaching and learning platform. This study views virtual interaction from two dimensions: learner interaction and asynchronous and synchronous interaction (Song, Rice & Oh, 2019). Learner participation and interaction are somehow linked. On the one hand, learner participation can be through assignment submission, or class attendance. On the other hand, it could be interacting with fellow learners, for example, chatting about an assignment or an activity. The chatting (interaction) occurs on the provided online learning platform. Evidence exists suggesting that when educators encourage learners to interact/participate by providing such opportunities, the rate at which learners succeed in online courses increases exponentially (Croxtton, 2014; Hawkins et al., 2013; Joksimović et al., 2015). Research by Goggins and Xing (2016) concurred with the previous assertion as their findings reveal that an increase in the number of interactions significantly predicted achievement of learning outcomes.

2.4 Unit content migration

Unit content migration refers to the educator's ability to transfer learning content from non-online to online sites. The content in question must be rich enough to ensure that achievement of learning outcomes is not compromised (Ashburn & Floden, 2006). Most of the material that the educator would transfer to an online site is more or less similar to that material which would have been utilised in contact sessions. Examples include books published by highly ranked publishers, and journal articles, among others. Teaching material is diverse depending on the discipline (Breslyn & McGinnis, 2012). Therefore, the transfer of material to an online site is not an easy task, as the educator will have to choose the most appropriate content to be uploaded on the correct digital media designed to carry that type of file so that students can easily access it whenever needed.

2.5 Online course alignment

Online course alignment speaks to the educator's ability to create online teaching material, online assessment methods and online teaching activities that support the achievement of set learning objectives by the faculty. According to McTighe and Wiggins (2012), through effective course alignment, students are able to consistently make meaning of the module concepts. In addition,

effective course alignment ensures that there is no information overload leading to the achievement of learning outcomes.

2.6 Web-based module structure

Web-based module structure speaks to the educator's ability to design an online module such that learners find it very simple to navigate. The easier it is for students to navigate, the more user friendly it is. A more user-friendly module site enables students to participate in classroom activities with confidence and further enhances the chances of learning outcomes achievement (Sun, Tang & Zuo, 2020). In their study, Sun et al. (2020) reported that students in China appealed to educators to provide a unified teaching and learning platform with features such as playback and also for educators to issue an appropriate number of formative assessments as opposed to dumping many tasks on the platform. In other words, the online platform must not be too crowded or overloaded with content as it may overwhelm and demotivate the students.

3. RESEARCH METHODOLOGY

The study is quantitative by nature and a positivist research paradigm was pursued. This section elaborates further on the study's research design, sampling method, research instrument, data collection and data analysis.

3.1 Research design

The study is descriptive by design as it is aimed at describing the effectiveness of educators in utilising educational technologies on four dimensions of online teaching, namely virtual interaction, unit content migration, online course alignment and web-based module structure.

3.2 Sampling method

The target population for the study was university students studying in historically disadvantaged institutions (HDIs). Although South Africa has at least six universities categorised as HDIs (Temoso & Myeki, 2022), two of them were selected for the purposes of this research. Proximity to the researcher was the qualifying dimension for participation as resource limitations and the COVID-19 pandemic hindered the researcher from implementing this study at a national scale. Respondents were randomly selected and the determining factor was that a person had to be a registered student in the chosen universities and must have been attending classes virtually. The researcher targeted a large sample resulting in the distribution of 240 questionnaires of which 150 were returned with sufficient information, giving the study a sample size of 150 respondents.

3.3 Research instrument and measures

Gosselin's (2009) Online Teaching Self-Efficacy Inventory was modified to allow students to evaluate educators on how they utilised education technologies. Thus, instead of educators responding to the questionnaire, students were used as respondents. Four dimensions of the Online Teaching Self-Efficacy Inventory were considered to be relevant in the context of HDIs, namely virtual interaction, unit content migration, online course alignment and web-based module structure. The virtual interaction subscale had 10 items and the Cronbach alpha coefficient was derived as .772 indicating that the scale was internally consistent. An example of the scale items reads, "Lecturers are able to manage the pace of facilitating interaction".

The unit content migration subscale had 7 items and its reliability score was derived as .749. An example of the scale item reads, “Lecturers are able to select the appropriate digital media format (PowerPoint, digital photographs, Adobe Flash, etc.) to transfer unit content and materials”.

The online course alignment scale had 11 items and the reliability score was derived as .783. An example of the scale item reads, “Lecturers are able to provide students with detailed feedback about their academic progress”. The web-based module structure sub-scale had 11 items and a reliability of .826 was derived. An example of the scale items reads, “Lecturers are able to adapt the design of online class content to the needs of students (motivation, interest, prior knowledge, etc.)”.

The internal consistency of all four dimensions utilised in this study was above the internal consistency threshold of .7. This is an indication that the scales were all reliable. For all the scales used, they were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

3.4 Data collection and analysis

Quantitative data was collected once, thus, a cross-sectional survey was adopted. A self-administered questionnaire was used as a research instrument. The researcher and four trained fieldworkers randomly distributed questionnaires to 240 students who returned to university campus during the controlled student return phases. The study received ethical clearance from the faculty ethics subcommittee (2021/02/IBIKA/FMS) and adherence to prevailing COVID-19 regulations were highly emphasised by the ethics committee. The researcher took the necessary precautions to protect the research team and the respondents. Thus, personal protection equipment and sanitisers were used as prescribed. To make meaning of the data, descriptive statistics were used, and the Statistical Package for Social Sciences (SPSS) version 27 was the software used for data capturing, cleaning, management and analysis.

4. RESULTS AND DISCUSSION

The data revealed that male learners were the dominant group in this study, represented by 56% while 40% were females. The remainder of 4% were in the rather not say category. In terms of race, Africans were the dominant group represented by 98% and the remaining 2% were Coloureds. This result further reinforces the idea that in HDIs, privileged groups such as Whites and Indians are rarely found in the context of South Africa, but they are highly represented in affluent universities whereas Africans are poorly represented there. The distribution of participants by age revealed that 25% of the participants were aged 20 years and below and was dominated by the 21 to 25 years represented by 70%. The 26 years and above age category was the least represented (5%).

A 5-point Likert scale was used to gather primary data and the averages method was used to rate the responses given by learners to determine the effectiveness of educators in their use of online technologies. As mentioned earlier, the Likert scale was anchored by 1 representing strongly disagree, then 2 representing disagree up to 5 representing strongly agree. To interpret the students’ responses with respect to each scale item, a range representing the 5 categories was mathematically derived and the final output revealed that averages between 1.00 and 1.80 represented the strongly disagree category, 1.90 – 2.60 represented disagree, 2.70 – 3.40 represented neutral, 3.5 – 4.20

represented agree and 4.30 – 5.00 represented the strongly agree category. Table 1 provides further details on the intervals and their description.

Table 1: Likert scale range

| Likert scale | Interval | Difference | Description |
|--------------|-------------|------------|-------------------|
| 1 | 1.00 -1.80 | .8 | Strongly disagree |
| 2 | 1.90 – 2.60 | .7 | Disagree |
| 3 | 2.70 – 3.40 | .7 | Neutral |
| 4 | 3.50 – 4.20 | .7 | Agree |
| 5 | 4.30 – 5.00 | .7 | Strongly agree |

Four dimensions were chosen to rate the performance of educators in the use of online teaching technologies, namely virtual interaction, unit content migration, online course alignment, and web-based module structure. The rating results making use of the averages techniques per each scale item are summarised in Table 2.

On the virtual interaction scale, HDI educators were rated better on two items of the scale where they received an average of 3.54 and 3.7 respectively. The V3 item asked learners to rate educators in terms of their ability to encourage learners to ask questions virtually. The V4 item pointed out that lecturers were able to promote student online participation. Students neither agreed nor disagreed with the remainder of the virtual interaction scale; items V2 and V7 rated lowly on this category. The V2 item asked learners to rate whether educators could overcome the influence of adverse student interactions online and this item received an average score of 3.05 (neutral). Similar to the V2 scale item, the V7 item received a 3.05 average score and it required learners to rate whether educators were able to use emotions to enrich communication effectively.

The unit content migration scale had 7 items of which 4 items received average score ratings which placed them in the agree category (UCM1 = 3.65, UCM2 = 3.62, UCM5 = 3.66, and UCM6 = 3.53). On the online content alignment scale, only scale item 11 received a rating of 3.53, that is, the agree category whereas scale items 1 to 10 received ratings which were in the neither agree nor disagree category. Lastly, the web-based module structure had 11 scale items where educators received average ratings that placed them in the agree category on two items only, that is, WMS1 and WMS4 with scores of 3.51 and 3.54 respectively. The other nine scale items were rated in the neither agree nor disagree category.

Table 2: Online educational technologies usage ratings of HDIs educators

| Code | Scale item | Average |
|------|--|---------|
| | Virtual interaction scale | |
| VI1 | Get students to work together in online classes. | 3.42* |
| VI2 | Lecturers are able to overcome the influence of adverse student interactions online. | 3.05* |
| VI3 | Lecturers are able to encourage students to ask questions. | 3.70 |
| VI4 | Lecturers are able to promote online student participation. | 3.54 |
| VI5 | Lecturers are able to project a positive virtual social presence (the perception of being real). | 3.23* |
| VI6 | Lecturers are able to effectively express emotion within the online environment. | 3.05* |
| VI7 | Lecturers are able to use emotion to effectively enrich communication. | 3.17* |
| VI8 | Lecturers are able to adopt a teaching style that allows for the facilitation of learning through guidance. | 3.31* |
| VI9 | Lecturers are able to manage the pace of facilitating interaction. | 3.24* |
| VI10 | Lecturers are able to adequately convey their availability for consultations making use of online platforms. | 3.37* |

| | Scale item | Average |
|-------------------------------------|--|----------------|
| Unit content migration scale | | |
| UCM1 | Lecturers are able to prepare the teaching materials to use online. | 3.65 |
| UCM2 | Lecturers are able to select the appropriate digital media format (PowerPoint, digital photographs, Adobe Flash, etc.) to transfer unit content and materials | 3.61 |
| UCM3 | Lecturers are able to select the appropriate online method to effectively convey unit content once used in traditional style (lecture of face-to-face) classrooms. | 3.47* |
| UCM4 | Lecturers are able to transfer lecture presentations used in face-to-face style units to online formats. | 3.39* |
| UCM5 | Lecturers are able to transfer assignments and assessments (such as exams) used in face-to-face style units to online formats. | 3.66 |
| UCM6 | Lecturers are able to determine the appropriate resources (i.e., technological, personnel, software, etc.) to assist with transferring unit materials from face-to-face to online formats. | 3.53 |
| UCM7 | Lecturers are able to manage the time needed to transfer unit content from face-to-face to online formats. | 3.43* |
| Online course alignment | | |
| OCA1 | Lecturers are able to evaluate the degree to which learning outcomes have been met. | 3.4* |
| OCA2 | Lecturers are able to use strategies to increase students' remember content covered online. | 3.26* |
| OCA3 | Lecturers are able to provide students with detailed feedback about their academic progress. | 3.41* |
| OCA4 | Lecturers are able to determine the most appropriate evaluation method for a particular unit. | 3.34* |
| OCA5 | Lecturers are able to clearly articulate the learning goals that students are expected to achieve. | 3.43* |
| OCA6 | Lecturers are able to connect unit assignments with the stated learning outcomes. | 3.28* |
| OCA7 | Lecturers are able to accurately assess the depth of students' learning. | 3.29* |
| OCA8 | Lecturers are able to accurately assess the depth of students' level of engagement. | 3.05* |
| OCA9 | Lecturers are able to engage students from a variety of cultural backgrounds. | 3.28* |
| OCA10 | Lecturers are able to engage students who have a wide variety of familiarity with online learning. | 3.22* |
| OCA11 | Lecturers are able to use written instructions to facilitate student engagement in online units. | 3.53 |
| Web-based module structure | | |
| WMS1 | Lecturers are able to adapt the design of online class content to the needs of students (motivation, interest, prior knowledge, etc.). | 3.51 |
| WMS2 | Lecturers are able to design online module content in accordance with the requirements of South African Qualifications Authority (SAQA). | 3.29* |
| WMS3 | Lecturers are able to design online module content that is easy for students to navigate. | 3.41* |
| WMS4 | Lecturers are able to create appropriate links to module content pages and materials. | 3.54 |
| WMS5 | Lecturers are able to design a unit that is representative of my institution's mission, goals and objectives. | 3.37* |
| WMS6 | Lecturers are able to design module content that address students' concerns and apprehensions about module content. | 3.33* |
| WMS7 | Lecturers are able to design a module content that another teacher could teach. | 3.25* |
| WMS8 | Lecturers are able to manage the time requirements needed to develop courses. | 3.29* |
| WMS9 | Lecturers are able to design module content that meet regulatory agency accreditation guidelines. | 3.341 |
| WMS10 | Lecturers are able to use digital media to create module content. | 3.47* |
| WMS11 | Lecturers are able to create module learning content that is consistent and structured. | 3.42* |

* scale item(s) with ratings below the agree and strongly agree categories

The descriptive results in the form of means per scale item informs us whether educators in HDIs effectively use online technologies. Based on the findings, with respect to the virtual interaction scale, only two items were rated in the agree category and the other eight scale items fell in the neither disagree nor agree category. Given this finding, it is evident that HDI educators are able to make students interact virtually, which increases their chances to pass online modules. This is line with research which found that when educators are able to make students interact virtually among

one another, the rate at which they are likely to pass online courses increases significantly (Croxtton, 2014; Goggins & Xing, 2016). The results further reveal that none of the HDI educators were rated in the strongly agree category (4.30 – 5.00), on the virtual interaction scale. In other words, with the continued adoption of online educational technologies and educator support on the use of online educational technologies, chances are that HDI educators will be able to enhance student learning through virtual interaction.

The findings with regard to the unit content migration show that the majority of students agree that HDI educators are effective in the use of online educational technologies and this ensures that meaningful learning is achieved. Unit content migration is an important task and when done correctly, it ensures that learners are provided with all the relevant learning material they need with respect to the qualifications they are studying for. This is in line with literature, which indicates that the ability of educators to migrate content from non-online to relevant online platforms enhances student learning through online educational technologies (Ashburn & Floden, 2006).

With respect to the online course alignment scale, the results reveal that HDI educators are able to link the learning outcomes and course components, assess the depth of student learning, implement strategies to ensure students remember content, and to provide students with detailed feedback among other important tasks associated with it. This is important as research revealed that effective course alignment plays a critical role in the achievement of learning outcomes by students (McTighe & Wiggins, 2012).

Results with respect to the web-based module structure also reveal that HDI educators are able to design the learning platform in such a way that it is user friendly. This is critical in the sense that a non-user-friendly learning platform defeats the goals of teaching and learning (Sun et al. 2020). The overall findings of this research are in line with the body of literature which indicates that most online teaching and learning within HDIs only got underway as a result of the Covid-19. A study by Suresh, Priya and Gayathri (2018) confirms that before the pandemic, the majority of universities utilised e-learning as an additional mode of educational delivery. To a greater extent this explains why the majority of the universities globally faced many challenges in the full implementation of e-learning as a major education delivery, including HDIs in South Africa. Major problems experienced were access to online educational technologies and the ability of educators to effectively deliver online courses (Coman, Țîru, Meseşan-Schmitz, Stanciu & Bularca, 2020). In addition, this explains why educators could not receive an outright rating of effective in the use of online educational technologies as they lacked prior experience and the know-how. Literature also pointed out that before the Covid-19 pandemic, most universities had no proper infrastructure to support online teaching and learning. This may have influenced educators to invest little time and effort in the use of existing online teaching technologies. To a certain degree, it can be argued that such acts deprived them of learning opportunities to gain the expertise and experience on how to fully utilise online educational technologies and render them highly effective. However, the little opportunities they had did provide them with the basics on the use of online educational technologies as observed from the ratings they received from students across four dimensions of online teaching and learning. Overall, making use of their basic understanding of online educational technologies, HDI educators were able to deliver online courses as observed from the findings of this study.

4.1 Implications to theory and managerial practice

Educator effectiveness in the use of online technologies is critical as far as active learning is concerned. This was emphasised by the IP model which advocates for the ability of educators to add new stimulus, that is, addition of new knowledge to the learner's short memory which will then be transferred to the long-term memory, that is, if a learning discrepancy has been confirmed. Educators within HDIs can enhance their effectiveness in the use of online technologies when HDIs continue to invest in training and continued provision of other online teaching-oriented support mechanisms for educators at individual level. These could be in the form of short courses, for example the Online Teaching with Technology module now on offer at various universities in South Africa. HDIs can finance such courses on behalf of educators given that blended learning is now a widely adopted teaching and learning approach in South Africa. In addition, universities and stakeholders in the higher education sector should collaborate, share experiences and online educational technologies to ensure that online teaching and learning within HDIs can be enhanced. More importantly, this will ensure that the technology gap that exists between South Africa's universities can be reduced.

4.2 Future research

Future research can focus on finding ways in which HDIs and affluent universities can collaborate to ensure that educators both from HDIs and from affluent universities can work together to ensure online teaching practices are on par across South African universities.

5. CONCLUSION

This study investigated the use of online educational technologies within HDIs in South Africa. Educators were rated across four dimensions of online teaching and learning, namely virtual interaction, unit content migration, online course alignment and web-based module structure. The findings reveal that educators within HDIs were able to make use of online educational technology to delivery online courses. The study is important to all stakeholders who are concerned about the use of educational technologies within HDIs to enhance student experience given the existing resource gap between South African universities. Literature reviewed and the findings of the study do provide evidence that with educational technologies and sufficient online infrastructure within HDIs, student experience can be enhanced.

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THE IMPACT OF STRATEGIC AGILITY ON BUSINESS PERFORMANCE

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ABSTRACT

Most organisations are struggling to continuously adjust and adapt key decisions to the challenging external environment. Business executives are struggling to design firms that are efficient to drive performance in the short run and flexible enough to sustain business performance over the long run. An extensive literature review regarding business performance, strategic agility and its four sub-components (collaborative innovation, technology capability, organisational learning and internal alignment) was performed. This study aimed to investigate the impact of strategic agility on the business performance. This aim was achieved by an extensive literature review, which revealed that strategic agility positively impacts business performance. The study showed that strategic agility and its four sub-components (collaborative innovation, technology capability, organisational learning and internal alignment) can assist the organisations to continuously adjust and adapt key decisions to the challenging external environment. The study concludes that strategic agility has a positive impact the business performance. Strategic agility and its four sub-components (collaborative innovation, technological capability, organisational learning and internal alignment) assist organisations to respond well to environmental changes. In view of the study's results, it is thus recommended that organisations and business executives work on improving their strategic agility and its four sub-components (collaborative innovation, technological capability, organisational learning and internal alignment) to enhance their business performance.

Keywords: Strategic agility, collaborative innovation, technological capability, organisational learning, internal alignment, business performance

1. INTRODUCTION

Most organisations are struggling to continuously adjust and adapt key decisions to the challenging circumstances of the external environment. Business executives are struggling to design firms that are efficient enough to drive performance in the short run and flexible enough to sustain organisational performance over the long run. The new norm in industry requires organisations to have a remarkable amount of agility in order to survive in the business environment. Various factors such as technology, innovation, industry trends and increased competition lead to a higher need for securing competitive advantage over the competitors. Organisations can use strategic agility to identify and react to the changes and challenges in the business environment.

The aim of this paper is to investigate the impact of strategic agility on business performance. This paper also aims to help the business executives to design organisations that are efficient enough to successfully drive performance in the short run and flexible enough to sustain organisational performance over the long run. This paper will use the literature to enrich the knowledge of organisations and business executives on strategic agility.

2. LITERATURE REVIEW

2.1 The Concept of Strategic Agility

According to Lungu (2020), strategic agility is defined as the ability of the organisation to respond fast to the changes in the business environment, adapt to it and take necessary actions to control uncertainty. Winby and Worley (2014) define strategic agility as the ability of the organisation to continuously adjust and adapt key decisions to the challenging circumstances of the external environment and thus nurture value creation. According to Ofoegbu and Akanbi (2012), strategic agility is the ability to continuously and adequately adjust and adapt, in the appropriate time, the strategic direction in core business in relation to changing circumstances.

2.2 Key Capabilities Enabling Strategic Agility

Three main dimensions in strategic agility are strategic sensitivity, leadership unit and resource fluidity (Mukerjee, 2014). Strategic sensitivity includes leadership actions such as anticipating with foresight, experimenting and corporate venturing, distancing to gain perspective, abstracting to concepts and models and reframing to imagine and generate new business models. Leadership unity encompasses actions designed to create bond and trust within the leadership team. Resource fluidity is a company's ability to reform business models and reallocate resources rapidly and it is divided into three main clusters of tools, which are mobilising capital resources, mobilising people and knowledge and creating a modular structure (Mukerjee, 2014).

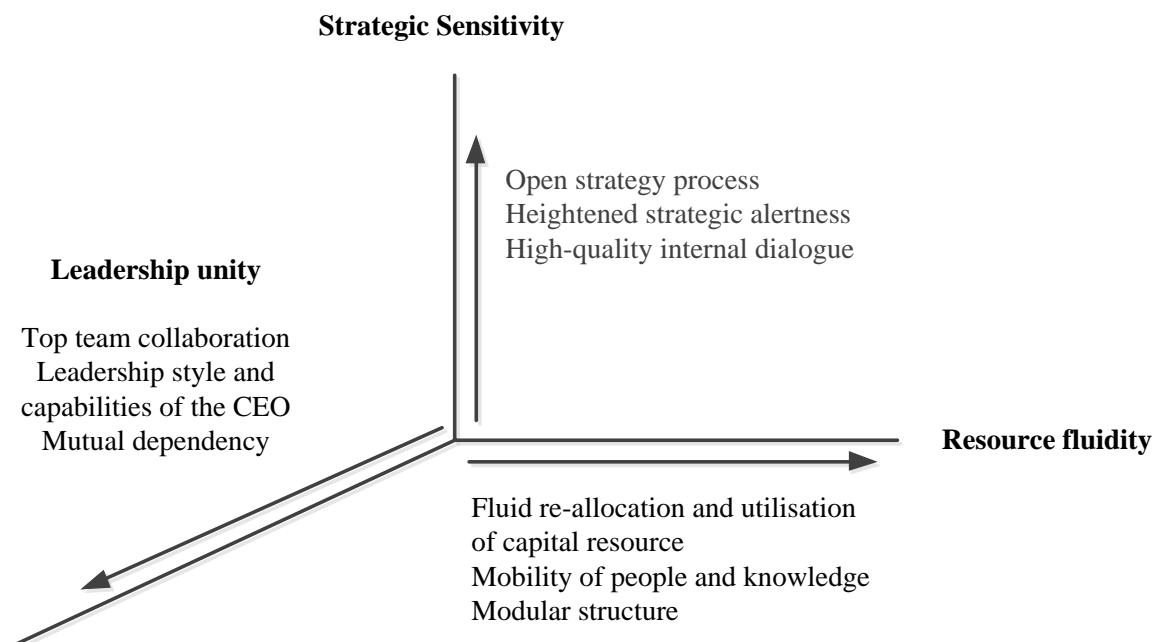


Figure 1. Key Capabilities Enabling Strategic Agility

Source: Doz (2011)

2.3 The Importance of Strategic Agility

The importance of applying strategic agility to organisations is one of the fundamental requirements for success. It is the guarantor of the organisation's survival and continuity (Abusalma, 2021). Strategic agility is the key to success in a dynamic and fast-changing business

environment (Halalmeh, 2021). Ofoegbu and Akanbi (2012) indicate that strategic agility can bring about organisations that can produce the right products and services at the right place at the right time at the right price and for the right customers. Di Minin, Frattini, Bianchi, Bortoluzzi and Piccaluga (2014) state that strategic agility's main goal is to integrate diverging strategic objectives.

Strategic agility is most important for organisations in which the business environment is rapidly changing and this change has a complex nature (Dabiri & Gholami, 2015). A survey by McKinsey found that nine out of ten executives agreed that strategic agility is critical to both business success and growth (Chandler Macleod Group Limited, 2011). Strategic agility is an applied methodology that yields business performance (Salih & Alanaji, 2014). The largest performance impact is on customer satisfaction, which in turn, contributes to improved bottom line financial performance (DeGroot & Marx, 2013). Strategic agility has various sub-components such as collaborative innovation, technological capability, organisational learning and internal alignment (Chen (2013).

2.4 Collaborative Innovation

The definition of collaborative innovation is “a distributed innovation process based on purposively managed knowledge that flows across organisational boundaries, using pecuniary and non-pecuniary mechanisms in line with each organisation's business model” (Chesbrough & Bogers, 2014). Collaborative innovation is a two-way process in which companies have an inbound process in which they bring ideas, technologies, or other resources needed to develop their own business and an outbound process in which they out-licence or sell their ideas, technologies and other resources (Lindgaard, 2011). Collaborative innovation is defined as the use of purposive inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation respectively (Jean-Claude, 2015).

Collaboration innovation is often divided into two core processes which are inbound and outbound collaboration innovation processes (Jean-Claude, 2015). Some authors consider a third process called coupled collaboration innovation (Mazzola, Bruccoleri & Perrone, 2012). Coupled collaboration innovation is co-innovation with complementary partners that combines the inbound with the outbound processes to bring the ideas to market and in doing so jointly develop and commercialise innovation. Linking both technology exploration and exploitation increase the global value orchestration (Lindgreen, Hingley Gant & Morgan, 2012).

2.5 Technological Capability

Technological capability is defined as the ability of the firm to manage and generate technological changes (Diyamett & Mutambla, 2014). It is the ability to innovate and to make effective use of technological knowledge in assimilating, using, adapting and changing existing technologies (Noh, Kim & Jang, 2014). It refers to a firm's ability to develop and use substantial technological resources (Su, Peng, Shen & Xiao, 2013). Technological capability is defined as the accumulated knowledge, skill expertise and organisational base which enables the firm to acquire, develop and use technology to achieve competitive advantage (Lopez-Salazar, Lopez-Moteo & Molina-Sanchez, 2014).

Technological capability is composed of two broad elements, namely, embodied and disembodied. The embodied elements of technological capability are those that involve the human aspect. They

include skills, knowledge, attitude and aptitude. The second is the non-embodied/disembodied elements. These are the part of the technological capabilities that are codified and can easily be transferred among users, which include equipment and software (Sobanke, Ilori & Adegbite (2012). Technological capability is categorised into three major levels depending on the complexity of the knowledge and therefore ease of achievement (Diyamett & Mutambla, 2014).

2.6 Organisational Learning

Organisational learning is defined as a process of inquiry through which members of the organisation develop shared values and knowledge based on their own experience and that of other (Herstein, 2011). It is defined as the process of improving actions through better knowledge and understanding (Ranjbar & Absalan, 2015). Organisational learning is a process of creating and transferring knowledge within an organisation (Zafar, Hafeez & Shariff, 2016).

The concept organisational learning describes the internal capacity of the organisation to learn from experience, to examine and adopt new ideas and transform them into policy and action plans to obtain competitive advantage (Herstein, 2011). Organisational learning is about the ability of the organisation to apply accurate and appropriate management practices, its structure as well as the procedures to enhance, facilitate and encourage learning (Shoid & Kassim, 2012).

2.7 Internal Alignment

Internal alignment deals with specifying how harmoniously the different departments of an organisation work together and how tightly their activities are coordinated (Pardo, Ivens & Wilson, 2013). Internal alignment is a group process related to shared comprehension among team members to attain organisational objectives (Puente-Palacios, Moreira, Puente & Lira, 2015). Internal alignment is the state of collaboration that exist among departments (Teixeira, Koufteros & Peng, 2012).

The internal alignment concept builds on the underlying hypothesis that higher degree of internal is associated positively with coordination and cooperation in the implementation of the strategy and hence with business performance (Mirzaei, Fredriksson & Winroth, 2016). Prior studies have conceptualised internal alignment broadly as the fit between a firm's external environment and its strategic orientation, organisational structure and processes (Ravasi & Phillips, 2011). The conceptualisation of internal alignment suggests that the extent of internal alignment results from skill rather than luck. This perspective is especially useful for organisational leaders as it profits an institutional orientation of internal alignment (Alagaraja & Schuck, 2015).

2.8 The Concept of Business Performance

The definition of business performance and its measurements continues to challenge scholars due to its complexity (Santos & Brito, 2012). Mostly, researchers use the term business performance to express the range of measurements of transactional efficiency and input and output efficiency (Shahzad, Luqman, Kahn & Shabbir, 2012). Irrespective of the differences among researchers on the definition, they agree that it is mostly tied in with arithmetic measures of success (Eniola & Entebang, 2015).

Nowadays, the performance of the business is the first thing to be evaluated by investors around the world (Al-Marari, Al-Swidi & Fadzil, 2014). Scholars have found that there are many variables

that affect business performance such as entrepreneurial orientation, information technology, strategy and others (Guo & Cao, 2012). Even if there are many various variables affecting business performance, but leadership style and innovative factors have a considerable effect on business performance (Erdem, Gokdeniz & Met, 2011).

Business performance has been measured in accounting terms such as profit, cost and market share (Al-Ansari, 2014). However, it should be measured using both financial and non-financial terms to enable efficient strategic decision-making where non-financial terms focus on the long-term success of the firm, customer satisfaction, internal business processes efficiency and innovation (Avci, Madanoglu & Okumus, 2011).

3. CONCEPTUAL FRAMEWORK AND SUMMARY OF PREMISES

The study tested the conceptual framework illustrated in Figure 1 which shows that technology capability, collaborative innovation, organisational learning and internal alignment are the sub-components of strategic agility.

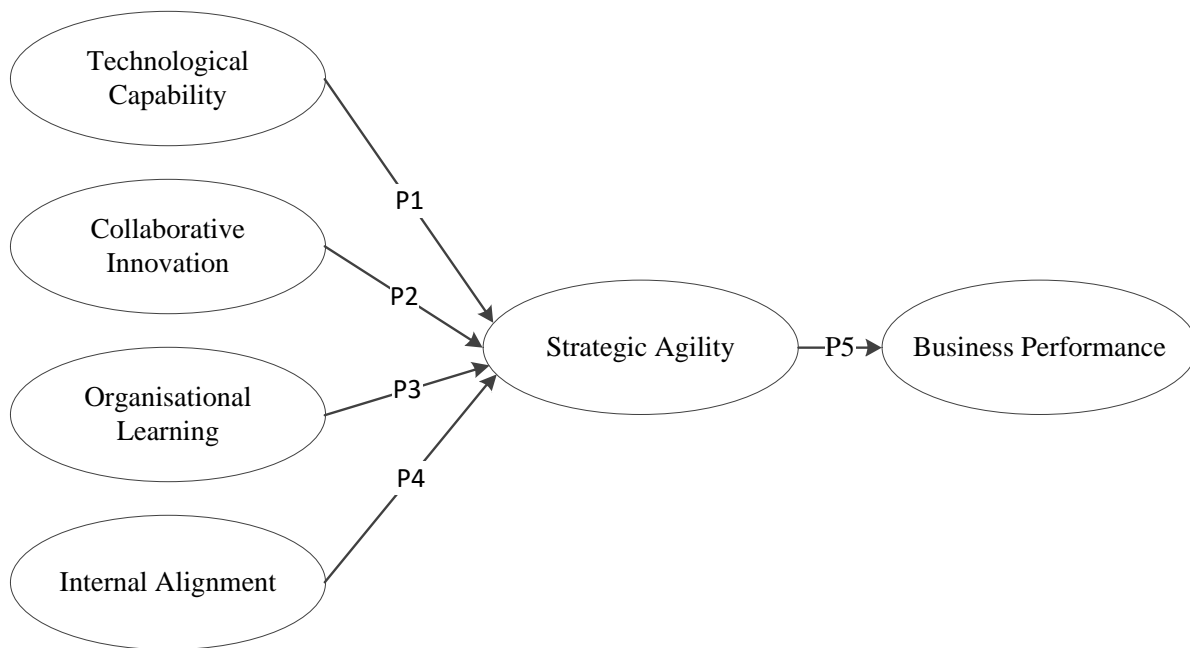


Figure 2. Conceptual Framework for Strategic Agility and Business Performance

Source: Govuzela and Mafini (2019)

The study also focused on testing the following premises, as indicated in the conceptual framework:

- P1: Strategic agility has a positive impact on technological capability
- P2: Strategic agility has a positive impact on collaborative innovation
- P3: Strategic agility has a positive impact organisational learning
- P4: Strategic agility has a positive impact internal alignment
- P5: Strategic agility positive has a positive business performance

The purpose of the study was to explore the extent to which strategic agility has an impact on business performance.

4. PROBLEM INVESTIGATED

The impact of strategic agility on business performance was investigated.

5. RESEARCH OBJECTIVES

The following theoretical objectives were formulated:

- 5.1 To carry out a literature study on strategic agility (and its four sub-components, collaborative innovation, technological capability, organisational learning and internal alignment).
- 5.2 To carry out a literature study on business performance.

6. RESEARCH METHODOLOGY

6.1 Research Design

Research design refers to a framework for conducting a research project. It specifies the details of the procedures necessary for obtaining the information needed to structure and solve research problems (Hove, 2012). A research design is defined as a blueprint for the collection, measurement and analysis of data, based on the research questions of the study (Sekeran & Bougie, 2010). It can initiate the information needed, the conceptual model, selected method, sampling method, sample size, measurement procedure and data analysis process, which plans and links collected data to the initial research question in the research study (Al-Ansari, 2014).

A qualitative research method was used in this study. Busetto, Wick and Gumbinger (2020) define qualitative research as the study of the nature of phenomena, including their quality, different manifestations, the context in which they appear or the perspective from which they can be perceived, but excluding their range, frequency and place in an objectively determined chain of cause and effect. Qualitative research generally includes data in the form of words rather than numbers.

6.2 Data Collection

This investigation used a document study to collect data on business performance, strategic agility and its four sub-components (collaborative innovation, technological capability, organisational learning and internal alignment). Data was collected from articles, dissertations, internet, theses and textbooks. Electronic databases such as Emerald, Science Direct, EBSCO-Host, Nexus, Sabinet and Sage were used as sources of data. Keywords were used to search for the relevant data in this document study.

6.3 Data Analysis

To analyse means to break down a whole into its components or constituent parts. Through assembly of the parts, one comes to understand the integrity of the whole (Onwuegbuzie, Leech & Collins, 2012). Analysis of literature takes one of two forms: within-study literature analysis or a between-study literature analysis. A within-study literature analysis involves analysing the contents of a specific work. In its most rigorous and comprehensive form, a within-study literature analysis does not merely involve analysing the findings of a study or the major premise used in a non-empirical work. Rather, optimally, it involves analysing every component of the work, including the title, literature review section, conceptual framework/theoretical framework,

procedures used, results section and discussion section (Onwuegbuzie, Leech & Collins, 2012). A within-study literature analysis was employed in this study to analyse the data collected. Keywords were also utilised to analyse the data in this document study.

7. RESULTS

This study examined the relationship between strategic agility and business performance. This aim was achieved by developing five premises. This section discusses the results of each of these premises.

7.1 Strategic Agility and Technological Capability

The first premise (P1) suggests a significant positive relationship between strategic agility and technological capability (Govuzela & Mafini, 2019). Literature showed that strategically agile firms can manage and generate technological changes. They use technological knowledge effectively in assimilating, using, adapting and changing existing technologies. Strategically agile firms can develop and design new products, new processes and more effectively operate the equipment, or resources needed to produce managerial technique revolution including skills, knowledge and experiences as well as institutional structures and ties. Strategically agile firms jointly mobilise different scientific resources and individual technicians, which allows the development of products or innovative and successful production processes, serving the implementation of competitive strategies that create value given certain environmental conditions. Thus, strategic agility serves as a driver for technological capabilities within organisations (Govuzela, 2018).

7.2 Strategic Agility and Collaborative Innovation

The second premise (P2) suggests that there is a positive relationship between strategic agility and collaborative innovation (Govuzela & Mafini, 2019). Literature review revealed that strategically agile firms use a two-way process in which they have an inbound process to bring in ideas, technologies, or other resources needed to develop their own business and an outbound process in which they out-licence or sell their own ideas, technologies and other resources. Strategically agile firms use purposive inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation respectively. Traditionally, new technologies were mostly developed in-house. As they became more complex and requested a broad portfolio of relevant knowledge, that a single firm could not have, collaboration with external partners (suppliers, customers and competitors) gained the upper hand. Hence, strategic agility leads to improved collaborative innovation within organisations (Govuzela, 2018).

7.3 Strategic Agility and Organisational Learning

The third premise (P3) suggests that there is a positive relationship between perceived strategic agility and organisational learning (Govuzela & Mafini, 2019). Literature review discovered that strategically agile firms use a process of inquiry through which members of the organisation develop shared values and knowledge based on their own experiences and that of others. Agile organisations make use of learning processes at the individual, group and system level to transform the organisation continuously in a direction that is increasingly satisfying to its stakeholders. They also focus on proper learning, which leads to specified results such as an increase in the

organisation's intelligence, the improvement of its knowledge base, the increase in shareholders' satisfaction, the increase in the organisation's long-term adaption ability, improvement of organisational productivity, more effective activities for customers and partners and the development of competitive advantage. Accordingly, strategic agility leads to better organisational learning within organisations (Govuzela, 2018).

7.4 Strategic Agility and Internal Alignment

The fourth premise (P4) suggests that there is a positive relationship between strategic agility and internal alignment (Govuzela & Mafini, 2019). Literature review indicated that strategically agile firms implement the process of achieving unity of effort among the various subsystems in the accomplishment of the organisation's tasks. In agile organisations, the different departments work together and tightly coordinate their activities for the achievement of organisational objectives. Agile firms employ a set of commitments, policies, strategies, procedures, behaviours and systems that support integrated customer decision-making based on suppliers' commercial and ethical commitment and performance. Their employees have an agreement of various levels on the organisation's most important goals. This validates that strategic agility is an important antecedent to internal alignment within organisation (Govuzela, 2018).

7.5 Strategic Agility and Business Performance

The fifth premise (P5) suggests that there is a positive relationship between strategic agility and business performance (Govuzela & Mafini, 2019). Literature review indicated that strategically agile firms have the operational ability to satisfy the desires of the company's major shareholders. They utilise their resources (such as knowledge, people and raw materials) to achieve organisational goals effectively and efficiently. Strategically agile firms can attain their goals by using resources in an efficient and effective manner. They use a set of financial and non-financial indicators, which offer information on the degree of achievement of objectives and results. Agile firms achieve their performance objectives based on the constraints imposed by the limited resources. In this context, profit is one of the many indicators of business performance. Therefore, strategic agility within organisation is an important contributor to business performance (Govuzela, 2018)

8. CONCLUSIONS

This document study investigated the impact of strategic agility on business performance. The results of the study indicate that strategic agility has positive influence on business performance. For this reason, the study concludes that strategic agility has positive impact on business performance. The study also concludes that strategic agility and its four sub-components (collaborative innovation, technological capability, organisational learning and internal alignment) assist organisations to respond well to environmental changes. Therefore, it can thus be concluded that strategic agility positively and significantly influences business performance.

9. RECOMMENDATIONS

The results and conclusions of this study indicate that strategic agility and its four sub-components (technological capability, collaborative innovation, organisational learning and internal alignment) contribute positively towards business performance. Strategic agility assists organisations to

respond well to unexpected challenges and environmental dynamics. It is thus recommended that organisations and business executives should work on improving their strategic agility to enhance their business performance.

- To maintain satisfactory technological capability, organisations and business executives should:
 - Adopt technology-driven systems such as just-in-time, value analysis, concurrent engineering and modular design systems.
 - Invest in upgrading production, information and inventory management systems.
- To maintain satisfactory collaborative innovation, organisations and business executives should:
 - Upgrade process/product design by investigating customer needs in the product development process.
 - Promote collaboration among major functions from the planning stage.
- To maintain satisfactory organisational learning, organisations and business executives should:
 - Provide an optimal working environment in which best performance practices can be disseminated.
 - Promote interdisciplinary training and team-based activities.
- To maintain satisfactory internal alignment, organisations and business executives should:
 - Align functional strategies with business strategy.
 - Align operational strategy with other functional strategies as well.
- To maintain satisfactory strategic agility, organisations and business executives should:
 - Be flexible in product mix or variety.
 - Maintain short cycles in product design and innovation.
- To maintain satisfactory business performance, organisations and business executives should:
 - Enhance return on investment by employing the skills and information needed to identify feasible investment projects.
 - Boost sales growth by having the ability to achieve market leadership.

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THE ROLE OF HOUSE PRICES IN THE MONETARY POLICY TRANSMISSION MECHANISM OF SOUTH AFRICA

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Abstract

Markets for residential property that include houses and loans secured on them are the most important assets and liabilities of the financial sector. Developments in house prices are a major part of the asset price information relevant for monetary policy. The paper examines the role of house prices in the monetary policy transmission mechanism in South Africa. The paper employs the Vector Error Correction Model (VECM) and Granger causality tests that incorporate quarterly data from 1990 to 2020. The VECM model comprises the domestic interest rate, consumer price index (inflation), GDP (real GDP at constant prices), and real house prices. Based on the order of the significance of the tests, the detection of causality between these variables arises, which indicates that house prices play a significant role in interest rates, and the ‘other asset price channel’ is the possible channel of monetary transmission. Inflation targeting of the monetary policy, transparency, and accountability have improved immensely, and further improvements are in prospect. It is recommended that this channel can be followed to evaluate the stance of the monetary policy, especially the role shown by house prices.

Keywords: Asset prices; house prices; monetary policy transmission mechanism; Vector Error Correction Model; Granger causality

1. INTRODUCTION

Monetary policy is a tool used by a national government of a country to influence its economy (Bernanke, Laubach, Mishkin & Posen, 2018; Wang, Lucey, Vigne, & Yarovaya, 2021). The government influences the overall economic activity level by allowing the monetary authorities to control the supply and availability of money. The monetary policy measures are usually aimed at influencing the quantity of money or the rate of interest to achieve its goal (Bernanke et al., 2018; Husna, Atika, Wahyudi, & Soemitra, 2021). The goal of monetary policy is macroeconomic stability which implies price stability, high employment, economic growth, interest rate stability, or stability of foreign exchange markets. However, the main goal of monetary policy in South Africa is price stability, relating to a stable and low inflation rate (Greenwood & Hanke, 2021).

The monetary policy framework implemented by the South African Reserve Bank (SARB) is an inflation-targeting framework. The SARB uses the repo rate as an instrument to target inflation, which is the rate the SARB charges for borrowed cash reserves (De Angelis, 2005; Seidman-Makgetla, 2021). The repo rate instrument has a direct effect on other variables in the economy, as it affects the demand and supply of goods and services (Wang et al., 2021; Husna et al., 2021). Through the assortment of relay mechanisms referred to as the transmission mechanism of monetary policy, several economic variables, including inflation, are affected (Fikri, 2018; Twinoburyo & Odhiambo, 2018).

To be successful in implementing monetary policy, the monetary policy practitioners should have an accurate assessment of the timing and the effect that their policies have on the economy, thus requiring an understanding of the mechanisms through which monetary policy affects the economy (Rosenberg, 2019). The monetary policy transmission mechanism is a complex process whereby the monetary policy stance is transmitted to achieve the goal of monetary policy (Song, Yang, Yu & Zhao, 2021). When the central bank decides to influence the change in the repurchase rate, it sets in motion a series of economic events which are referred to as the transmission mechanism of monetary policy. The literature suggests that monetary policy is transmitted through four main channels (Song, et al., 2021; Greenwood & Hanke, 2021). These channels include interest rate effects, exchange rate effects, asset price effects, and the credit channel. The focal point of this paper is the asset price channel, and it is measured by the role played by house prices.

Various asset prices are linked to the monetary policy transmission mechanism. These assets include stocks, bonds, housing, and foreign exchange. Mishkin (2001; 2011) surveys the transmission mechanisms of monetary policy beyond the standard interest rate channel by focusing on how monetary policy affects the economy through asset prices. Many studies have mainly focused on different channels of the South African transmission mechanism through which monetary policy affects the economy. For instance, Taguchi, Sahoo & Nataraj (2015) looked at capital flows on asset prices; Gumata & Ndou (2017) on exchange rate channels; Ducastel & Anseeuw (2017) on agriculture as an asset class; Ndou, Gumata & Ncube (2018) on exchange rate shocks. In addition, some studies outside South Africa investigated asset prices other than house prices, for example, Husna et al. (2021) in Indonesia and Song et al. (2021) in China. The novelty of this paper is to fill the gaps in the literature by focusing on the asset price channel, which deals with the role of house prices on the monetary economy. Moreover, the contribution of the house price channel can assist policymakers to be conscious of the consequences of the global financial crises of 2007-2008 as they emanated from shocks in house prices (Dlamini, & Ngalawa, 2022). Given the role that house prices play in the transmission mechanism, central banks have often been tempted to use them as targets of monetary policy, which is likely to lead to worse economic outcomes and might even erode the support for their independence (White, 2012; Rosenberg, 2019).

Literature debates in South Africa that include house prices do not focus on the role played on monetary policy, and therefore, no focus on the asset price channel. For instance, Aye, Balcilar & Gupta (2013) found a non-linear relationship between house and stock prices in South Africa in their non-parametric analysis. Apergis, Simo-Kengne & Gupta (2015) used a clustering procedure to discover a heterogeneous relationship between house prices and club convergence in nine South African provinces. There is a weak relationship in emerging economies including South Africa between house prices and some macroeconomic indicators (Twinoburyo & Odhiambo, 2018; Tita & Opperman, 2021). For example, Twinoburyo & Odhiambo (2018) documented an inconclusive relationship between monetary policy and economic growth in developing countries including South Africa. Tita and Opperman (2021) investigated the role played by house prices on household income per capita and realized that home ownership can reduce inequalities and increase wealth. Kim & Mehrotra (2022) concluded a weak association between macro-prudential policy and credit shocks. These debates indicate a gap in South African literature on studies that focused on the role of house prices on monetary policy hence this paper could contribute to documenting the possibility of the asset price channel

Homes and loans secured on them are respectively the most important assets and liabilities of the financial sector (Bernanke et al., 2018; Rosenberg, 2019; Dlamini, & Ngalawa, 2022). Developments in house prices and activity are, therefore, a major part of the asset price information relevant for monetary policy. Consider, for example, some aspects of the relationship between house prices and consumer expenditure. Higher house prices increase the (gross) wealth of homeowners, and greater wealth tends to lead to higher consumer spending (Dong, Chang, Wang & Liu, 2021; Tita & Opperman, 2021). Indeed, it may be that increases in housing wealth tend to influence consumption more than increases in financial wealth. This shows the importance of the asset price channel, especially to open economies where the flow of capital can affect the domestic behavior of monetary policy variables including house prices (Gilbert, Scotti, Strasser & Vega, 2017).

Houses can be used as collateral for household borrowing through mortgage equity withdrawal. There are also direct effects of house prices on inflation measures than, say, pension fund wealth (Berger, Guerrieri, Lorenzoni, & Vavra, 2018). House prices may also reflect other influences on consumption, such as the level of, and uncertainty about, expected future income from employment. Moreover, activity in the housing market, which tends to be greater when prices are rising, can directly affect demand for consumer durables (Dong et al., 2021). This indicates the importance of studying the asset price channel through the role house prices play in the monetary policy transmission mechanism. In addition, Dlamini & Ngalawa (2022) discovered that monetary policy is not a significant contributor to house prices, allowing this paper to investigate if there is directional causality in this relationship. Following the discussions above, the following questions come to mind; what is the role of house prices in the monetary transmission mechanism in South Africa over these years? Hence, it is imperative to examine the role of house prices in the monetary policy transmission mechanism in South Africa. The paper is structured as follows; this section is followed by a literature review, then methodology, results and discussions, conclusions, and recommendations.

2 LITERATURE REVIEW

2.1 Theoretical literature

This section aims to review theoretical literature on the conduct of monetary policy and its effect on the channels of monetary policy through the monetary policy transmission mechanism. The adopted theory focuses on the fact that the Keynesians view the monetary transmission mechanism as the route by which changes in monetary policy are related to changes in output, employment, prices, and inflation (Del Negro, Giannoni, & Schorfheide, 2015; Fikri, 2018; Akram, 2022).

An example to illustrate the Keynesian transmission mechanism is as follows. Suppose the repo rate is increased by the central bank. This discourages the lending and money creation capacity of banks (Fikri, 2018). The money supply contracts and causes excess demand in the money market. Sales of money market instruments cause downward pressure on their prices, and upward pressure on interest rates. The higher interest rates discourage investment and result in a decrease in aggregate expenditure (Del Negro et al., 2015). If production decreases, real GDP and thus real income decreases, and the level of economic activity declines. Monetary changes are transmitted to the real sector via the interest-investment link. Real sector changes affect aggregate income as

well as the price level. These steps illustrate the link between the monetary sector and the real sector through the transmission mechanism.

The Keynesian framework can be used to explain different observed patterns in the macroeconomy. The monetary policy is very important for stabilizing the economy using various channels of the transmission mechanism such as asset prices, interest rates, monetary targets, and exchange rates, among others (Akram, 2022). The argument is that monetary policy can quickly cure the ills facing the economy and is increasingly becoming popular relative to fiscal policy (Ncanywa & Ralarala, 2022). The Keynesian framework in this paper map the route from changes in asset prices (housing prices in this case) to changes in interest rate, as to see the role played by house prices on monetary policy. Most studies found that house prices could contemporaneously convey important information for the conduct of monetary policy (Damen, Vastmans & Buyst, 2016; Bernanke et al., 2018; Rosenberg, 2019; Martin, Schmitt & Westerhoff, 2022; Olusegun, 2022).

Dalziel (2002) explained three essential features of the modern monetary policy, of which only the first can be at all consistent with classical monetarism. This first feature is that the primary objective of monetary policy is to maintain a low rate of inflation. In many countries including South Africa, the target rate of inflation is preannounced by the government or the central bank, typically with agreement by both institutions. The second feature is that the instrument of monetary policy is not the quantity of money but the base interest rate at which the financial sector borrows cash reserves from the central bank. If a central bank judges that on current policy settings, domestic inflation is likely to rise above target, and the bank raises its base interest rate (Bernanke et al., 2018). If the economy is weak and there are no anticipated inflationary pressures, the bank lowers the base interest rate (Kim & Mehrotra, 2022). Third, given that monetary policy is credible, and expectations stabilised around the target inflation rate, the main transmission mechanism from instrument to objective is understood to be through changes in the "output gap" between aggregate supply and aggregate demand (Dalziel, 2002). Supply-side capacity, or potential real gross domestic product (GDP), is assumed to grow at a relatively steady rate depending on real factors such as population growth, investment in physical and human capital, and the rate of technological advance (Olusegun, 2022; Wang, Wang & Guo, 2022). If aggregate demand grows faster than capacity, this generates inflationary pressures. If demand grows too slowly, there is unnecessary unemployment and a risk of recession. By adjusting its base interest rate the central bank can influence the growth rate of aggregate demand, and so meet its inflation target.

2.2 Empirical literature

Following the literature debates on the asset price channel, some studies alluded to the importance of considering the changes that can be done by house prices in the South African economy and related countries, particularly on monetary and macro-prudential policies (Taguchi, Sahoo & Nataraj, 2015; Gumata & Ndou, 2017; Ducastel & Anseeuw, 2017; Ndou, Gumata & Ncube, 2018). For instance, Gumata & Ndou (2017) indicated the importance of South Africa in adopting a floating exchange rate and its influence on the behavior of domestic monetary variables. It further alludes to Gilbert et al (2017) that announcement of changes in asset prices in open economies results in large capital flows that affect the domestic behavior of monetary policy variables in the transmission mechanism.

Though most studies that looked at the asset price channel the focus was not on house prices (Taguchi et al, 2015; Ducastel & Anseeuw, 2017), and also those studies that looked at asset prices were linking it with some macro-economic variables other than interest rates (Berger et al, 2018; Tita & Opperman, 2021; Dlamini, & Ngalawa, 2022). Taguchi et al, (2015) examined the impact of capital flows on asset prices and alluded to the importance of an exchange regime to asset prices. Ducastel and Anseeuw (2017) point to an asset price channel on farming land as an important investment that can hugely contribute to the financial sector by capitalizing on the South African agricultural sector. Berger et al (2018) link the effects of house prices with consumer spending behavior, while Tita & Opperman (2021) link house prices to household income and wealth creation. Dlamini & Ngalawa (2022) employed a dynamic stochastic general equilibrium methodology to establish the small effects of monetary policy on house prices. Twinoburyo & Odhiambo (2018) viewed international literature that includes South Africa on the relationship between monetary policy and economic growth. There was a weak association in developing countries, especially those with underdeveloped financial markets.

However, the study of Bernanke et al. (2018) informed a route of the asset price channel through the role of house prices on the monetary policy transmission mechanism.

Some empirical studies in developing and developed countries have contributed to the debate on the channels of monetary policy. There are some studies on the transmission mechanisms of monetary policy beyond the standard interest rate channel focusing on how monetary policy affects the economy through other asset prices (Rey, 2016; Eichenbaum, Rebelo & Wong, 2022). When house prices were considered, it was confirmed that direct effects on housing expenditures, household wealth, and bank balance sheets could affect aggregate demand. For instance, a study by Claessens & Kose (2017) established that house prices are less volatile than equity prices, and they have permanent effects on wealth and consumer spending though they do that at a lag. So, the house process effect has a weak relation to interest rate changes as they are traded in less liquid markets. Further alluded by Bernanke et al. (2018) that the knowledge of the housing market can play a role in the monetary transmission mechanism. It was discovered that on the household expenditure effects, the expansionary monetary policy could increase aggregate demand. Interest rates are lowered, leading to a low cost of financing housing and an increase in the house price. Firms find it profitable to build housing, housing expenditure will rise, and so aggregate demand will rise (Dorling, 2021). Housing prices are an essential component of household wealth, which affects consumer spending. It is argued that the housing market is of central concern to monetary policymakers (Rosenberg, 2019; Cumming & Hubert, 2022; Dlamini & Ngalawa, 2022).

3 METHODOLOGY

3.1 Model specification

The paper aims to examine the role of house prices in the monetary policy transmission mechanism in South Africa using an econometric methodology called the Vector Error Correction Model (VECM). The VECM comprises the three-month domestic interest rate, the log of real house prices, the changes in the domestic consumer price index, and the log of real Gross Domestic Product. Following Fikri (2018), Bernanke et al (2018), Dong et al. (2021), Cumming & Hubert (2022), and other reviewed authors in the literature review section, the choice of variables in the VECM reflect the theoretical setup of a Keynesian model and the classical monetarism as follows:

$$IR = \beta_0 + \beta_1 HP + \beta_2 CPI + \beta_3 GDP + \epsilon_t \dots\dots\dots (1)$$

Where IR represents interest rates, HP real house prices, CPI consumer price index for inflation, GDP gross domestic product for economic growth, β_0 constant, β_{1-3} slope coefficients, and ϵ_t error term.

3.2 Data

The model is estimated for South Africa using quarterly data from 1990 to 2020. The sample is large enough to cover problems that can be created in the estimation process (Asteriou, Dimitras & Lendewig, 2013). The data is sourced from the South African Reserve Bank (SARB). In this study, full simultaneity between monetary policy and house prices is assumed (Bjørnland et al., 2008).

3.3 Estimation techniques

The vector error correction model (VECM) methodology begins with the Johansen cointegration technique (Asteriou et al, 2013). This methodology uses the error-correction model that determines the speed of adjustment to equilibrium, which will include both long-run and short-run information. The first task is to make sure the data is integrated in the same order (Raimbekov, Sładkowski, Syzdykbayeva, Azatbek & Sharipbekova, 2022). This is done by using unit root tests to examine the stationarity of data sets. Thus, the variables are subjected to the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test. The tests are also done to avoid the spurious regression problem, which exists if unit roots are present. If the unit root is present, we work with differenced data. The PP statistics is a modification of the ADF t-statistics that consider the less restrictive nature of the error process (Asteriou et al., 2013).

Variables are cointegrated if they are related and move together so that the stochastic trends would be like each other and when they are combined, it should be possible to find a combination of them that eliminates the non-stationarity (Song et al., 2021; Raimbekov et al., 2022). In theory, this should only happen when there is a real relationship linking the variables together. Therefore, cointegration is used as a way of detecting the presence of economic structures. In cointegration, the long-run relationship between variables indicates a common trend that links them together. For a long-run equilibrium relationship to exist there should be a linear combination of stationary variables (Asteriou et al., 2013).

Johansen followed five steps to conduct the VECM (Brooks, 2019). Firstly, the order of integration of the variables (unit root test) is tested to test stationary variables. The desired case is when all variables are integrated in the same order and then proceed with the cointegration test. However, it is important to stress that it is not the case, and even in cases where a mix of I (0), I (1), and I (2) that variables are present in the model, the cointegration relationship might exist. The inclusion of such variables will affect the results and therefore more consideration should be applied in such cases (Asteriou et al., 2013; Brooks, 2019). The second step involves setting the appropriate lag length of the model. Finding the optimal lag length is important to obtain Gaussian error terms. In the third step, we choose the appropriate model regarding the deterministic components in the multivariate system. In this step, the decision of whether to include an intercept or a trend in the short run or the long run or both models is taken. Fourthly, the rank of the matrix or the number of cointegrating vectors is determined. Lastly, there is an estimation of the impulse response

functions of economic growth and inflation to shocks in interest rate, house prices, and other variables. The impulse response analysis allows for a convenient representation of the time path of effects. In addition, a variance decomposition is included to uncover the short-run relationships among variables (Song et al., 2021). The results in the estimations are subjected to diagnostic checks that test the stochastic properties of the model, such as residual autocorrelation, heteroscedasticity, and normality, among others.

The estimation of the error correction model allows testing for Granger causality (Wang et al., 2022). The framework allows for a causal link between two variables stemming from a common trend or long-run equilibrium relationship. This framework considers the possibility that the long-run information in the data represented by a lagged level of a variable, X may help to explain the current changes in another variable, Y, even if the short-run information in the data given by the past changes does doest (Asteriou, 2013).

4. EMPIRICAL RESULTS AND DISCUSSION

4.1 Unit root test results

If a series becomes stationary after d numbers of difference, then it is said to be integrated of order d (Brooks, 2019). Two asymptotically equivalent tests have been performed: the ADF and the PP test. The results of the unit root tests for all the variables in the estimated model discussed in section 3.1 above for the period 1990 to 2020 are presented in table 1.

Table 1: The results of various unit root tests

| Type | Order | CPI | GDP | HP | IR |
|------|------------------|-----------|-----------|----------|-----------|
| ADF | Level | -2.609 | -3.67 | -2.13 | -3.48 |
| ADF | First difference | -12.25*** | -7.28*** | -7.63*** | -6.12*** |
| PP | Level | -1.06 | -4.53 | -2.08 | -2.838 |
| PP | First difference | -16.96*** | -24.45*** | -9.08*** | -6.139*** |

Notes: CPI-Consumer Price Index; GDP-Gross Domestic Product; HP- house prices; IR-Interest rates; ADF-Augmented Dickey-Fuller; PP- Phillips-Perron; *** indicates significance at 1%.

The results of the ADF test show that the series of house prices, growth, CPI, and interest rates are non-stationary when variables are defined in levels (see table 1). First differencing the series removes the non-stationary components and the null hypothesis of non-stationarity is rejected at the 1% significant level suggesting that these variables are integrated of order one. The results of the PP test are not fundamentally different from the respective ADF test results. The lag truncation for the Bartlett kernel was chosen according to the Newey and West suggestions (Asteriou, 2013). The results after first differencing the series reject the null hypothesis of the presence of a unit root, suggesting that the series are integrated of order one. The results confirmed that differencing once was all that is required to bring these variables to stationarity. Hence the cointegration tests were conducted.

4.2 Cointegration analysis

Once the stationarity order has been established, a cointegration test should follow. The test used for cointegration is the one proposed by Brooks (2019). This became necessary to find variables that exhibit long-run equilibrium. Firstly, we started with the choice of optimal lag length. This is important to avoid spurious rejection or acceptance of estimated results. If the lag length is too

large, the VECM is more likely to pick up within sample random variation as well as any systematic relationship, because there is the need to estimate a great number of parameters (Song et al., 2021). The lag length also influences the power of rejecting the hypothesis. For instance, if k is too large, the degree of freedom may be wasted. Moreover, if the lag length is too small, important lag dependences may be omitted from the VECM, and if the serial correlation is present the estimated coefficients will be inconsistent (Asteriou, 2013).

The optimal lag length is suggested by Akaike Information Criteria (AIC), Schwarz Information Criterion (SIC), Hannan-Quinn criterion (HQ) Final Prediction Error (FPE) as well as Likelihood Ratio (LR) test. This is because all these criteria can produce conflicting lag length choices. However, the decision about the lag structure of a VAR model could be because a given criterion produces a white noise residual and conserves degrees of freedom (Song et al, 2021). In this study, table 2 presents the selection of an optimal lag length.

Table 2: VAR lag order number selection criteria

| Lag | Log-Linear | LR | FPE | AIC | SC | HQ |
|-----|------------|-----------|-----------|-----------|-----------|-----------|
| 0 | -945.4854 | NA | 708.6154 | 17.91482 | 18.01533 | 17.95556 |
| 1 | -716.7719 | 435.8502 | 12.80876 | 13.90136 | 14.40389* | 14.10504 |
| 2 | -689.8066 | 49.35157 | 10.42906 | 13.69447 | 14.59903 | 14.06109* |
| 3 | -669.5124 | 35.61058 | 9.649422 | 13.61344 | 14.92004 | 14.14301 |
| 4 | -650.4884 | 31.94601 | 9.171034 | 13.55639 | 15.26501 | 14.24890 |
| 5 | -629.5238 | 33.62256* | 8.435440* | 13.46271* | 15.57336 | 14.31817 |
| 6 | -617.8560 | 17.83192 | 9.291910 | 13.54445 | 16.05713 | 14.56285 |
| 7 | -606.3843 | 16.66640 | 10.33547 | 13.62989 | 16.54460 | 14.81124 |
| 8 | -599.8720 | 8.969697 | 12.71637 | 13.80891 | 17.12564 | 15.15320 |

Notes: * indicates lag order selected by the criterion; LR: Likelihood ratio; FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion.

Table 2 indicates that the optimal lag length is 5 as indicated by most criteria (as indicated by*), which are more reliable. The paper employed the Johansen multivariate cointegration techniques. The cointegration technique was chosen because it performs better than single-equation and alternative multivariate methods. The results of the cointegration tests are reported in table 3.

Table 3: A cointegration analysis

| H_0 : $rank = p$ | Maximum Eigenvalue Statistics | Trace Statistics | Eigenvalue |
|-----------------------|-------------------------------|------------------|------------|
| $\rho = 0$ | 44,12* | 27,58 | 86,20* |
| $\rho \leq 1$ | 28,21* | 21,13 | 42,09* |
| $\rho \leq 2$ | 13,20 | 14,26 | 13,86 |
| $\rho \leq 3$ | 0,667 | 3,841 | 0,667 |

Notes: *represent* hypothesized number of cointegrating equation(s)

Trace and maximum eigenvalue statistics presented in table 3 indicate that there are two cointegrating relations in the system. The cointegrated variables must have an error correction representation in which an error correction term must be incorporated into the model. Accordingly, a vector error correction model is formulated to reintroduce the information lost in the differencing process, thereby allowing for long-run equilibrium as well as short-run dynamics (Asteriou et al, 2013). Based on the given explanation, we then move on to the next stage of generating an error correction model. These results are in line with Keynesian theory in that the monetary policy

variables are related to real sector variables as the cointegration relationship implies a long-run relationship (Del Negro et al., 2015; Fikri, 2018; Rosenberg, 2019).

4.3 Vector error correction modeling (VECM)

Given that variables are cointegrated, one can proceed to estimate the VECM. The model contains information on the long-run, and short-run relationship between variables and speed of adjustment (error correction model). To check for the long-term relationship between the dependent and independent variables, the variables are subjected to estimation using the specification stated in section 3.1. To specify the VECM, the number of cointegrating relationships obtained in the previous step, the number of lags, and the deterministic trend assumption in the cointegration test are all used. The fact that variables are cointegrated informed the use of the VECM (Raimbekov et al., 2022). The model allows the long-run behavior of endogenous variables to converge to their cointegrating (that is long-run equilibrium) relationships while allowing a wide range of short-run dynamics (Brooks, 2019).

The long-run effects of house prices on interest rates are obtained from the normalized cointegrating equations. House prices and inflation have a negative and significant relationship with interest rates. The statistical significance of the variables was established at a five percent significance level. These results are in line with most studies found in the literature (Rosenberg, 2019; Cumming & Hubert, 2022). A normalized cointegration equation is as follows:

$$IR = -57.79 - 5.8 \times 10^{-7} HP - 0,3569 CPI - 0.735 GDP \dots\dots\dots (2)$$

The result revealed that a 1 percent increase in house prices could cause over a 0,00058 percent proportional decrease in interest rates and an increase in inflation could cause over a 0,357 percent proportional decrease in interest rates. These results indicate a significant possibility of the house price channel on monetary policy though 0.00058 percent is a small number indicating a weak link. These results are in line with the studies of Bernanke et al (2018) who suggested the house price channel as a possible link to the monetary transmission mechanism. In addition, a study by Claessens & Kose (2017) confirmed a permanent link between house prices and interest rates, though this happens after a lag. The strength of this model is supported by scholars who identified that the role played by house prices on monetary policy occurs in an inflation-controlled framework as the case in South Africa (Apergis et al, 2015; Twinoburyo & Odhiambo, 2018; Dlamini & Ngalawa, 2022).

For economic growth, a 1 percent increase in it would lead to over 0,735 percent proportional decrease in interest rates. The results imply that the general price levels must be set to a given target to achieve the projected future growth of the economy (Raimbekov et al., 2022). Thus, a moderate annual inflation growth rate would be required to stimulate the economy to attain long-term growth. As an instrument of monetary policy, interest rates should be used with caution in order not to retard the development process of the economy. For instance, mopping up excess money in the economy must be carefully carried out in a way it will not generate higher lending interest rates as well as lower savings ratios (Twinoburyo & Odhiambo, 2018). Investment, through house prices, though important for long-run growth, must be properly channeled to the sectors of the economy that are growth enhancing (Dong et al., 2021; Olusegun, 2022).

The error correction model estimate of -0,1089, also called speed of adjustment shows that interest rate, house prices, inflation, and GDP adjust to the deviations from their long-run paths. This long-run relationship is significant at 1 percent. However, this indicates that the adjustment process takes a very long period with a speed of around 11 percent. To these results, the short-run effects of monetary policy on real activity deviate from the long-run effect. The implication is that the short-run impact of monetary policy may be very low, although significant. Besides, the results indicate that the longer-run policy actions and measures on house prices can bring desirable and required adjustments to the economy at large (Dorling, 2021). The monetary authorities should, for the immediate period, focus on the use of interest rates as policy instruments to actualize its objectives. Hence, targeting house prices can be a long-run policy goal, and the model is found stable as shown in the polynomial AR root that all dots are inside the circle (figure 1).

Inverse Roots of AR Characteristic Polynomial

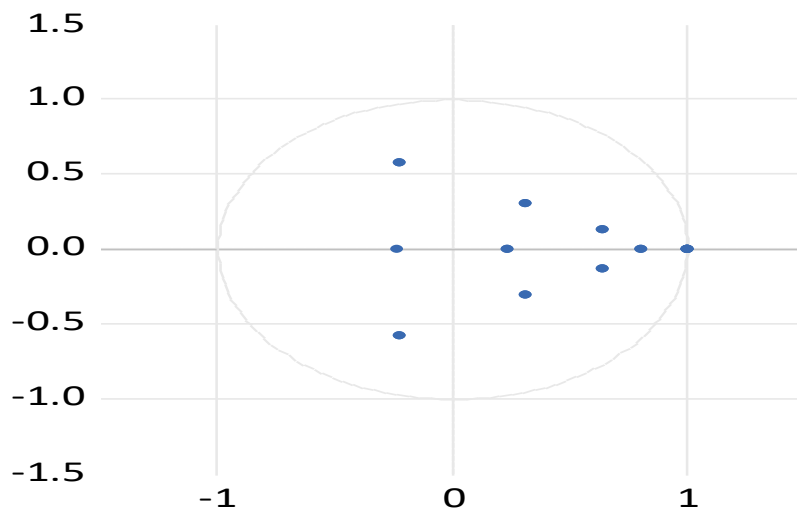


Figure 1: Inverse roots of AR characteristic polynomial

4.4 Impulse Response Functions

The impulse response functions trace the temporal and directional response of endogenous variables to a change in one of the structural innovations (Brooks, 2019). Impulse response functions indicate the lag structure in the economy. It shows the responses of a particular variable to a one-time shock in each of the variables in the system. The interpretation of the impulse response functions should take into consideration the use of the first differencing of the variables as well as the vector error correction estimates. Figure 2 illustrates the combined impulse response functions for the interest rate- house price series.

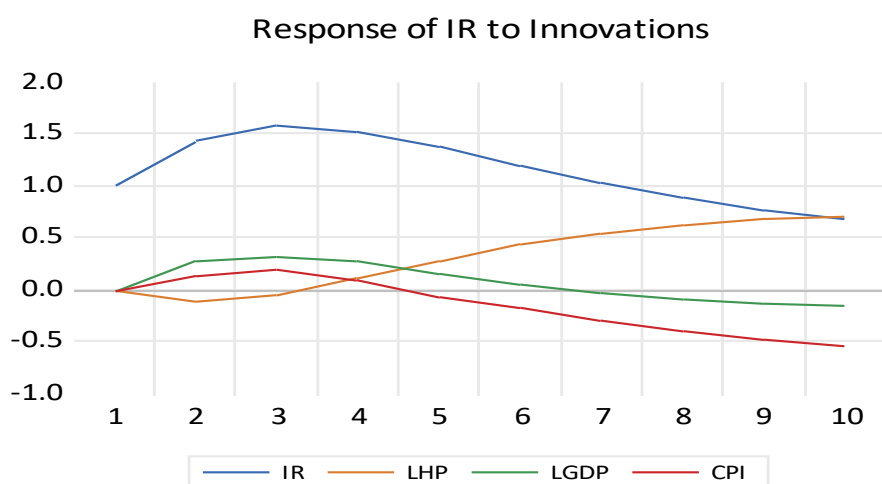


Figure 2: Impulse response functions

Notes: LHP- house prices; IR- Interest rates; CPI- Consumer Price Index; LGDP- gross domestic product

A one-time shock to the first difference in a variable is a permanent shock to the level of that variable (Ncanywa & Ralarala, 2022). This allows issues to be addressed concerning the effects of monetary policy on the real economy. Of particular interest in this study are the dynamic responses of interest rates to innovations in each variable (figure 2). The ordering of the variables used for the study followed from interest rates to house prices, GDP, and inflation. A shock to interest rates generates a negative response to other variables beginning from the second quarter.

4.5 Variance Decomposition

Variance decompositions indicate the proportion of the movements in a sequence due to its shocks versus shocks to the other variables. It shows the fraction of the forecast error variance for each variable that is attributable to its innovations and innovations in the other variables in the system (Asteriou, 2013). The variables are listed according to the increasing order of responsiveness, with the least responsive variables coming first. Based on the assumptions of sluggish adjustments of the goods market, economic growth and inflation were listed first. Following were house prices and then lastly, interest rates, on the assumption of quick responses of the monetary variables to shocks in interest rates. The variance decomposition is presented in Table 4 using the Cholesky decomposition method, to identify the most effective instrument to use in targeting each variable of interest. This helps in separating innovations of the endogenous variables into portions that can be attributed to their innovations and innovations from other variables.

Table 4: The results of the forecast error variance decomposition

| Variable | Standard error | Period (Month) | HP | CPI | IR | GDP |
|----------|----------------|----------------|---------------|---------------|----------------|-------|
| HP | 4.171 | 1 | 99.847 | 0.000 | 0.152 | 0.000 |
| | 5.706 | 4 | 82.469 | 0.627 | 11.472 | 5.430 |
| | 6.121 | 7 | 72.108 | 1.799 | 18.992 | 7.090 |
| | 6.283 | 10 | 69.797 | 2.613 | 20.457 | 7.132 |
| CPI | 1.104 | 1 | 0.911 | 99.085 | 0.003 | 0.000 |
| | 2.058 | 4 | 2.027 | 93.612 | 0.214 | 4.146 |
| | 2.291 | 7 | 4.277 | 90.867 | 0.718 | 4.137 |
| | 2.331 | 10 | 5.179 | 89.121 | 1.400 | 4.297 |
| IR | 0.650 | 1 | 0.000 | 0.000 | 100.000 | 0.000 |
| | 0.767 | 4 | 0.304 | 2.198 | 92.656 | 4.041 |
| | 0.816 | 7 | 2.792 | 4.555 | 88.446 | 4.206 |
| | 0.850 | 10 | 6.026 | 6.026 | 84.072 | 3.770 |

| Variable | Standard error | Period (Month) | HP | CPI | IR | GDP |
|----------|----------------|----------------|----------|--------|--------|---------------|
| GDP | 0.988 | 1 | 7.02E-05 | 2.623 | 0.158 | 97.217 |
| | 2.771 | 4 | 0.226 | 11.530 | 6.264 | 81.979 |
| | 3.431 | 7 | 0.198 | 14.960 | 17.166 | 67.675 |
| | 3.636 | 10 | 0.454 | 16.398 | 20.598 | 62.549 |

Notes: CPI-Consumer Price Index; GDP-Gross Domestic Product; HP- house prices; IR-Interest rates

As anticipated, own shocks constitute the predominant sources of variations for all the variables in the model. From Table 4, the predominant source of variation in house price forecast errors is own shocks, which account for between 69,3 percent and 99,8 percent of the forecast errors in house prices. Innovations from interest rates are a relatively important source of forecast error variance in monetary activity. In the first quarter inflation and economic growth account for zero percent and interest rates accounts for 15 percent. Both inflation and economic growth are less significant.

4.6 Granger Causality test results using ECM framework

The estimation of the error correction model allows testing for Granger causality. The framework allows for a causal link between two variables stemming from a common trend or long-run equilibrium relationship (Wang et al., 2022). This framework considers the possibility that the long-run information in the data represented by a lagged level of a variable, an independent variable, may help to explain the current changes in another variable, the dependent variable, even if the short-run information in the data given by the past changes do not (Asteriou et al, 2013). A VAR Granger-causality test was presented in Table 5.

Table 5: VAR Granger Causality/Block Exogeneity

| Dependent variable: Interest rates | | | | |
|------------------------------------|-------------|----|-------------|--|
| Excluded | Chi-squared | df | Probability | |
| HP | 6.533355 | 2 | 0.0381 | |
| CPI | 5.090648 | 2 | 0.0784 | |
| GDP | 11.31267 | 2 | 0.0035 | |
| All | 19.18603 | 6 | 0.0039 | |
| Dependent variable: HP | | | | |
| Excluded | Chi-squared | df | Prob. | |
| IR | 11.10653 | 2 | 0.0039 | |
| CPI | 1.055781 | 2 | 0.5898 | |
| GDP | 3.068139 | 2 | 0.2157 | |
| All | 13.44634 | 6 | 0.0365 | |
| Dependent variable: CPI | | | | |
| Excluded | Chi-squared | df | Prob. | |
| IR | 0.522466 | 2 | 0.7701 | |
| HP | 1.089390 | 2 | 0.5800 | |
| GDP | 7.238925 | 2 | 0.0268 | |
| All | 9.110961 | 6 | 0.1674 | |
| Dependent variable: GDP | | | | |
| Excluded | Chi-squared | df | Prob. | |
| IR | 14.47412 | 2 | 0.0007 | |
| HP | 0.671648 | 2 | 0.7147 | |
| CPI | 8.966218 | 2 | 0.0113 | |
| All | 27.10054 | 6 | 0.0001 | |

Notes: CPI-Consumer Price Index; GDP-Gross Domestic Product; HP- house prices; IR-Interest rates; df- degrees of freedom

Table 5 shows a bi-directional causality in the interest rate–house prices and interest rate-economic growth series. There is unidirectional causality from inflation to interest rates and economic growth. The findings of this sub-section imply that house prices can be a possible link in the monetary transmission process as alluded to in the literature (Rosenberg, 2019; Dong et al., 2021; Wang et al., 2022).

5. CONCLUSIONS AND RECOMMENDATIONS

The paper aimed to examine the role of asset prices in the monetary policy transmission mechanism in South Africa. The paper employed the vector error correction model and Granger causality tests that incorporated quarterly data from 1990 to 2020. The series comprised the domestic interest rate, consumer price index, GDP (real GDP at constant prices), and real house prices. Based on the order of the significance of the tests, the detection of causality between these variables arises, which indicates that house prices play a significant role although it is weak and the ‘other asset price channel’ is the possible channel of monetary transmission. There was bi-directional Granger causality between house prices and interest rates.

The results further indicated that the role of house prices on interest rates should take place in an inflation-controlled framework. Inflation targeting of the monetary policy of South Africa, transparency, and accountability have improved immensely, and further improvements are in prospect. The weak link indicates that monetary authorities are unlikely to have informational advantages when looking at house prices. Meaning, that changes in house prices should affect monetary policy only to the extent that they affect the South African bank’s forecast for inflation and the outlook on economic growth. It is recommended that the asset price channel can be followed with inflationary precautions to evaluate the stance of the monetary policy, especially the role shown by house prices.

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AVAILABILITY OF ALTERNATIVE MODES OF TRANSPORTATION FOR GAUTENG URBAN FARMERS DELIVERING GOODS TO CUSTOMERS

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ABSTRACT

Food insecurity in cities is exacerbated by urbanisation and population growth. According to the City of Johannesburg Review (City of Johannesburg Review 2020/21:12), the City of Johannesburg's population has increased by approximately 12% in the last two years, from 5,05 million to 5,74 million. Urban farming has emerged as the best solution for food security and job creation. Urban farming can be practised in any available space suitable for growing agricultural produce for food sustainability and income, such as backyards and rooftops. However, produce loss can occur both after harvest and during transportation, and for many smallholder farmers, post-harvest processing technologies and efficient transportation networks may be prohibitively expensive. The purpose is to gain a detailed understanding of the transportation options currently used by smallholder urban farmers and which other transportation options could be used to improve the delivery of produce to current and potential customers in and around Johannesburg. For the purpose of this study, quantitative data were collected on the transportation options available to urban farmers and their customers in Gauteng province. The smallholder urban farmers were given either a digital or a physical questionnaire. The questionnaires were distributed via WhatsApp and other digital modes available to the urban farmers. The sampling frame were 80 smallholder urban farmers identified in the Johannesburg area and surrounds. According to the data collected, urban farmers are aware of the different transportation options available to them; however, they do not utilise outsourced transportation alternatives. Outsourcing transportation will help the smallholder urban farmers to reduce damage to or loss of produce caused by unsuitable vehicles to deliver fresh produce. In addition, outsourcing transportation will reduce delivery time, which will result in preserved freshness of the produce as less time will be spent in transit.

Keywords: Transportation, outsourcing, urban farming, smallholders, urban agriculture

1. INTRODUCTION

Urbanisation is a key factor that leads to overpopulation in metropolitan areas, which in turn results in food insecurity. Urbanisation is defined as movement of people from rural areas to cities for

better living conditions (Szabo, 2015:28) and occurs when people are looking for better opportunities, such as employment, education, and health facilities. According to the City of Johannesburg Review (2020/21:12), the population of the City of Johannesburg has increased by approximately 12% in the past two years, from 5,05 million to 5,74 million. Approximately 30% of the population are born in other provinces (Crosthwaite, 2017:1). Urbanisation has led to food poverty and insecurity as the unemployment rate increased from 29,1% to 32,5% (Statistics South Africa, 2021:3).

Food poverty occurs when a household or an individual cannot access healthy and nutritious food, due to the lack of affordability (Crosthwaite, 2017:1). On the other hand, food insecurity is the lack of access to enough nutritious and affordable food (Fawole, Ilbasimis & Ozkan, 2015:1). Hence, urban farming has become an optimal solution for food security and generation of income in urban areas. Urban farming is described as an individual or a group of people who utilises the available space in their communities, backyards, and rooftops for planting fresh agricultural produce for food sustainability and income (Steele, 2017:1). These urban farmers plant for personal consumption, to sell in neighbouring areas, and to donate produce to schools and churches for those in need (Gwamba, 2018:13). According to Molelu (2015:17), over the years, urban farming networks have been successful in terms of food security and job creation. However, due to a lack of resources and knowledge, farmers have faced difficulties in transporting their produce effectively and efficiently (Ngcoya & Kumarakulasingam, 2017:48).

Transportation is critical in enabling people and organisations to interact and trade information, goods, and services (Miller, 2018:552). Urbanisation has increased in demand for an effective and efficient transportation network in urban areas (Turok, 2017:101). This emphasises the importance of an effective transportation network for facilitating the delivery of product to customers and assuring timely delivery of produce (Speranza, 2018:835). Most food spoilage occurs during transportation from the urban farms to customers (Hlommendlini, 2019:1). Food security and sustainability awareness have grown in popularity over the years. This is evidenced by the significant number of people in urban areas who have begun farming on available land (Hammond, Brown, Burger, Flanagan, Fristoe, Mercado-Silva, Nekola & Okie, 2015: 758). However, the issue of food spoilage as a result of insufficient storage and transportation facilities receives less attention.

Numerous smallholder farmers face difficulties with post-harvest handling practices and effective transportation networks, which can be prohibitively expensive. According to Sawicka (2019:7), an estimated 40% to 50% of the fresh produce loss occurs post-harvest and during transportation. Additionally, a lack of awareness about market information and transportation networks has contributed to South Africa's food waste (Hlommendlini, 2019:2). The smallholder urban farmers are greatly affected by food spoilage as they do not have sufficient knowledge of transportation networks due to lack of exposure (Lutz, Smetschka & Grima, 2017:925). Additionally, due to their lack of exposure to these networks prior to starting their urban farms, their only knowledge of deliveries is to make use of their own vehicles or alternative vehicles that are available for them to use freely (Lutz et al., 2017:925).

This resulted in many farmers opting to use their private vehicles to transport produce to the customers and, in some instances, the customer collects their order from the farmers (Robinson, 2018:2). However, smallholder urban farmers recognised that delivering product to customers via

private vehicles is expensive and time consuming (Robinson, 2018:2). At the same time, the farmers who do not own private vehicles may walk, use bicycles or even collectively hire a vehicle to make deliveries (Grocycle, 2021:1). The farmers who use their private vehicles for deliveries began to research the benefits and consequences of outsourcing a transportation company to do deliveries (Robinson, 2018:2). Moreover, the farmers prioritise the cost-efficiency, reliability, and suitable transportation network to get the produce from the farm to the customer in a timely manner.

The lack of knowledge about market information and the transportation network has led to smallholder urban farmers within Gauteng being incompetent. The lack of transportation methods and strategies for maximising their effectiveness and reaping the benefits necessary to build the business resulted in customer dissatisfaction and loss of produce in transit. The literature review focuses on identifying and evaluating the transportation networks currently available to urban farmers as well as finding ways to improve or design a new transportation network to increase reliability and customer service while reducing produce spoilage and costs. Through investigating the above, the literature review below is laid out under the following headings: Self-sufficient urban farmers, commercial customers and then insourcing versus outsourcing transportation to deliver the produce to the consumers.

2. LITERATURE REVIEW

2.1 URBAN FARMERS

The urban farmer is described as a person in an urban area who makes use of communities, backyards, even rooftops for the production of agricultural products for food sustainability and revenue generation (Steele, 2017:1). More examples of urban farming are balcony gardening, growing in vacant lots, rights-of-way, fruit trees, market farms, and raising livestock (Steele, 2017:4). However, land availability for farming in the cities has been a constraint due to industrialisation and urbanisation (Kyaw & Keong, 2017:342). Many farmers have encountered this land availability constraint and, as a result, have adopted vertical and pot plant farming strategies in order to produce adequately (Chatterjee, Debnath & Pal, 2020:159). During the recent lockdown, many people in urban areas, such as Bedfordview, started farming projects, which increased the number of farmers in the area to 120 (Abrahams, 2020:2). Consequently, urban farming supplies 20% to 60% of food, such as vegetables, and medicinal and aromatic plants in most households (Myeni, Thayhana, Randela & Mokoena, 2019:2). Urban farmers start with a sustainable garden of produce to feed their families and most move into the direction of growing enough to sell and start a sustainable business (Diehl, Oviatt, Chandra & Kaur, 2019:1378).

2.2 Customers

Since there are various distribution channels, smallholder urban farmers must determine how they will distribute and sell their produce to their customers. These distribution channels are classified into two types: both formal and informal (Siegener, Sowerwine & Acey, 2018:12). A few examples of formal distribution channels would be when farmers sell their produce to institutions or directly to retailers and farmers' markets (Siegener et al., 2018:12). On the other hand, smallholder urban farmers can also make use of an informal distribution channel, which consists of crop swaps, mobile food markets and online marketing channels (Siegener et al., 2018:13). The choice of

distribution channel type necessitates the development of a transport network that will allow for the movement of their produce (Speranza, 2018:835). Depending on the distribution channel or channels selected by the smallholder urban farmers, this may affect the transport methods used, namely insourcing or outsourcing transportation (Siegener et al., 2018:14).

2.3 Insourcing transportation

When smallholder urban farmers use their own vehicles to deliver produce, they incur a variety of costs and potential problems, such as a lack of suitable vehicles to preserve the freshness of produce while in transit or a lack of a reliable vehicle to transport produce to customers on a regular basis (Negi & Trivedi, 2021:3). Therefore, it is difficult for farmers to manage their urban farms, package produce as well as deliver produce to customers. Owing to the nature of these activities, they experience a limited window of time (Kader, 2004:296). Customers have higher service expectations in terms of produce being delivered on time and the quality of the produce (Kader, 2004:296).

Thus, while dealing with a start-up urban farm, it is critical to analyse the costs of insourcing versus outsourcing transportation. (Snyman, 2018:4). Owing to financial constraints, most South Africans keep their vehicles for a longer period of time (Staff Writer, 2020:2). Owning a car has fixed and variable costs to be considered (Snyman, 2018:4). Driving efficiently and renewing your licence on time save on variable costs (Snyman, 2018:4). All the above costs pale in comparison to the amount of money one must spend on fuel per year (Snyman, 2018:4). Using outsourced transportation eliminates additional costs, such as insurance and maintenance, as there will be a fixed cost from A to B (Snyman, 2018:4).

Coordinating growing and delivering produce to customers simultaneously may be difficult for urban farmers, and the reliability of transportation has an impact on the farmer's reputation (Vencataya, Pudaruth, Dirpal & Narain, 2018:230). Numerous urban farmers who operate their own trucks have struggled to sell high-quality fruit owing to spoilage and transportation concerns, which is why they consider outsourcing (Moosa, 2019:2).

2.4 Outsourcing transportation

Outsourced transportation bridges the gap for farmers by providing the know-how for an appropriate mode of transport (Banister, 2001). Outsourcing transportation can be defined as a business or an individual contracting with a third-party logistics provider or transport provider to transport specific products because they are unable or unwilling to transport the products themselves or would rather focus on their core business activities (The Supply Chain Consulting Group, 2021:1).

Outsourcing transportation would provide many benefits to urban farmers, including cost savings from using a third-party logistics provider, who is often able to provide the service at a reasonable price (The Supply Chain Consulting Group, 2021:2). An external transport company provides the expertise to deliver goods to customers, thus allowing smallholder urban farmers to focus on their core business activity, namely farming and providing high quality produce to their customers as well as minimising their wastage of produce (GTZ, 2018:1)

Uber launched in South Africa in 2013 as a service that transports people to their desired location (Mayuri Pillay, 2016:1). In 2016, the company launched a fast-food delivery service called 'Uber

Eats’, followed by an additional feature service in the Uber app called ‘Uber Connect’ in 2020 (Mercury Reporter, 2019:1; Staff Writer, 2020:2). Uber Connect is a feature on the Uber application that allows individuals or businesses to use their smartphones and request a parcel collection and delivery to a destination (Staff Writer, 2020:3). Individuals and businesses alike gain from this program because it enables them to utilise their smartphones to expeditiously deliver goods to their customers’ specified locations. Additionally, the usage of the Uber application enables urban farmers and customers to track and trace their product packages in real time (Staff Writer, 2020:4), resulting in greater customer satisfaction and, ultimately, customer loyalty (GTZ, 2018:2).

Another example of a third-party logistics provider is a company called ‘E-cargo bike’, which launched in South Africa in 2018 (Staff Writer, 2018:4). An electronic bike is used for the transport and delivery of goods aimed at providing a cost-effective, safer, and greener ‘last-mile’ solution in the freight distribution system (Staff Writer, 2018:4). Uber, E-cargo bike, and other third-party logistics providers are possible options for farmers to combat the issues that arise from making use of their own vehicles to transport produce to customers (GEP, 2019:1).

3. RESEARCH METHODOLOGY AND DESIGN

The most appropriate research design for this study was descriptive and evaluative. According to Saunders, Lewis and Thornhill (2019: 186-188), a descriptive design is a study that asks participants a variety of questions about the topic of interest in order to acquire insight. Additionally, evaluative research is defined as a study that determines the topic’s effectiveness (Saunders et al., 2019:188). The demographic data acquired by the questionnaire were descriptive in nature, as the mean, mode, and standard deviation were utilised to analyse the data. The questions asked in the questionnaire were descriptive in nature, to identify the transportation alternatives available to urban farmers and their customers in Johannesburg.

This study analysed the current modes of transportation utilised by smallholder urban farmers and identified alternative means of transportation that would efficiently and effectively transport their produce to their customers, hence Pragmatism was the best ideology to use. The data were collected using a structured questionnaire, which was distributed electronically and physically to farmers within Johannesburg. The data collected by this questionnaire provided the relevant information to address the research question, thus identifying transportation options available to the urban farmers and their customers within Johannesburg.

The data were descriptive in nature, assisting in the identification of the urban farmer profile, type of urban farm, and transportation options available to urban farmers and their customers. Some questions were either similar or related to previous questions asked with the intent to confirm the information provided in previous questions as accurate, relevant, and reliable. The information gathered by the demographic questions in the questionnaire can be generalised and a general conclusion can be assumed.

Primary data were collected by means of a quantitative survey using a structured questionnaire. The quantitative method was more suitable as the research requires information in the form of variables from a group of urban farmers. It also allows for more data to be collected over a shorter period of time (Mander, 2017). This research has a limited time frame; hence, it was critical to conduct research on a reliable group of farmers in Johannesburg. Furthermore, a quantitative

method allows for more variables to be collected and analysed, which will allow for a bigger picture of the problem.

The Gauteng smallholder urban farmers served as the unit of analysis for this research. The sampling frame was 80 from the 120 urban farmers identified by Abrahams in 2020 in the Johannesburg area and surrounds. The survey was administered to 80 urban farmers in the province. The urban farmers received either a digital questionnaire or a physical questionnaire.

To conduct the surveys in compliance with COVID-19 requirements, researchers joined WhatsApp groups for urban farmers. The questionnaires were made available to urban farmers via WhatsApp and other digital platforms. Social media facilitated contact between researchers and participants, allowing members of each group to complete the questionnaire and participate in the study. When possible, questionnaires were delivered and collected in person.

4. RESULTS AND DISCUSSION

According to Carstensen (2021) from Foodxchange, the problem faced by smallholder urban farmers is a lack of knowledge about transportation planning and the creation of an optimal transport solution to execute produce deliveries within Gauteng province. A transportation solution plays a vital role in linking urban farmers to their customers.

4.1 Biographic data

4.1.1 Age groups

The majority of urban farmers (24%) are between the ages of 26 and 34, with 22% between the ages of 35 and 44. Thus, it appears as though the majority of urban farmers are middle aged. The middle-aged demographic has turned to urban farming to support or provide for their families. This could be for a variety of reasons, including unemployment or a lack of income. The smallest age cohort is composed of the 10% of respondents who are 65 years or older.

4.1.2 Education

According to the data gathered, the majority of urban farmers (57%) have a Grade 11 or lower education. Because many participants did not have the opportunity to complete their schooling, many chose urban farming to complement or replace their income. Only 23% of urban farmers surveyed have a matric certificate as their highest level. The remaining 20% have a post-matric qualification.

4.2 Farming data

4.2.1 Farming duration and type of farm

According to Figure 1, farmers who have been farming for four to six years are more likely to be community garden farmers than backyard and open land farmers. While those who have been farming for less than a year are considered backyard farmers.

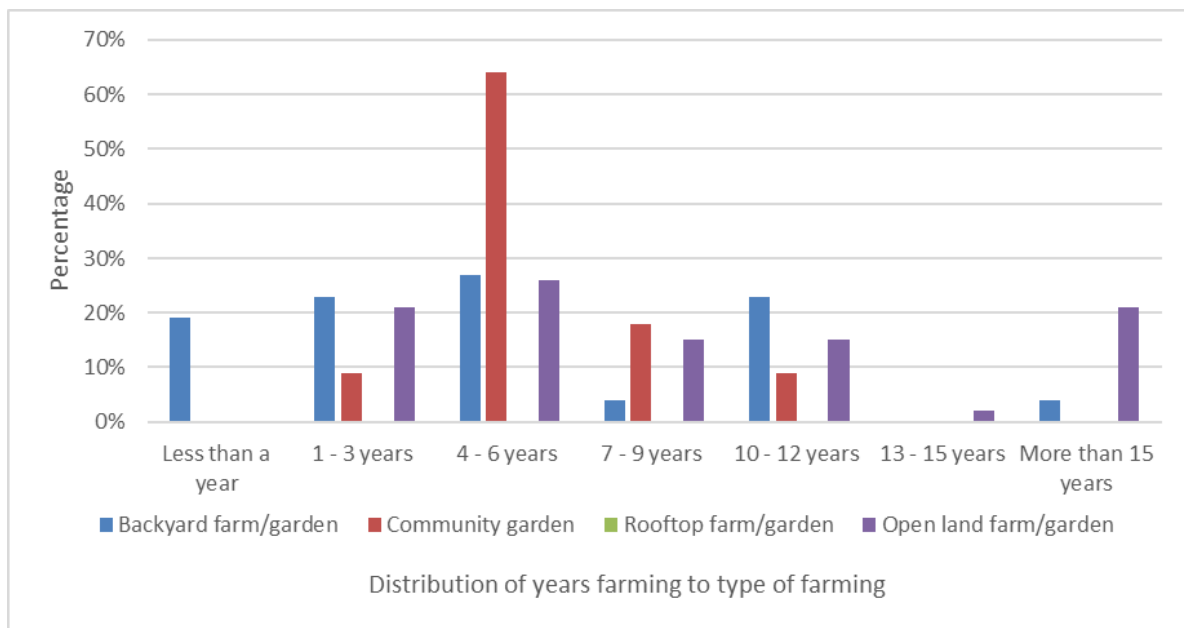


Figure 1: Farming duration and type of farm

The longer people farm, the larger the scale of farming they seem to engage in. Open land farming has the most respondents who say that they have been farming for more than 15 years.

4.2.2 Packaging methods

The majority of smallholder urban farmers indicated that they utilised packaging. In total, 62% replied ‘Yes’; additionally, 28% claimed that they occasionally used packaging but did not specify when. Only 10% of respondents reported that they did not utilise any packaging at all. A total of 61% of respondents who indicated they package their produce did so with cardboard boxes, 14% used plastic bags, while another 13% used crates. Several respondents reported that they used more than one sort of packing material. Only 1% of respondents reported using a netting bag.

4.2.3 Produce sales

According to the survey, 36% of respondents sell their produce at farmers’ markets, which are often considered to be the most popular and easiest method of selling produce, while 22% sell straight from the farm. A total of 14% are informal traders who sell their products at informal markets, while a small percentage (6%) locate buyers through cold calling or social media platforms (11%).

Table 1: Produce sales

| Options | Frequency | Percentage |
|---------------------------------------|-----------|------------|
| Calls to potential customers | 5 | 6% |
| Online: WhatsApp, Facebook, Instagram | 10 | 11% |
| Informal trader | 12 | 14% |
| Farmers’ market | 31 | 36% |
| Retailers | 10 | 11% |
| Direct from urban farm | 19 | 22% |
| Total frequency (%) | 87 | 100% |

According to Table 1, markets and direct sales are the most popular and likely the simplest methods of selling, whereas marketing to individual customers is difficult and expensive, as marketing online and advertising require additional funds that may not be available.

4.3 Transportation data

4.3.1 Transportation alternatives

The majority (55%) of smallholder urban farmers are aware of outsourcing transportation options that would assist them in delivering their produce to customers, whereas 45% are unaware of such options.

4.3.2 Transportation companies utilised

According to the collected data, the vast majority of respondents (78%) use outsourced transportation providers to deliver their goods to their customers. Of the 78% of respondents who use outsourced transportation businesses to deliver their items to customers, 2% use online retailers similar to Takealot, 4% use The Courier Guy, 13% use Mr Delivery, and the bulk (52%) use other companies that were not identified. Only 22% of respondents who were aware of any outsourced transportation businesses do not make use of them.

4.3.3 Transportation applications

The feasibility of a transportation-based application that can be used by smallholder urban farmers for transportation of produce will be evaluated here.

According to Table 2, 66% strongly agree and agree that technology-based applications should be considered, whereas 12% strongly disagree and disagree; 22% remain neutral. According to the statistics, 67% strongly agree and agree that transportation applications will aid urban farmers in their delivery efforts, whereas 17% strongly disagree and disagree; 16% remain neutral. In total, 57% strongly agree and agree that they do not use transportation applications due to their perceived high cost, while 13% strongly disagree and disagree; 32% remain neutral.

Table 2: Outsourcing and application opinions

| Opinions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Total (%) |
|--|-------------------|----------|---------|-------|----------------|-----------|
| Use transportation applications | 7% | 5% | 22% | 33% | 33% | 100 |
| Transportation application will assist in deliveries | 11% | 6% | 16% | 46% | 21% | 100 |
| Costly to use transportation applications | 6% | 6% | 32% | 19% | 37% | 100 |

Analysing the aforementioned data suggests that urban farmers are considering the use of technology applications and believe that they will aid them in their deliveries, but also believe that the cost of these applications is too expensive, and therefore they do not use them. According to the literature assessment, farmers who rely on their own vehicles have not yet considered an alternative.

4.3.4 Usage of private owned transportation

The majority of respondents (78%) use their own vehicle to deliver their produce to customers, while only 22% do not.

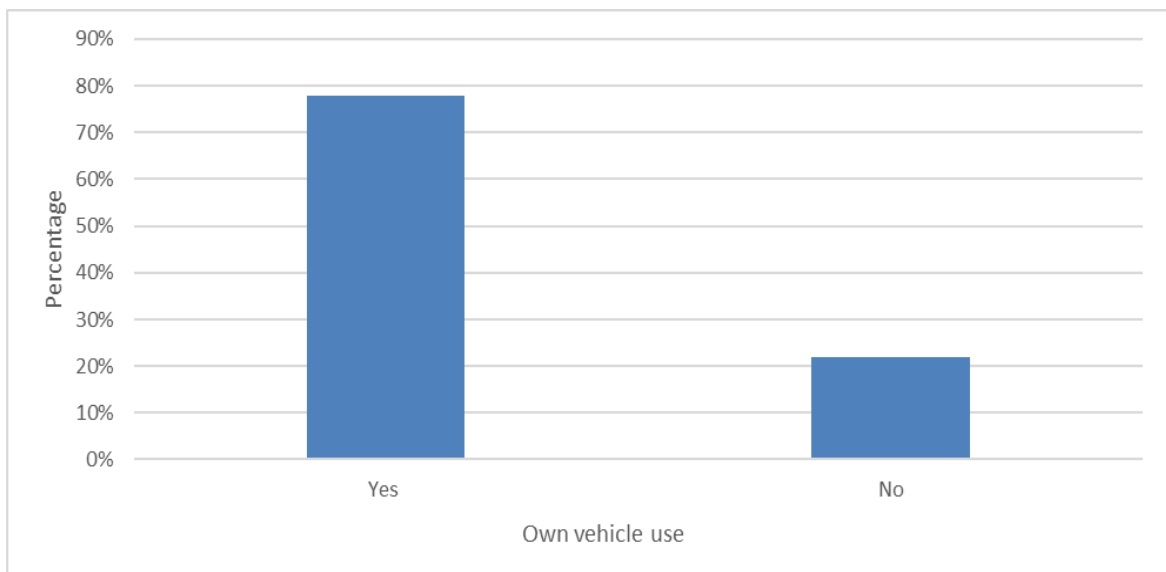


Figure 2: Usage of private owned transportation

The great majority (78%) of respondents, transport and deliver their produce to customers using their own vehicle. This demonstrates that the majority of respondents transport their produce to their customers using their own vehicles and do not rely on outsourced transportation.

4.4 COSTING DATA

4.4.1 Willingness to spend on outsourcing

In total, 30% of respondents are willing to spend between R21 and R40 rand, while 31% are willing to spend between R40 and R61 for transportation per delivery.

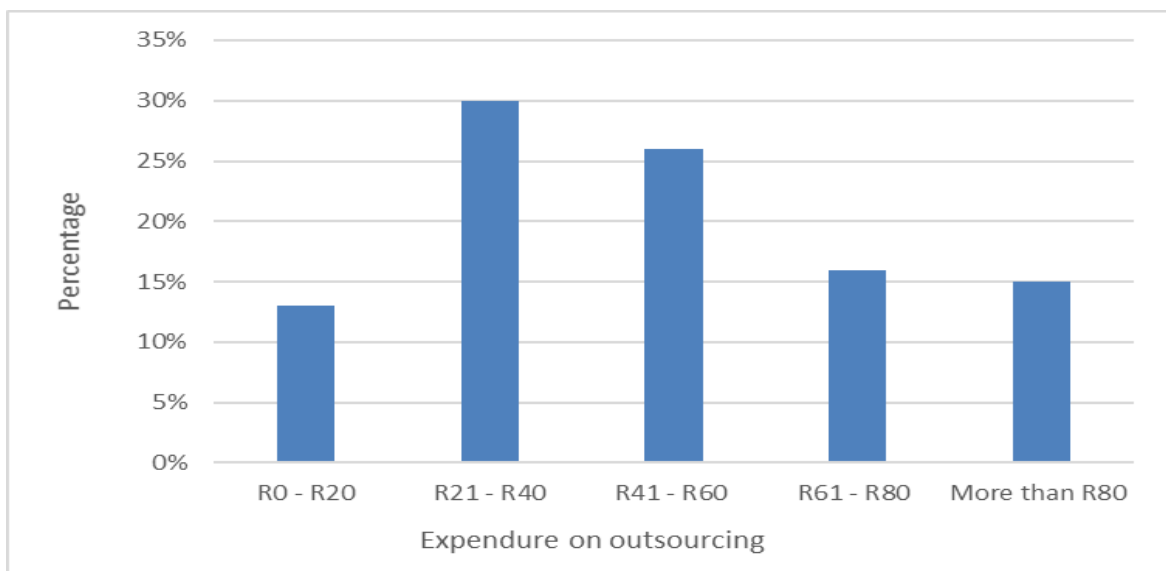


Figure 3: Transportation companies utilised

This demonstrates that, with the proper knowledge and subsequent willingness, urban farmers may be able to leverage outsourced transportation to grow their businesses and improve their effectiveness and efficiency.

4.4.2 Cost of utilising privately owned transportation

The possibilities of cooperative transportation systems that can provide cost-effective and efficient solutions for smallholder urban farmers will be investigated.

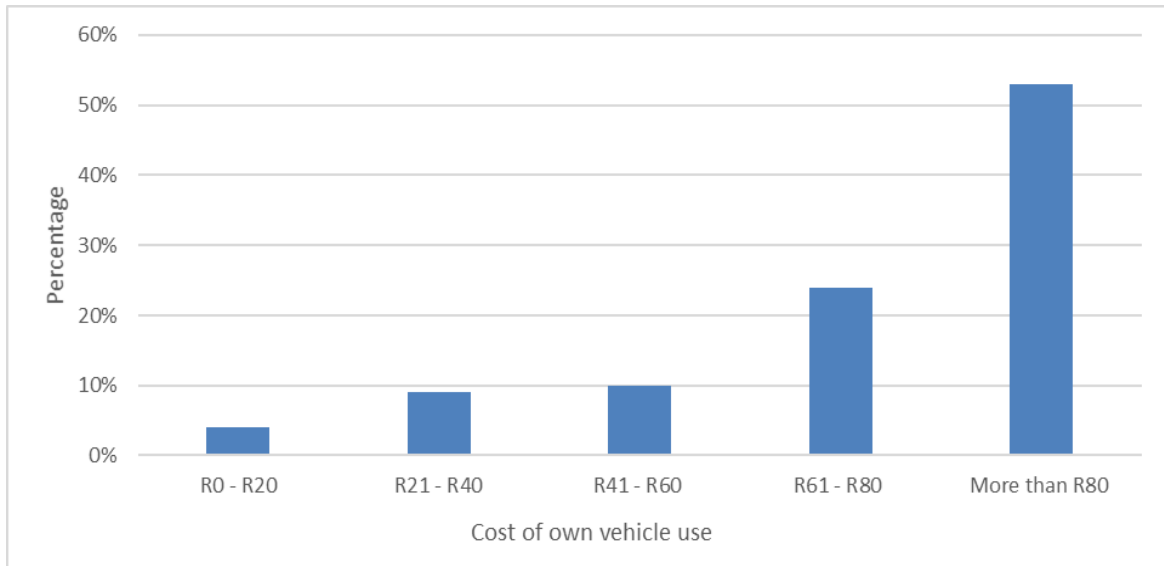


Figure 4: Cost of utilising privately owned transportation

Figure 4 demonstrates that the majority of respondents (53%) answered that it cost more than R80 for a delivery and 47% stated that it cost less than R80. Of the 47% of respondents who stated that it cost less than R80 per delivery, 24% stated that it cost between R61 and R80 per delivery, 10% stated that it cost between R41 and R60 per delivery, 9% stated that it cost between R21 and R40 per delivery, and 4% stated that it cost between R0 to R20 per delivery. According to this research, the majority of respondents (53%) pay more than R50 every delivery.

4.4.3 Losses due to damage and spoilage of produce in transit

The possibility of joint transportation solutions, which can aid the urban farmer to reduce produce loss will be explored.

Based on the collected data, the majority of the respondents (75,9%) indicated that they experienced damages and spoilage of the produce in transit. Whereas 24,1% of the respondents were not faced with the challenge of spoilage or damage of the produce while in transit.

4.4.4 Financial loss because of damage/spoilage.

The loss of produce owing to damage/spoilage has resulted in smallholder farmers losing money, as evidenced by the data obtained. In total, 26,4% of respondents reported losing between R0 and R200, 25,3% reported losing between R401 and R600, and 20,7% reported losing more than R801 worth of produce post-harvest and in transit.

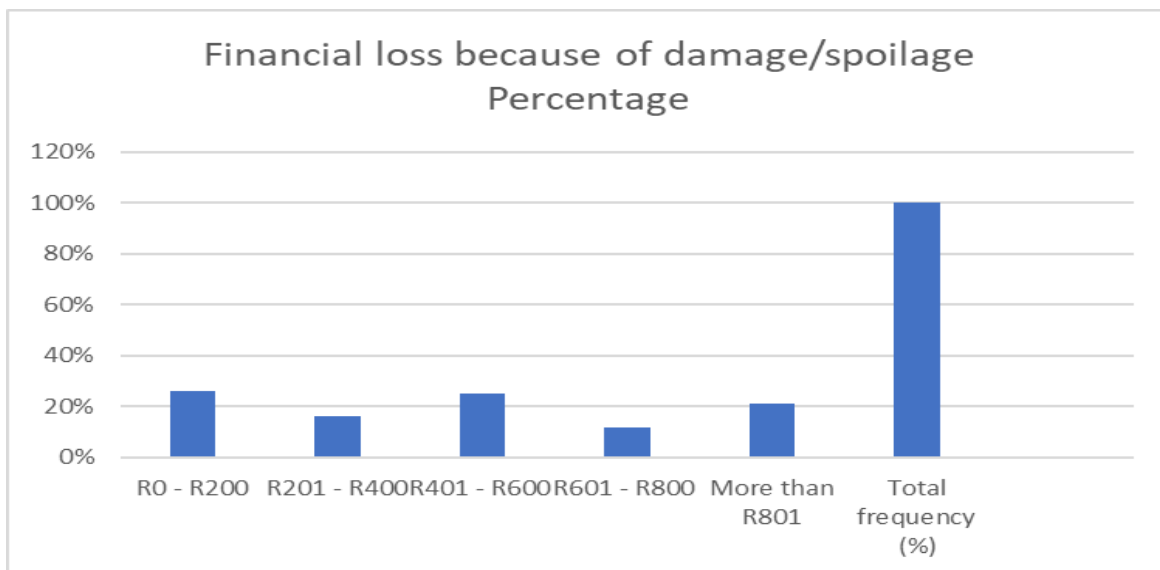


Figure 5: Financial loss because of damage/spoilage

Produce damage/spoilage as a result of insufficient storage facilities and the absence of suitable vehicles for produce transportation is one of the difficulties faced by some smallholder farmers in Gauteng. Because fresh produce is particularly temperature sensitive, it is critical that post-harvest produce is properly stored and transported. Damage/spoilage of produce results in a financial loss, and some farmers cannot afford to lose a portion of their income.

5. CONCLUSION

The majority of smallholder urban farmers interviewed make use of their own vehicles to transport their produce to their customers and showed an interest in outsourcing transportation if it would be cheaper than using their own vehicle and would reduce delivery time. By analysing the data collected on assessing the knowledge that urban farmers have about the transportation options available to them, it was seen that 22% of urban farmers who responded have knowledge about outsourced transportation options; however, they do not make use of them. Findings also indicate that the farmers are in favour of third-party transportation with 66% of respondents saying that they are willing to use third-party transportation applications. In total, 67% said it would assist them in their business and make it more productive. However, 43% indicated they believed it would be more expensive and thus would not use the option.

Outsourcing transportation will benefit the smallholder urban farmers to reduce damage/loss of produce caused by unsuitable vehicles to deliver fresh produce. In addition, outsourcing transportation will reduce delivery time, which will result in preserved freshness of the produce as less time will be spent in transit. A trusted relationship may be established using the information provided by a third-party transportation provider, and urban farms can benefit from this option of outsourcing and become a more successful and efficient farm by filling the gap.

A cost-effective distribution network is thus crucial for smallholder urban farmers, but it is an area that has received insufficient attention for improvement, resulting in negative consequences for urban farmers due to income loss and delayed deliveries caused by lack of proper planning. Therefore, it would be feasible to do research on the consolidation and transportation of fresh fruit from smallholder urban farmers to their numerous consumers, allowing urban farmers to split the

cost of outsourced transportation, thereby reducing the number of empty loads. Further research can also be done on the third-party applications as smallholder urban farmers also showed interest in using application-based transportation companies as it would assist them in completing deliveries. However, there are still some reservations about using these applications due to their perceived high cost.

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THE INFLUENCE OF STRATEGIC PARTNERSHIP, SUPPLIER INFORMATION SHARING AND INFORMATION QUALITY ON INTERNAL LEAN PRACTICES

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ABSTRACT

The importance of Small and Medium Enterprises (SMEs) is largely acknowledged in South Africa and yet the subject of internal lean practices has largely remained a research void within the sector. It is conceived that strategic partnerships allow firms to pool resources together for increased efficiency in internal lean practices while information-sharing and information quality facilitate the exchange of information and the transmission of constructive information respectively. Research into this conjecture, however, is scant and a number of SMEs remain frail with some continuing to deteriorate. This is disconcerting, given that an improvement in internal lean practices is one of the ways in which efficiency is guaranteed and likely so on the backdrop of strategic partnership, information-sharing and information quality collectively. Realising more efficiency in internal lean practices denotes cost reductions and an increase in revenue available for the firm's subsistence and sustainability. The current study therefore seeks to investigate the influence of strategic partnership, information-sharing and information quality on the internal lean practices of Small and Medium Enterprises (SMEs). The conceptualised research model and three hypotheses are empirically validated, using a sample of 350 SMEs from four provinces of South Africa i.e., Gauteng, North West, Free State, and Limpopo. The findings indicated that the research constructs' strategic partnerships, information-sharing and information quality influence internal lean practices in a positive way. Implications of the study are further provided.

Keywords: Strategic partnerships; supplier information sharing; information quality; internal lean practices; small and medium enterprises

1. INTRODUCTION

Internal lean practices are perceived to be important for the reason that they enable organisations to improve performance (Boyer, 1996; Swink, Narasimhan & Kim, 2005; Adamides, Karacapilidis, Pylarinou & Koumanakos, 2008; Shah, Chandrasekaran & Linderman, 2008; Fullerton & Wempe, 2009). According to Nurdiani, Börstler and Fricker (2016), lean practices strengthen a firm's capacity by enabling it to shorten lead times and provide quality products while minimising costs. More so, lean practices put emphasis on waste reduction (Altria, Dufton & Carleysmith, 2009), which supplements a firm's contribution to a green economy.

Internal lean practices are implemented as a way of responding to changes in the business environment. Since they are diverse (James-Moore & Gibbons, 1997; Cooney, 2002; Pettersen, 2009), they need to be controlled so that they remain within the best interests of the firm. To achieve this, buying firms should consider engaging in strategic partnerships with their suppliers. The advantage of such a partnership is that collectively, firms take the responsibility of improving operations and do so on a planned and tactical basis (Sadovnikova, Pujari & Mikhailitchenko,

2016). A partnership can further be supplemented by the exchange of information. Information-sharing, particularly if cooperative, stimulates coalition, increases learning and knowledge capacity and minimises the uncertainty of default in any process of improving efficiency (Raweevan & Ferrell, 2018; Piderit, Flowerday & Von Solms, 2011). The information transmitted between the buyer and the supplier also needs to be of the right quality. If improper information is shared, it will be misunderstood and misleading (Adams, 2003), thus conflicting with the objective of internal lean practice.

Internal lean practices are therefore implemented with the expectation of creating value. Firms are able to become more efficient while meeting consumer needs (Hines, Holwe & Rich, 2004; Gerbens-Leenes, Moll & Uiterkamp, 2003). However, success in internal lean practices is not typically candid (Sousa & Voss, 2008; Jayaram, Ahire & Dreyfus, 2010). This is because strategic partnerships are polarised while information-sharing and information quality are often mal-administered. Under these circumstances, the influence on internal lean practices is unconstructive. For example, the diversity in partnerships has been found to create conflict and impede lean practices from becoming effective (Sadovnikova *et al.*, 2016). Furthermore, insignificant information-sharing is said to increase insecurity and distorts its application (Ganesh, Raghunathan & Rajendran, 2008; Ketzenberg, Rosenzweig, Marucheck & Metters, 2007; Gal-Or, Geylani & Dukes, 2008; Mishra, Raghunathan & Yue, 2007; Jeong & Leon, 2012; Bian, Shang & Zhang, 2016) while low quality in information is conceived to subdue maximum effect, as these practices are effected on the basis of unconstructive data (Grudzien & Hamrol, 2016). This has been found to be typical of the SME sector (c.f. Offset, 2009; Lotfi, Mukhtar, Sahran & Zadeh, 2013; Haviernikova, Lemanska-Majdzik & Mura, 2017) and as disconcerting as this is, the influence of strategic partnerships, information-sharing and information quality on internal lean practices under the right circumstances has rarely been investigated. What is more, this conjecture identifies with the relational view which highlights that relational rents generated in inter-firm relationships are viable sources of competitive advantage (Dyer & Singh, 1998). For this reason and the expressed research gap, this study is therefore warranted. Three research questions are poised i. e:

- To what extent does strategic partnerships influence internal lean practices?
- To what extent does information-sharing influence internal lean practices?
- To what extent does information quality influence internal lean practices?

It is expected that findings will indicate if strategic partnerships, information-sharing and information quality are significant for internal lean practices in the SME sector. The rest of the paper is structured as follows: Section two involves a review on the literature while section three illustrates the conceptual model with hypotheses developed thereafter. Section four describes the methodology and design and conclusions are made in section five. Implications, and limitations and suggestions for future research are given in section six and seven respectively.

2. LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Relational View

The relational view is an extension of the Resource-Based View (Dyer & Singh, 1998). The theory contends that competitive advantage derives from mutually adapted dyad relations and the

partner's collective input, which propel organisations to co-evolve and generate relational rents (Dyer & Singh, 1998; Lavie, 2006; Kamalaldin, Linde, Sjodin & Parida, 2020) or “the supernormal profit jointly generated in an exchange relationship that cannot be generated by either company in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners” (Dyer & Singh, 1998:6). Notwithstanding competition between organisations as a general rule, firms that amalgamate their resources in a unique way may acquire greater advantage compared to competing firms incapable or unwilling to do so (Dyer & Singh, 1998). However, the inter-organisational competitive advantage is determined by *complementary resources and capabilities, relation-specific assets, knowledge-sharing routines and effective governance* (Dyer & Singh, 1998). Gronroos and Voima (2013) and Sjodin (2019) further add that the intimacy and quality of the relationship is central in co-creating this value.

Strategic partnerships are often complementary because the relationship has to be constructive. Resources and capabilities are pooled together and expended within the interest and goals of the partnership. What's more, the relational attributes (Sadovnikova *et al.*, 2016) reflect the relation-specific assets of the partnership. These can be production processes and systems (information technology) directly involved in creating value. According to Sadovnikova *et al.* (2016), strong control structures are critical for strategic partnerships in becoming effective. They minimise partner confusion, reduce role of uncertainty and streamline processes (Lambe, Morgan, Sheng & Kutwaroo, 2009) thereby effecting good governance. Information-sharing and information quality typify knowledge-sharing routines between the buyer and supplier. By default, information is shared in buyer-supplier relationships and over time, the routine evolves to exhibit properties of knowledge-sharing. This is because it allows both parties to eventually function better. Furthermore, it can be conceived that there is merit in knowledge-sharing routines when information is of the right quality.

2.2 Empirical Review

2.2.1 Strategic partnership

The inter-organisational literature identifies firm strategy, resources and relational characteristics as important aspects in partnerships (Sadovnikova *et al.*, 2016). This implies that firms must be compatible on each of these aspects. Cooperation has also been argued to be mandatory for strategic partnerships (Grant & Baden-Fuller, 2002) while at the same time, competition has been found to be integral as well (Ritala & Hurmelinna-Laukkanen, 2012; Sadovnikova *et al.*, 2016). Cooperation facilitates intense and comprehensive interactions and competition exists because the intentions of the partners may not be entirely compatible. Nonetheless, a strategic partnership in the context of lean is vital in that it maximises profits, minimises costs, facilitates better customer service and mitigates improbability (Zhao & Cavusgil, 2006; Sawhney & Zabin, 2002; Kothandaraman & Wilson, 2001; Hakansson, 1982). It is imperative that firms in a strategic partnership strive to co-exist and work together. However, Lado, Boyd and Hanlon (1997) assert that such a cooperation should always be encouraged with room for maximum innovative thinking.

As much as cooperation is essential in strategic partnerships, trust is just as important. Trust has been found to influence strategic partnerships by reducing partner opportunism and reinforcing teamwork (Sadovnikova *et al.*, 2016). In the literature, one definition of strategic partnerships is that they are long-term transactions, flows and linkages that occur among or between an

organisation and one or more organisations in the business environment (Oliver, 1990). The study, however, adopts a definition from Bachmann and Van Witteloostuijn (2006), who assert that strategic partnerships are “formal arrangements that bring together assets (of whatever kind, tangible and intangible) of two or more legally independent organisations with the aim to produce joint value added (of whatever kind, tangible or intangible)”. The construct is conceptualised contrarily to popular contexts that analyse strategic partnerships between economies (e.g., Yu, 2015; Romanova, 2016).

2.2.2 Information-sharing

In the main, information is shared vertically, horizontally or completely (Huang, Hung & Ho, 2017). Vertical information-sharing takes place between the buyer and the supplier while horizontal information sharing refers to that between buyers and buyers, sellers and sellers or even competitors and competitors. Complete information-sharing is a combination of both perspectives. It strives to increase the performance of supply chains and maximise overall profits (Li, 2002; Gal-Or, Geylani & Dukes, 2008; Rached, Bahroun & Campagne, 2015). The benefits are realised because the practice allows risk reductions and generates efficiencies (Mishra *et al.*, 2007; Ha *et al.*, 2008; Costantino, Gravio, Shaban & Tronci, 2015). The literature further adds that information-sharing fosters coordination (Disney, Lambrecht, Towill & Van De Velde, 2008; Cachon & Lariviere, 2005). This is important for internal lean practices generally grounded on the objective of removing waste and non-value added activities, standardising activities and instilling quality into the product as much as possible (Poppendieck & Poppendieck, 2003; Azadegan, Patel, Zangouinezhad & Linderman, 2013; Yang, Hong & Modi, 2011). However, according to Chu and Lee (2006) and Chen and Lee (2009), sharing information is meaningless if the cost of obtaining it is too high. This also would also contradict with the lean objective of minimising costs (Carter & Rogers, 2008).

It is important that the information shared with suppliers is done so under the right conditions. The purpose is therefore to add value through the exchange of knowledge (Cho, Bonn & Kang, 2016). Empirically, information has been found to improve firm performance (Bowersox, Closs & Stank, 2000; Cachon & Fisher, 2000). This effect has further been supported in a study by Grekova, Bremmers, Trienekens, Kemp and Omta (2014), which concluded that information sharing enhances the organisational ability to manage and adapt. The construct has served to mediate (e, g., Wu, 2008; Kim & Chai, 2017) in supply chain and business management studies as well, which further underscores its significance. By definition, it is generally regarded as surplus information about the business environment that is acquired directly through a partnership that improves the performance of that organisation (Yu, Yan & Cheng, 2001). This study, however, adopts a definition from Nooteboom (1999), Song, Berends, Van der Bij and Weggeman (2007), who assert that information sharing is “a transparent communication of information and the continuous sharing of explicit and tacit knowledge between the buying firm and the supplier”. Vertical information-sharing is therefore the construct’s context.

2.2.3 Information quality

Information is regarded as one of the most important resources of the organisation (Grudzien *et al.*, 2016). It is imperative that the information received is of the right quality in which lean practices are implemented. Information quality dimensions can be intrinsic or contextual

(McKnight, Lankton, Nicolaou & Price, 2017). Intrinsic information quality is the congruence between the data gathered and actual data in reality (Nelson, Todd & Wixom, 2005), while contextual information quality is a measure of the extent to which information contributes to completing a specific task effectively, for example, its relevance, completeness and predominance. According to Collier and Bienstock (2006), Chen and Kao (2010), and McKnight *et al.* (2017), this requisite is a motivating factor that allows both the buyer and supplier to excel in their roles respectively. In the context of lean, when information utilised is of the right quality, firms are stimulated and may benefit from accurate production schedules, improved inventory control and reduced operational costs (Lippert, 2007). The quality of information further amplifies the partners' level of cooperation and therefore overall operational performance (Madlberger, 2006). This is supported by Prakash (2011), who contends that quality information improves partner relationship and operational efficiency.

In some business relationships, quality is inadequate (Lippert, 2007; Nicolaou & McKnight, 2006). Lin and Lin (2006) cite accuracy and timeliness as especially poor. Information that has low quality can have severe consequences, including lost orders, increased claims from dissatisfied customers, and impaired reputation on behalf of the supplier (Guonaris, 2005; Mehta & Durvasula, 1998). Empirical studies, however, found that trust between the buyer and supplier is essential and helps in alleviating irregularities around information (e. g., Ibrahim & Ribbers, 2009; Nicolaou, Ibrahim & van Heck, 2013). Tests for mediation in the study by McKnight *et al.* (2017) confirmed that the influence of information quality on inter-firm relationships is strengthened by trust. Information quality is defined as “the merit or excellence of a system’s informational content” (Xu, Benbasat & Cenfetelli, 2013). This study, however, adopts a definition from McKnight *et al.* (2017), who assert that information quality is the extent to which information is useful in completing a specific task.

2.2.4 Internal lean practices

In general, the literature underlines two elementary orientations of lean practices: lean purchasing and lean operations (Mehra & Inman, 1992; Karlsson & Ahlstrom, 1997; Shah & Ward, 2007). Lean purchasing has an external orientation and is centred on minimising waste in the purchasing process (Freeland, 1991; Kaynak & Pagan, 2003). Comparatively, lean operations have an internal focus and are centred on reducing lot sizes and set-up times, eliminating equipment downtime, and producing quality while minimising costs (Gilbert, 1990; Poppendieck & Poppendieck, 2003; Li, Rao, Ragu-Nathan & Ragu-Nathan, 2005; Azadegan *et al.*, 2013; Nurdiani *et al.*, 2016). Given that an organisation is identified as a system, these two orientations are not mutually distinct (So & Sun, 2010). Internal lean practices have been considered to be solutions to problems relating to lead times, quality and costs (Leffingwell, 2007; Dybå & Dingsøy, 2008). However, to realise the benefit of internal lean practices optimally, firms promulgate its adoption through supply chain relationships (Perez, Castro, Simons & Gimenez, 2010). The buyer brings the supplier closer and collectively they engage in planning and problem solving (Li, Ragu-Nathan, Ragu-Nathan & Subba Rao, 2006) in which production pull systems, process improvement efforts, and preventive maintenance are some of the key practices (Shah & Ward, 2003; Furlan Pont & Vinelli, 2011). In the main, firms implement lean practices to improve performance while proactively shaping the environment (Boyer, 1996; Swink, Narasimhan & Kim, 2005; Adamides *et al.*, 2008; Fullerton *et al.*, 2009; Azadegan *et al.*, 2013). There has been an increase in the number of studies throughout

the years (Nurdiani *et al.*, 2016) and many of these report on the effect of lean practices on variables such as quality, finances and schedule (Project Management Institute, 2004). According to Fullerton, McWatters and Fawson (2003), improved firm performance can be identified in the form of an increase in customer service and market share. James *et al.* (1997), Cooney (2002) and Pettersen, (2009), however, assert that the effect of lean practices will depend on the environmental context of these firms (Jayaram *et al.*, 2010).

Wang, Huang and Dismukes (2004:1), Vonderembse, Uppal, Huang and Dismukes (2006:223) describe lean as an approach that aims at creating cost efficiencies through focusing on decreasing inventory, lead times and waste. In the present study, internal lean practices is a one-dimensional construct and is defined as “practices that aim to improve a firm’s internal production activities” (Shah *et al.*, 2003).

3. CONCEPTUAL MODEL AND HYPOTHESES DEVELOPMENT

Drawing from the relational view and the literature, a conceptual model was developed. Figure 1 below illustrates the formative conceptualised model. The study proposes that strategic partnership, information-sharing and information quality have an effect on internal lean practices. Three hypotheses are therefore drawn and will subsequently be developed.

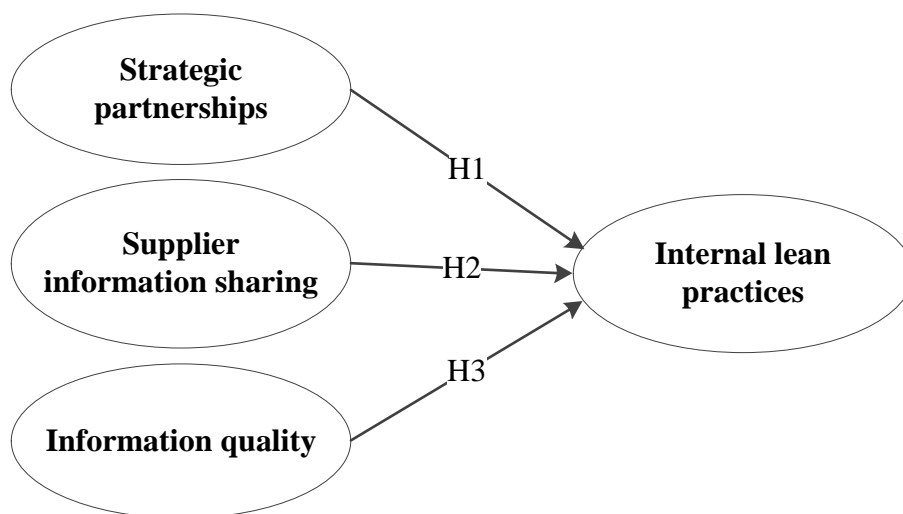


Figure 1: Conceptual model

3.1 Hypotheses Development

3.1.1 Strategic partnership and internal lean practices

Sampson (2007) asserts that organisations collaborate to pursue certain projects, therefore firms form strategic partnerships when they seek to implement lean practices in their operations. Partnerships are considered to be essential because they directly impact performance (Hoang & Rothaermel, 2005). They are understood to creatively unite and synthesise their knowledge resources (Sadovnikova *et al.*, 2016) as well as streamline processes (Lambe, Morgan, Sheng & Kutwaroo, 2009).

For organisations to form partnerships when pursuing certain projects, it is likely that they do so as a response mechanism or a reaction. This implies that changes in customer needs, regulations, technology and competition compel responses and reaction from organisations. In other words,

changes within the business environment compel organisations to react by pursuing certain projects where strategic partnerships are required and necessary. Certain projects could be internal lean practices implemented by organisations. The study therefore proposes that there is a relationship between strategic partnerships and internal lean practices. In particular, it is conceptualised that strategic partnerships influence internal lean practices of Small and Medium Enterprises (SMEs). Therefore, it is hypothesised that:

H1: There is a positive relationship between the strategic partnership and internal lean practices of Small and Medium Enterprises

3.1.2 Information-sharing and internal lean practices

Firms implement internal lean practices to proactively shape the environment or as a response mechanism (Azadegan *et al.*, 2013). Sharing information therefore becomes vital and necessary as it is with the use of this information that organisations can respond successfully. According to Gilbert (1990), Poppendieck and Poppendieck (2003), Azadegan *et al.* (2013), Li *et al.* (2005) and Nurdiani *et al.* (2016), internal lean practices are constructive in that they reduce waste, minimise costs and simplify and standardise work activities while enforcing quality. However, to realise these outcomes, internal lean practices have to be implemented with the support of information-sharing between the buyer and supplier. It is emphasised in the literature that in addition to being well-informed for decision making, information-sharing is fundamental for alleviating irregularities and impelling progress and coordination (Ha *et al.*, 2008; Mishra *et al.*, 2007; Costantino *et al.*, 2015).

It is therefore proposed in the study that there is a relationship between information-sharing and internal lean practices. In particular, it is conceptualised that information-sharing has an influence on internal lean practices of Small and Medium Enterprises. Inferring from the literature and the observed evidence, it is therefore hypothesised that:

H2: There is a positive relationship between information-sharing and internal lean practices of Small and Medium Enterprises

3.1.3 Information quality and internal lean practices

Internal lean operations comprise systems that are information intensive (e. g., pull system) (Azadegan *et al.*, 2013). For this reason, the information that is used should be of the right standard of quality. Good quality information improves operations in the areas of production runs, costs and product quality (Lippert, 2007; Poppendieck *et al.*, 2003). If poor quality information is processed, there could be drastic consequences with regards to internal lean practices. McKnight *et al.* (2017) emphasise that trust is important if firms are to give and receive information of good quality. Therefore, for there to be information with adequate quality that significantly influences a firm's internal lean practices, there needs to be trust. Trust is important when processing information in order to avoid partner perceptions of uncertainty and risk, which compromise information quality (Ibrahim & Ribbers, 2009; Morgan & Hunt, 1994; Lippert, 2007; Nicolaou *et al.*, 2006; Nicolaou, Ibrahim & Van Heck, 2013; Ratnasingam, 2001).

The study therefore proposes that there is a relationship between information quality and internal lean practices. In particular, it is conceptualised that information quality has an influence on

internal lean practices of Small and Medium Enterprises. Deducing from the literature and the observed evidence, it is therefore hypothesised that:

H3: There is a positive relationship between information quality and internal lean practices of Small and Medium Enterprises

4. RESEARCH METHODOLOGY AND DESIGN

4.1 Sample and Data Collection

Research data was collected from the SME sector in four provinces of South Africa, i. e., Gauteng, North West, Free State, and Limpopo. These provinces were selected on the basis that the likelihood of depth and representation of the SME sector in South Africa is increased. A list of registered Small and Medium Enterprises was obtained from Companies and Intellectual Property Registration Office (CIPRO) from which a sample of 700 SMEs was extracted using simple random sampling. The survey method was used to collect data. Employees who held a managerial position in the operations department were requested to complete the questionnaire.

4.2 Measurement Instruments

Measures for all constructs, i. e., strategic partnership, information-sharing, information quality and internal lean practices were adopted from previous studies (see appendix). They were adapted to fit the study's context and purpose. All items were measured on a 5-point Likert scale.

5. DATA ANALYSIS AND RESULTS

5.1 Sample Description

Of the 700 questionnaires distributed, 350 questionnaires were usable, representing a response rate of 50%. Results pertaining to the profile of respondents are indicated as follows: of the 350 firms, 104 were sole proprietors while the least (26) were cooperatives; 105 responses were from the retail industry and 127 firms had a number of employees within the range of 20-50. Most SMEs have been in operation for five to ten years and, in general, a significant number is located in the Gauteng province.

5.2 Structural Equation Modelling using Smart PLS

A structural equation modelling (SEM) approach, using Smart PLS statistical software (Ringle, Wende & Will, 2005) was adopted for the purpose of analysing the data. A mandatory two-stage procedure of SEM was carried out (Anderson & Gerbing, 1988). First, measurement model assessment was performed to test for reliability and validity. In the second stage, structural modelling was undertaken to evaluate the causal relationships between constructs. Results from this two-staged procedure are discussed in detail below. Table 1 below exhibits the results from the scale accuracy analysis.

Table 1: Scale accuracy analysis

| Research Construct | | Descriptive Statistics | | Cronbach's Test | | CR Value | AVE Value | Factor Loading |
|-------------------------------|------|------------------------|-------|------------------------|----------------|----------|-----------|----------------|
| | | Mean | SD | Item-total correlation | α value | | | |
| Information-Sharing (IS) | IS1 | 2.89 | 1.402 | 0.570 | 0.905 | 0.884 | 0.718 | 0.900 |
| | IS2 | 3.03 | 1.478 | 0.782 | | | | 0.915 |
| | IS3 | 3.02 | 1.507 | 0.760 | | | | 0.934 |
| Information Quality (IQ) | IQ1 | 2.64 | 1.394 | 0.623 | 0.836 | 0.902 | 0.755 | 0.804 |
| | IQ2 | 2.43 | 1.373 | 0.605 | | | | 0.913 |
| | IQ3 | 2.29 | 1.293 | 0.534 | | | | 0.885 |
| Strategic Partnership (SP) | SP1 | 2.64 | 1.394 | 0.623 | 0.859 | 0.914 | 0.779 | 0.879 |
| | SP2 | 2.43 | 1.373 | 0.605 | | | | 0.880 |
| | SP3 | 2.29 | 1.293 | 0.534 | | | | 0.889 |
| Internal Lean Practices (ILP) | ILP1 | 2.07 | 1.227 | 0.578 | 0.804 | 0.884 | 0.718 | 0.799 |
| | ILP2 | 2.51 | 1.542 | 0.717 | | | | 0.884 |
| | ILP3 | 2.53 | 1.312 | 0.539 | | | | 0.857 |

Note: IS = Information-sharing; IQ = Information quality; ILP = Internal lean practice; SP = Strategic partnership
SD = Standard Deviation CR = Composite Reliability AVE = Average Variance Extracted

* Scores: 1 – Strongly Disagree; 3 – Moderately Agree; 5 – Strongly Agree

5.2.1 Measurement model assessment

At the outset, reliability of the measurement scale was ascertained through running Cronbach alpha tests. Alpha coefficients ranged between 0.804 and 0.905, which connoted reliability as per the recommended ≥ 0.7 threshold (Green & Salkind, 2017). Tests for composite reliability were further performed to validate reliability (Chinomona, 2011). Results indicated internal consistency as CR indexes presented in Table 1 levelled at values greater than 0.6 (Chinomona, 2011). Validity was examined hereafter. This was initiated by determining convergent validity through examining if items loaded well on their respective (a priori) constructs that is if the value is ≥ 0.5 (Anderson & Gerbing, 1988; Chinomona, 2011; Sarstedt, Ringle, Smith, Reams & Hair, 2014). Results indicated that all measurement items loaded strongly on their common constructs (0.799-0.934), expressing that each measured at least 50% of their respective constructs (Anderson & Gerbing, 1988; Chinomona, 2011). Furthermore, tests for the Average Variance Extracted confirmed that all constructs were represented well by their measurement items as they exhibited estimates (0.718-0.779) greater than 0.5 respectively (Fraering & Minor, 2006; Sarstedt *et al.*, 2014). In verifying validity even further, discriminant validity was assessed. First, it was determined if there were any significant inter-construct cross-loadings by examining if correlation coefficients do not exceed 1 (Chin, 1998; Chinomona, 2011). Once that was confirmed, the square root of each AVE was compared against correlation coefficients and the resulting higher indexes in favour of the former affirmed the presence of discriminant validity (Zait & Berteau, 2011). Results from testing discriminant validity are presented in Table 2 below.

Table 2: Correlation between the constructs

| Research constructs | Construct Correlation | | | |
|-------------------------------|-----------------------|--------------|--------------|--------------|
| | SIS | IQ | SP | ILP |
| Information- Sharing (IS) | 0.847 | | | |
| Information Quality (IQ) | 0.529 | 0.869 | | |
| Strategic Partnership (SP) | 0.339 | 0.290 | 0.883 | |
| Internal Lean Practices (ILP) | 0.632 | 0.605 | 0.430 | 0.847 |

Note: SP = Strategic Partnership; IS = Information Sharing; IQ = Information Quality; ILP = Internal Lean Practices

5.2.2 Structural model results

Figure 2 and Table 3 present results from structural modelling. According to Chin (1998), the standardised path coefficients are expected to be at least 0.200 and preferably greater than 0.300. Bootstrapping (300 re-samples) was used to evaluate the reliability of each coefficient. The results provide support for all the three hypotheses. All path coefficients were above 0.2 and significant at least at pb 0.001. As indicated in Figure 2 and Table 3, the path coefficients are 0.201, 0.381 and 0.345 for Hypothesis 1, Hypothesis 2 and Hypothesis 3 respectively.

Table 2 further presents *t*-statistics and P values. *T*-statistics were measured against a threshold of ≥ 1.96 while P value tests were undertaken at a ≤ 0.05 significance level (i. e., 1-95%) to avert false positives (Kock, 2016). All three hypotheses were positive and significant. These results further validated statistical significance and support for hypothesised relationships.

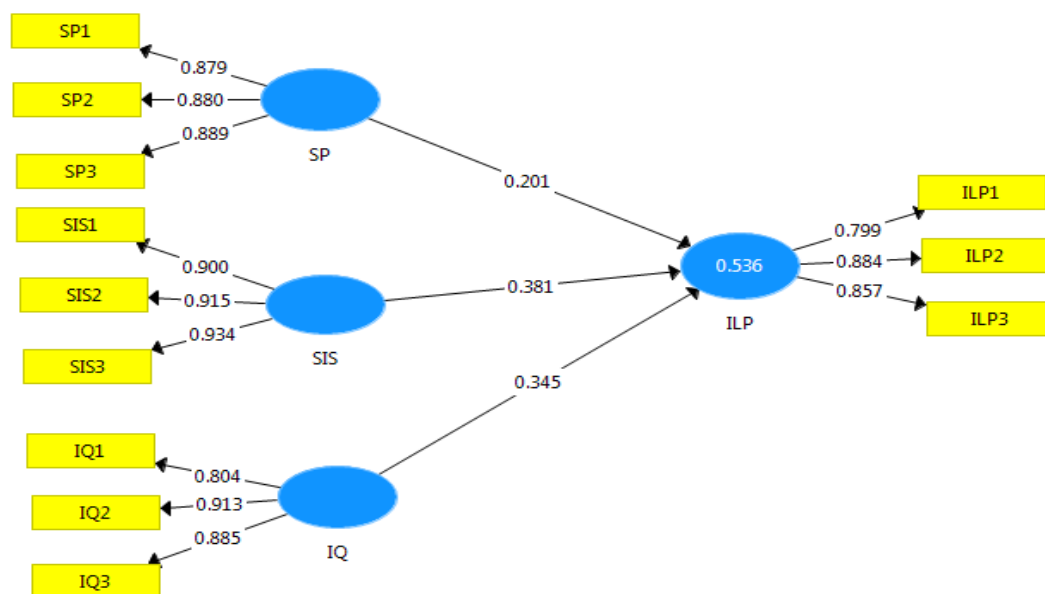


Figure 2: Structural model

Note: SP = Strategic Partnership; IS = Information-Sharing; IQ = Information Quality; ILP = Internal Lean Practices

Overall, R^2 indicate that the research model explains more than 50% of the variance in the endogenous variable. Having employed the formulae provided by Tenenhaus, Vinzi, Chatelin and Lauro (2005), the global goodness-of-fit (GoF) statistic for the research model was examined and identified at 0.38, which exceeds the threshold of >0.36 suggested by Wetzels, Odekerken-Schröder and Van Oppen (2009). Thus, this study concludes that the research model has a good overall fit.

Table 3: Results of structural equation model analysis

| Path | Hypothesis | Path coefficients (β) | T - Statistics | P - Values |
|--|------------|-------------------------------|----------------|------------|
| Strategic partnership (SP) \rightarrow Internal lean practices (ILP) | H1 | 0.201 | 2.829 | 0.005 |
| Supplier information sharing (SIS) \rightarrow Internal lean practices (ILP) | H2 | 0.381 | 4.210 | 0.000 |
| Information quality (IQ) \rightarrow Internal lean practices (ILP) | H5 | 0.345 | 3.680 | 0.000 |

Note: SP = Strategic Partnership; IS = Information-Sharing; IQ = Information Quality; ILP = Internal Lean Practices

6. DISCUSSION AND CONCLUSIONS

The purpose of the study was to investigate the influence of strategic partnership, supplier information sharing and information quality on internal lean practices. The relational view was adopted as the study's theoretical framework. Three hypotheses were developed and examined with the use of data collected from small and medium enterprises in four provinces of South Africa i. e., Gauteng, North West, Free State, and Limpopo. Inferring from the empirical results, all hypothesised relationships were supported and found to be significant as well.

It is important to note that information-sharing strongly influenced internal lean practices (0.381) more than strategic partnership (0.201) and information quality (0.345). This result is surprising as it is accepted that strategic partnerships and information quality allow firms to be synchronised and collaborate well and utilise information that provides value. Perhaps the reason for this is, like most firms, SMEs are reluctant to engage in partnerships and share information that is quality because of the vulnerability and exposure of company strategies and processes that come with partnering and sharing a pedigree of information. Trust is therefore an important requirement as underscored by Sadvnikova *et al.* (2016). It is also paradoxical that information-sharing (0.381) has a more significant effect on internal lean practices given that this practice essentially involves sharing information and conceivably that which is constructive. Perhaps the logic behind this is that in any of its applications, information-sharing is expansive and orientated to improve organisational performance in the general (Grekova *et al.*, 2014) in contrast to information quality which is centred on data and the extent to which information helps an organisation to complete specific tasks (McKnight *et al.*, 2017).

7. IMPLICATIONS OF THE STUDY

The current research is the first to examine these hypotheses with the use of data collected from SMEs in four provinces of South Africa, and findings have provided some educational implications. On the academic side, the study contributes significantly to the literature of lean practices in the Small and Medium Enterprise sector. In the main, results corroborated the proposition that strategic partnership, information-sharing and information quality have an effective impact on internal lean practices. Additionally, the study's adoption of the relational view proved to be informed and practical. This denotes that the relational view supports and validates SME internal lean practices as relational rents generated from buyer-supplier interactions (strategic partnership, information-sharing, information quality). Overall, the study is expected to further increase our understanding of internal lean practices within the SME sector, which is an important but often much neglected research context of the SME sector in developing countries in Southern Africa.

From the viewpoint of the practitioner, the important role of strategic partnerships, information-sharing and information quality on internal lean practices is highlighted. SME owners and their managers are therefore advised to heed these findings in planning and decision-making. The following are further recommended: first, it is important that firms, particularly SMEs, embrace information-sharing in the context of internal lean practices and do so under the right conditions. Given that vertical information sharing is a priori, suppliers are and should be prioritised as an extension of the buying firm. In light of this and the results, SMEs must concede and acknowledge sharing information with the supplier as key to effective internal lean practices. Supplier

information is an invaluable resource and should be leveraged for gains that extend even beyond internal lean practices. Second, SMEs should always strive to share and make use of information that is accurate, reliable and up to date. This would minimise irregularity and maximise efficiencies in tasks performed in internal lean practices. Despite the insignificant relationship found between strategic partnerships and internal lean practices, such a collaboration must remain an objective. Firms must acknowledge that strategic partnerships are built over time and patience is required. Once trust has been developed, it can be accepted that its influence on internal lean practices will be more significant.

8. LIMITATIONS AND FUTURE RESEARCH

The study is not without limitations. First, the study is confined to SMEs in four out of nine provinces in South Africa and as such, representation of the SME sector in the country is weak. It would be progressive if future studies could conduct a similar study with data collected from more provinces. In addition, extending the study to other African countries would impart a different point of view that further contributes to the literature.

Second, self-ratings of the study's constructs were collected from SMEs. The results would be more telling if data from both sides of the dyad i. e., SMEs and their suppliers were compared. Future studies could, therefore, be an extension that analyse paired data from both the SMEs and their suppliers. Third, trust was found to be relative to all three predictors. Future research could therefore expand the study's conceptual model to include trust as an additional construct. Since this study did not check the common method bias, it is advised that future researchers attend to this.

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EXAMINING THE EFFECT OF SOCIAL MEDIA MARKETING DIMENSIONS ON CONSUMER ATTITUDES AMONG GENERATION Y CONSUMERS IN GAUTENG PROVINCE

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ABSTRACT

It is evident that social media has become a fundamental instrument in society and has revolutionised the way society interacts and conducts business. However, many challenges are associated with social media concerning the affordability and accessibility of the internet. Consequently, it makes it a challenge for organisations to utilise social media as a reliable marketing instrument. Therefore, the study seeks to examine the effect of social media marketing dimensions on consumer attitudes among Generation Y consumers.

The sample consisted of 285 self-reporting social media active users located in the southern Gauteng region of South Africa. The study adhered to a quantitative approach and a snowball sampling method was utilised to collect data. A positivist research philosophy was followed whereby hypotheses were formulated for the study. In addition, formal procedures regarding research ethics were observed during empirical data collection and the questionnaire was also tested for reliability as well as validity. A pilot study preceded the main data collection survey processes. The regression model revealed that social media marketing dimensions (informativeness, source credibility and perceived enjoyment) predict a significant effect on consumers' attitude towards social media marketing. The empirical results regarding an existence of a relationship between the other social media marketing dimension (social identity) and consumers' attitude did not yield a statistically significant relationship in the regression model. As such, insight acquired from this study will assist both marketing academics as well as practitioners in comprehending Generation Y consumers' perceptions on attitudes in relation to the adoption of social media as a marketing instrument. Based on the results, recommendations assert that, among others, marketing practitioners should effectively adopt social media as a marketing platform to communicate their marketing efforts and initiatives. Furthermore, marketers should integrate their marketing initiatives and strategies with the 4th industrial revolution. In addition, limitations and future research avenues are identified and the contributions of this study are discussed.

Keywords: Informativeness, perceived enjoyment, source credibility, social identity, consumer attitudes, Generation Y

1. INTRODUCTION

Hays, Page and Buhalis (2014:304) define social media as deeds, actions and operations among groups of people who gather online to exchange information, understanding and feelings by utilising conversational media. Therefore, social media is initiating a new system of how society absorbs and contributes to the design of information. The emergence and acceptance of social

network sites have established a new social order of alliance and communiqué, where social network platforms are the fundamentals of the new digital existence and society has formed a digital existence, almost without realising it.

The development of social marketing as an academic field of study has been fuelled by the extensive usage of social media marketing as a state of art methodology to stimulate behaviour change and the appreciation by many governments that it contributes significantly to enhanced digital existence of consumers and societies (Truong & Dietrich 2017:1). Guesalaga (2016:72) defines social media marketing as the technological component of the communication, transaction and relationship building functions of a business, which leverages the network of customers and prospects to promote value co-creation. 77 percent of the inspected US corporations are estimated to be utilising social media for marketing purposes (Pan, Vorvoreanu & Zhou 2014:347). Executives spend time on social media marketing to nurture relations and engage with customers (Vries, Gensler & Leeftang 2012:83). Furthermore, Constantinides (2014:42) affirms that to effectively engage social media as part of the corporate marketing strategy, it needs to demonstrate an exceptional company website that is well designed, competent and credible, organisationally united and customer orientated. The organisation's existence towards social media marketing must reproduce and clearly communicate its positioning, excellence, customer orientation and appearance (Seo & Park 2018:37). In addition, the acceptance of social media marketing is influenced by consumer attitudes.

Boateng and Okae (2015:250) define consumer attitude as an individual's favourable or unfavourable assessment with using a service. In contrast, Khandelwal and Bajpai (2013:90) define consumer attitude as the trend of group affiliates to establish a group norm and the tendency of individuals to comply with the respective norm. In addition, consumer attitudes towards social media marketing can be defined as consumers' likes or dislikes of marketing initiatives communicated through social media platforms (Duffet 2017:498). Ling, Piew and Chai (2010:118) state that in consumer studies, consumer attitude constitutes the central role because it influences feelings, thoughts and above all the process of consumer decision making. Furthermore, consumer attitude can be a determinant in the decision-making process of adopting a technological innovation.

Generation Y consumers are defined as individuals born in the 1980s and 1990s and have grown up in a materialistic society with social media (Kim & Jang 2014:39). Bolton, Parasuraman, Hoefnagels, Migchels, Kabadayi, Gruber, Loureiro and Solnet (2013:248) articulate that Generation Y consumers grew up with a technological device and have understood its use for numerous roles in their lives, mostly communication. According to Lissitsa and Kol (2016:305), Generation Y individuals originated during the period of economic development, strong exposure of social media and the disappearance of modern beliefs, sustained by globalisation and strong domination from western culture. According to Statistics South Africa (2020:1), there is an estimated more than 27 percent of the South African population identified as Generation Y, translating into a buying power of 14 million people. In other words, Generation Y consumers are an important market to target in relation to the social media, as a marketing channel.

2. LITERATURE REVIEW

The literature review is focused on the selected social media marketing dimensions that may have the inclination to enhance Generation Y consumer attitudes.

2.1 Informativeness

Informativeness is defined as the ability of advertising to inform users of alternative product information, which allows them to make choices with the highest value (Hamouda 2018:428). The key inspiration for Social Network Service (SNS) is the trade of reliable data, given the information structure of their SNS. Celik and Karaaslan (2014:304) define SNSs as software technology services that offer users modified facilities, such as constructing a digital existence, locating users with whom a mutual connection is shared, seeing and permitting their list of networks and information from other users in the allowance of the system. SNS users were found to be friendly to information when advertising on social network platforms and indeed, informativeness remained positively associated to consumer' attitude towards advertising on social network platforms (Bright, Gangadharbatla & Logan 2010:168). Vries, Gensler and Leeflang (2012:85) affirm that information exchange is a crucial motive for individuals to engage in social networking platforms, contribute to an online community and participate in Facebook groups.

Based on the preceding argument, the following hypothesis is proposed:

H1: Informativeness significantly influences Generation Y consumer attitudes

2.2 Source Credibility

Source credibility is defined as the positive features of the source of the communication that persuades how a receiver responds to the message (Todd & Melancon 2018:81). Source credibility refers to a source's capability and rationale to offer correct and honest information and the source of influential information is valued as more reliable through knowledge or trustworthiness (Chiou, Hsu & Hsieh 2013:912). Reliable data sources usually produce enough influential messages and prompt a satisfactory attitude towards products or services. Housholder and LaMarre (2014:370) advocate that conceptual reliable sources comprise two main components, character and capability (such as dependability and capability), therefore, sources are reliable (or trustworthy) to a degree that the audience are convinced that their declarations are valid. Luo, Luo, Schatzberg and Sia (2013:93) state that source credibility can directly change an individual's attitude and that a highly credible source will provide a greater impact on information credibility, hence individuals are more likely to accept and adopt the viewpoint of the information communicated. Furthermore, Luo, Luo, Schatzberg and Sia (2013:93) state that source credibility can directly change an individual's attitude and that a highly credible source will provide a greater impact on information credibility, hence individuals are more likely to accept and adopt the viewpoint of the information communicated.

The following hypothesis is then set for the study:

H2: Source credibility significantly influences Generation Y consumer attitudes

2.3 Perceived enjoyment

Perceived enjoyment is evaluated as a form of amusement, desire or enthusiasm resulting from performing an activity (Than, Goh & Lee 2015:595). According to the 14th Bled Electronic Commerce Conference compiled by Heijden (2001:177), perceived enjoyment is defined as the degree to which the deed of utilising software technology is alleged to be fun in its own capacity and separate from any performance drawbacks that may be projected. Perceived enjoyment is theorised to have an influential effect on usage intention. Therefore, perceived enjoyment refers to a consumer's view that a service rendered is fundamentally enjoyable (Yen 2014:581). Consequently, perceived enjoyment reflects the satisfaction and pleasure related to utilising a technological innovation such as social media marketing (Zhou 2013:1290). Furthermore, regarded as an essential element, perceived enjoyment has been thoroughly scrutinised and its impact on consumers' attitude and behaviour has been investigated by a variety of studies (Than, Goh & Lee 2014:91).

Based on the preceding argument, the following hypothesis is proposed:

H3: Perceived enjoyment significantly influences Generation Y consumer attitudes

2.4 Social identity

Langner, Hennigs and Weidmann (2013:32) define social identity as an individual's awareness that he/she belongs to a particular social group together with emotional and significance of the group membership. Therefore, social identity articulates how belonging to a group shapes individual behaviour, as it claims that individuals describe themselves as associates of groups and develop their identity group affiliation. Kwon and Wen (2010:256) assert that "social identity theory has recently expanded from its origins in social psychology to areas of organisational research". Social identity is described by its consensus to the social group in accordance with in-groups (individuals that belong to the same virtual community) and discrimination against out-groups (individuals that do not belong to a virtual community). Individuals who possess a high social identity tend to declare their in-groups in ways that distinguish themselves clearly from out-groups and prefer a group which provides them with positive online existence (Langner, Hennigs & Weidmann 2013:33). In a nutshell, Pan, Lu, Wang and Chau (2017:76) articulate that social identity refers to the classifications of the self that reflect integration to more inclusive social units. Consistent with this, Ambrose, Matthews and Rutherford (2018:271) also contend that social identity suggests that individuals normally categorise themselves into a variety of classifications as a means of determining their identity and belonging to a larger collective.

Based on the foregoing arguments, the following hypothesis is proposed:

H4: Social identity significantly influences Generation Y consumer attitudes

2.5 Consumer attitudes

Consumer attitudes can be defined as individuals' total assessment of carrying out a specific conduct (Matikiti, Mpinganjira & Lombard 2017:3). Consumers' attitudes towards social media marketing in general can be described as unfavourable or favourable tendencies towards marketing communications through social media (Humbani, Kotze & Jordaan 2015:5). Dhurup, Muphosi and Shamhuyenhanzva (2015:1273) define consumers' attitudes as a psychological act that is

articulated by an evaluation of a specific entity with a certain extent of disfavour or favour. Ariffin, Aun and Salamzadeh (2018:35) attest that attitude is the tendency or trend to act in a negative or positive manner to a given motivation such as a brand, product category and advertisement. Similarly, Bashir and Madhavaiah (2015:79) define consumer attitude as practised tendencies to react in a consistently unfavourable or favourable way with detail to a given object.

According to Wang, Zhang, Choi and Eredita (2002:9), individuals form an attitude towards an object in relation to affective beliefs in a component that reflects how they feel about the object and, on the other hand, to cognitive beliefs in a component that reflects whether the aspects and functions of the object are to their advantage. In addition, the more an individual's attitude is favourable towards a brand or service, the more likely they are to utilise the service.

3. METHODOLOGY

3.1 Research design

According to Pallant (2016), research design refers to a mind map that outlines in detail the process the study will follow by outlining procedures for the collection of data and analysis applicable to the research study under observation. A quantitative research approach using a survey was found to be more suitable in this study because of the nature of the topic, population size and large-scale numerical data collected that needs to be analysed by means of statistical procedures. For the purpose of this study, a descriptive research design was deemed appropriate in order to quantify the different social media marketing activities. Furthermore, a quantitative research approach a quantitative research approach was deemed appropriate for this study. The rationale for employing this approach is that it enables the researcher to quantify the data and generalise the results from the sample to the population of interest (Zikmund & Babin 2007).

3.2 Sampling method

The purpose of the study, availability of resources and type of research design followed influenced the choice of a sampling method in this study. Due to the quantitative nature of the study, a non-probability sampling method was utilised, specifically the snowball sampling technique, as it enables the selection of respondents based on a series of referrals (Chowdhury *et al.* 2013). The major advantage of the snowball sampling technique is that it substantially increases the likelihood of locating the desired characteristics in the population (Malhotra 2010).

3.3 Research instrument and data collection procedure

The researcher made use of a self-administered structured questionnaire to collect data. A questionnaire was preferred as a measuring tool mainly because it is simpler to administer and eases the variability in the outcomes that may be instigated by dissimilarities in other types of interviews (Malhotra 2010). Due to resource constraints, this study adopted existing scale items from past related studies, which assisted the researcher to make validity and reliability comparisons with variables utilised in previous research. A survey questionnaire adapted from previous studies was used and comprised of six sections. Section A solicited demographic variables, while sections B to F on the study constructs were varied, using a five-point Likert and semantical differential scales to address issues of common method bias in scale construction. Section B solicited information on source credibility in the context of social media marketing

adapted from Mahapatra and Mishra (2017). Section C consisted of statements relating to informativeness in the context of social media marketing adapted from Logan, Bright and Gangadharbatla’s (2012). Section D focused on gathering information on perceived enjoyment in the context of social media marketing and was adapted from Soares and Pinho’s (2014). Section E focused on social identity in the context of social media marketing and the questions were adapted from a questionnaire that was prepared by Chahal and Rani (2017). Questions to solicit information on consumers’ attitude towards social media marketing (Section F) were adapted from a questionnaire developed by Akar and Topcu (2011). Furthermore, the sections of the study constructs were varied, using a five-point Likert and semantical differential scales to address issues of common method bias.

3.4 Statistical analysis

Data were captured on Microsoft Excel, whereby a coding book was established and then transferred to Statistical Package for Social Sciences (SPSS) version 26.0. SPSS performed descriptive and inferential statistics (comprising correlations and regression analysis).

4. RESULTS

4.1 Sample composition

There was an unequal distribution of female (n=156; 55%) and male (n=130; 45%) respondents in the sample. The majority of the respondents indicated being single (n=247; 86.6%) and earning a monthly income ranging between R10 000 - R20 000 (n=150; 52.4%) as well as spending more than R1 000 on social media activities (n=180; 64%).

4.2 Correlation analysis

The purpose of this analysis is to discover whether two or more variables are in some way associated with one another (Leedy & Ormond 2021).The study utilised Pearson’s correlations analysis as reported in Table 1.

Table 1: Inter-construct correlations, descriptive statistics and reliabilities

| Construct | SC | IN | PE | SI | CA | MEAN S | STD DEV | Cronbach alpha |
|-----------|--------|--------|--------|-------|------|--------|---------|----------------|
| SC | 1.00 | | | | | 4.02 | 0.429 | .664 |
| IN | .478** | 1.00 | | | | 4.30 | 0.375 | .664 |
| PE | .199* | .092 | 1.00 | | | 3.87 | 0.418 | .764 |
| SI | .469** | .405** | .154* | 1.00 | | 4.15 | 0.443 | .607 |
| CA | .257** | .278** | .214** | .179* | 1.00 | 4.31 | 0.323 | .635 |

Key: SC= Source credibility, IN= Informativeness, PE= Perceived enjoyment, SI= Social identity, CA= Consumer attitudes **Correlation is significant at the 0.05 level (2-tailed)

An analysis of the correlation matrix indicates significant positive associations between the research constructs.

4.3 Reliability and validity

The Cronbach’s coefficient alpha was used to assess the internal consistency of each construct employed in the study and the accuracy of the questionnaire. The results of the study reported in Table 1 show that all constructs, attained Cronbach alpha values that were above 0.6, which attests

that the scales met the minimum recommended threshold and were reliable. In order to determine the degree that a measuring scale precisely measures what it was supposed to measure, various validity procedures were undertaken to the measuring instrument. Face and content validities were tested through a review of the questionnaire by subject experts in the marketing field. A pilot study was undertaken to access construct validity. In this study, convergent validity was determined through the Cronbach alpha coefficient that were greater than the recommended level of 0.60 as well as significant positive correlation coefficients reported in Table 1. Average inter-item correlation coefficients are all above and Watson’s (1995:316) recommended range of 0.15 to 0.50, suggesting existence of discriminant validity for each of the scales used in the study.

4.4 Regression analysis

Regression analysis is a procedure for analysing associate relationships between a metric-dependent variable and one or more independent variables (Malhotra, Nunan & Birks, 2017). Prior to the computation of the regression model, it was necessary to assess whether the data set posed any multicollinearity problems. Multi-collinearity was assessed by inspecting the tolerance value (Tol) (>0.1) and the variance inflation factor (VIF) (<10) for each construct. As shown in Table 2, all the independent variables had VIF values of <10 and tolerance value of >0.10, thus dispelling any multicollinearity threat (Malhotra, 2010). Regression analysis was then performed and the results are recorded in Table 2. In the regression model, CA was entered as the dependant variable while the four predictors (Sc, IN, PE and SI) were entered as independent variables.

Table 2 Regression model

| DEPENDENT VARIABLE: Consumer attitudes | Standardise d Beta | T | Sig | Collinearity statistics | |
|---|-----------------------|-------|-------|-------------------------|-------|
| | | | | Tol. | VIF |
| Independent variables | | | | | |
| (Constant) | | 9.889 | | | |
| IN (H1) | .171 | 2.767 | .008 | .667 | 1.499 |
| SC (H2) | .302 | 6.030 | .003 | .729 | 1.371 |
| PE (H3) | .169 | 2.956 | .003 | .955 | 1.047 |
| SI(H4) | .017 | 0.256 | 0.798 | .734 | 1.362 |

R = 0.354 R² = 0.125 Adjusted R² = 0.113 F change 10.042 **sig at <0.05. Tol. = Tolerance value, VIF = Variance inflation **SC**= Source credibility, **IN**= Informativeness, **PE**= Perceived enjoyment, **SI**= Social identity, **CA**= Consumer attitudes

Overall, the four predictor variables (I, SC, PE and SI) accounted for approximately 11 percent (Adjusted R² = 0.113) of the variance in CA. These results indicates that CA is attributed to the combined effect of the four predictors

5. DISCUSSION OF RESULTS

5.1 Descriptive statistics

With respect to descriptive statistics, Table 1 indicates that all the mean scores returned for all the constructs were all above the score of three on the Likert scale (>3 - <5) suggesting that the respondents recognise the significance of these constructs within the retail outlet. The standard deviations were less than one, therefore, indicating that the mean values are correct reflection of the majority average perceptions.

5.2 Correlations

The results of the correlation analysis showed a significant weak positive association between source credibility and consumer attitudes ($r=0.257$; $p<0.05$). These results suggest that an increase in source credibility might trigger an improvement in consumer attitudes towards social marketing adoption among Generation Y consumers. There was a significant yet weak positive association between informativeness and consumer attitudes ($r=0.278$; $p<0.05$). This result implies that an increase in informativeness among Generation Y consumers may slightly improve their attitudes towards social marketing adoption. Further analysis of the correlation matrix indicates a significant weak positive association between perceived enjoyment and consumer attitudes ($r=0.214$; $p<0.05$). This indicates that as perceived enjoyment increases among Generation Y consumers, they might experience a positive attitude towards social marketing adoption. Finally, the results of the correlational analysis, revealed a positive yet weak association between social identity and consumer attitudes ($r=0.179$; $p<0.05$) suggesting that a positive relationship exist between social identity and consumer attitudes towards social marketing adoption among Generation Y consumers.

5.3 Regression

Informativeness recorded the weakest but statistically significant influence on consumers' attitude in the regression model ($\beta=+0.302$; $t=6.030$; $p<0.05$). The results are in line with the research findings of Lee and Hong (2016) who also reported existence of a significant influence of informativeness on consumers' attitude. As a result, H1 can be accepted.

The second hypothesis intended to test the influence of source credibility on consumers' attitude towards the adoption of social media marketing. The results acquired from the hypothesis testing ($\beta=+0.171$; $t=2.767$; $p<0.05$), corroborated the assertion by Wu and Wang (2011), that source credibility has a positive influence on consumers' attitude. Therefore, a decision was taken to accept H2 accordingly.

In relation to the third hypothesis, perceived enjoyment was found to have a significant influence on consumers' attitude ($\beta=+0.169$; $t=2.956$; $p<0.05$). To this end, a statistically informed decision was undertaken to accept H3.

With respect to the fourth hypothesis, the sample data could not establish enough evidence for the relationship between social identity and consumers' attitude ($\beta=0.017$; $t=0.256$; $p>0.05$). In this regard, H4 is rejected since there is inadequate evidence to support the acceptance of the fourth hypothesis suggested between social identity and consumer attitudes.

6. LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

With regards to the scope, the study concentrated only on Generation Y consumers' who are based and reside in the southern Gauteng region. To increase the scope for a comprehensive picture of Generation Y consumers', it would be of interest to concentrate on other provinces and regions inclusive of South Africa. Furthermore, the study utilised a snowball sampling method which is not based on any probability estimation and thus dispenses implications for sampling error and thus have the potential to contaminate the findings. Future research should be conducted using sampling methods which are probabilistic in nature in order to permit statistical estimations. Another limitation is attributed to the use of a single method of data collection (data were collected

quantitatively). Resultantly, the study did not acquire the benefits of conducting mixed or triangulation methods approach. Nevertheless, it will be worthwhile for future researchers to utilise both quantitative and qualitative paradigms to supplement each other.

7. CONCLUSION

The study has provided relevant and significant findings with regards to understanding Generation Y consumers' behaviour and attitude in relation to social media marketing adoption. These are new types of influential and refined customers developing, which are difficult to control, convince and retain (Constantinides 2014:40). However, the study was predisposed to several limitations, which provided a foundation in relation to opportunities for further research in the future. Drawing from the findings of this study, it is evident that the 4th industrial revolution has dawned and social media has become an integral part of our lives. It was further established in this investigation that the adoption of social media marketing is influenced by an assortment of elements. Finally, the study provides insights into the significant role of social media marketing in the modern marketplace.

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LEADERSHIP POWER BASES INFLUENCE ON QUALITY OF WORK LIFE AMONG EMPLOYEES AT A SELECTED RETAIL OUTLET IN GAUTENG PROVINCE

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ABSTRACT

Retailing refers to the activities involved in selling goods or services to the final consumer for personal use as opposed to business purposes. It is a socio-economic system that gets people together to interchange goods and services for a small payment, which matches the final consumers' needs. In South Africa, the industry has grown by a yearly average of 3 percent in the past eight years and Gauteng, as a province, contributed 26.5 percent to this growth. Therefore, the retail industry has been growing at a very slow rate. The primary objective of the study was to examine the influence of selected leadership power bases on quality of work life (QWL) among employees at a selected retail outlet in Gauteng province. A quantitative research approach was followed in this study and a random probability sampling method was adopted. A structured questionnaire, divided into four sections, was utilised to survey 300 (both male and female) employees from three branches of the selected retail outlet. The pilot study preceded the main survey and the internal consistency reliability was ascertained. Of the 300 questionnaires distributed to the participants, a total of 285 responses were usable for data analysis (response rate of 95 percent). The Statistical Package for Social Sciences (SPSS), version 26.0, was used to analyse data into descriptive statistics, reliability and validity analysis, correlations and finally, regression analysis, which was used to test the relationship among the constructs under investigation. The results indicated that coercive power base ($\beta=0.456$) and legitimate power base ($\beta=0.210$) contribute positively to the prediction of QWL, while reward power indicated a negative prediction of QWL ($\beta=-0.044$). Cronbach's alpha values ranged from 0.764 to 0.913, (exceeding the threshold of 0.7), thus suggesting that all the items in the measuring instrument tap into the same underlying constructs. Findings from this research study will assist retailers to increase the QWL levels in their companies by advancing the factors that were identified in this research study. Additionally, these findings may enable retail store managers to comprehensively understand how employees perceive power bases and how these employees' perceptions influence QWL. The implications of the results are addressed as well as the limitations of the study and future research opportunities are further identified.

Keywords: Retailing, coercive power, legitimate power, reward power and quality of work life

1. INTRODUCTION AND BACKGROUND

Retailing is a socio-economic system that gets people together to interchange goods and services for a small cost, which serves people's needs, the final consumers (Rudrabasavaraj 2010). Amit and Kameshvari (2012) refer to retailing as a group of activities whereby products and services

are promoted to ultimate consumers for personal or household consumption. Thus, retailing in this regard refers to the activities involved in selling goods or services to the final consumer for personal use as opposed to business purposes. Indeed Hameli (2018) concludes that retailing consists of all of the undertakings of goods sold to ultimate buyers.

South Africa remains the most developed economy in Sub-Saharan Africa and the retail sector is the second biggest employer in the country (Vather 2008). The retail sector is a labour-intensive industry employing a large number of the workers (Vijayakrishna 2013). The industry has grown by a yearly average of 3 percent in the past eight years; with Gauteng province contributing 26.5 percent to this growth. However, according to Statistics South Africa (2018), it has been tough for the retail industry as even in the most crucial month, December 2018, sales fell by 1.4 percent. The report further shows a low growth of 3.1 percent in 2017 and 1.7 percent in 2016. Therefore, the retail industry has been growing at a very slow rate.

There is, however, a need to note that the nature of the workforce in retail today is generally very different from the workforce of the past decades. Effective and efficient management of employees today, for example, is a significant determinant of success for retailers in firms of any size.

This means that the power base a retail manager wields with regard to leading can have a major impact on employees. Indeed, Robbins and Judge (2013) suggest that leaders need to possess power in order to influence others towards acceptable or needed behaviour. Igbaekemen and Odivwri (2015) describe the exercise of power as a process that helps to explain how different leaders can influence the behaviours and actions of other employees within an organisation. Somoye (2016) refers to power as the probability that one may be in a position to carry out his/her will despite resistance from other employees. Thus, retail managers use power to get the best quality of work in order to maintain the perceived standards of their respective companies.

Employees' quality of work life (QWL), on the other hand, reflects the way employees organise and interpret their impressions in order to give meaning to their environment and, thus, it influences their workplace behaviour significantly (Sharif, Zaidatul, Rashid & Mohd 2013). QWL is positively associated with the work outcomes of employees (Berta, Laporte, Perreira, Ginsburg, Dass, Deber, Baumann, Cranley, Bourgeault, Lum, Gamble, Haroun & Neves 2018). It should also be noted that in recent years, QWL has become a significant tool in attracting well-qualified personnel with experience (Mbui 2014:1) and retaining employees (Sojka 2014:283).

Nanjundewaraswamy and Swamy (2014:3) are of the view that leaders with a substantive leadership power base are able to encourage the participation of subordinates in an effort to improve their productivity.

Against this background, the study examines the influence of coercive power, reward power and legitimate power bases on QWL within a selected retail outlet in South Africa.

2. LITERATURE REVIEW

The literature review is focused on the selected leadership power bases that may have the tendency to enhance QWL among retail outlets employees in Gauteng province.

2.1 Coercive power base

Coercive power is predicated entirely upon fear and takes place when someone who is in an authority position threatens subordinates with different reprimands if certain duties are not completed in time and appropriately (Singh 2009:). Banerjee (2009:8) defines coercive power as the power based on subordinates' perception that a superior has the potential to punish them for not conforming to set requirements. In concert, Anthony, Ree and Carretta (2015:5) also view coercive power as subordinates' perception that a superior has the ability to punish them if they fail to conform to the superior's influence. Therefore, coercive power is conveyed through fear of being punished, demoted, not being recognised or even losing one's job (Chakrabarti 2014:5). For this reason, employees fear punishment and choose to either comply or leave.

Megheirkouni (2018:7) concludes that a coercive power base used by leaders has either a negative or positive impact on employees' intention to stay. On the other hand, Robbins and Judge (2013:240) argue that managers believe that their employees naturally dislike work and, therefore, must be directed or even coerced into performing. Based on these assertions, the system of punishments and rewards is solely dependent upon the followers. The following hypothesis is then set for the study:

H1: Coercive power base significantly influences employees' quality of work life

2.2 Reward power base

Somoye (2016) defines reward power as the power to reward subordinates and give incentives for carrying out certain operational duties and orders given by a superior body. Examples of reward power include, but are not limited to promotions, bonuses, salary increments, time off from work and public recognition. Thus, people comply because it yields positive benefits for them (Robbins & Judge 2013). This implies a promise to increase an employee's benefits, which benefits can only be provided by the person in the position of leadership force the employee to comply (Omisore & Nweke 2014). Hassard and Cox (2015) point out that an imbalance in the relationship between the effort exerted and rewards received has a direct bearing towards employees perceptions on QWL. Furthermore, Megheirkouni (2018) established that reward power based behaviour of leaders has a strong effect on an employee's QWL. Based on the preceding argument, the following hypothesis is proposed:

H2: Reward power base significantly influences employees' quality of work life

2.3 Legitimate power base

Legitimate power is the power that derives from holding a high position of power at work (Somoye 2016). This type of power is recognised and accepted by subordinates as being in agreement with the laid down rules and regulations that are considered legitimate by both parties (Bernard & Umar 2014). Igbaekemen and Odivwri (2015) expressed that legitimate power is based on the roles leaders play in the organisation and on the nature of the leaders' personal relationship with other employees. Furthermore, Somoye (2016) portrays legitimate power as the right way of directing employees and getting them to do things they would not normally want to do during the course of working hours. Based on the foregoing arguments, the following hypothesis is proposed:

H3: Legitimate power base significantly influences quality of work life

2.4 Quality of work life (QWL)

Nazir, Qureshi and Shafaat (2011) define QWL as a combination of strategies, measures and ambience related to the workplace that enhance employee satisfaction by improving work conditions for employees. Kanten and Sadullah (2012:361) further describe QWL as a consideration for employees' exigency and desires with regards to working conditions, career development opportunities, remuneration, work-family role balance, leadership power base and social interactions. Similarly, Shankar (2014:901) observes QWL as the degree to which employees are able to satisfy their important personal needs while employed by the organisation. Furthermore, Acharya and Siddiq (2017:584-585) concede that the purpose of QWL is that of attaining greater levels of job involvement and motivating employees by improving the attractiveness of the work itself rather than improving only the terms and conditions of work.

In essence, QWL shows a balance both in work and personal life, which also ensures organisational productivity, employee job satisfaction and intention to stay with the same organisation for longer (Mohammad 2012:1). Therefore, the QWL of an individual is inclined by the direct experiences of work and by the direct and indirect dynamics that affect the experience.

3. METHODOLOGY

3.1 Research design

This study adopted a combination of descriptive and causal research design. The descriptive research design was applied in analysing the demographic profile of respondents, while causal research was utilised in addressing the predictive relationships between the various research constructs. A cross-sectional research design was employed since data was gathered only once from one sample group of respondents to understand and describe the broad characteristics of those selected leadership power bases that influence QWL among employees within a selected retail outlet.

3.2 Sampling method

A convenience (non-probability) sampling method was used to draw the sample as it was duly practical and effective under the COVID-19 related lockdown restrictions in 2020. For the determination of the sample size, the study was guided by Pallant (2016) recommendation of sample sizes of 250-400 for multivariate analysis such as regression analysis.

3.3 Research instrument

A questionnaire was preferred as a measuring tool as it is simpler to administer and eases the variability in the outcomes that may be instigated by dissimilarities in other types of interviews (Malhotra 2010:225). The questionnaire was self-administered to attain relevant data from the respondents and comprised four sections. Demographic and general questions included age group, gender, ethnicity, level of study, etc. The questionnaire further included adapted scales from previous studies for all the constructs measured. The leadership power bases scales (with a reported reliability of 0.87) were adapted from the revised Rahim Leader Power Inventory (1988) while the QWL scale (with a reported reliability of 0.87) was derived from the scale developed by Chinomona and Dhurup (2014) Furthermore, the sections on the study constructs were varied,

using a five point Likert and semantical differential scales to address issues of common method bias in scale construction.

3.4 Data collection

In this study, data were collected by means of a survey method whereby a structured questionnaire was used, since it is cost effective, easy to administer and has a high response rate compared to other forms of data collection instruments (Malhotra 2010:225). Data were collected from three different stores of the same retail outlet company with the assistance of three trained fieldworkers in order to avoid unclear variances on the data and to mitigate against possible low response rates.

3.5 Statistical analysis

The data were analysed using the Statistical Package for Social Sciences (SPSS), version 26.0. Descriptive analysis was utilised to report on the profile of the retail employees. Correlation and regression analysis were applied to examine associations and predictive relationships among the study constructs for hypothesis testing.

4. RESULTS

4.1 Sample composition

A majority of the respondents were females (66%; n=223) as compared to their male counterparts (34%; n=113). The largest group of respondents were between 21 to 30 years of age (n=223; 66.4%), had a matric qualification (n=241; 71.7%) and indicated a work experience of between 7 to 10 years of service in the retail environment outlet (n=193; 57.4%).

4.2 Correlation analysis

The purpose of this analysis is to discover whether two or more variables are in some way associated with one another (Leedy & Ormond 2021). The study utilised Pearson's correlations analysis as reported in Table 1.

Table 1: Inter-construct correlations, descriptive statistics and reliabilities

| Construct | CP | RP | LP | QWL | MEANS | SD | Cronbach alpha |
|-----------|--------|--------|--------|------|-------|-------|----------------|
| CP | 1.00 | | | | 3.71 | 1.303 | .808 |
| RP | .242** | 1.00 | | | 3.64 | 1.324 | .847 |
| LP | .464** | .512** | 1.00 | | 3.75 | 1.282 | .764 |
| QWL | .542** | .173* | .756** | 1.00 | 3.32 | 1.363 | .863 |

CP= Coercive power base, RP= Reward power base, LP= Legitimate power base, QWL= Quality of work life. **Correlation is significant at the 0.05 level (2-tailed).

An analysis of the correlation matrix indicates significant positive associations between the research constructs.

4.3 Reliability and validity

The Cronbach's coefficient alpha was used to assess the internal consistency of each construct employed in the study and the accuracy of the questionnaire. Table 1 reports that all alpha values ranged from 0.764 to 0.863, thus exceeding the recommended threshold of 0.7, which according to Pallant (2010:97) is regarded as satisfactory. Face and content validities were tested through a

review of the questionnaire by subject experts in the human resources field. A pilot study was undertaken to assess construct validity. All scales attained average item correlations above the recommended threshold of 0.3 and Cronbach alpha values were above 0.7 as the minimum threshold recommended (Leedy & Ormrod (2010:92) ensuring convergent validity. The hypothesised relationships between variables were tested using regression analysis to provide evidence of predictive validity (Malhotra *et al.*, 2017).

4.4 Regression analysis

Regression analysis is a procedure for analysing associate relationships between a metric-dependent variable and one or more independent variables (Malhotra, Nunan & Birks, 2017). Prior to the computation of the regression model it was necessary to assess whether the data set posed any multicollinearity problems. Multi-collinearity was assessed by inspecting the tolerance value (Tol) (>0.1) and the variance inflation factor (VIF) (<10) for each construct. As shown in Table 2, all the three independent variables had VIF values of <10 and tolerance value of >0.10, thus dispelling any multicollinearity threat (Malhotra, 2010). Regression analysis was then performed and the results are recorded in Table 2. The enter method of regression was chosen as each independent variable is evaluated in terms of its predictive power, over and above that offered by all the other independent variables (Pallant, 2010). In the regression model, (Table 2) QWL was entered as the dependant variable while the three predictors (CP, RP and LP) were entered as independent variables.

Table 2: Regression model

| DEPENDENT VARIABLE: QWL | Standardised beta | T | Sig | Collinearity statistics | |
|------------------------------|----------------------|-------|------|-------------------------|-------|
| | | | | Tol. | VIF |
| Independent variables | | | | | |
| Coercive power (H1) | .456 | 8.886 | .000 | .770 | 1.229 |
| Reward power (H2) | -.044 | -.827 | .409 | .710 | 1.409 |
| Legitimate power (H3) | .210 | 3.556 | .000 | .582 | 1.720 |

R=0.571 R²=0.326 Adjusted R²=0.320 F change 53.588 **sig at <0.05. Tol.= Tolerance value, VIF= Variance inflation

Overall, the three predictor variables (CP, RP and LP) accounted for 32% (Adjusted R² = 0.320) of the variance in QWL. These results indicate that QWL is attributed to the combined effect of the three predictors.

5. DISCUSSION OF RESULTS

5.1 Descriptive statistics

With respect to descriptive statistics, Table 1 indicates that all the mean scores returned for all the constructs were all above the score of three on the Likert scale (>3 – <5) suggesting that the respondents recognise the significance of these constructs within the retail outlet. The standard deviations were less than two, therefore, indicating that the mean values are correct reflection of the majority average perceptions.

5.2 Correlations

The results of the correlation analysis showed a significant strong positive association between coercive power and QWL (r=0.542; p<0.05). These results suggest that an increase in coercive power may trigger an improvement in QWL among employees in a retail setting. There was a

significant yet weak positive association between reward power and QWL ($r=0.173$; $p<0.05$). This result implies that an increase in reward power among employees within a retail outlet may slightly improve their QWL. Further analysis of the correlation matrix indicates a significant strong positive association between legitimate power and QWL ($r=0.756$; $p<0.05$). This indicates that as legitimate power increases among employees, they will experience a high level of QWL.

5.3 Regression

The first hypothesis (H1) states that a significant relationship exists between coercive power and QWL among employees in a selected retail outlet in South Africa. The regression analysis results ($\beta=0.456$, $t\text{-value}=8.886$, $p>0.000$) show that coercive power is a significant predictor of QWL. These results confirm the findings of previous studies conducted by Blanchard (2016:9) which demonstrated that coercive power positively shape employee QWL. Thus, H1 is supported.

The second hypothesis (H2) states that there exists a significant relationship between reward power and QWL among employees in a selected retail outlet in South Africa. The regression analysis results shows that reward power has a negative insignificant association with QWL ($\beta=-0.044$, $t\text{-value}=-0.827$, $p>0.409$). This finding refutes studies of Omisore and Nweke (2014) who revealed that reward power significantly influences employees QWL. Thus, H2 is rejected.

The third hypothesis (H3) states that there is a significant relationship between legitimate power and QWL among employees in a selected retail outlet in South Africa. The regression analysis results ($\beta=0.210$, $t\text{-value}=3.556$, $p<0.000$) provide empirical evidence to support the H3. The results of this study are in line with previous studies undertaken by Tost, Plunkett, Gino and Larrick (2018), which indicated that legitimate power plays a vital role in behavioural and attitudinal compliance.

6. LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

The results are limited to employees from one retail outlet in South Africa. Therefore, these results cannot be generalised across the categories of the retail environment at a national level. The results must therefore be viewed with caution. A broader and more geographically diverse group of participants can be considered in future related studies. This would enlarge the research sample to include a much more representative section of the population. Only three leadership powerbases (coercive power, reward power and legitimate power) were part of the study. Additionally, other leadership powerbase variables such as expert power, referent power and information power could be avenues for further research. Furthermore, the study relied upon self-reported data to test the proposed conceptual framework. There is a possibility that some respondents may have inflated or understated the extent of their assessment of the study constructs. Lastly, a single method of data collection (quantitative approach) was used. It would be advantageous that future research consider using both quantitative and qualitative research approaches to complement each other.

7. CONCLUSION

Overall, the study contributes to the current literature by focusing on leader power base effect on QWL among employees within the retail industry in South Africa, offers suggestions to improve QWL among employees and opens up avenues for further research in this field.

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THE NATURE OF INTERFACES BETWEEN TVET STAKEHOLDERS TO DETERMINE GRADUATES' REQUIRED EMPLOYABILITY SKILLS

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ABSTRACT

Employability skills channel graduates into desired career choices. This paper focuses on the nature of interfaces between Technical and Vocational Education and Training (TVET) stakeholders (industry, graduates, lecturers) in engineering. A qualitative case study approach undergirds this study. The research study was done in the Kwazulu-Natal Province at a TVET college and three local companies. Data were generated from open-ended questionnaires and semi-structured interviews guided by policy documents for National Accredited Technical Education (NATED) and National Certificate (Vocational) (NCV) curricula. The study's conceptual framework drew on Singh-Pillay (2010)'s notion of interface and the Employability Skills Framework by Curtis (2004). Data analysis was done through document and content analysis and thematic methods. The results for sustainable employability skills were juxtaposed to establish the existence of interfaces. This study contributes to knowledge on interfaces between industry, TVET graduates and lecturers and economic and human development. Further, the study reveals the mismatch between skills outlined by policy and syllabi versus skills acquired by TVET graduates and industry-required skills.

Keywords: Interface, stakeholders, employability skills, engineering industry, skills, TVET policy.

INTRODUCTION

The Technical and Vocational Education and Training (TVET) sector aims to prepare graduates to take up different occupations in the workplace. From the dawn of democracy, the South African TVET sector has undergone major transformations, as indicated in the White Paper for Post School Education and Training (PSET) (Department of Higher Education and Training, 2013), that TVET students could learn skills which create employment opportunities in industry. TVET institutions are regarded as the conduits for skills development that provide individual professional development opportunities (Mesuwini et al., 2020). A distinctive feature of TVET is outlined by Zelloth (2014), who describes TVET as a learning process with a practice-oriented or work-integrated learning component. Through this work-based learning, graduates are expected to possess a particular industry-specific skillset based on the fundamental theoretical principles that support professional competence development.

The study explores the interfaces between the stakeholders' skills set and TVET graduates' employability skills. Often, the TVET sector has been under scrutiny by various stakeholders for

not realising their primary responsibilities and being responsive to industry needs (Mesuwini & Bomani, 2021). The lack of essential workplace skills constrains the economic growth of any country and its human capital development. In this regard, Sweden and Germany are regarded as countries with companies that are highly involved in TVET delivery and governance (Zelloth, 2014), while to a lesser extent, Canada, Australia and England integrate industry partners (Rauner & Wittig, 2013). South Africa's government has enormously invested in the TVET sector and allocated R10.7 billion in 2018 (Viljoen, 2020) to cater for artisan development, infrastructure development, and student support grants. In this view, the Department of Higher Education and Training (DHET) launched its Decade of the Artisan programme (2014-2024), which aimed to produce 30 000 artisans yearly (Skillsportal, 2014). Through artisan knowledge and skills, TVET graduates are provided with industry-specific skills to match the trade skills requirements.

Singh-Pillay (2010) explains that an interface arises from points of convergence and divergence among different stakeholders' requirements concerning skills development. This understanding forms the basis of discussion in this study. The notion of an interface is construed as a point of contact (convergence) or a point of deviation (divergence) among stakeholders concerning the phenomenon under study (Mesuwini, 2015). The interfaces that emerge are discussed first regarding sustainable employability skills. Secondly, a cross-interface analysis is tabled to reveal the nature of these interfaces in terms of sustainable employability skills. The two policies, NC(V) and NATED, have different methods of delivering content. The NATED curriculum is 100% theoretical, while NC(V) is 40% theory and 60% practice. NC(V), on the one hand, plays a positive role where practical skills are foregrounded. NATED, on the other hand, serves as a background for entry into off-campus training programmes as required by employers.

Purpose

This study explores the nature of interfaces between TVET stakeholders (industry, graduates, lecturers) and highlights if there is a mismatch between the skills outlined by policy and syllabi, skills.

Justification of the Study

There appears to be limited literature on the nature of interfaces between TVET stakeholders (industry, graduates, lecturers). It is not clear whether their voices have been silent or not heard. The White Paper on PSET (Department of Higher Education and Training, 2013, p. 11) states, "*Colleges should be rooted in their communities, serving their communities and regional and national needs*". The TVET should predominantly deliver education and training to nearby communities and develop skills for local industry. There should be a symbiosis among stakeholders regarding employability skills that TVET graduates should acquire to be industry-ready. In this view, the TVET syllabi, industry, and lecturers need to have a common ground on the employability skills that TVET graduates should gain during training. The above explains the objective of this study which aims to explore the nature of interfaces between TVET stakeholders' skillsets.

Contribution to Knowledge

There are three suggested success components for research: contribution, contribution, and contribution (Te'eni et al., 2015). This study is considered a valid knowledge contribution when

little is known about the phenomenon being studied. This exploratory study provides insight into the convergence /divergence of interfaces between TVET stakeholders regarding the required employability skills of their learners.

LITERATURE REVIEW

NATED in South Africa covers the Engineering trimester and Business semester courses. This paper focuses on Engineering NATED and NCV courses. Engineering NATED trimester is generally described as a 10-week course, while NCV is a year course (Mesuwini, 2015). The literature concerning the disjuncture between skills required for work and skills acquired by graduates is brought to the fore. There appears to be some tension between skills required, skills acquired and human and economic development. At the intersection of these skills lies the TVET college sector. The TVET sector may ease this tension by developing these much-needed industry skills, contributing to human resources/capital and economic development. The required skills may be a way of training TVET students for work-related fields and effective participation in the workplace; an aspect of lifelong learning and readiness for responsible citizenship; an instrument for supporting environmentally sound, sustainable development and a way of alleviating poverty (United Nations Educational Scientific and Cultural Organization, 2015). TVET has the transformative capacity that promises its graduates the right to employment (Mesuwini, 2015). Employability skills refer to the ability of an individual to gain employment appropriate to his educational standard (Singh & Singh, 2019). Employability may depend on how these skills, knowledge and attitudes are used, deployed and presented within a particular work context. Various studies investigated employability skills required by the industry.

Nisha and Rajasekaran (2018) highlight the significance of employability skills by exploring the different kinds of skills perceived by employers. The employability skills highlighted by employers included communication skills, teamwork skills, problem-solving skills, leadership skills, interpersonal skills, entrepreneurial skills, and analytical skills. Communication is the unity of the difference between utterance, information, and understanding (Baraldi & Corsi, 2017). The employability skills shaped students' careers and emphasised how they can assist them in achieving greater career heights. The study suggests essential employability skills needed in the workplace.

Singh and Singh (2019) investigated employability skill sets expected from engineering graduates. Responses were sourced from the viewpoint of representatives of private engineering institutions and human resource managers of companies. The identified skills gap suggests the important measures private institutions take to attain employability skills. The study attempted to inculcate these skills in students and how it impacts national growth.

Mittal and Raghuvaran (2021) revealed that entrepreneurship skills built competencies in students and increased their capabilities for putting knowledge into practice. Therefore, students with entrepreneurial skills were said to have better employability skills and a workplace advantage. In another study, Laguna-Sánchez et al. (2020) analysed the attainment of skills acquired in a training programme to develop entrepreneurial and employability competencies. The results suggest acquiring a higher level of proficiency in entrepreneurial skills and gaining transversal competencies. It remains to be seen what interface exists between stakeholders' skill sets.

The concept of an interface is construed as a meeting point (convergence) or a point of deviation (divergence) among stakeholders concerning the nature of interfaces explored. I first discuss the interfaces that emerged regarding sustainable employability skills. Second, a cross-interface analysis is presented to highlight the nature of these interfaces in terms of sustainable employability skills.

CONCEPTUAL FRAMEWORK

The study's conceptual framework drew on Singh Pillay's notion of interface and Employability Skills Framework (ESF) by Curtis (2004). The framework has its roots in the Mayer key competencies. Key competencies are essential for effective participation in emerging work patterns and organisations (Curtis, 2004). Australian Education Council: Mayer Committee (1992) describes competencies as essential for effective participation in emerging work patterns. The Australian Education Council: Mayer Committee (1992, p. 12) proposed the following characteristics for generic skills: *“be essential to prepare for employment; be generic to the kinds of work emerging in the range of industry occupations; equip individuals to participate effectively in various social settings; involve knowledge and skill application; be amenable to credible assessment”*. These characteristics guided the formation of ESF by Curtis. They focus on the capacity to apply knowledge and skills in integrated work situations. The eight employability skills are: Communication, teamwork, problem-solving, initiative and enterprise, planning and organising, self-management and learning skills. Employability skills are important because they bring significant changes to the economy and how companies operate, requiring employees to possess these skills. Jobs in this era require flexibility, initiative and the ability to multitask. The ESF incorporates the Mayer key competencies within the major skills.

The Key Competencies are essential for effective participation in TVET education in general. Globally, key competencies are core skills in the United Kingdom, essential skills and employability skills in Canada, and Secretary's Commission on Achieving Necessary Skills (SCANS) in America. The following table summarises the generic skills referenced in the discussion.

Table 1: Generic Skills

| Generic skills | Workplace Competencies |
|-------------------------|---|
| SCANS | Basic skills (literacy, numeracy, communication), Thinking skills (decision-making, problem-solving), Personal qualities (responsibility, self-esteem, integrity). |
| Core skills | Communication, problem-solving, personal skills, numeracy, information technology, language competence |
| Key skills | Communication, information technology, working with others, improving learning and performance, and problem-solving. |
| Essential skills | communication (oral, reading and writing text), document use, numeracy, thinking skills (problem-solving, decision-making, planning and organising tasks, significant use of memory, and finding relevant information), working with others, computer use, continuous learning. |

| Generic skills | Workplace Competencies |
|-----------------------------|--|
| Employability skills | Academic skills (Communicate, employability, learning skills) Personal management skills (Personal skills, positive attitudes and behaviours to get and keep a job). Adaptability, responsibility, working safely, Teamwork skills (working with others, skills to achieve the best results). |
| Key competencies | Communicating ideas and information Using mathematical ideas and techniques Working with others and in teams Problem-solving problems Planning and organising activities Collecting, analysing and organising information Using technology. |

Adapted from Curtis (2004).

Notes:The workplace competencies listed above are shown against each generic skill described globally. Kearns (2001) agrees on finding acceptable terminology for all stakeholders—TVET, higher education, employers, students, and communities which recognise that the new agenda of generic skills for the 21st century is about employability skills.

Singh Pillay’s Notion of Interface

Interfaces arise out of points of convergence and divergence (Singh-Pillay, 2010) between elements or people’s views. It is this understanding that is applied in this study. The concept of an interface is construed as a meeting point (convergence) or a point of deviation (divergence) between sustainable employability skills acquired (via the curriculum) and required (by graduates, employers, and lecturers). The sustainable development approach emphasises the purpose of TVET as the provision of skills to support economic, social and environmental sustainability. The sustainable development approach has broadened the concept of employability to include lifelong learning, sustainable economies in the context of the information age and the knowledge economy, education for all, and education for human security. The role of TVET is the preparation of learners for sustainable livelihoods (Tikly, 2013). Competencies in economic literacy, sustainable consumption and managing small enterprises are emphasised in relation to the economic aspects while using resources wisely and minimising waste and pollution are considered central to ensuring environmental sustainability (Maclean & Pavlova, 2013).

The notion of interface was used to look for congruence (convergences) or divergences (non-congruence) regarding sustainable employability skills acquired and required. The factors that enable or impinge the interfaces will be used to explain the nature of the interface.

The relationships at the interface are indicated in Figure 1 below.

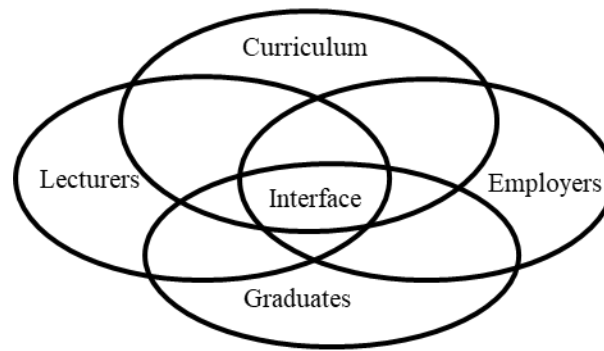


Figure 1: Interface among Stakeholders

Notes: Figure 1 shows lecturers, curriculum, employers and graduates meeting at the interface. The interface describes the common areas shared by all stakeholders.

Employability skills development requires involvement from employers, students, TVET, and other stakeholders to achieve skills development (Maclean & Pavlova, 2013). The role of TVET is the preparation of learners for sustainable livelihoods (Tikly, 2013).

METHODOLOGY

A qualitative research approach was employed in this study. Kankam (2020) maintains that using a qualitative approach seeks to establish the meaning of a phenomenon from the participants' perspective. A case study approach from KwaZulu-Natal province, South Africa, was used to explore the skills sets required by TVET graduates from the perspective of policy (NCV and NATED), lecturers (6), and TVET graduates (3) and employers (3). A case study approach explores a phenomenon to understand it in detail. Chowdhury and Shil (2021) maintain that a case study is an empirical inquiry approach to investigating a phenomenon within its real-life context. The study used convenience and purposive sampling to select participants. Convenience sampling was selected based on affordability, accessibility, and proximity of the data sources. Purposive sampling allowed handpicking potential participants to be included in the sample based on their judgement of the typicality or possession of the particular characteristics sought (Muzata, 2020). Purposive sampling identifies the relevant participants with the right information (Campbell et al., 2020).

The selected participants were graduates in the researcher's proximity and had completed their studies. Employers were host companies that offered training to graduates during industry exposure. Reliability was maintained by ensuring that adequate resources to generate data were available and that the steps were consistent throughout the process. Validity in this study was addressed through honesty and ensuring that rich data were gathered without bias.

This study gathered qualitative data using an open-ended questionnaire, semi-structured interview and document analysis. The different methods of generating data allow for data triangulation by cross-checking or juxtaposing data from different sources (Mesuwini, 2015). Triangulation increases credibility and checks dependability by obtaining information from different sources to form reliable themes in a study. These instruments were suitable for generating qualitative data and answering the research questions. An open-ended questionnaire was used for TVET lecturers, employers and graduates because it did not limit responses. Li et al. (2021) maintain that open-ended questionnaires permit creativity, self-expression and richness of detail. The questionnaires

were piloted using a group of TVET engineering lecturers to check the clarity of the questions and eliminate any possible ambiguities. Some questions were reworded for clarity. A semi-structured interview allowed for probing of participants’ responses. However, Zoch (2021) cautions that interviewer bias is greatest in a face-to-face interview. This was avoided by letting participants give their responses without intercepting them. Galetta (2013) emphasises discipline on the researcher’s side, allowing space to develop the narrative and holding back some questions until the participant has covered sufficient ground in the responses. Anonymity and confidentiality of participants were maintained strictly, consistent with Cohen et al. (2017), who emphasise that the confidentiality and anonymity of participants' information should be sustained. Formal permission from various gatekeepers was obtained to conduct research at each stage.

DATA ANALYSIS

The study used Jansen and Reddy (1994) tool to analyse the NC(V) and NATED TVET documents. Donthu et al. (2021) define document analysis as a strict and systematic set of processes for rigorous data verification and analysis. Singh-Pillay's notion of interface was used to identify points of convergences or divergences in terms of sustainable employability skills. The nature of the interface was ascertained by exploring the factors that contributed to refractions at the points of convergences and divergences. As indicated by validity and reliability, research rigour was maintained by engaging in member checking, triangulation, and retaining thick descriptions. Member checking ensured the credibility and validity of the research. Thick descriptions provided detailed narratives and interpretations of situations observed and experienced by the researcher (France, 2022). The process involved taking back the transcripts to participants and asking them to check the accuracy of the recorded data. The researcher's position was defined and attempted to address the bias inherent in interpreting qualitative data, including member checking, which ensured that the key issues had been interpreted correctly (Walton, 2020).

RESULTS AND DISCUSSION

Analysis of the Skills set for Sustainable Employability Interface

Data from curriculum or policy documents, lecturers, graduates, and employers were compared to determine whether an interface existed in the skills set needed for the employability of engineering graduates. The points of convergences to capture existing interfaces were foregrounded to identify current interactions in terms of sustainable employability skills. Table 2 represents the existence of interfaces among stakeholders.

Table 2: Interfaces among stakeholders

| Interfaces | |
|------------|---|
| A | Policy-Employer-Lecturer-Graduate Interface w.r.t. mechanical, electrical and civil skills. |
| B | Policy-Lecturer-Graduate Interface w.r.t. safety skills. |
| C | Policy-Lecturer-Employer Interface w.r.t. communication, problem solving and computer skills. |
| D | Policy-Employer Interface; w.r.t. quality work and time management. |
| E | Lecturer-Graduate Interface; w.r.t. machine operations; supervision of workers; correct tool handling and background knowledge. |
| F | Policy-Lecturer Interface w.r.t. on analytical skills, creativity and problem-solving skills. |

Table 2 above demonstrates that certain interfaces involve 2 to 4 stakeholders. The interfaces point to the areas of convergences (agreements) among the stakeholders regarding skills needed for

sustainable employability. Table 3 shows the interfaces on the needed skills for sustainable employability as perceived by different stakeholders.

Table 3: Interfaces on Skills Needed for Sustainable Employability

| Stakeholders | Interface among stakeholders |
|--|--|
| The Policy-Employer-Lecturer-Graduate interface | The interface involves all four stakeholders. These four stakeholders concur on the skills set for sustainable employability required by the TVET graduate in the following trades: mechanical, electrical and civil skills. Mechanical: Safety skills, Tool handling, Engineering Drawing and interpretation. Electrical: Safety skills, Hand tool skills, Reading Electrical Drawing. Civil: Safety skills, handling skills, Reading and Drawing plans. |
| Lecturer-Graduate-Employer Interface | The interface highlights the need for job-specific skills. Three of the four stakeholders agree that the essential skills for sustainable employability are listed below: Mechanical: Automotive Repair & Maintenance, Welding, Boiler making, Fabrication, Machining, Reading Drawings. Civil: Carpentry & Roof Work, Plumbing, Bricklaying, Plastering, Reading drawings. Electrical: House wiring, tubing, reading drawings, fault finding, communication skills, report writing and computer literacy. Drawings are common in all disciplines, while the other skills are discipline-specific. |
| The Policy-Lecturer-Employer Interface | The Policy-Lecturer-Employer interface reflected convergences in communication, problem-solving and computer skills. It implies that there were no common skills identified among these three stakeholders. If skills were common to these three, they were also common to the graduates. |
| Lecturer-Graduate Interface | The lecturers and graduates consider the following skills vital for sustainable employability: machine operations, supervision, correct tool handling and background knowledge. |
| The Policy-Lecturer-Interface | The interface was founded on analytical skills, creativity and problem-solving skills. |

Nature of Interface of Skills Set Required for Sustainable Employability

In describing the nature of inference, the reasons offered by the stakeholders were examined from the interviews to obtain the contextual factors that shape these interfaces. The Policy-Lecturer-Employer interface matches the key workplace competencies postulated by Curtis (2004).

Underqualified and inexperienced lecturers

Employers maintain that inexperienced and unqualified lecturers impeded skills development in TVET graduates, as shown in the excerpt below:

It seems many lecturers have not been in industry at all. Therefore, they lack the know-how and understanding of vital concepts and cannot teach different issues. As a result, many graduates have gaps in their knowledge and cannot perform the jobs they are trained for (Employer 1).

Lecturers seem unhappy about their lack of exposure to and experience of industry requirements, as reflected in the excerpt below:

Lecturers are teaching because they cannot fit into industry. They do not have the experience to train individuals who can compete effectively on the job market. These lecturers are a liability to the system. Qualified and experienced lecturers leave teaching to the industry for better offers. More surprisingly, no lecturers engage in technology degrees for staff development (Lecturer 3).

The above finding concurs with Mutereko and Wedekind (2017), who posits that most lecturers with education qualifications have general qualifications or those related to school teaching rather than qualifications designed for college lecturers. Likewise, the Department of Higher Education and Training (2022) argues that the greatest challenge in improving and expanding TVET colleges is the capacity of lecturers, particularly their subject-matter expertise. Lecturers drive curriculum delivery, meaning they need to be knowledgeable in their respective trades and offer successful training. Learning from Germany, graduates with a Bachelor's degree go through industry exposure to improve their practical skills and employment opportunities (Maclean & Pavlova, 2013). In this way, the lecturers would obtain generic skills to equip students with workplace competencies.

Unprepared students and strikes for NSFAS

Both lecturers and graduates mentioned students' strikes as hampering the acquisition of the skills set required by graduates. Students who are not ready to learn allegedly incite violence and anarchy because they have nothing to lose. Curtis (2004) highlighted personal qualities, responsibility, self-esteem and integrity as necessary workplace employability skills. The personal qualities exhibited during strikes do not reflect a submissive attitude and character to authority. Luhmann (1995) states that when there is a disruption or disturbance to the equilibrium of an ecology, agents respond by adapting. It aligns with decisions taken when TVET college management succumbs to students' demands to maintain harmony in the 'ecosystem'. Graduate 4 said:

The students' strike for NSFAS money is disturbing learning almost every term.

Lecturer 5 blamed the colleges on "weak recruitment criteria which take students with poor passes". Many factors result in colleges breaking their enrolment policy to either fill class groups or satisfy student leadership demands. The researcher observed such a strike at the college, which resulted in cancelling all full-time NATED trimester examinations. A lack of preparedness to sit for final examinations tended to trigger such strikes. In support of this idea, Lecturer 6 echoed, "The strike for NSFAS by students wastes precious time". Employer 1 commented on the preparedness of students:

Most school leavers want to become millwrights, electricians, boilermakers and fitters, but they do not know about the trades.

The excerpt above shows that a lack of college career guidance prevented students from making appropriate career decisions. Employer 1 further submitted that:

A handful of students seems to know what they want to study. If some students want to become electricians, they will not go to civil because that is where space is available.

The graduates' opinion reflects a poor understanding of the prescripts of trade skills. This is supported in the excerpt below by Employer 2, who said:

It seems those students who come to college want to become electricians, and when it is full, they are redirected to other disciplines. It suggests that students do not know what they want to become.

The excerpt speaks to college enrolment procedures concerning the different courses offered. The primary aim seems to fill available spaces rather than ensure that students enrol for their preferred

career choices. The administrative behaviour highlighted above reveals that the college aims to fulfil enrolment targets at the expense of proper career guidance and career choices. Students were allocated to courses based on available spaces rather than their aptitude or interest, which did not promote the development of the required skills set for sustainable employability. Supporting career guidance the above, Allais and Wedekind (2020, p. 326) posit:

Education has long been part of the problem, turning out graduates who were clueless about how the world works as a physical system or why that knowledge was important to their lives and careers.

Against this backdrop, developing students in their disciplines of interest moulds career-oriented graduates with industry-required employability skills.

Poor Infrastructure and under-resourced workshops

Appropriate resources and qualified lecturers are needed for skills to be fully developed. The resources include computers, workshops with functional equipment, tools and machines, textbooks, visual aids and physical aids for items such as pumps, valves, circuits, panels and trusses (Mesuwini & Thaba-Nkadimene, 2021; Yeap et al., 2021).

In this regard, Graduate 6 stated, "*Group practical tasks prevented hands-on practice for some students*". Freely available resources enhance appropriate skills development without improvising or taking shortcuts. For instance, if the tools have to be shared, this can increase the time to teach a concept. Less time is needed if all students use their tools than they have to share, so teaching time is used more effectively to impart the requisite skills.

A civil engineering Lecturer 6 reiterated:

Infrastructure is necessary for bricklaying so that the weather does not affect projects in progress.

Graduate 3 alluded to the same idea by saying:

More practical tasks are needed at college to meet industry skills and demands.

Baraldi and Corsi (2017) advocate for graduates with skills relevant to current economic needs. The TVET sector should offer short to long-term quality and usable programmes (Maclean & Pavlova, 2013). Besides the lack of resources, Lecturer 2 put forward that:

A lack of the practical component for the NATED programme disadvantaged lecturers' duties as it was very difficult to explain concepts or processes without seeing them in practice.

From the stakeholders' perspective, it is important to provide the resources recommended by policy, to ensure effective teaching and learning, thereby leading to the skills set required by the TVET graduate. A similar study by Legg-Jack (2014) highlights some factors that impede the effective implementation of the curriculum, such as lack of training materials and equipment, a dearth of qualified technical teaching and non-teaching staff, out-of-date and non-functional equipment, lack of staff development and poor management of Technical Education.

The late release of results

The researcher with fifteen years of experience in the TVET sector has noted that examination results are often released a week or two into the following trimester. Since the NATED programme is scheduled for only ten weeks, losing two weeks each trimester compromises the outcome. Registration for current (pipeline) students may not occur until the release of previous results, leading to further delays. Such unproductive use of tuition time leaves an average of eight weeks being used fruitfully every trimester. Experience has shown that lecturers are under immense pressure to complete the course, and there is likely no time to understand the skills taught properly. The loss of time significantly affects the time available for lecturing and planning (Mesuwini & Bomani, 2021). It should be addressed so that teaching and learning are allocated adequate time to avoid keeping the lecturers under pressure, playing “catch-up” and ensuring graduates receive the skills set for sustainable employability.

Lecturer-student ratio

Even though the policy document (Department of Higher Education and Training (DHET), 2017) states that the lecturer: student ratio should be 1:30, colleges do not seem to adhere to this ratio. There is a tendency to enrol high numbers of students for NC(V) because of the high subsidies received from the government for these students (Matenda, 2020; Zulu & Mutereko, 2020). At the same time, NATED subsidies are very low. Therefore, colleges tend to enrol the maximum possible NC(V) students to maximise income.

Lecturer 6 said: “*Sometimes the student numbers are too high to manage*”. The high student numbers strain the available resources, negatively impacting the final results. It also affects the mode of delivery, and more teaching time may be required to ensure the understanding of the requisite skills.

Language barrier

The language barrier was observed through the interviews as a reality. Electrical Lecturer 1 responded that the “*Language barrier had negative effects*”. Language barriers contribute to poor productivity, with mistakes or a general lack of trust between employers and employees. In support, Shaik and Makhecha (2019) add that the language barrier results in a lag in response, language misinterpretation, and bad networks in the workplace. Clear communication can avoid all the points noted above. Students and workers were generally unwilling to speak English, and some felt frustrated and intimidated trying to communicate with English-speaking supervisors or co-workers. Core skills highlighted the importance of language competence in a workplace as skills set. Furthermore, values and integrity, personal and interpersonal skills, and a positive attitude to change were intended to be integrated into national vocational qualifications (Curtis, 2004). To ensure understanding, it is important to seek feedback after instructions have been given, either orally or by demonstration, particularly during training to ensure the same message is shared across the student groups.

Political pressure

The introduction of NC(V) followed financial support from the government. All public TVET colleges offer NC(V) programmes in civil, electrical and mechanical fields, and students who meet

the financial requirements get study bursaries (Lawrence, 2016; Mesuwini, 2015). Civil engineering Lecturer 3 showed some displeasure with political pressure and said:

Political pressure forces TVET colleges to succumb to the demands of recruiting undeserving students into the college sector.

As observed during the interviews, the NC(V) programme is still not widely understood by the industries under study. Promotion of the programme is required to ensure that all stakeholders have a common understanding of NC(V). Bordean and Sonea (2018) comment that a successful recruitment process is a critical driver for the sustainable employability of the business. Mesuwini and Bomani (2021) support that college management often budges to student demands without carefully considering the effects. In this context, Luhmann (1995) explains that the social system has its dynamics, and as such, the TVET needs to gradually blend with industry for a common cause.

Policy discrepancies

Department of Education (2006, pp. 5-6) states that NC(V) is meant to cover the skills gap and:

- Equip its learners with knowledge, skills and values necessary for self-fulfilment and meaningful participation in society as citizens.
- Provide access to further learning in the learner's choice of a specific vocational sector.
- Facilitate learners' transition from formal education to the workplace.
- Provide the employers with profiles of learners' capabilities.
- Deepen the foundation laid by General Education and Training.
- Lay a foundation for specialist learning.
- Prepare learners for employment purposes at any level.
- Develop citizens committed to social demands, such as improved productivity, global competitiveness, and social and economic transformation (FET Act 98/1998).

There is a challenge linking TVET and its syllabi to the constantly evolving industry needs. In this instance, creating partnerships between TVET, industry and other stakeholders is inevitable to ensure synergy between skills offered in the TVET sector and industry expectations.

CONCLUSION

The factors that impacted teaching and learning, such as political pressure, poor infrastructure and under-resourced workshops, were explored and highlighted. Political pressure led to the enrolment of students who focused on getting NSFAS funding instead of studying. Policy differences showed that NC(V) provided vocational skills and access to further learning in a specific vocational sector and equipped students with the knowledge, skills and values needed for self-fulfilment and significant social participation as South African citizens. NC(V) was portrayed as a course offering practical industry skills compared to NATED, which was recorded as totally theory-based. Further studies could focus on a possible increase of time from the NATED trimester to seek ways to eliminate the challenges of running the 10-week course. Further, the NC(V) programme, which is marred by poor attendance, could also be investigated, possibly reducing the study period to six months. Effective career guidance was lacking during enrolment, forcing students into wrong subject choices, which could be corrected by creating strict recruitment criteria across TVET

colleges. Communication, teamwork, problem-solving and computer skills were highlighted as vital for employability skills. These perspectives can inform current policy debates.

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HINDRANCES ON POLICE OFFICERS TO COMBAT MOB-JUSTICE: GQEBERHA, SOUTH AFRICA

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ABSTRACT

In South Africa, mob-justice is treated as a pandemic. Even though the Constitution Act 108 of 1996, section 12(1) (c) mandates police officers to safeguard the inhabitants of this country, police officers continue to struggle to address the occurrence or reoccurrence of mob-justice. This paper attempts to address challenges faced by police in combating mob justice in Port Elizabeth, currently known as Gqeberha. The point of this focus is holistic understanding of bottlenecks that lead to increased incidences of mob justice in South Africa. Qualitative research methodology with a sample size of 48 participants was used, and data was analyzed through thematic analysis. Findings revealed that, lack of resources, lack of community involvement, police corruption and ineffectiveness of the Judicial System to deal with reported cases are some of the worst factors that contribute to increased incidences of mob justice.

Keywords: Mob justice, hindrances, communities, police officers.

INTRODUCTION AND BACKGROUND

Mob justice incidences have been escalating throughout the world. In South Africa, it has become a critical problem for the public and the government, particularly the South African Police Service (SAPS) as it reflects badly on the country's security efficiency. Furthermore, the Criminal Justice Systems (CJS) recognized as a significant institution in this country is negatively affected by this phenomenon as citizens depend on them for safety and security. Undoubtedly, policing is fundamental in all societies and expected to ensure maintenance of order, safety and social interaction. Rising population rates, urbanization and high unemployment rates translate to more demand for police to ensure security for citizens (Ojo, 2014). Malik (2016) holds the same viewpoint, claiming that urbanization and rising unemployment encourage crime since crime rate is higher in large cities and urbanized areas.

However, the inability of the police to maintain order and safety in most areas encourage community members to resort to mob justice. Gross (2016) argues that mob justice in South Africa is not completely due to dissatisfied and disappointed expectations on South Africa's transition to democracy after 1994; rather, mob justice seems to be a phenomenon that originated through a surge in crime and failure of the police to respond to criminal cases. As a result of the high rate of crime, lower-income citizens feel relatively insecure compared to wealthier neighbours who have greater access to private and public security. Unlike wealthier neighbourhoods, lower-income citizens depend on the police for protection; due to police invisibility in their communities, they perceive mob justice as the only way to reduce the security gap and relative deprivation of security (Adu-Gyamfi, 2014:87). In other instances, some people feel the strain because accused criminals

are being arrested today but are back on the streets the following day. Recent incidents of mob justice that occurred in Zandspruit near Honeydew, north of Johannesburg where four people were killed and five seriously injured are strong indicators of the incompetence of the police in combating criminal activities (SABC News, 2021).

According to Ikuomola (2011), police, in conducting their duties of combating criminal activities, need to be intellectual, courageous and diligent. Unfortunately, police are not provided with enough resources to conduct their daily tasks, and this has affected the police department negatively (ibid). It has also been revealed that lack of police professionalism and justice efficiency are factors that negatively impact human protection (SABC News, 2021). In an observational study, it was found that poor information-sharing and organizational culture affect police actions in security management (Ahmed, Muhammad, Mohammed & Idris, 2013). Ahmed et al (2013) add that police are not sufficiently equipped to perform their duty, and this leads to their ineffectiveness in conducting their job. They operate within very constrained resources, resulting in weak operational preparation and lack of equipment and logistical capacity (ibid). Faull (2007) argues that transitional nations, such as post-apartheid South Africa are difficult to police and present a series of obstacles to law enforcement agencies. On the other hand, lack of state control measures and subsequent increase in individual freedom give newly empowered societies more opportunities to participate in non-state activities, such as crime. Thus, in a newly minted democracy, violence associated with historically oppressive state police organizations is either inaccessible or heavily restricted. As a result, the convergence of these two patterns often results in increased crime at precisely the moment when law enforcement agencies are caught off guard and lacking a range of skills required to police a democratic society (Shaw, 2002b). In addition, police corruption is another stumbling block to efficient police work performance because it delays the extent to which the SAPS can perform their duty and build public trust and legitimacy (Faull, 2011).

Nonetheless, the most noticeable challenges that have been generated for policing include lack of occupational and operational autonomy for police, as well as an occupational culture that still maintains a colonial mindset, rather than adhering to obligations to duty, the rule of law, human rights enforcement and professional norms (Ashimala, 2014). Due to these factors, large numbers of victims of mob justice have been killed and severely injured. Statistics suggest that in South Africa, more than 800 individuals die in a year due to mob justice (Crime Stats SA, 2018). However, as evidenced by the proliferation of mob justice in contemporary South Africa, as long as communities feel vulnerable and there is an absence of a legitimate state police force that can effectively control crime, the disaffected public will certainly turn to other alternatives such as mob justice. Therefore, the rise in incidents of mob justice in Gqeberha, irrespective of the government appealing to the public to stop taking the law into their own hands, motivated the researcher to choose this research topic. The focus of this paper is, thus, on challenges that hinder effectiveness of police in combating mob justice, with the aim of suggesting measures to restore police integrity so that police administration can be efficient in eliminating the occurrence.

PROBLEM EXPOSITION

South African Police Service (SAPS) has a significant role to play in providing safety and security for all inhabitants of the Republic and upholding and enforcing the law. In Section 12 (1) (c) of

the Constitution of the Republic of South Africa, Act No. 108 of 1996, it is stated that every person has the right to freedom from all forms of violence from either public or private sources. Chapter 2 (Bill of Rights) of the Constitution (1996), Section 35 (3) (c) continues to highlight that every accused person has a right to a fair trial, which includes the right to a public trial before an ordinary court. The former prescriptions mean that everyone has the absolute right to safety, whether that person is accused of a crime or not and if accused of a crime, must be given an opportunity to prove his or her innocence in a court of law. Nevertheless, this is not the case, as occurrences of mob justice are reportedly on the increase in many townships in Gqeberha.

According to the survey conducted by the Department of Safety and Liaison (2016), there has been an increase in mob justice in the Eastern Cape since 2000. Crime Statistics demonstrate that between 1 April 2017 and 31 March 2018, 72 people were killed in the Eastern Cape in cases police classify as mob justice (Crime Stats SA, 2018). However, within the Eastern Cape, 47 cases were reported for the period 1 April 2018 to 31 March 2019 in the Motherwell Cluster in Gqeberha. Six (6) of these cases were reported in Ikamvelihle Police Station, fourteen (14) in Motherwell, three (3) in Swartkops, eight (8) in Kwadwesi, Kwazakhele and New Brighton Police Stations (Crime Stats SA, 2019). Given the difficulty of accessing reliable data and many incidents not resulting in death or not reported to the police, mob justice undoubtedly occurs with greater frequency than these statistically reflected. The statistics above attempt to provide an insight into how widespread such incidents are in the Eastern Cape despite the police effort. In addition, Crime Stats SA (2018) revealed that sixty-six percent (66%) of individuals mistrust police and that forty-six percent (46%) do not have confidence in the judicial process, so they take the law in their own hands.

Reports of such criminal acts against suspects have been increasing in media reports, and there is likelihood that this will be a growing trend if nothing is done to address police challenges (News24, 2018; Brodie, 2013: 1). Thus, this paper is attempted to address some of the challenges pertaining to the reduction of mob justice. Addressing police challenges in combating mob justice is of importance in contributing to the holistic understanding of bottlenecks that lead to an increase in mob justice. It is the observation of the researcher that in previous studies conducted on mob justice, the voice of SAPS members is absent. Therefore, the researcher argues that challenges faced by the police in curbing mob justice need to be taken into consideration to address the issue.

RESEARCH METHODOLOGY

This paper utilized a qualitative research approach. This approach, according to Babbie and Mouton (2004: 134), considers the narrative and descriptive essence of circumstances, relationships, or individuals, focusing on the interpretation of human values, behaviours, feelings, perceptions and emotions. In this study, such a qualitative approach was used to better understand participants' opinions, experiences and perceptions, with reference to challenges that hinder the effectiveness of police in combating mob justice in their policing areas. More so, qualitative research in this study was used to address questions about the phenomenon's dynamic existence and explain and interpret the phenomenon from the participants' perspective. A case study research design that is exploratory in nature was utilized in this study. A research design refers to a procedural plan, structure and strategy for a research project that the researcher uses to address the research questions (Kumar, 2011: 94). The use of a case study research design in this study enabled

the researcher to analyze and study the case of Gqeberha in greater detail with regards to exploring and gaining an understanding of participants concerning challenges confronted by police in combating mob justice. The target population of the study was drawn from four settings in Gqeberha, namely: Kwadwesi, Kwazakhele, Motherwell and New Brighton. A sample size of 48 respondents was utilized; it comprised sixteen (16) SAPS members selected based on their Public Order Policing status (POP). The sample further included eight (8) Community Police Forum (CPF) leaders who were chosen since they collaborate with SAPS members in building trust to fight crime at a local level. Pastors, Teachers, Civic and School Governing Bodies (SGBs) were among the twenty (20) community members selected for the study because of the important role they play in crime prevention. Lastly, the sample consisted of four (4) community leaders chosen because of their valuable responsibility in assisting to combat and solve crime and other social issues.

Table 1: The study sample

| SAPS Officials | CPF Leaders | Community Members | Community Leaders | Total |
|---|---|--|---|-------|
| Station Commanders; Vispol Commanders; Detectives; Sector Managers | Chairpersons; Secretaries | SGBs; Pastors; Civic | Councillors | |
| 4 (New Brighton) + 4 (Kwazakhele) + 4 (Kwadwesi Ext) + 4 (Motherwell) =16 | 2 (New Brighton) 2 (Kwazakhele) 2 (Kwadwesi Ext) 2 (Motherwell) = 8 | 5 (New Brighton) 5 (Kwazakhele) 5 (Kwadwesi Ext) 5 (Motherwell) = 20 | 1 (New Brighton) 1 (Kwazakhele) 1 (Kwadwesi Ext) 1 (Motherwell) = 4 | 48 |

Sampling procedures

This study's participants were chosen using purposive sampling, which is a non-probability sampling technique. Purposive sampling enabled the researcher to select a number of participants who could provide appropriate information on the subject. This sampling method was utilized to select respondents from SAPS, community members and CPF and community leaders, as they are well-informed about mob justice and challenges confronted by SAPS members in combating the occurrence since they are working together in preventing crime. Respondents were chosen purposefully for their experience in the phenomenon being studied.

Data collection techniques

Interviews were used as the research instrument in this study because they allowed respondents to freely express their insights and experiences without being constrained by predetermined questions. The aim was to acquire rich data that assisted to understand the participants' construction of knowledge and social reality. The advantage of using interviews is that they elucidate subjectively lived experiences and positions from the participants' perspective. The researcher had the opportunity to bring up observations and request interviewees to verify, refute, defend or expand on their input (Tracy, 2013: 132). The study utilized focus group interviews (FGIs) and semi-structured interview schedules to gather data. Semi-structured interview schedules were designed to gather data from key informants (KIs), which comprised SAPS members, CPF leaders and local community leaders. On the other hand, FGIs were established to acquire data from community members. The semi-structured interview schedules were in-depth and done on a one-on-one basis to develop detailed information about challenges confronted by

police in combating mob justice in each of the study areas. This allowed room for respondents to voice out their opinions; as such, more data was captured (Silverman, 2005: 155). Focus groups, on the other hand, assisted to gather in-depth qualitative data about community members' experiences and perceptions on mob justice as well as on challenges faced by the police in combating the occurrence.

Data analysis

The researcher analyzed data obtained for the study using the thematic method. Guest, MacQueen and Namey (2012) and Joffe (2011) define thematic analysis as a method of phenomenology that allows the researcher to identify, investigate, and record patterns in the data. Particularly, data was analyzed using Clarke and Braun's (2013: 120-123) six phases of thematic analysis. These phases included multiple levels of analysis, and it was critical for the researcher to follow all of them to properly analyze the data (Joffe, 2011). This method of analysis enabled the researcher to draw useful conclusions regarding the subject at hand.

ETHICAL CONSIDERATIONS

An ethical clearance certificate was received from the University of Fort Hare's Research Ethical Committee (REC) and the South African Police Ethics Committee before data was collected. Permission to conduct the study was also provided by the National Commissioner of Police, and participants who expressed an interest in taking part were given consent forms to sign before taking part in the interviews. Respondents were informed of the nature and the purpose of the study as well as their right to participate or withdraw. Furthermore, participants were also informed that their privacy would be protected and that their rights would be respected, that their identities would not be revealed and the information they provided would be kept private and used only for the purposes of the study.

RESULTS AND ANALYSIS

This section presents findings from data acquired through interviews (one-on-one interviews and FGIs carried out with the chosen participants from Gqeberha). The findings from in-depth interviews were analyzed thematically. Presented below is the analysis of the seven key themes that developed from the analysis. The themes include *verbatim* quotations (unedited raw data) from participants; italics are utilized for all *verbatim* quotes.

Theme 1: Challenges faced by police in combating mob justice

The findings from in-depth interviews revealed that challenges confronting the police in combating mob justice in Gqeberha are enormous. Primarily among these are the following: Reluctance of community members to provide information; overloaded police; underpaid police officers; lack of resources; attacks on police officers; hesitancy of community members to report mob justice cases; mob justice cases that occur out of sight; police corruption; an illiterate community and police officers who are not passionate about their jobs. In addition, some of these included the following: Ineffectiveness of the judicial system, lack of implementation, lack of cooperation, refusal of community members to be part of the CPF and community members who do not report crimes. All of these issues pose a significant challenge to efficient policing.

Sub-theme: The reluctance of community members to provide information

The participants highlighted that police have a challenge with communities and informers who are very skeptical about giving information to the police and who do not want to be witnesses, for fear of intimidation. They are afraid to be called ‘*impimpi*’ by their communities. To add, some participants mentioned that many people are reluctant to provide information to the police because they do not trust them as some are working with these criminals. Some of the comments were as follows:

"First of all, the community we are serving is very skeptical about even giving the information to the police because they are saying the police do not keep the information they give them. They go and tell these criminals that it is so and so who gave them the information. Secondly, I do not know which effective way can assist us to address this issue and build community trust between the police and the community because people do not trust the police and do not want to hear anything about them. The reason for this high crime rate is simply because people do not work together in fighting it. I do talk to them and they listen to me, but the minute I turn my back on them, they start to say he is wasting about our time, have you ever seen authentic police in this area?" (KI-B: 1).

"Police are always being called when the person is already dead or assaulted. Another thing is that they do not get witnesses who can stand in a court of law about what really happened. No one tells the police what really happened, and it is not like these people were not there. They witnessed everything, but it is always the case... I just arrived... I did not see anything or I was not there. You do not get to know what really happened because people are refusing to be witnesses of cases because once you are a witness, you become a target. Some families have lost their loved ones because of being witnesses. These criminals do get information... if how, I do not know. They give warnings to these people who are going to be witnesses to stop whatever they think of doing and if they refused, they kill them before they appear in court. As a result, in most mob cases, no one is arrested because no one wants to be a witness" (KI-C: 2).

Additionally, some participants emphasized that the main challenge the police are faced with is to have somebody who is in that group of people planning the occurrence of mob justice to inform them that this is what is going to take place so that before it happens, they are already there. According to a participant in an in-depth interview:

"As much as we do patrols in the areas, we are not always everywhere at the same time. So if people are deciding somewhere that we are going to this house at 00; 00 at night. We are going to get and burn this person, they have decided and have done their intelligence. Now when they execute, the challenge most of the time is having somebody in that group of people to inform us and say, this what is going to take place so that before even it happens, we are already there" (KI-D: 4).

Sub-theme: Overloaded police

On the issue of overloaded police, participants pointed out that due to shortage of resources, police are overloaded and incapable of investigating large numbers of cases/dockets. The responses below reveal more in this regard:

“As detective, we are overloaded. Let us say, for instance, here in this area, we had about 10 to 12 murders maybe a year. So if you allocate two detectives for the twelve. So suddenly with these three incidents of mob justice, we have now 15 murders. Therefore, the same two detectives must still do that and now they suddenly have two cases a month. So it is difficult for them to handle that and there is no new manpower coming in now to the detectives. So, to teach somebody to be a detective in investigative murders takes about 5 to 10 years. Only after 5 years can we start giving the new guy the investigation. Murder cases are done in high court, so is it very difficult. You must be well trained and well experienced. So, I can say there is workload with limited resources” (KI-C: 1).

“There is too much work for police as everything involves the police. Even though we blame them, but to be honest they have too much on their plate with limited resources and sometimes we do not report crime related issues to the police” (FGI-B: 5).

Sub-theme: Lack of resources

On the challenge of lack of resources, a number of participants mentioned shortage of vehicles and manpower. It emerged from the interviews that due to inadequate manpower, it becomes difficult sometimes for police to respond immediately to all crime scenes they are called to and in such cases, they have to prioritize. To add, if all vehicles are busy attending mob justice cases, they cannot respond to other crime scenes because they do not have standbys for mob justice cases. It also emerged that police have a challenge with the shortage of manpower in the detectives section, specifically trained manpower. However, new police recruits were reported as receiving very poor training, which leaves them largely unskilled and unable to perform some of their duties. Some of the comments on this issue were as follows:

“The members of the SAPS are responding but you will find that in a mob justice, one or two vans are responding, and then these vehicles are not enough to disperse those people. And then when these members of SAPS are there and then the numbers are not enough you have to mobilize in terms of getting POPs. In most cases, you find that the numbers of the police are not matching with the community we are policing. But sometimes the problem is not on the transport side but the repairs of vehicles - the garages. The problem particularly is the logistical problem with the police. The vehicles stay in the garage for a long time because of the difficulty of getting parts. As a result, you will find that we are struggling to get our working tools” (KI-C: 3).

“We have a challenge with the trained manpower. As detectives, we do not have enough manpower. So it is difficult for us to handle some of the cases in time. There is no new manpower coming in now to detectives. To teach somebody to be a detective in investigative murders takes about 5 to 10 years. Murder cases are done in high court so is it very difficult. You must be well trained and well experienced” (KI-C: 1).

“They do not have resources to do what is expected from them. I am talking about manpower and transport. Vehicles for example are not enough because the police do not only police mob justice but also other crimes. It is even difficult for them to visit their sectors, four people have to use one vehicle. They cannot be in two different sectors at the same time; instead, they must visit one and then another. As a result, other sectors are not being policed effectively” (KI-B: 2).

Furthermore, one participant said the following:

“Sometimes we do not have resources to maintain the situation and manage mob justice or the crowd where we use minimum force. We also face a challenge with investigation especially in our policing areas in Motherwell. Our policing areas have a lot of cameras, but the problem is that they are not recording. You can see what happened but it is not recorded. Not all places in PE have recording cameras. So, if we had that, we could be in a better position. They cannot put those recording cameras in certain areas because we do not know where crime is going to be committed. Sometimes it happens during the night and during the night, you cannot see anything” (KI-C: 1).

Sub-theme: Corrupt police officers

On this issue, some participants articulated that communities and other police have a challenge with some police officers who are working with criminals and who do not professionally conduct themselves. As a result, these practices, according to participants, have tarnished the image of the police and shattered their integrity. Some of the comments are as follows:

“There are also some police officers who are working with criminals and who do not have an approach. All these things cause the community members to distrust us” (KI-B: 4).

“These police officers are also criminals, and it is true they are criminals themselves and they protect each other. The management is aware of these allegations, but nothing is being done to arrest these police officers” (KI-B: 1).

“Some police officers do not professionally handle people's cases. Even if they know someone who committed a crime, they do not come forward and arrest the person. They just keep quiet as if they did not see anything. They are protecting these criminals. We are working with people who are not willing to work with us, and these people do not listen to our advice as people who are living in these areas” (FGI-D: 2).

Sub-theme: Ineffectiveness of judicial system

On this issue, it emerged that the police have a challenge with the Department of Justice that keeps releasing criminals on bail and probation etc. It was also highlighted that the bail itself is a challenge. Participants continued by expressing their confusion as to why persons who rape young girls and old women are granted bail. Some of the respondents had this to say:

“We have a challenge with the courts. Courts keep releasing the alleged criminals and this comes back to the police. The Department of Justice is failing the police and whatever the court does comes back to the police. When someone who has been arrested has been released, community members shout at the police and not the courts” (KI-C: 2).

“People are also complaining about criminals who get arrested today but are seen on the streets tomorrow. This also is a challenge to the police because they are fighting a losing battle. We report criminals today but tomorrow they are out committing other crimes. The government should stop this bail and sentence people to imprisonment or death penalty” (FGI-A: 2).

Sub-theme: Lack of leadership

On this matter, the participants stated that lack of leadership by station management poses a serious challenge in Motherwell Cluster police stations. The participants articulated that in meetings that they conduct with the management, promises are always made concerning the improvement of the station's performance, but there is nothing done to put those promises into practice. Some mentioned that even in those public meetings with community members, promises are made to support communities but when it comes to implementation, nothing is being done. As a result of this, many people do not attend police programs. As one community member in an interview said:

“Lack of leadership is another challenge the police are facing. There is no outcome in most of the meetings that we and the police hold with the management. They keep on having these meetings but there is no way forward. Management keeps telling people that they are going to do ABC, but when it comes to implementation, nothing is being done, and this also demotivates us from assisting them” (FGI-D: 3).

Theme 2: Impact of identified challenges on police work performance CPF Leaders

“Police performance is affected badly because in the event of mob justice, you have maybe two or three vehicles in the area. Those vehicles will be taken to hostage by that mob justice and police performance will be affected because police are not only policing mob justice. There are also other crimes happening there, and this one of mob justice becomes more serious and needs more police members. Because there is a life that is in danger, you cannot say you leave one vehicle with this mob because even the life of police officials will be in danger, so you keep as many vehicles or resources as you can. But in the meantime, complaints are outstanding in other areas, and service delivery is now poor there. There are crimes happening, there are murders that are happening, there are robberies that are happening other than mob justice and then the priority will be mob justice. Those people are also not happy with the police and will end up mobilizing themselves for mob justice because they are sick and tired of crime. Therefore, I would say due to insufficient resources, police are unable to render their services effectively e.g. be visible in all hot spot areas, respond to emergencies and arrest alleged criminals. All these things damage our image and cause communities to lose faith in us” (KI-C: 3).

“Unreported cases of mob justice by community members affect our performance because there is a crime committed and no arrest effected; we could not rescue the victims before getting injured/killed. So immediately a crime is committed, there must be an arrest. So, it is affecting our performance because no arrest is effected and if the victim injured stays five to six months in hospital, justice will not be served and that person with scars will seek revenge at the end of the day. So, it is a cycle of violence taking place” (KI-B: 2).

Theme 3: Measures undertaken to address identified challenges

When asked, how these challenges are addressed to improve police effectiveness, a significant number of participants asserted that the above-mentioned challenges are addressed by conducting awareness campaigns, *imbizos*, and public meetings in communities. It was also expressed that some of these challenges are addressed through meetings with station management and cluster offices, but nothing is being implemented; certain participants stressed that nothing is being done

to address the identified challenges because police are still overloaded and underpaid. On the other hand, some CPF members stated that they address these challenges with the Department of Safety and Liaison. The responses below tell more in this regard:

“To address these challenges we conduct public meetings, awareness campaigns and ‘imbizos’ because knowledge is the key. In these educational programs, we also invite this justice cluster, the Department of Justice and the Department of Correctional Services. But even in those ‘imbizos’, members of the community always point fingers at the Department of Justice. Because in ‘imbizos’ the police talk about their role and then the Department of Justice talk about their role with the department of Department of Correctional Services. Police will say, we arrest this one, taken to court and then the court is deciding on the release of this one. There are rights, they have the right to be bailed, they have the right to get free bail and there are also those minor sentences that they have to impose according to the constitution. The members of the community are not happy with that, they contest everything that is beyond our control. Because when you talk about the constitution and the rights, all those things are entailed in the constitution and police are not making the constitution; only politicians are making the constitution” (KI-C: 3).

“Councillors hold meetings with SAPS to find some strategies to address identified challenges, but the problem is that there is no implementation. They have been saying they are going to add more vehicles but up to now, there is nothing that has been done to fulfil their promises. The Minister only reacts after the incident, not before it occurs” (KI-B: 3).

Theme 4: Involvement of stakeholders in resolving mob justice

When asked about the stakeholders involved in resolving mob justice and their involvement, the majority of participants concurred that they have street committees and neighbourhood watch that assist by conducting patrols. On the other hand, other participants mentioned political organizations, correctional services, metro police, churches, social development and social justice that assist by organizing public meetings, *imbizos* and awareness campaigns with them. Some of the comments were as follows:

*“We have our structures called **sector forums, street committees and neighbourhood watch** that assist us in policing mob justice and other crimes. Even in our policing areas, these neighbourhoods watch help us by doing patrols and giving us information about people who are not happy with the way we do things. Then as the police, we go to the community the same day we hear the complaint and address that” (KI-B: 4).*

“The stakeholders involved in mob justice are departments that I am talking about ie the Correctional Services, Social Department and Department Of Justice. When we are having those ‘imbizos’ they come and talk to the community, and they are part of resolving mob justice. I am saying that we need the commitment from those influential members in the communities, those political leaders and those pastors, we need them to be involved” (KI-C: 3).

Theme 5: Description of police working conditions

When asked about the description of police working conditions, significant numbers of participants stressed that working conditions for police officers are strenuous and traumatic as a

result of long hours and excessive workloads. It was also expressed that police are in danger and exposed to traumatic events, which affects their well-being. However, only a minority of participants reported that their working conditions are tolerable. According to one of the key informants:

“It is very traumatic sometimes and dangerous because when you are the police, you are in a danger zone. Others are having psychological problems but fortunately, SAPS have an institution called employee health and wellness. Its programs are spiritual services, social work services, psychological services and work of life. But the problem is, even those people we are told to report our problems to, are having their stress. So, how is someone who is also stressed going to listen to me? As a result, due to these traumatic events, some police officers end up resigning” (KI-A: 1).

In the same vein, another key informant said:

“They are exhausting because we are working for long hours with too much work. You become stressed sometimes due things you are subjected to and unable to do anything when you get home. But as time goes by you, become used to the working environment. For example, for my stress, I must go to the gym and I must go to church” (KI-C: 4).

Another key informant corroborated when he said:

“As the police officer, you put your life on the line so that you can save lives. That is part of why everybody is here. Whenever it comes to protecting individuals or communities of South Africa, we have to come between the community and the perpetrators or criminals and find out if their property is safe. So, conditions are conducive and you will never know what to expect outside. There are channels whereby you can address those issues, for conditions to be tolerable” (KI-D: 4).

Sub-theme: Attacks on police officers

On the issue of attacks on police, participants stated that police officers are assaulted by community members when attempting to rescue victims of mob justice, which has made it impossible for them to rescue victims because the public wants to put the victims to death. According to a participant in an in-depth interview:

“It becomes difficult to control the crowd sometimes and in other cases, you community members do not want us to get in, they are hostile to us and even assault us because they want to finish that person. Maybe the reason the community is doing this, it does not have trust in the police or does not have trust in the justice system as a whole” (KI-A: 3).

Theme 6: Relationship between the police and the CPF/community leaders

When asked how they can describe the relationship between the police and CPF/Local councillors, all participants stated that even though there are certain challenges, police and CPF have an excellent relationship. On the contrary, some of the participants articulated that the police and councillors have a strained relationship. According to one of the key participants:

“We do work together with the police and we meet time and again. We engage each other in certain issues and assist each other whenever it is possible. Therefore, as the CPF, we

have that interrelationship with the police, but no relationship is free of problems” (KI-B: 1).

Similarly, another key informant added that:

“I can say it is not that bad; maybe they are just pretending as if they care. Because if you are an outspoken person like me, they put you under watch. So we are at risk because some of them are involved in these criminal activities or are close with people who are involved in these criminal activities and we cannot expose them to our station commander because we are going to be targeted” (KI-C: 2).

In a different perspective, another key informant said:

“There is no relationship between us and the police. We only meet when they have a problem that needs our attention. There are no weekly or monthly meetings that we conduct with them” (KI-A: 3).

Theme 7: Community-police relationship

When asked to describe a relationship between the police and the community they are serving, all the participants concurred that police-community relations are extremely bad in the Motherwell Cluster precinct. The responses below tell more in this regard:

“The relationship between the police and the community is not good as the community does not conduct any meetings and campaigns with them. When they call they do not arrive at times. The majority of the people also withdrawn as CPF representatives. The police forum also does not exist anymore. The communities want nothing to do with the police as they say they are useless, corrupt and do not fulfil their promises. Also, we used to invite the police to our meetings to express our concerns, but we were discouraged because they did nothing to address the issues we brought up. Hence, we consider embarking on strike” (FGI-C: 1).

“It is not good because there are still those who hate the police. Others hate the police because are disturbing them in their misdeeds. The majority of them also do not trust the police and do not report the crime to them. There is no cooperation between the police and the community” (KI-B: 3).

DISCUSSION OF FINDINGS

From the gathered qualitative data, it is clear that police officers are faced with numerous challenges in their attempt to combat mob justice in Motherwell Cluster precincts. It is said that in most instances, incidents of mob justice and other criminal activities are unreported, and communities hesitate to come forward for fear of being intimidated, thus posing a challenge to the police. These findings are similar to the findings of Buttle, Fowler and Williams (2010), who found that crimes such as those involving mob justice are not put on trial due to lack of credible evidence. This is mostly due to inadequate investigative methods, certain cases being unreported to police and communities reluctant to come forward to provide evidence. The participants also emphasized that the police challenge is to have somebody in that group of people planning mob justice to pre-warn them.

Furthermore, organization failures, especially inefficient management and ineffective justice department have been highlighted as one of the major factors affecting the police performance in combating mob justice. The station's management has been accused of not following through on its commitments whilst the Department of Justice has been reported to keep releasing criminals on bail and probation. Subsequently, literature such as that of Seekings (2007:189) has shown that bail is not seen as an approach of defending human rights or upholding the presumption of innocence unless proven guilty. Instead, it seems to be an obstruction to justice. Since it prevents punishment, public perception is that it provides space for more crime. On the other hand, Smith (2019) is of the view that the manner in which a democratic state is formulated gave rise to mob justice in South Africa. Smith believes that the mere reason the police are unable to combat mob justice is that the state provided strong procedural rights to accused criminals.

Another major impediment to police performance has been identified as corruption. On this issue, some police officers have been accused of working with criminals and acting in an unprofessional manner. These practices, as a result, have shattered police integrity. This is corroborated by Steinberg (2012), who stated that corruption jeopardizes public trust in SAPS and represent challenges of defining a new role and identity for a broad, highly structured policing organization operating in a troubled transitional environment. This finding is similar to findings by Faull (2011) who averred that corruption in the police department includes theft or extracting money from citizens and stealing or smuggling goods from alleged criminals, and this delays the extent to which SAPS can perform its duty and build public trust and legitimacy.

It has also been stated that underpayment is among one of the major challenges confronted by police. Police are reported to be working very hard and sometimes see themselves dealing with dangerous, life-threatening situations, but they are underpaid and this discourages them from doing their job effectively. This is in line with Westervelt (2012), which reveals that a better salary encourages people to do their job efficiently. Therefore, when they receive a small salary, they become reluctant to do their job. According to Westervelt, the salary of many police officers (excluding senior officials) is an insufficient source of income to provide for themselves and their families. As a result, the majority of them hardly resist bribes, which results in corruption within the police force.

Other challenges highlighted are lack of resources and overloaded police. The SAPS, like many other police forces across the world, is confronted with inadequate qualified personnel and resources. For instance, vehicle patrols in various police stations are restricted by lack of availability of vehicles and the minimum resources available are poorly serviced and scarcely fuelled due to lack of funds. Lack of reliable transport and poorly serviced vehicles mean that police will be slow to respond immediately to incidents of mob justice (Ashimala, 2014). This finding was also reinforced by Mlandu (2014), who argues that many police stations are deficient in resources and need manpower, which makes them overloaded and incompetent to perform important tasks effectively, such as patrolling crucial and distant neighbourhoods and responding quickly to emergencies.

The results also showed that illiterate communities pose another challenge in the effectiveness of the police in combating mob justice. The participants claimed that several community members do not comprehend the method in which the criminal justice system operates and are unaware of the dangers of mob justice. Yeboah-Assiamah and Kyeremeh (2014:9), writing in the Ghanaian

context, observed that the majority of citizens in developing African countries do not have a clear understanding of the legal system and how law enforcement agencies operate. They do not comprehend the value of giving alleged criminals a long time to prove their innocence in court. This may be attributed to the high rate of illiteracy and ineffectiveness of the National Commission for Civic Education (NNCE) to execute its statutory mandate of sensitization. This finding is also supported by Tankebe and Asif (2016) who articulated that people with limited educational backgrounds do not comprehend how the legal system works and have difficulty reading and interpreting the law, as well as knowing where to seek legal knowledge and acquire legal documents.

The findings also revealed that the police have a challenge with police officers who are not passionate about their job but joined the SAPS for the money. Omeje and Githigaro (2012:11) discovered in their research that certain police stations have officers who are less committed to policing duties. Some of these officers were recruited by senior officers or governing figures and perceive law enforcement to be their final career choice. Some of these officers are not genuine in their commitment to ethical work ethics, which is discouraging to officers who are passionate about their careers. Therefore, the police's ability to perform their duties is hampered, and the public suffers as a result of the police's failure to provide sufficient services. Participants also identified a lack of cooperation as a barrier to the police's effective operation. According to Schulhofer, Tyler and Huq (2011), effective policing necessitates cooperation and involvement of citizens; when the police are to combat disorder, they require the assistance of society. It is also said that for police to gain community trust and have a strong bond with the community, they must gain community interest and make contributions to the communities.

Other challenges that participants mentioned as hindering police ineffectiveness in preventing mob justice included the following: refusal of communities to join CPF, lack of implementation, attack on police officers, and mob justice cases which occur out of sight, under houses or in the bushes, places which are not easily accessible to drive. In addition, the findings demonstrated that the aforementioned challenges have a detrimental impact on police performance. According to the findings, police are unable to identify, apprehend and prosecute perpetrators of mob justice and alleged criminals due to poor police-community relations and the reluctance of community members and informants to provide information to the police. The findings also found that a lack of resources causes the police to be unable to provide effective service e.g. be visible in hot spot areas, respond to emergencies and arrest alleged criminals. This finding is similar to the findings of Martin (2012), Ashimala (2014), Omeje and Githigaro (2012:7) and Tankebe (2009a). These researchers all found that in South Africa, lack of resources is a challenge to surveillance, investigation and apprehension of wrongdoers. Particularly, lack of resources is seen in critical areas as a challenge to mob justice prevention. Similarly, Tengpongsthorn (2017) indicated that inadequate resources are not the only stumbling blocks to efficient police work performance, but they are also identified as an impediment to work performance efficacy in the inspection and enquiry divisions.

Furthermore, the majority of participants viewed that due to police work overload, the police are unable to conduct investigations thoroughly. As a result, many cases have been withdrawn due to a lack of evidence. Mlandu (2014) posits that many police stations are in shortage of manpower which makes them overloaded and incompetent to perform important tasks effectively such as

patrolling crucial and distant neighbourhoods and responding quickly to emergencies. Among other factors that have been reported to affect police investigation are un-recorded cameras, because without evidence, there is nothing the police can do to apprehend the suspects. Ashimala (2014) argues that police are not sufficiently equipped to perform their duty, and this leads to their ineffectiveness in conducting their jobs. They operate within very constrained resources, resulting in weak operational preparation and lack of equipment and logistical capacity. Inadequate equipment and work tools are not the only barriers to reducing efficacy of police work performance as they have also been identified as an obstacle to the effectiveness of work performance in the inspection and inquiry divisions.

The study also revealed that because of danger to which police officers are exposed, some officers do not want to work outside for fear of losing their lives, resulting in reduction in the number of officers needed to respond to mob cases. Ashimala (2014) identifies and explains poor working conditions as factors that have significantly tarnished the reputation and credibility of the South African police. As a result of unsafe working conditions, police officers are required to deal with risky, life-threatening circumstances without sufficient insurance to cover their families if something goes wrong. Hence, police become reluctant to respond to some of the violent crimes, thus undermining oversight and accountability. Other police officers, have been accused of failing to perform their duties effectively due to poor remuneration. Westervelt (2012) stressed that the salary of police officers (excluding the senior officials) is insufficient to provide for themselves and their families. As a result, the majority cannot resist bribes, which results in corruption within the police force. A better salary according to Westervelt, encourages people to do their jobs efficiently instead of collecting bribes. Additionally, the Department of Justice and Constitutional Development have been accused of tarnishing the police image by releasing wrongdoers on bail.

Consequently, with reference to the manner in which the identified challenges are addressed to improve police effectiveness, nearly all respondents articulated that the identified challenges are addressed through awareness campaigns, *imbizos* and public meetings with the station management, community members and other stakeholders. However, the only challenge they face is lack of implementation. Even SAPS members who articulated that they address some of these challenges through cluster-level meetings with station management acknowledge the issue of lack of implementation. Some claimed that nothing is being done to address the identified challenges because police officers are still overloaded and underpaid. In an attempt to address this occurrence, the study found that sector forums, street committees and neighbourhood watch are assisting the police in policing mob justice and other crimes. The following are some of the other stakeholders mentioned: political organizations, correctional services, metro police, churches, social development and social justice which assist by organizing public meetings, *imbizos* and awareness campaigns.

The study demonstrated that the police and the CPF in the Motherwell Cluster have good working relationships. Participants expressed their dissatisfaction with the relationship among the police, councillors and community members. Concerning the description of the police working conditions, the majority of participants stressed that working conditions for police are strenuous due to long working hours and the enormous amount of work. Further to the above, the participants highlighted that they are in danger and are subjected to traumatic events that have an impact on their well-being. Police across the world's living and working conditions are terrible. As a result,

they are forced to deal with vicious life-threatening circumstances without sufficient insurance coverage to offer their families in the event of death. As a result, police become reluctant to respond to some of violent crimes in many African countries, thus undermining oversight and accountability (Ojo, 2014:94; Greener, 2011).

CONCLUSION AND RECOMMENDATIONS

This study examined the perceptions and experiences of people on the challenges faced by police in combating mob justice in Gqeberha. The study established that the police officers in Gqeberha are confronted with enormous challenges in dealing with mob justice. Some of these challenges include communities and informants that are very skeptical about providing information to the police. Some police are described to be unproductive at work as a result of strenuous and traumatic working conditions. While some participants argued that these challenges cause police to be unable to conduct investigations thoroughly, the majority of participants stressed that these factors pose a significant challenge to efficient policing, resulting in proliferation in the number of mob justice cases. The study revealed that some attempts, such as awareness campaigns, *imbizos*, and public meetings, are made to address the highlighted challenges, but the problem is that the recommendations made from those gatherings are not being implemented. Consequently, it has been stated that the relationship between the police, the community and councillors is bad. Citizens are tired of current police officers and want police officers they can trust, as well as justice for those who break the law. Therefore, for citizens to get the type of police they desire intervention from the government, SAPS and the community is needed. The researcher is of the view that the integrity of the police can be re-established if challenges can be addressed. This paper has recommended that, firstly, South African Police Services officials from Public Order Policing indicated that, there is lack of resources. Based on this, the state government should supply the police with necessary resources to fulfil the necessities and demands of the communities. In addition, there should be at least two vehicles at each station reserved for emergencies. Police should also utilize motorcycles in places that are not easily accessible; these motorcycles will be helpful to reduce petty crimes and assist them to address community concerns timeously. It is very significant for SAPS to have transport at the police stations to combat mob justice rapidly and easily. Secondly, police officers' performance needs to be monitored weekly to ensure commitment and adherence to regulations when they are on duty. It was suggested that, the Department of Community Safety is suitable to monitor police agencies and assess their efficiency and effectiveness. The Department should ensure that they do follow-ups on meetings, campaigns and *imbizos*' resolutions or decisions. It is recommended that police officials receive necessary support in order to perform their duties with passion. Lastly, community members should also be inspired and motivated to join CPF, Street Committees, Community Patrollers or Neighbourhood Watch to establish an active relationship between the police and the community. By being part of these structures, community members could be informed of duties and tasks that they are expected to perform to combat mob justice as well as responsibilities of the CJS. More significantly, financial and material support to them may inspire and strengthen them to carry on their work in preventing mob justice and attract more people to join the above-mentioned structures and motivate existing CPF. In addition, CPF representatives, local churches, SGBs, councillors and local community leaders should motivate members of the community to be part of gatherings arranged to deal with crime issues in their communities. The above-mentioned stakeholders should

take a lead in campaigns against mob justice and encourage people to report incidences of mob justice.

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THE EFFECTS OF COVID-19 ON THE MENTAL HEALTH OF STUDENTS IN THE FREE STATE PROVINCE, SOUTH AFRICA

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ABSTRACT

Studies around the world show that the COVID-19 pandemic has exacerbated mental health issues amongst individuals. However, the impact of COVID-19 on the mental health of university students in South Africa has not been reported. This study surveyed the mental health status of the University of The Free State students using two measures of mental health, i.e., anxiety and stress during the COVID-19 pandemic. An online survey was used to collect data from undergraduate and graduate students at the University. The survey was distributed via a bulk emailing system through the University gatekeepers. Student demographics and other variables related to mental health were analysed descriptively. Inferential statistics were used to analyse some of the most important variables linked to mental health. Mental health measurements (anxiety and stress) were used to realise the objective of the study. Three hundred and ninety-two (392) registered students at the UFS responded to the questionnaire. Most of the respondents $n=262$ were female, graduate students ($n=112$), between the age group 18-25 ($n=292$) studying on the Bloemfontein campus ($n=352$). The Generalised linear mixed model revealed that the interaction between gender and the students' faculty were significant predictors of students' anxiety and stress reports. Female students reported higher levels of anxiety and stress than male participants. The highest number of students from the Natural and Agricultural Sciences faculty reported anxiety, while the highest number of students from The Humanities faculty reported stress. Inadequate efforts to recognise and address mental health issues affecting university students in South Africa, especially during disasters or pandemics, can have long-term consequences on students' health and education, thereby affecting future generations. Many students need professional assistance to cope with psychosocial conflicts and mental disorders. Therefore, this study recommends that the University focus its mental health efforts more on the students from Natural and Agricultural Sciences and Humanities faculties to understand the reasons for the findings of this study and come up with effective intervention measures.

Keywords: COVID-19; anxiety, stress, mental health, students

INTRODUCTION

Since the World Health Organisation (WHO) declared COVID-19 on 11 March 2020 as a global pandemic (WHO, 2020), fear has gripped people and tested the ability of countries readiness to deal with the alarming levels of its spread and severity (Cvetković et al., 2020). World leaders realised that they were not at war with the Corona virus but with the human factor (Greg, 2020), the impact of COVID-19 on students, especially the mental health impacts have received little attention (Sundarassen et al., 2020). The impacts involve the study of how human beings behave physically and psychologically in response or relation to COVID-19 situations. Students' mental health has become a major national concern in developed countries like the United States of

America (Holm-Hadulla and Koutsoukou-Argyaki, 2015). Gallagher (2006) reported that staff members of university counselling services hold licenses to practice as psychologists, and anxiety and depression are experienced most by students. However, no one anticipated the far-reaching mental health issues to be exposed by COVID-19, especially in developing countries like South Africa. In South Africa, especially during disasters, there are more pressing issues such as people's livelihoods being affected; therefore, mental health issues are often ignored. Therefore, this study seeks to gauge how COVID-19 has affected the University of the Free State (UFS) students, focusing on two main measures of mental health, anxiety and stress (Keckojevic et al., 2020). In addition, the study also focused on knowledge of COVID-19 mode of transmission, reports on the perceived level of risks, and fear of contracting COVID-19. The literature scan did not show any study that has documented findings on mental health issues among University students in South Africa. More studies focused on the mental health of health care professionals (Naidu, 2020; Kim et al., 2020), leaving out other vulnerable groups, i.e. students. This study tries to fill this gap, drawing insights from the literature to conceptualise the problem, focusing solely on anxiety and stress reports from the UFS students.

LITERATURE REVIEW

Mental health issues are among the most critical health problems experienced by humans, particularly students in Higher Education Institutions (HEI) (Quinn et al., 2009; Levecque et al., 2017). However, the extent of the problem has not been established in developing countries (Baloran, 2020). Therefore, case-specific studies are needed from HEI in these countries, with different socio-economic issues, to enable a global understanding of mental health issues across developing countries, particularly in HEI. In most developing countries, most mental health problems are reported to occur within the health sector (Lai et al., 2019). Little attention is paid to university students' mental health, especially during disasters, even though the Royal College of Psychiatrists (2003) reported an increasing number of students in higher education experiencing mental health problems. For example, in French Universities, Wathelet et al. (2020) students demonstrated anxiety, traumatic stress disorder, depression, and suicidal thinking in 28%, 22%, 16%, and 11% of students, respectively. Furthermore, Holm-Hadulla and Koutsoukou-Argyaki (2015) demonstrated that student mental health and specialized services helping students to come to terms with psychological problems are an important professional issue worldwide. Moreover, students' flexibility has been reported to be increasing worldwide, which will eventually exacerbate physiological problems and mental disorders (Pakenham et al., 2020). Detailed reports of psychological problems besetting university students are found in letters, autobiographies and notes of politicians Holm-Hadulla et al., 2010). For example, Prince (2015) reported increasing mental health issues among students in the United State of America (USA). Increased anxiety, depression, traumatic stress, and even suicidal thinking associated with COVID-19 quarantine has been amply documented in various countries and populations, but such studies are lacking in Africa.

Mental health and COVID-19

Many studies have linked fear and knowledge to mental health issues (Mertens et al., 2020; Salisbury, 2020; Thombs and Tao, 2020). Mertens et al. (2020) reported increased fear to be related to perceived risk and health anxiety in a social media survey of 439 participants. Several studies

reported individuals who are vulnerable to COVID-19 to experience high levels of fear, which could lead to acute and ongoing anxiety (Salisbury, 2020; Thombs and Tao, 2020; Ahorsu et al., 2020; Brooks et al., 2020). In the face of the COVID-19 pandemic it is important to identify factors that make people particularly vulnerable to developing mental-health issues and to gauge these issues case by case (Millroth and Frey, 2021). In this study UFS students' responses to anxiety and stress were measured.

Mental health measures and COVID-19

Females are regarded as the most vulnerable group in line with the sphere project standards. In addition, Eaton-Stull (2021) reported gender as a precipitator of Post-Traumatic Stress Disorder, with females as the most vulnerable gender compared to their male counterparts. In a meta-analysis study, the prevalence of anxiety in 17 studies with a sample size of 63,439 was found to be 31.9% in a systematic review (Salari et al., 2020). Women were also found to be more anxious 62% and more likely to adopt precautionary behaviour, such as avoiding going to the hospital as observed in a study done in Pakistan (Rabbani et al., 2022). In Iraq, females were found to be a significant independent factor for higher anxiety and stress levels (Kamal and Othman, 2020). In the USA an online study also reported that women had more negative emotional experiences during the pandemic to a point where they became more anxious (Alsharawy et al., 2021). The female gender was a significant predictor of health anxiety in a study done in Saudi Arabia (Al-Rahimi et al., 2021). A correlation has been reported between the level of vulnerability and anxiety during the COVID-19 pandemic (Al-Rahimi et al., 2021).

METHODOLOGY

Research design

The research design is a systematic plan and procedure to be followed in integrating the different components of the study coherently and logically to effectively address the research problem and answer the research questions (Leedy & Ormrod, 2015). This study adopted a mixed method research design to obtain qualitative and quantitative data. The quantitative component of the study was used to collect numeric data and the qualitative component was used to collect text data (Dubois, 2018). A mixed methods study, therefore, allows for a more holistic approach to research (Leedy & Ormrod, 2015).

Sampling method

This study conducted an anonymous Google form survey, distributed online using the UFS, bulk email system, with the assistance of the gatekeeper between December 2020 and January 2021. The survey was distributed with a consent form, ethical clearance obtained from the UFS and a gatekeeper permit.

The survey targeted all the undergraduate and graduate students at the UFS. The sample size included all the students who had been registered for the 2020 and 2021 academic year to gather maximum possible data to enhance generalizability. The Google form survey setting was adjusted to allow a participant to fill the form once, after submission of the form, the participant could not take the survey again. However, if the respondents wanted to make amendments on their responses, an option was given where they could anonymously contact the principal researcher.

This study used the Cronbach Alpha to test the reliability of the questions (Inal et al., 2017). The questionnaire was piloted with 10 students before administration to check for validity and reliability. For the pilot study, a preliminary analysis of the collected data was carried out to check the reliability and validity of the questionnaire. The questionnaire used for this study was developed by the researchers and was ethically approved by the University of the Free State Human ethics committee (ETHICS NUMBER). Data was retrieved from the online survey, entered into Microsoft Excel and then imported into R Statistical Software (version 4.0.4; 2021-02-15) for statistical analysis while text analysis was done for the qualitative part of the study to derive themes that were surfacing from the gathered data.

Research instrument

A semi-structured questionnaire survey was used to collect data for this study. Questions that were not answered in the survey were considered non-responses and were excluded from the analysis.

Quantitative data was captured in Microsoft Excel and analysed using Microsoft excel and R statistical Programme, while text analysis was used for the qualitative data of the study to derive themes that surfaced from the data gathered. Most questions allowed for dichotomous answers, coded as yes and no. Few trichotomous questions required yes, no, no response/not sure and/or do not know from the questionnaire.

Data collection

To address mental health issues amongst students, students' opinions and perceptions were prioritized. The study then collected data using a semi-structured questionnaire online survey, distributed electronically amongst the UFS students. The questionnaire was chosen to gather in-depth information on the students' perspective regarding their mental health issues since the start of COVID-19. To address mental health issues the researchers worked in collaboration with the GUniversity gatekeepers to develop a secure anonymous space accessible only to participating students and the lead researcher. Mental health issues are very sensitive, and a secure space was needed for this study. Students were invited to participate in the study through an initial email sent to the UFS gatekeepers describing the study's aim and inviting them to participate.

Students were invited to contact the main researcher if they felt uncomfortable completing the questionnaire. Interest in the study from students was much greater than anticipated with more than 300 students responding to the study amidst reports of people being COVID-19 fatigued. The study considered of ethical considerations, and the University of the Free State Human ethics committee gave ethical approval to the research. The participants were treated as confidential as possible, and the anonymity of the participants was preserved. Finally, information collected through the questionnaire was analysed using R statistical software program (See data analysis below).

Data analysis

Descriptive summaries concerning demographic information of the students and some level of knowledge about COVID-19 were used together with inferential statistics to:

- a) Assess the relationship between university majors of the students (grouped into the seven academic faculties of the UFS as the dependent variable) and students' reports of three independent variables:
- level of personal risk of acquiring COVID-19.
 - fear of contracting COVID-19; and
 - knowledge of the time it takes for COVID-19 to show symptoms after infection.

These issues were considered separately during the survey, a multinomial logistic regression analysis fitted from the *nnet* package in R (version 4.1.10 (2021-05-18)) with a multinomial function was applied to assess the relationship between the variables mentioned above. This statistical test was performed to understand the COVID-19 risk knowledge, and perception amongst the UFS students based on their faculty.

- b) To investigate the mental health of students during the COVID-19 pandemic, mental health measures (anxiety and stress) were used (Kecojevic et al., 2020) and gender as the most important demographic when it comes to mental health (Eaton-Stull, 2021; Wathélet et al., 2020; Browning et al., 2020). Two separate GLMMs fitted via maximum likelihood in R (version 4.1.0; 2020-05-18) with a *glmer* function and a poisson distribution (*lme4* package, Bates et al., 2015) were applied to assess the student's mental health status during the COVID-19 pandemic. The mental health measures were analysed separately as response variables. Gender and the interactions between gender and the students' faculty were set as predictor variables. For all models, student numbers were used as a random factor (intercepts only). The mental health measures could be influenced by the number of student reports per faculty since most students were from the NAS faculty (See results below). The model was checked to see if it was appropriate for the variables described above, and a suitable model was used, based on the plot of the residuals against the fitted values from each model. P values were generated using likelihood ratio tests. For all models, significance was determined using Wald (χ^2) statistics. All graphs were produced using a *GGplot2* package from the R software and tables were produced using Microsoft Excel 2010.

RESULTS

Demographic characteristics

The study participants were predominantly female, 66.8% between the 18-25 age group, 73.7% doing their post-graduate studies, 28.6% in the Bloemfontein campus, with no Biological and Health science university exposure. Most of the students, 70.2% of the respondents did not have either Biological or Health sciences exposure before they enrolled at the UFS. Furthermore, 79.1% of the respondents did not take any Biological or Health sciences majors at UFS (Table 1).

The issue of Biological and Health Science exposure in terms of COVID-19 is a very critical one, since exposure before or in a tertiary institution might assist in predicting the mental health based on respondents' basic knowledge of viruses even though COVID-19 is new. However, since most of the respondents did not have exposure to Biological and Health Sciences and not majoring in either led this study to investigate gender as the most critical demographic variable regarding mental health issues (Eaton-Stull, 2021). Eaton-Stull (2021) reports gender as one of the precipitators of post-traumatic stress disorder (PTSD).

Table 1. Demographic characteristics of the University of the Free State students in Bloemfontein, South Africa.

| Variables | Categories | Responses (N, %) |
|---|-------------------|------------------|
| Age groups | 18-25 | 289 (73.7) |
| | 26-35 | 70 (18) |
| | 36-45 | 18(5) |
| | 46-55 | 10(3) |
| | 56-65 | 2(0.5) |
| | NA | 3(0.8) |
| Gender | Male | 121 (30.9) |
| | Female | 262(66.8) |
| | Other | 4(1.02) |
| | Prefer not to say | 5(1.3) |
| Biological and Health Science University exposure | Yes | 111(28.3) |
| | No | 275(70.2) |
| | NA | 6(1.53) |
| Level of study | 1st year | 11(2.8) |
| | 2nd year | 111(28.1) |
| | 3rd year | 78(19.9) |
| | 4th year | 80(20.4) |
| | Post-graduate | 112(28.6) |
| Biological and Health Science as a University major | Yes | 78(19.9) |
| | No | 310(79.1) |
| | NA | 4(1.0) |
| Campus | Bloemfontein | 352(89.8) |
| | South campus | 7(1.8) |
| | QwaQwa | 33(8.4) |

Knowledge about COVID-19

The ('yes', 'no', maybe/not sure/no responses) of students to two questions from the survey were analysed to measure students' knowledge on COVID-19, as detailed below:

Students were asked whether COVID-19 can be transmitted by direct contact with an infected person; respiratory droplets and contact with contaminated surfaces as reported by the World Health Organization (WHO, 2021). Most students (n=372) reported maybe when asked if they knew how COVID-19 is transmitted, followed by (n=13) students who reported that they knew how COVID-19 is transmitted. A negligible number of students (n=7) did not know how COVID-19 is transmitted, as reported by WHO (2021). Furthermore, most students, (n=211) reported that were at risk of contracting COVID-19; followed by (n=103) who reported maybe and (n=78) who reported not being at risk of contracting COVID-19 (Figure 1).

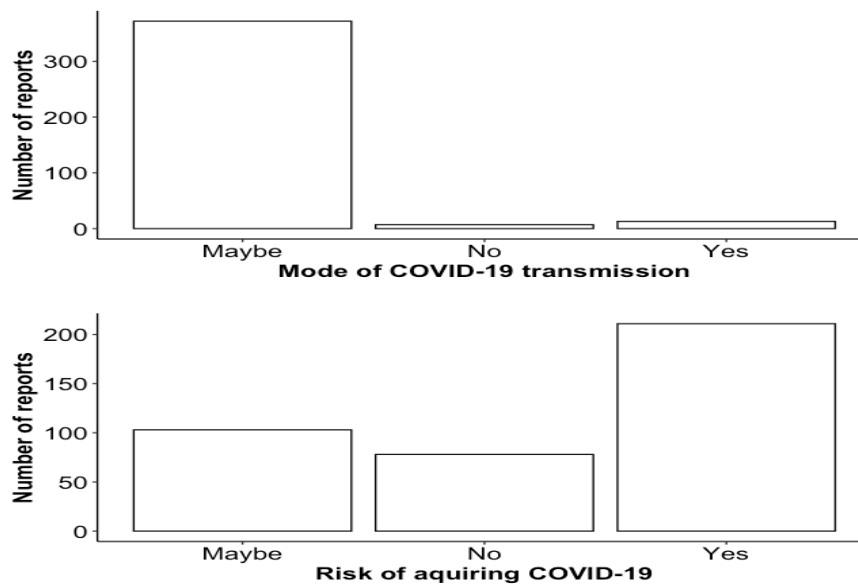


Figure 1: The number of reports on knowledge of the mode of COVID-19 transmission (top) and risk of acquiring or contracting COVID-19 (bottom) of the University of the Free State students in South Africa.

Level of risk, fear and knowledge of COVID-19

The multinomial analysis revealed student responses on the level of risk of acquiring COVID-19 (Wald $\chi^2_{56} = 59.88$, $P=0.336$), fear of contracting COVID-19 (Wald $\chi^2_{56} = 75.33$, $P=0.310$ and knowledge of the time it takes for COVID-19 to show symptoms after infection (Wald $\chi^2_{56} = 45.215$, $P = 0.848$) were not influenced by students' university majors based on their faculties. However, most of the students reported that the risk of contracting COVID-19 is medium, with most of the students reporting this medium risk coming from the NAS faculty (Figure 2). Furthermore, some students reported to be a little bit afraid of contracting COVID-19, but most of the students from the NAS faculty reported to be very afraid of contracting COVID-19. The majority of the respondents reported that COVID-19 takes up to 14 days to show symptoms, with most of the students coming from the NAS Faculty (Figure 2).

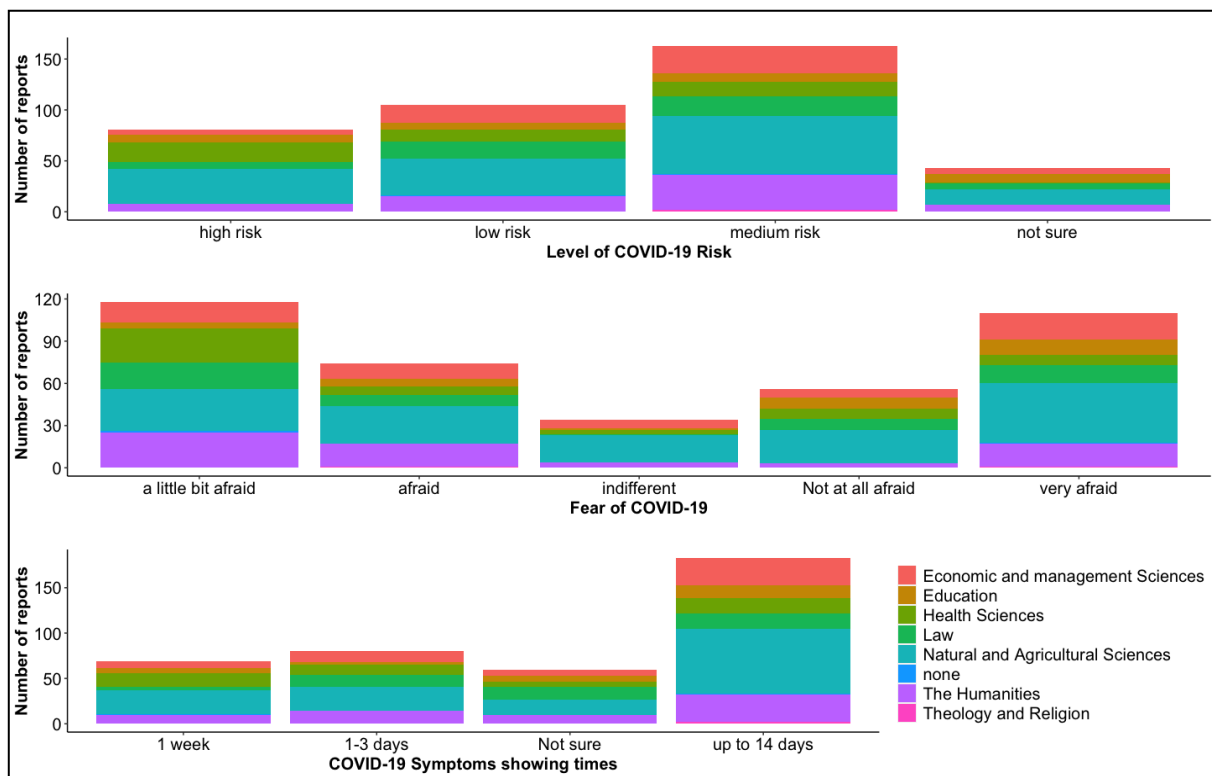


Figure 2: The number of reports per faculty on the level of personal risk of acquiring COVID-19 (top), fear of contracting COVID-19 (middle) and the time it takes COVID-19 to show symptoms (bottom) of the University of the Free State students in South Africa.

Variation in students’ responses for anxiety

Gender (Wald $\chi^2_3 = 63.8, P < 0.001$), faculty (Wald $\chi^2_7 = 145.6, P < 0.001$) and the interaction between gender and faculty (Wald $\chi^2_{11} = 23.5, P = 0.014$) were significant predictors of students’ anxiety. Significant higher reports of anxiety were from females, followed by males, students who chose other as their gender and those who chose not to reveal their gender. Furthermore, the highest number of students from the NAS faculty reported feeling anxious during the COVID-19 pandemic, followed by students from EMS, Law and Health Sciences with equal reports and Edu. A very negligible number of students did not report their faculty and were the same number of students as the ones from TAR with regard to reporting whether they felt anxious during the COVID-19 pandemic (Figure 3). Moreover, the highest number of anxiety reports was from females as compared to males across all faculties, with the highest number of reports coming from females in the NAS faculty (Figure 3). The number of students who responded to the survey per faculty did not influence the anxiety reports (Wald $\chi^2_1 = 0.7, P = 0.392$).

(Abbreviations for Figures 3 and 4: PNTS=Prefer Not To Say; All faculties of the University are abbreviated on the figure as follows; Edu=Education; EMS=Emergency Management Sciences, HS=Health Sciences, NAS=Natural and Agricultural Sciences, NF=No Faculty reported, TAR=Theology and Religion, TH=The Humanities)

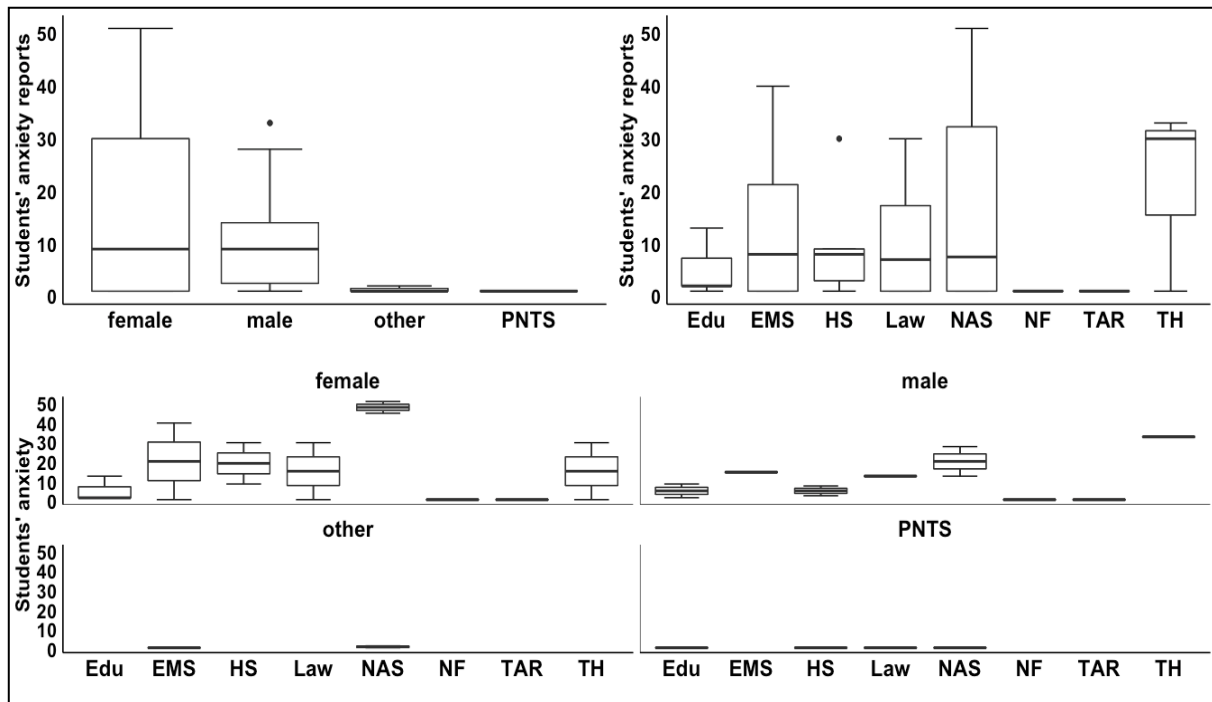


Figure 3: Anxiety reports during COVID-19 by gender (top left), faculty (top right) and the interaction between gender and faculty (bottom) by the students of the University of the Free State, South Africa. Boxes show medians (solid black line across the box) and 1st (top box) and 3rd (bottom box) quartiles. Whiskers show total range and dots outside of boxes indicate outliers.

Variation in students' responses for stress

Gender (Wald $\chi^2_3 = 50.7$, $P < 0.001$), faculty (Wald $\chi^2_7 = 150.6$, $P < 0.001$) and the interaction between gender and faculty (Wald $\chi^2_{10} = 23.4$, $P = 0.09$) were significant predictors of students reports on stress. As with anxiety, significantly higher stress reports were from females, followed by males, students who chose other as their gender and those who chose not to reveal their gender (Figure 4). Interestingly, the highest number of students from the TH faculty reported that they felt stressed during the COVID-19 pandemic, followed by students from NAS, Law, EMS, HS, Edu faculties. A very negligible number of students did not report their faculty and they were the same number of students as the ones from TAR regarding reporting whether they experienced stress at some point during the COVID-19 pandemic (Figure 4). Furthermore, the interaction graph shows more reports of stress were from females from the NAS faculty followed by males (Figure 4). The number of students who responded to the survey per faculty significantly influenced the stress reports given by students (Wald $\chi^2_1 = 1$, $P = 0.015$).

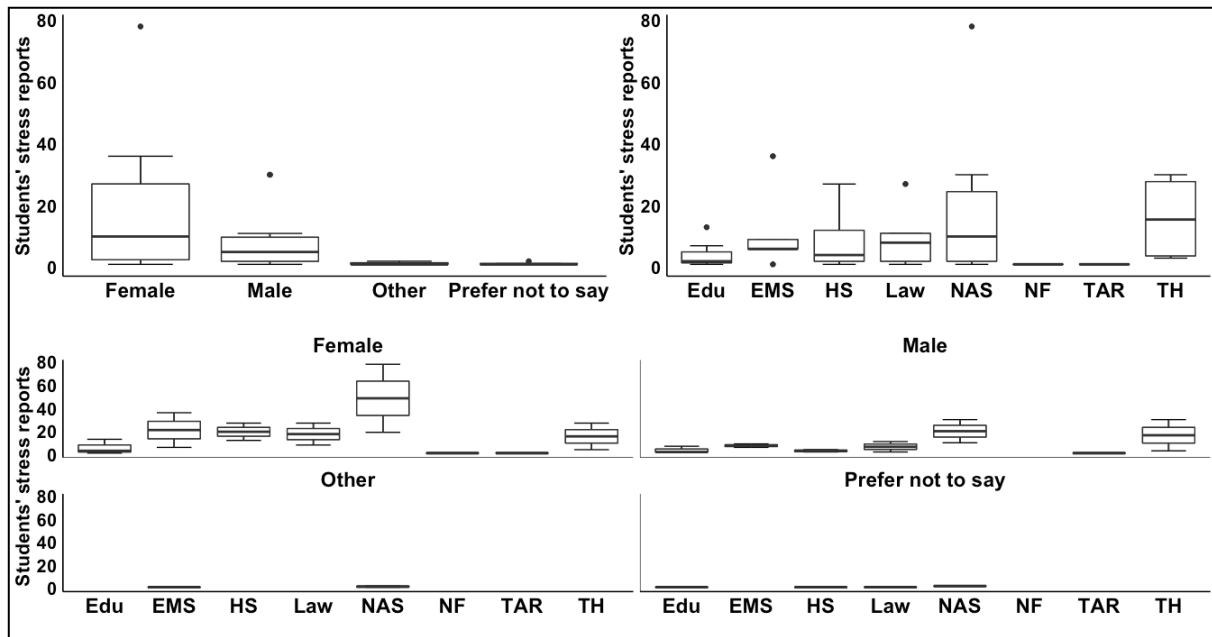


Figure 4: Stress reports during COVID-19 by gender (top left), faculty (top right) and the interaction between gender and faculty (bottom) by the students of the University of the Free State, South Africa.

DISCUSSION

A negligible number of students of the UFS (n=13 out of 392 responses) reported that they knew how COVID-19 is transmitted is worrisome, especially with most of the respondents (n=121) reporting that they are at risk of contracting COVID-19. Knowing the mode of transmission of a virus can to some extent reduce the risk of any individual. In addition, the response is surprising because of the availability of information regarding COVID-19 from reputable websites like WHO where students can get information. In contrast to the study findings, a study in the United States of America (USA) revealed that college students in New Jersey had a fundamental knowledge of COVID-19 transmission and tended to use and trust the official sources and changed their behaviour by following public health recommendations (Keckojevic et al., 2020). Nevertheless, the contradictory reports from students in America and South Africa cannot be reduced to tertiary affiliation only, other socio-demographic factors come into play, especially in South Africa as a developing country. For example, the USA, compared to South Africa, has free fiber for students and everyone to access news at any time they want. Even though not investigated by this study, internet access and load shedding could be some of the main reasons most of the students did not bother to visit the WHO website or any other reputable site to look for information.

Level of risk, fear and knowledge of COVID-19

The faculty that students are enrolled at did not determine the students' responses when they were asked on their level of risk of acquiring COVID-19. Their fear of contracting COVID-19; knowledge of the times it takes for COVID-19 to show symptoms after infection indicate and remove the bias associated with the highest number of respondents coming from the NAS faculty. However, most of the students from the NAS faculty reported medium risk of contracting COVID-19, this was surprising, as this faculty has students majoring in hard sciences, in particular biological sciences, where there is more awareness of viruses as compared to other academic faculties of the UFS. Furthermore, most students reported to be a little bit afraid of contracting

COVID-19, but most of the students from the NAS faculty reported to be very afraid of contracting COVID-19. This could be justified by the fact that most courses in the NAS faculties required students to be in the laboratories for experiments; fear of the unknown amidst the COVID-19 pandemic could have exacerbated the highest reports of contracting COVID-19 in this faculty as compared to other faculties. This finding could be attributed to the fact that some of the majors in this faculty include laboratory work, whereby social distancing could sometimes not be avoided due to common use of other materials and apparatus and the time it takes for experiments to run.

The majority of Health Science students reported being slightly afraid of COVID-19 after the NAS respondents. Lessons can be learnt from the Health Science students as some of these students were and are still working in hospitals for their practical modules. However, this finding could be attributed to the Personal Protective Clothing the Government provides the Health Sciences students with during their practical's, therefore reducing their risk level. Most of the respondents reporting that COVID-19 takes up to 14 days to show symptoms, could emanate from the fact that since the start of COVID-19 people who were in closed contact with a COVID-19 infected person were encouraged to isolated for 14 days. Students could not fail to be aware of this information on the mode of COVID-19 infection as this was practiced in most of their homes as the COVID-19 variants were emerging.

Variation in students' responses for mental health measures

Gender, faculty and the interaction between gender and faculty were significant predictors of students' reports on stress and anxiety during the COVID-19 pandemic. It was not surprising that female respondents reported significantly higher anxiety and stress reports. Studies reported females as the most vulnerable to anxiety as compared to their male counterparts (Browning et al., 2021; Al-Rahimi et al., 2021; Wathélet et al., 2020). A study in French universities reported females being more anxious during the COVID-19 pandemic (Wathélet et al., 2020). Furthermore, the highest number of students from the NAS faculty reported that they felt anxious at some point during the COVID-19 pandemic. Even though in the GLMM model NAS students' reports had the highest number, this finding was not surprising. The NAS students due to the nature of most of the courses in their faculty might have perceived themselves as vulnerable to COVID-19 as compared to students from other academic faculties. The finding of the highest number of students from The Humanities faculty reporting stress, was surprising and could not be explained by the study data. This study chose not to explore the majors in The Humanities faculties to further gauge student perceptions from this faculty, but rather to recommend for further studies.

CONCLUSION

In conclusion, compared to their male counterparts, women were reported to experience a disproportionate burden of the psychological impact of the COVID-19 pandemic (Rabbani et al., 2022). Also, in Asia, a study showed female students experienced a higher level of psychological impact (Browning et al., 2021). Therefore, mental health communication by the UFS and relevant stakeholders in healthcare targeting women should be considered a mental health risk reduction measure during disasters.

Based on the problematic knowledge of the respondents on the mode of COVID-19 transmission by a negligible number of the respondents, this study concludes that several modes of knowledge

and information dissemination should be considered in disaster situations. For example, theatrical knowledge dissemination could be very appealing to students. Even though the UFS was and still is consistent in sharing COVID-19 news on their official platforms, most students ignore the news. Indeed, a lot of literature reported students to be COVID-19 fatigued because of higher levels of anxiety (Browning et al., 2021; Labrague and Ballad, 2020; Wathelet et al., 2020). This could be one of the reasons the students' knowledge of COVID-19 about the mode of transmission was negligible in this study.

Although it is recognised that each institution of higher learning is different, the study captures an issue that might be similar in most institutions of higher learning in South Africa. Even though the findings of this study are not generalisable across South Africa or Africa as a continent, they offer an understanding of the anxiety and stress level by gender and faculties within the UFS which may need to be investigated in other institutions in South Africa. Given that the project was self-funded, other organizations for Mental Health and Well-Being in South Africa could use this finding to create a framework to take actions on addressing student mental health across the country. The study acknowledges that the UFS has done much work to address mental health issues amongst its community during the COVID-19 pandemic. However, it appears from the students' perspective in this study that there are still issues that still need to be addressed, such as gender if the UFS is going to effectively meet the needs of students with mental health problems.

RECOMMENDATIONS

Even though COVID-19 is new, this study recommends that role players and stakeholders in Disaster Management should in future come up with several alternative measures to disseminate disaster information, especially in a disaster where lockdown and isolation measures are keeping people, especially students glued to their screen. This study recommends further studies to investigate the report from The Humanities students about high stress levels.

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THE CHANGES IN EVENING SCREEN EXPOSURE AND SLEEP DISTURBANCES DURING THE COVID-19 PANDEMIC

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ABSTRACT

University students are within the group of vulnerable populations that experience great challenges. Social developmental transition and excessive use of smart devices coupled with the COVID-19 pandemic seem to have exacerbated their vulnerability. This study aimed to explore how individuals' sleep quality and sleep duration can be affected in disaster situations. Most importantly, this study assessed whether screen exposure before bedtime would affect the sleeping times of the University of the Free State (UFS) students amidst the COVID-19 pandemic while also determining whether electronic device usage would affect the sleep quality of the students. This study reports the results of an online -based-survey distributed among UFS students regarding evening screen exposure and sleep disturbances during the COVID-19 pandemic. The researcher used the UFS gatekeeper process to submit electronic questionnaires to students' email addresses. The descriptive summaries of the demographic characteristics of the students were represented by frequencies. The Generalised Linear Models (GLZs) were used to assess variations in students' responses by 1) electronic device usage and 2) sleep quality during the COVID-19 pandemic. In addition, the Generalised Linear Mixed Model (GLMM) was used to assess whether students' screen exposure before bedtime affected their sleep patterns during the pandemic. The R Statistical software was used to analyse all statistical data. Descriptive statistics showed that 256 students responded to this study, whereas inferential statistics revealed an effect of screen exposure, electronic device use, and sleep quality of the students and student responses separately. In line with studies around the world, this study revealed that most of the students reported reduced sleep quality together with reduced sleep duration since the beginning of the COVID-19 pandemic. In addition, most students reported that their screen exposure had increased since the beginning of the COVID-19 pandemic. Furthermore, many of the students reported that their screen exposure had affected their sleep time during the pandemic. Students who reported increased electronic device usage also reported decreased sleep quality. This paper showed a sleep-screen exposure link exacerbated by the COVID-19 pandemic among UFS students. While the government of South Africa is in the process of drafting policies to allocate free 10 gigabytes of data for its citizens, the new policies can take into consideration the findings from this study.

Keywords: Screen time, screen-based devices, sleep implications, students, COVID-19, Public Sector and HR: Education Culture and society

INTRODUCTION

South Africa went into lockdown on the 26th of March 2020, to combat the spread of COVID-19 infections and to reduce pressure on healthcare systems (Egbe & Ngobese, 2020). Hence, people were confined to their homes with limited access to many services, thus resulting in huge

complications. Lockdown measures, i.e., home confinement as a measure to mitigate the spread of the coronavirus, implemented in South Africa was a great strategy, but studies reported that it affected the physical and mental well-being of individuals (Erren et al., 2020; Wang et al., 2020; Zhao et al., 2020). Social isolation as a measure to reduce infection curtails access to family, friends, and other social systems that can cause loneliness, anxiety, and depression (Zhao et al., 2020). This motivates the greater use of digital devices that may alter and compromise sleep patterns (Majumdar, Biswas & Sahu, 2020).

The use of social media and digital devices provides a platform to ameliorate social isolation, but when used close to bedtime can negatively affect sleep among young adults (Orzech et al., 2016). Extensive use of social media by young adults between 18 and 35 years of age is linked with an elevated tendency to develop sleep problems and disruption of daily activities (Sivertsen et al., 2019). Additionally, excessive screen time is associated with problematic behaviors attributed to sleep disturbances and inattentiveness (Demirci et al., 2015; Parent et al., 2016; Tamana et al., 2019).

Worldwide, the COVID-19 pandemic has been reported to exacerbate community sleeping disorders (Altena et al., 2020; Majumdar et al., 2020; Salfi et al., 2021). However, an area that has received little attention in the COVID-19 literature is screen exposure among university students, especially in South Africa. Few studies have investigated the effects of COVID-19 on sleep but mostly focused on the medical staff or those who have been exposed to or suffered from COVID-19 and not students in institutions of higher learning (Brooks et al., 2020).

This study assessed the effects of electronic device usage before bedtime on the sleep quality of UFS students during the COVID-19 pandemic. This study wanted to demonstrate that in any disaster situation, individuals' sleep quality and sleep duration can be affected differently. Most importantly, the study assessed whether screen exposure affected the sleep times of the UFS students during the COVID-19 pandemic while also gauging if electronic device usage affected the students' sleep quality.

LITERATURE REVIEW

Many factors can affect sleeping patterns (Feng et al., 2014), but the role of mobile use in causing sleep problems has gained attention in the past few years (Akçay & Akçay, 2018). The current meta-analysis by Carter et al. (2016) showed that bedtime use of electronic devices was positively associated with poor sleep quality and excessive daytime sleepiness. Various mechanisms of mobile use at bedtime can cause poor sleep quality (Mireku, 2019). The blue light emitted by the screens of mobile phones contributes to poor sleep quality (Shechter, 2018). Moreover, mobile phones receive and transmit signals through radiofrequency electromagnetic fields (Patel, 2018), which can pass through the skull and reach the brain (Tattersall et al., 2001). Therefore, this technology may pose dangers to human health; of particular interest are its effects on sleep parameters and sleep electroencephalogram (Loughran et al., 2005).

College students are vulnerable populations that endure many challenges, risks, and social developmental transition (Feng, Du, Ye & He, 2014). The excessive use of smart devices (Feng, Du, Ye & He, 2014) coupled with the COVID-19 pandemic seems to exacerbate these challenges. Among a sample of 200 Stanford university students, 10% and 34% in the US acknowledged full addiction and almost addiction to iPhones, respectively (Kandell, 1998). Likewise, 11.2% of 276

African American college students showed a high level of Smartphone addiction (Lee, 2015). Whereas in Africa, a study in Nigeria found that university students in Southeast Nigeria spend a lot of time on screen-based devices (Adum, 2016).

Increased communication is associated with the use of screen and internet-based technology by college students (Clark et al., 2004). In addition, students use new media and screen devices for academic purposes (Adum, 2016). Aside from the many benefits of ubiquitous screen-based devices and technologies, the problem of overuse, compulsive use, pathological use, over-exposure, abuse, or addiction to them is becoming increasingly apparent (Davis, 1999). Students represent a particularly vulnerable group to problems associated with new media use (Adum, 2016). This is because students at least have a mobile phone. In contrast, others who do not have personal computers access them in their hostels, libraries, and computer labs or patronise cybercafes (Kandel, 1998).

Studies reveal that some kinds of effects could exist, based on the usage pattern for these technologies (Gustafsson, 2009; Linn, Almon & Wolfsheimer, 2012). Studies in the United States indicated low student awareness of the negative impact of too much screen time, and these studies did not focus specifically on health impacts (Anderson, 2001; Scherer, 1997). There is a need to ascertain students' awareness of the impact of exposure to screen-based devices, especially before bedtime. Huijberts et al. (2022) reported that the influence of pre-bedtime light-emitting screen use on sleep duration might partly attribute to differences in screen activities. However, Staple et al. (2021) reported that evening and bedtime screen use was related to more parent-reported sleep problems.

METHODOLOGY

Research design

In this study, a mixed-method research approach was adopted. The mixed method approach is embedded in the pragmatist research paradigm. It employed a qualitative approach to identify the thoughts and responses of students from the UFS to understand how their electronic devices use during the COVID-19 pandemic affected their sleep. To observe South Africa's lockdown regulations, such as social distancing, data for this study was collected using an online survey. The survey was made available online for a month after the study was approved. The sample included graduate and undergraduate students registered for the 2021 academic year at all UFS campuses.

The quantitative data from the completed survey was collected in Microsoft Excel version 16.39 and analysed using R Statistical programming language. The study calculated frequencies by using descriptive statistics to analyse the demographics of students and applied inferential statistics to analyse information sought questions.

Sampling method

The survey targeted UFS students across all campuses. The survey was sent to all UFS students registered for 2021 through the UFS gatekeeper's process to adhere to the POPIA Act. To avoid Pseudo replication of the results, participants could only submit one questionnaire. An option to make amendments was made available through the principal investigator should the participant want to make changes in their responses. Cronbach Alpha was used to test the questions (Inal et

al., 2017). The questionnaire for this study was also ethically approved by the University of the Free State Human ethics committee. Data were retrieved from Google forms as CSV files and analysed using R Statistical software (version 4.0.4; 2021-02-15).

Ethical consideration

This study received ethical approval from the UFS Human ethics committee (UFS-HSD2020/2149/21). In addition, the participants confirmed that they understood that their participation in the study was voluntary and was free to withdraw at any time without giving a reason and without any negative consequences. They were also free to not answer any particular question or questions. They were free to decline or withdraw by contacting the principal investigator at any time using the details provided on the survey. Furthermore, the participants confirmed that they understood that their responses and personal data would be kept confidential and gave permission for the principal investigator to have access to the data; most importantly, all participants agreed to take part in the study. To further ensure validity and reliability, the Google form responses of the 256 students were automatically time and date-stamped.

Research instrument and data collection

An online semi-structured e-questionnaire survey developed using Google forms by the principal investigator was used to collect data for this study. Questions that were not answered in the survey were considered non-responses and were excluded from the analysis. Data from the Google form was downloaded in CSV format and uploaded to R Statistical Software Programme. Only three questions across the study allowed for dichotomous answers, coded as yes and no; the rest were information-seeking questions related to the study objectives. There were no trichotomous questions that required yes, no, no response/not sure, and/or do not know from the questionnaire as the study wanted to get honest opinions of the student's on-screen use. Surprisingly, the interest in the study was much greater than anticipated, with more than 200 students responding to the questionnaire amidst informal reports that students are fatigued with COVID-19 studies.

Data analysis

Frequencies were used to report descriptive summaries of the demographic characteristics of the students. Data were mostly categorical and did not meet the assumptions of normality (Shapiro-Wilk test). Accordingly, nonparametric analyses were used. The Generalised Linear Models (GLZs) were applied first to assess variations in students' responses by 1) electronic device usage and 2) sleep quality of the UFS students during the COVID-19 pandemic.

The numerical frequencies of students' reports were analysed separately with the GLZs, with a *glm* function and Poisson distribution. Electronic device usage and sleep quality were reported separately as independent variables, with the number of student responses as the outcome variable for the two models. Data for this study is presented as bar plots. Secondly, the Generalised Linear Mixed Model (GLMM) fitted via maximum likelihood with a *glmer* function and a Poisson distribution (lme4 package, Bates *et al.* 2015) was applied to assess whether students' screen exposure before bedtime affected their sleep patterns during the COVID-19 pandemic.

The number of student responses was set as the outcome variable whereas screen exposure, sleep times, and the interactions between screen exposure and sleep time were set as predictor variables. The number of students was included as a random factor (intercepts only) because the student

responses could be influenced by the number of student reports for each predictor variable. The model fit for the variables described above was checked and used based on the plot of the residuals against the fitted values from each model. The P values were generated using likelihood ratio tests. For all models, significance was determined using Wald (χ^2) statistics, and the probability level was set at $P \leq 0.05$. All statistical tests and graphs were produced using a GGplot2 package from the R Statistical software (version 4.1.0; 2020-05-18).

RESULTS AND DISCUSSION

A total of 256 students responded to the survey and all confirmed that they read and understood the information sheet explaining the study. As expected, most of the respondents were female (n=181) followed by males (n=73) and two respondents preferred not to reveal their gender.

Interestingly, a significant number of respondents preferred not to divulge their age (n=27). This could be because of the stigma attached to the overuse of cell phones among students (Gajecki et al., 2014). It can only be assumed that older students are the ones who did not reveal their age since most of the younger students (n=190) reported their age followed by the students who still fall under the youth category 26-35 (n=36). It is reported across the world, that university students, particularly the youth, are glued to their small screens for a greater part of the day (Demirci et al., 2015; Parent et al., 2016; Tamana et al., 2019), now with the COVID-19 and online learning, these reports hold more truth. The survey was designed to make all questions compulsory not allowing the participants to see the next question before they answer the current one. Therefore, the researcher can only assume that the study title was a giveaway for some participants not to divulge their age or rather it was just the participants not willing to give their age group.

As expected, a very negligible number (n=8) of 1st-year students responded to the survey. However, most of the participants (n=85) were post-graduate students of the UFS, followed by the 2nd (n=62), 4th (n=52), and 3rd (n=49) year students respectively. Furthermore, most participants (n=227) were students at the Bloemfontein campus (n=233). In contrast, a negligible number (n=29) of the participants were both staff and students of the UFS from QwaQwa (n=22), and the South campus had only one respondent. All 256 participants reported that they have electronic devices and the majority reported delayed bedtime during the COVID-19 pandemic (Figure 1).

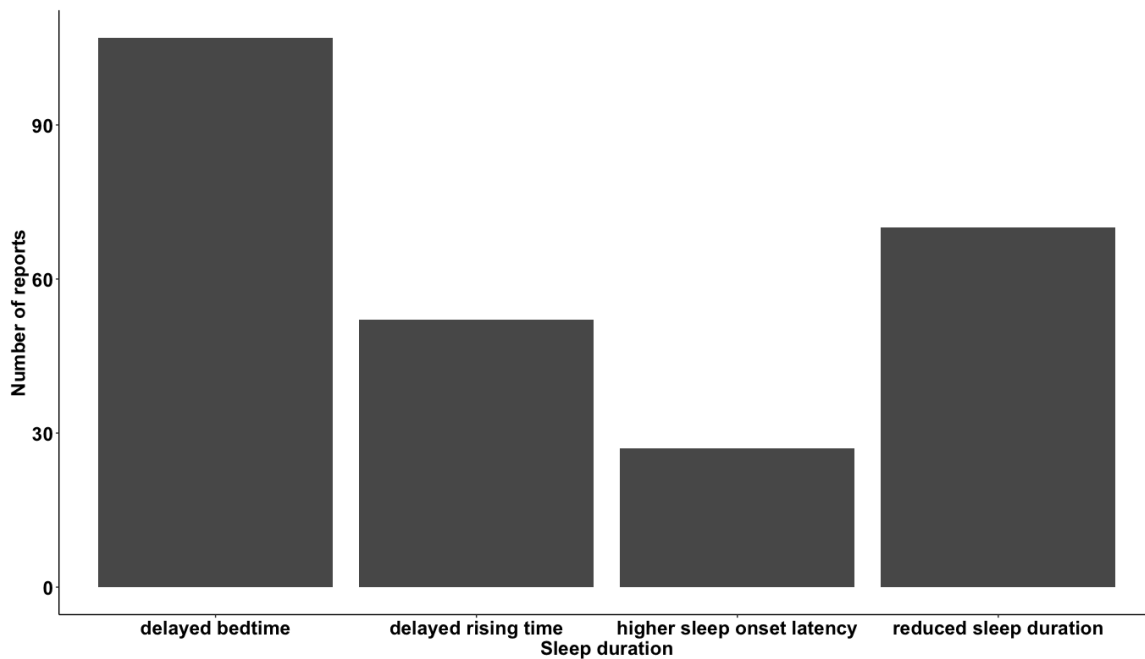


Figure 1: Responses of bedtimes amongst the University of the Free State students in Bloemfontein, South Africa, during the COVID-19 pandemic.

Variation by electronic device use and sleep quality

The electronic device use (Wald $\chi^2_3 = 2124.4$; $P < 0.001$) and sleep quality of the students (Wald $\chi^2_3 = 1799$; $P < 0.001$) were significant predictors of the number of student responses with the highest number of students reporting increased electronic device use followed by those students who reported their electronic use behavior to have not changed during the COVID-19 pandemic. As expected, a negligible number of students reported that their electronic usage had reduced during the COVID-19 pandemic (Figure 2). Furthermore, the majority of the students reported their sleep quality to have decreased during the COVID-19 pandemic, students also reported increased sleep quality and insomnia during the pandemic (Figure 2).

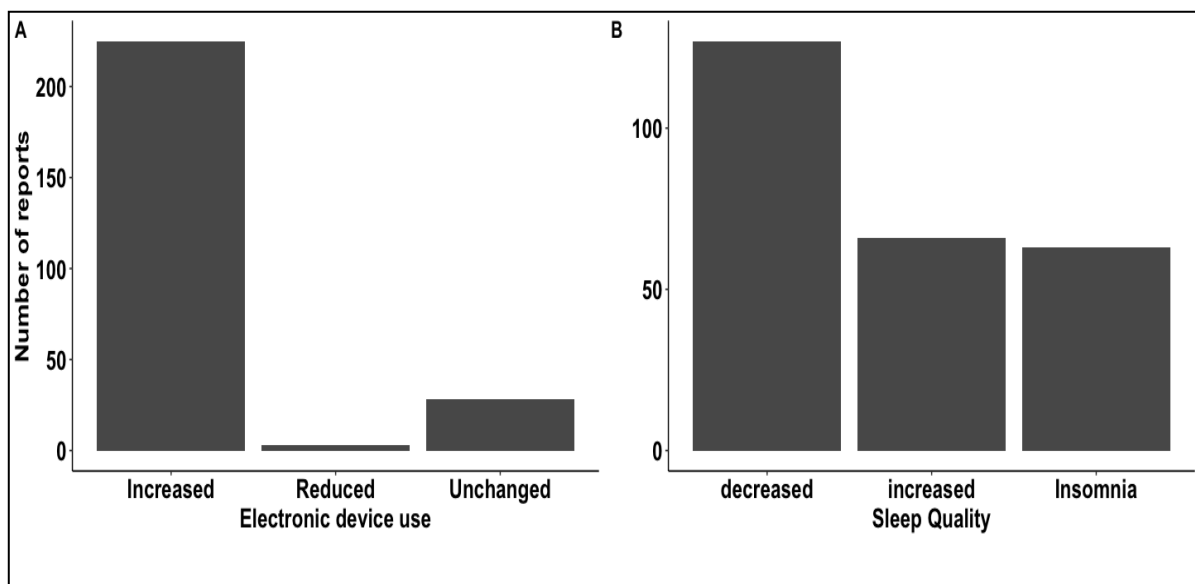


Figure 2: Frequency of the responses by electronic device use (A), Sleep Quality (B) amongst the University of the Free State students in Bloemfontein, South Africa, during the COVID-19 pandemic.

Variation in screen exposure and sleep time

Students were asked about their screen exposure before their usual bedtime, and most of the students reported that their screen exposure had increased since the start of COVID-19 (Figure 3). As a follow-up question, students were asked if they thought their screen exposure was affecting their sleep time during this COVID-19 pandemic, and most students reported yes (Figure 3).

Furthermore, screen exposure (Wald $\chi^2= 10.286$, $P=0.005$) significantly predicted the students' responses, but sleep time (Wald $\chi^2_1= 0.942$, $P=0.331$) and the interaction between sleep exposure and sleep time (Wald $\chi^2_2= 0.9,67$ $P = 0.616$) were not significant predictors of students' responses. There were significantly higher student reports of increased screen exposure before bedtime during the COVID-19 pandemic (Figure 3).

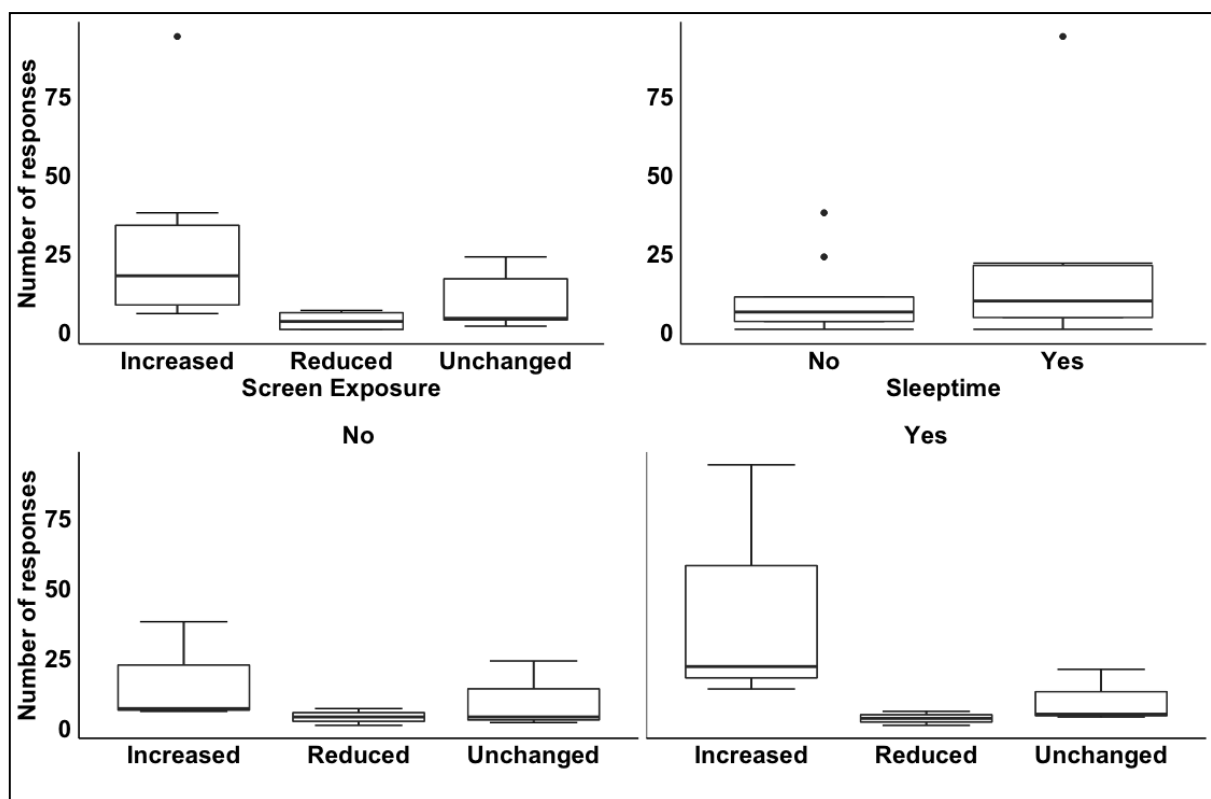


Figure 3: Students' reports by screen exposure (top left), sleep time (top right), and the interaction between sleep exposure and screen time (bottom) by the students at the University of the Free State, South Africa.

Boxes show medians (solid black line across the box) and 1st (top box) and 3rd (bottom box) quartiles. Whiskers show the entire range, and dots outside of boxes indicate outliers. Dots outside boxes indicate outliers.

A significant difference was recorded for reduced screen exposure and no significant differences were recorded for all the other variables and the interaction thereof (Table 1).

Table 1: The output of the GLMM model about age comparisons of the students for reports of screen exposure and sleep time. Significant predictors are shown in bold.

| Variables | Estimate | Std error | Z value | P value |
|---|---------------|--------------|---------------|---------------------|
| Screen Exposure: Reduced | -1.359 | 0.868 | -1.566 | P < 0.001 |
| Screen Exposure: Unchanged | -0.620 | 0.734 | -0.845 | P = 0.398 |
| Sleep time: Yes | 0.951 | 0.700 | 1.359 | P = 0.174 |
| Screen Exposure: Reduced* Sleep time: Yes | -1.063 | 1.225 | -0.868 | P = 0.386 |
| Screen Exposure: Unchanged* Sleep time: Yes | -0.782 | 1.021 | -0.766 | P = 0.444 |

DISCUSSION AND CONCLUSION

Consistent with studies around the world, this study revealed that most students reported reduced sleep quality since the beginning of COVID-19, followed by those with reduced sleep duration (Scherer, 1997; Linn, Almon & Wolfsheimer, 2012; Anderson, 2001; Gustafsson, 2009). In addition, most students reported increased screen exposure, which has affected their sleep time since the start of COVID-19. Furthermore, students who reported increased electronic device usage reported decreased sleep quality.

Variations in electronic device use and sleep quality

The results showed that the sampled students in this study who reported increased screen exposure also reported decreased sleep quality was not surprising since studies reported an increase in electronic devices usage during the COVID-19 pandemic (Bruni et al., 2021; Kennedy & Grandner, 2021; Salfi et al., 2021). Salfi et al. (2021) reported decreased sleep quality among 2 123 Italians with increased electronic device usage in 2021. In addition, a meta-analysis by Carter et al. (2016) showed that bedtime use of electronic devices was positively associated with poor sleep quality and excessive daytime sleepiness. The relationship between electronic device usage and sleep quality existed for University students as they had to attend online classes during the COVID-19 pandemic while in lockdown. Furthermore, Shechter (2018) reported that a major contributing factor to poor sleep quality is the blue light emitted by the screens of mobile phones. Some studies have found that exposure to blue light increases brain alertness (Lockley & Gooley, 2006) and can stimulate cognitive functions, leading to poor sleep quality (Daneault et al., 2014). The highest number of UFS students that reported increasing their screen usage before bedtime is worrisome not only for poor sleep quality but also for the student's health. Demirci, Akgönül & Akpınar (2015) found that in Turkey, depression, anxiety, and sleep quality among students were associated with Smartphone overuse.

Another study in Serbia reported a statistically significant and strong positive correlation between medical students' sleep quality and the use of mobile phones (Randjelović, 2019). Poor sleep quality has emerged as a relevant public health problem in technologically advanced societies (Cheung & Wong, 2011). Participants in this study who reported increased screen exposure also reported decreased sleep quality. The issue of electronic device use is very sensitive and cannot be tackled at an institutional level, especially in South Africa as a developing country. This study recommends policy interventions on these issues even though they will be difficult and controversial to handle even in developed countries.

Delayed bedtime during COVID-19

Most of the students reported delayed bedtime, followed by those who reported reduced sleep duration during the COVID-19 pandemic. Sleep problems during confinement may be an important issue for everyone, but some individuals are at a higher risk of developing sleep problems than others (Altena et al., 2020). Walker & Van Der Helm (2009) reported sleep as an important factor in regulating behavior and emotions. The novel coronavirus pandemic and its uncertainties coupled with periods of isolation were too challenging for university students, as shown by the research findings in terms of sleep.

Variation in screen exposure and sleep time

Students were asked about their screen exposure before their usual bedtime, and most reported that their screen exposure has increased since the start of COVID-19. Consistent with studies around the world, this finding was not surprising (Altena et al., 2020; Killgore et al., 2020; Kocevskaja et al., 2020; Majumdar et al., 2020). For example, a study in India reported excessive screen exposure by office workers and students (Majumdar et al., 2020) during the COVID-19 pandemic. Altena et al. (2020) **reported** that screen exposure might affect sleep quality when used close to bedtime.

These unprecedented changes occurred quickly because of the COVID-19 pandemic and lockdowns coupled with restrictions. The University of the Free State students is not an exception. Moreover, the stay-at-home regulation coupled with social distancing to curb the spread of the pandemic came with many challenges for students. These are the most socially vulnerable groups in communities as most students are still in their teenage years and very hormonal. Social contact is very vital to them. Therefore, most students reporting increased screen exposure during the pandemic could have been compensation for limited social life.

As a follow-up question, students were asked if they thought their screen exposure is affecting their sleep time amidst the COVID-19 pandemic and most students reported yes. Sleep times play an important part in humans because of the fundamental role sleep plays in emotion regulation. Therefore, sleep disturbance can directly affect the next day's emotional functioning (Pinto et al., 2020). The COVID-19 situation was likely to affect many factors that influence sleep quality (Kocevskaja et al., 2020).

RECOMMENDATIONS

This paper showed a sleep-screen exposure link exacerbated by the COVID-19 pandemic among UFS students. Although this is a very controversial issue that needs to be handled by institutions worldwide, unstructured mitigation from the Government of South Africa through policies can try to reduce the impact of this link among students in South Africa. For example, the Government of South Africa is in the process of drafting policies to allocate free ten gigabytes of data for its citizens, and the new policy can make use of the findings of this study.

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THE ASSOCIATION BETWEEN GENERATION Y STUDENTS' GLOBAL CONSUMER ACCULTURATION AND MATERIALISTIC INCLINATIONS IN SOUTH AFRICA

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ABSTRACT

Materialism tendencies, generally perceived as being a negative trait, are often attributed to Western mass-media, global marketing activities and other global consumer acculturation forces. However, empirical evidence supporting these allegations is limited, begging the question of whether such allegations are real or mere conjecture. Indeed, the findings from a recent study encompassing USA and Japanese Millennial consumers indicate that only openness to the global consumer culture contributes significantly to materialism tendencies, and only so in the individualistic and ethnically diverse context of the USA sample. In line with these findings, this study sought to investigate the association between South African Generation Y students' global consumer acculturation and materialistic inclinations. Data were gathered from a sample of 564 university students from three South African public universities. The questionnaire included four global acculturation dimensions and one materialism dimension. Data analysis included principle component analysis, descriptive statistics, a one sample t-test, confirmatory factor analysis, path analysis and an independent samples t-test. The findings indicate that South African Generation Y students exhibit materialistic tendencies and are cosmopolitan, open to the global culture and are exposed to both Western mass-media and global brand advertising. Path analysis results indicate that only openness to the global consumer culture is a statistically significant predictor of their materialistic tendencies and that while exposure to Western mass-media contributes to those tendencies, it does not do so in a significant manner. Furthermore, cosmopolitanism and exposure to global brand advertising had a negative, although insignificant, influence on materialism. In terms of gender differences, female respondents were significantly more open to the global consumer culture than the male respondents and indicated a significantly greater exposure to both Western mass-media and global brand advertising. The study's findings suggest that allegations that global consumer acculturation forces contribute significantly to Generation Y consumers' materialistic inclinations are more speculation than truth.

Keywords: Materialism values; global consumer acculturation; Generation Y, South Africa

1. INTRODUCTION

The concept of an increasingly homogeneous global consumer culture emerged against the backdrop of McLuhan's (1962:31) foretelling that the evolution of technology and electronic media would reduce the world into a metaphorical "global village" and Levitt's (1983) assertion that modernity, driven by technological advancements in communications, transport and travel, would cause national and regional differences to give way to a global communality in markets. Based on Robertson's observations of the "crystallization of the world as a single place" (1987a: 38) and "the emergence of the global human condition" (1987b: 23), Featherstone (1990) indicates

that the world's progressive interdependence and interconnectedness leads to global ecumenism and to the production of a global culture. In terms of consumption-related behaviour, Alden *et al.* (1999) explain that globalisation gives rise to a global consumer culture, with globally-shared consumption symbols and aspirations. Typically, this acculturation into the global consumer culture is taken to mean acculturation into Western-style consumption patterns (Czarnecka *et al.*, 2020; Sobol *et al.*, 2018; Robertson, 1987a.). The implication here being that globalisation and the forces of global consumer acculturation, particularly global brand advertising and exposure to Western media have a more insidious side, namely the global spread of consumerism, and conspicuous, compulsive and impulsive consumption; that is, the spread of materialistic values (Cleveland *et al.*, 2021; Czarnecka *et al.*, 2020; Cleveland & Bartsch, 2019; Sobol *et al.*, 2018; Strizhakova & Coulter, 2013; Paek & Pan, 2004). While theories of this effect abound (Paek & Pan, 2004), empirical evidence of it are contradictory. Cleveland *et al.* (2021) found that at the aggregate eight country sample level, with the exception of cosmopolitanism, there was a strong positive relationship between global acculturation forces and materialistic values, but that the predictive nature of those forces on materialistic values decreased substantially on the individual country level. Lysonski and Durvasula (2013) found only some of the global acculturation forces to have an influence on materialistic values in their Nigerian youth study, and report that this influence was moderate at best. In another study, Gonzalez-Fuentes (2019) found that openness to the global consumer culture was the only positive and only statistically significant predictor of materialistic values in his USA consumer sample and the only positive but non-significant predictor of those values in his Japanese consumer sample.

Against the background of these contradictory findings, this study set out to investigate the link between materialistic values and global acculturation forces in the context of South Africa, as an emerging economy. The target population selected for the study was Generation Y university students. Several studies (Sobol *et al.*, 2018; Carpenter *et al.*, 2013; Cleveland *et al.*, 2009) indicate that younger, more educated individuals exhibit a greater degree of global consumer acculturation than older, less educated individuals. As such, Generation Y university students were viewed as an ideal target population for testing the influence of global consumer acculturation forces on materialistic values in the South African context. Specifically, the study aimed at determining the extent to which Generation Y students exhibit materialistic values and identify with the global consumer culture, and whether the global acculturation forces of openness to the global culture, cosmopolitanism, and exposure to Western mass-media and global brand advertising influence their materialistic values. In addition, the study sought to determine whether Generation Y males and females differed significantly in terms of their level of materialistic tendencies and the extent to which they identify with the global consumer culture.

2. LITERATURE REVIEW

Culture plays a salient role in consumption-related behaviour (McCracken, 1986), and the progressive interdependence and interconnectedness between world cultures has fostered the emergence of the global consumer culture (Featherstone, 1990), characterised by globally-shared consumption symbols and aspirations (Alden *et al.*, 1999). Acculturation into this global consumer culture refers to the process by which individuals acquire the knowledge, skills and behaviours synonymous with this transnational, non-regional global consumer culture, with the purported drivers of this acculturation process being openness to the global consumer culture,

cosmopolitanism, self-identification with the global consumer culture, English language use, traveling experiences and attitudes, exposure to global mass media and exposure to global multi-national marketing activities (Cleveland & Laroche, 2007). One of the criticisms levelled against this acculturation into the global consumer culture is the theory that the process kindles and/or exasperates materialism, with predominantly Western consumer ideologies spreading from advanced Western economies to emerging and developing economies (Cleveland *et al.*, 2021; Czarnecka *et al.*, 2020; Cleveland & Bartsch, 2019; Sobol *et al.*, 2018; Strizhakova & Coulter, 2013; Paek & Pan, 2004).

Materialism refers to a devotion to worldly possessions and the avid desire to consume for non-utilitarian reasons such as status and novelty (Richins & Dawson, 1992). Generally, materialism has a negative connotation and is associated with envy, possessiveness, covetousness and avariciousness (Belk, 1985). Materialistic tendencies are linked to status consumption, conspicuous consumption, compulsive consumption and impulsive consumption (Czarnecka *et al.*, 2020; Podoshen & Andrzejewski, 2012). Richins and Dawson (1992) conceptualise materialism as a personal value and indicate that individuals with a high level of materialistic values view the acquisition of possessions as central to their lives and as essential to their happiness, and tend to assess their own and others' success in terms of the number and quality of possessions accumulated. Global brand marketing efforts and Western media promoting a hedonistic lifestyle and conspicuous consumption in particular are thought to trigger consumerism desires and encourage consumers in emerging economies to emulate their counterparts in the consumer societies of advanced Western economies (Cleveland *et al.*, 2021). Nevertheless, empirical evidence supporting the allegation that global consumer acculturation forces create and/or intensify materialistic tendencies across the globe are limited and contradictory, begging the question of whether such allegations are real or mere conjecture.

In their study of consumers in China, Fastoso and González-Jiménez (2020) indicate a statistically significant association between the latent factors of cosmopolitanism and materialism. This relationship is in contrast to the findings reported by Cleveland *et al.* (2009), who indicate a negative relationship between cosmopolitanism and materialism in seven of the eight countries that they sampled. However, they did find a strong positive relationship between these two factors in their South Korean consumer sample. In their study of Nigerian youths, Lysonski and Durvasula (2013) report that openness to the global consumer culture and exposure to Western media had a small but statistically significant positive influence on materialism, while cosmopolitanism and exposure to global brand advertising had a non-significant positive influence on those values. In their eight country study, Cleveland *et al.* (2021) report that openness to the global culture had a statistically significant positive influence on materialism in Mexico and India, a non-significant positive influence in Greece, Sweden and South Korea, and a non-significant negative influence in Canada, Chile and Hungary. Cosmopolitanism had a non-significant positive influence on materialism in Mexico, Hungary and South Korea, a non-significant negative influence in Canada, Chile, Greece and India, and a significant negative influence on materialism in Sweden. Exposure to Western media had a significant positive influence on materialism in Canada, Mexico, Chile, Greece, Hungary, Sweden and South Korea, but a non-significant negative influence on those values in India. Exposure to global brand advertising had a statistically significant positive influence on materialism in Greece and India, a non-significant positive influence in Canada, Mexico, Chile and Sweden, and a non-significant negative influence in Hungary and South Korea.

In his two country study, Gonzalez-Fuentes (2019) reports that openness to the global consumer culture had a statistically significant positive influence on materialism in the USA and a non-significant positive influence in Japan. He reports that cosmopolitanism, exposure to Western media and exposure to global brand advertising all had a negative, though non-significant influence on materialism in both the USA and Japan.

Against the backdrop of these findings, this study tested the most relevant global consumer acculturation forces as drivers of materialistic values, namely openness to the global culture, cosmopolitanism, exposure to Western media and exposure to global brand advertising.

3. RESEARCH METHODOLOGY

This study was guided by a descriptive research design and utilised a single cross-sectional sample design.

3.1 Sampling and data collection

In line with the objective of testing the influence of global acculturation forces on materialistic values, the target population for this study was Generation Y university students. The assumption here being that younger and better educated individuals have a stronger affinity with the global consumer culture. Specifically, the target population was defined as male and female 18 to 24 year-old students registered at South African public universities. Taking into account cost constraints, the sampling frame was constrained to university campuses situated in the Gauteng province, which is the most populace province in the country (Statistics South Africa, 2020). Thereafter, judgment sampling was used to select three campuses in the province, with the criteria being to ensure that students from each of South Africa's three main types of public universities, namely universities of technology, comprehensive universities and traditional universities, were represented in the sample. Applying a mall-intercept style approach, fieldworkers administered the survey questionnaire to a non-probability convenience sample of 600 students at the three selected universities' campuses (200 per campus).

3.2 Research instrument

A self-reporting survey questionnaire was used to record the required data. The questionnaire included a section designed to capture demographic information as well as a section designed to measure relevant global consumer acculturation forces and materialism values that included scales from published studies. Materialistic values were measured using the three-item scale developed by Richins (2004) that included the items of "I like a lot of luxury in my life", "I admire people who own expensive homes, cars and clothes" and "I'd be happier if I could afford more things". The global acculturation forces deemed relevant to this study included openness to the global culture, cosmopolitanism, exposure to Western media and exposure to global brand advertising. The five-item scale used to measure openness to the global consumer culture was an extended version of the Cleveland and Laroche (2007), the added items based on the idea that the youth generally share similar leisure interests, concerns, hopes and ambitions across the globe (Frank & Watchravesringkan, 2016; Wee, 1999). These five items included University students like me generally "enjoy the same leisure activities across the globe", "have the same hopes and ambitions across the globe", "listen to the same type of music across the globe", "watch the same type of films/TV programmes across the globe" and "experience similar concerns and worries across the

globe”. Cosmopolitanism and exposure to Western media were measured using the scales from the Cleveland *et al.* (2013) study. Cosmopolitanism included the four items of “I enjoy being with people from other countries to learn about their views and approaches to life”, “I like to observe people of other cultures to see what I can learn from them”, “I enjoy exchanging ideas with people from other cultures or countries” and “I am interested in learning more about people who live in other countries”, while exposure to Western media included the three items of “I enjoy watching Hollywood films”, “I often watch Hollywood TV programmes” and “Some of my favourite actors/actresses are from Hollywood”. Exposure to global brand advertising was measured using Durvasula and Lysonski’s (2016) abridged version of Cleveland and Laroche’s (2007) scale, which was adapted to include exposure to global brands on television, social media sites and in print media. The three items included in this scale were “When I am watching TV, I often see advertisements for global brands”, “When I am on social media sites, I often see advertisements for global brands” and “When I read newspapers/magazines, I often see advertisements for global brands”. Responses to these 18 scaled-response items were recorded on a six-point Likert-style scale.

3.3 Data analysis

The captured data were analysed using IBM’s Statistical Package for Social Sciences (SPSS) and Analysis of Moment Structures (AMOS), Versions 27. Data analysis included frequencies and percentages, principal component analysis using varimax rotation, descriptive statistics, a one sample t-test, an independent samples t-test, confirmatory factor analysis and path analysis using the maximum likelihood approach, and measures of reliability and construct validity.

4. RESULTS

Field work resulted in 564 completed questionnaires being collected from the 600 distributed. Table 1 provides a profile of the respondents who formed part of the study’ sample.

Table 1. Sample’s respondent profile

| | Frequency | Percentage (%) | | Frequency | Percentage (%) |
|---------------------|-----------|----------------|----------------------|-----------|----------------|
| Gender | | | Home language | | |
| Female | 309 | 55 | Afrikaans | 45 | 8 |
| Male | 255 | 45 | English | 53 | 9 |
| Age | | | Ndebele | 6 | 1 |
| 18 | 5 | 1 | Xhosa | 45 | 8 |
| 19 | 62 | 11 | Zulu | 98 | 17 |
| 20 | 151 | 27 | Northern Sotho | 46 | 8 |
| 21 | 143 | 25 | Southern Sotho | 121 | 22 |
| 22 | 92 | 16 | Tswana | 59 | 11 |
| 23 | 53 | 9 | Swati | 30 | 5 |
| 24 | 58 | 10 | Venda | 25 | 4 |
| Universities | | | Tsonga | 36 | 6 |
| Traditional | 196 | 35 | | | |
| UoT | 186 | 33 | | | |
| Comprehensive | 182 | 32 | | | |

The information laid out in Table 1 indicates that each of South Africa’s three main types of universities, each of the country’s 11 official languages and each of the seven age categories set out in the target population description were represented in the sample data. Slightly more female

than male respondents participated in the study and the majority of the respondents fell into the 20- and 21-year old categories (52%) and ticked Southern Sotho (22%) as their home language.

Following the computation of frequencies and percentages for sample description purposes, a principal component analysis was conducted applying varimax rotation to check for cross-loading items and for any items loading on a factor not in line with the literature. A Kaiser-Meyer-Olkin (KMO) of 0.785 and Bartlett's Test of Sphericity value of χ^2 3829.677, df 153, $p \leq 0.01$ confirmed that the data set was appropriate for principal component analysis (Pallant, 2020). Table 2 presents the rotated components, communalities, eigenvalues and percentage of variance extracted values.

Table 2: Rotated components and communalities

| Items | Factors | | | | | Communalities |
|-------------------------------|---------|-------|-------|-------|-------|---------------|
| | 1 | 2 | 3 | 4 | 5 | |
| MV1 | | | | .718 | | .567 |
| MV2 | | | | .863 | | .758 |
| MV3 | | | | .821 | | .679 |
| OGC1 | .660 | | | | | .496 |
| OGC2 | .753 | | | | | .590 |
| OGC3 | .812 | | | | | .678 |
| OGC4 | .803 | | | | | .694 |
| OGC5 | .748 | | | | | .595 |
| COS1 | | .785 | | | | .627 |
| COS2 | | .855 | | | | .748 |
| COS3 | | .854 | | | | .736 |
| COS4 | | .788 | | | | .654 |
| EWM1 | | | .875 | | | .786 |
| EWM2 | | | .858 | | | .777 |
| EWM3 | | | .746 | | | .619 |
| EGB1 | | | | | .756 | .585 |
| EGB2 | | | | | .852 | .755 |
| EGB3 | | | | | .774 | .666 |
| Eigenvalues | 4.313 | 2.565 | 2.091 | 1.639 | 1.403 | |
| Percentage of variance | 23.96 | 14.25 | 11.61 | 9.11 | 7.79 | |

MV: materialistic values; OGC: openness to global culture; COS: cosmopolitanism; EWM: exposure to Western media; EGB: exposure to global brand advertising

The results set out in Table 2 indicate that five components were extracted that explained 66.73 of the total variance. No items cross-loaded and all items loaded as per the literature. All communality values were above 0.40, thereby indicating that each of the items relate adequately to the other items in their respective component (Costello & Osborne, 2005). Furthermore, all loadings were above 0.50, signifying both statistical and practical significance (Hair *et al.*, 2019). Therefore, the underlying factor structure of five components reported in Table 2 is consistent with the literature; that is, consistent with the prior criterion approach followed in this study.

Once the structural integrity of the components solution had been established, confirmatory factor analysis was carried out in AMOS using the maximum likelihood method. This confirmatory factor analysis included measures of internal-consistency (α) and composite reliability (CR), measures of convergent and discriminant validity and model fit index assessment.

Reliability requires Cronbach α and CR values of 0.70 and above (Hair *et al.*, 2019), convergent validity necessitates CR values of 0.70 and above, together with standardised loading estimates and average variance extracted values (AVEs) of 0.50 and above, and discriminant validity calls for the square root of those AVE values (\sqrt{AVE}) to exceed their relevant correlation coefficients

(Fornell & Larcker, 1981). Given the salience of establishing discriminant validity when dealing with multi-variate statistical analysis, this study also included the computation of the heterotrait-monotrait (HTMT) correlation ratios between the latent factors, where values below 0.85 provide an additional indication of discriminant validity (Franke & Sarstedt, 2019). The measurement model specified for testing comprised the five latent factors of materialistic values (three indicators), openness to global culture (five indicators), cosmopolitanism (four indicators), exposure to Western media (three indicators) and exposure to global brand advertising (three indicators).

With the loading of the first indicator of each of the five latent factors set at 1.0, this equated to 189 distinct sample moments, 64 distinct parameters to be estimated and 125 degrees of freedom (df) based on an over-identified model and a chi-square value of 345.285, with a probability level equal to 0.000. The chi-square value returned by AMOS suggested poor model fit. However, this statistic is ill-famed for being susceptible to larger sample sizes (Byrne, 2010). As a result, the study considered other model fit indices. These indices included the normed fit index (NFI), the Tucker-Lewis index (TLI), the comparative-fit index (CFI), the standardised root mean square residual (SRMR) and the root mean square error of approximation (RMSEA). Acceptable model fit requires NFI, TLI and CFI values above 0.90, along with SRMR and RMSEA values below 0.08 (Malhotra, 2020).

Table 3 outlines the standardised loading estimates, error variance estimates, Cronbach α , CR, AVE, $\sqrt{\text{AVE}}$ values, correlation coefficients and HTMT ratios.

Table 3: Standardised loading estimates, error variance estimates, α , CR, AVE, $\sqrt{\text{AVE}}$ values, correlation coefficients and HTMT ratios

| Latent factors | Items | Standardised loading estimates | Error variance estimates | α | CR | AVE | $\sqrt{\text{AVE}}$ |
|---------------------|----------|--------------------------------|--------------------------|----------|----------|----------|---------------------|
| F1 | MV1 | 0.590 | 0.652 | 0.742 | 0.759 | 0.518 | 0.720 |
| | MV2 | 0.862 | 0.256 | | | | |
| | MV3 | 0.680 | 0.538 | | | | |
| F2 | OGC1 | 0.559 | 0.688 | 0.832 | 0.831 | 0.501 | 0.708 |
| | OGC2 | 0.622 | 0.613 | | | | |
| | OGC3 | 0.795 | 0.368 | | | | |
| | OGC4 | 0.825 | 0.319 | | | | |
| | OGC5 | 0.702 | 0.507 | | | | |
| F3 | COS1 | 0.681 | 0.537 | 0.848 | 0.850 | 0.587 | 0.766 |
| | COS2 | 0.845 | 0.286 | | | | |
| | COS3 | 0.818 | 0.331 | | | | |
| | COS4 | 0.709 | 0.497 | | | | |
| F4 | EWM1 | 0.817 | 0.332 | 0.805 | 0.815 | 0.599 | 0.774 |
| | EWM2 | 0.848 | 0.281 | | | | |
| | EWM3 | 0.640 | 0.590 | | | | |
| F5 | EGB1 | 0.569 | 0.677 | 0.742 | 0.755 | 0.512 | 0.715 |
| | EGB2 | 0.826 | 0.318 | | | | |
| | EGB3 | 0.728 | 0.470 | | | | |
| Correlations | F1<->F2: | F1<->F3: | F1<->F4: | F1<->F5: | F2<->F3: | F2<->F4: | |
| | 0.271 | 0.002 | 0.106 | 0.037 | 0.186 | 0.335 | |
| | F2<->F5: | F3<->F4: | F3<->F5: | F4<->F5: | | | |
| | 0.251 | 0.111 | 0.228 | 0.365 | | | |
| HTMT ratios | F1<->F2: | F1<->F3: | F1<->F4: | F1<->F5: | F2<->F3: | F2<->F4: | |
| | 0.342 | 0.020 | 0.156 | 0.069 | 0.219 | 0.347 | |
| | F2<->F5: | F3<->F4: | F3<->F5: | F4<->F5: | | | |
| | 0.258 | 0.134 | 0.249 | 0.400 | | | |

| Latent factors | Items | Standardised loading estimates | Error variance estimates | <i>a</i> | CR | AVE | $\sqrt{\text{AVE}}$ |
|--------------------------|-------|--------------------------------|--------------------------|----------|--------|-----|---------------------|
| Model fit indices | NFI: | TLI: | CFI: | SRMR: | RMSEA: | | |
| | 0.911 | 0.928 | 0.941 | 0.049 | 0.056 | | |

MV: materialistic values; OGC: openness to global culture; COS: cosmopolitanism; EWM: exposure to Western media; EGB: exposure to global brand advertising

The measurement model estimates depicted in Table 3 indicate evidence of composite and internal-consistency reliability, with all Cronbach *a* and CR values exceeding 0.70 (Hair *et al.*, 2019). These CR values, along with all standardised loading estimates and computed AVE values exceeding 0.50 confirm convergent validity. The discriminant validity of the latent factors in the measurement model is confirmed given that each computed $\sqrt{\text{AVE}}$ value exceeds its relevant correlation coefficients (Fornell & Larcker, 1981) and that all HTMT ratios are lower than 0.85 (Franke & Sarstedt, 2019). The NFI of 0.911, TLI of 0.928, CFI of 0.941, SRMR of 0.049 and RMSEA of 0.056 all infer acceptable model fit (Malhotra, 2020).

Therefore, the findings of the confirmatory analysis affirm that the influence of global consumer acculturation forces on Generation Y students' materialistic tendencies is a five-factor model comprising materialistic values, openness to global culture, cosmopolitanism, exposure to Western media and exposure to global brand advertising that presents as reliable and valid, and has acceptable model fit.

Before conducting the path analysis, the descriptive statistics were computed, together with a one sample t-test in order to determine the extent to which Generation Y students exhibit materialistic values and are open to the global culture, cosmopolitan, and are exposed to Western mass-media and global brand advertising. Descriptive statistics computed included means and standard deviations. For the one sample t-test, the expected mean was set at 3.5. These results of these are presented in Table 4.

Table 4: Descriptive statistics, t-statistics and *p*-values

| Latent factors | Means | Standard deviations | t-statistics | <i>p</i> -values |
|--------------------------------------|-------|---------------------|--------------|------------------|
| Materialistic values | 4.154 | 1.25480 | 38.733 | 0.000 |
| Openness to global culture | 4.181 | 1.02018 | 22.071 | 0.000 |
| Cosmopolitanism | 4.907 | 0.86291 | 37.215 | 0.000 |
| Exposure to Western media | 4.554 | 1.13453 | 15.849 | 0.000 |
| Exposure to global brand advertising | 4.913 | 0.90141 | 12.371 | 0.000 |

*Significant at $p \leq 0.01$

The t-statistics computed using the one sample t-test and their related *p*-values presented in Table 4 indicate that responses recorded on the six-point Likert-type scale were all significantly ($p \leq 0.1$) above the set expected mean of 3.5 and, therefore, in the agreement portion of the scale. The highest mean recorded was for exposure to global brand advertising (mean = 4.913), which is not surprising given the extensive number of advertisements, including advertisements for global brands that Generation Y consumers confront daily, not only through traditional media but now also through online social media platforms (Fallon, 2021). The next highest mean was recorded for cosmopolitanism (mean = 4.907). Pichler (2011) explains that higher levels of cosmopolitanism are linked to younger, better educated individuals who reside in multi-cultural societies, which explains the high mean recorded here for South African Generation Y university students. The next highest mean was recorded on the exposure to Western media factor (mean = 4.554). This

high mean is likely the result of the extent of Western-generated, especially Hollywood-generated content on popular South African entertainment platforms such as DStv, ShowMax and Netflix (Mwangi, 2020), as well as the amount of Hollywood celebrity gossip reported on in locally-available magazines. With Cohn’s d-values ranging between 0.929 and 1.631 (large effect size), exposure to global brand advertising, cosmopolitanism and exposure to Western media, were all also practically significant (Cohen, 1992). The two lowest means were recorded for openness to the global culture (mean = 4.181) and materialistic values (mean = 4.154). However, these means were still statistically significant ($p \leq 0.1$) and practically significant, with a computed Cohn’s d of 0.667 (medium effect size) for openness to the global culture and 0.521 (medium effect size) for materialistic values (Cohen, 1992). The statistically and practically significant mean for materialism values is in line with the findings of Cleveland *et al.* (2009), who indicate that younger individuals are more prone to materialism tendencies than older individuals. Taken together, these results suggest that Generation Y students in South Africa have materialistic values and are cosmopolitan, open to the global culture and are exposed to Western mass-media, as well as global brand advertising. In a study on young Nigerian consumers in Lagos, Lysonski and Durvasula (2013) also recorded high means for cosmopolitanism, exposure to global brand advertising, cosmopolitanism and exposure to Western media and lower means for openness to the global culture and materialistic values. However, in contrast to the findings of this study, the means they recorded for openness to the global culture and materialistic values were statistically and, obviously practically, non-significant.

Path analysis then ensued to address the primary aim of this study, which was to determine whether the forces of global consumer acculturation contribute to materialistic inclinations amongst Generation Y students in South Africa. The un-standardised and standardised regression estimates, together with the standard errors and p -values produced by AMOS are reported in Table 5.

Table 5.: Path analysis results

| Latent factors | Un-standardised β | Standardised β | SE | p |
|---|-------------------------|----------------------|-------|--------|
| Openness to global culture \rightarrow Materialistic values | 0.399 | 0.282 | 0.086 | 0.000* |
| Cosmopolitanism \rightarrow Materialistic values | -0.061 | -0.045 | 0.069 | 0.377 |
| Exposure to Western media \rightarrow Materialistic values | 0.027 | 0.028 | 0.054 | 0.623 |
| Exposure to global brand advertising \rightarrow Materialistic values | -0.058 | -0.034 | 0.098 | 0.558 |

*Significant at $p \leq 0.01$

As is evident in Table 5, the only global acculturation force to have a statistically significant positive influence of Generation Y students’ materialistic values was openness to the global culture ($\beta = 0.28$, $p = 0.00 < 0.01$). In practical terms, with a Cohen’s f^2 of 0.085 ($R^2/1-R^2$) this would constitute a small-medium effect (Cohen, 1992). Whilst exposure to Western media was a positive predictor of their materialistic values, that influence was statistically non-significant ($\beta = 0.028$, $p = 0.62 > 0.01$). Both exposure to global brand advertising ($\beta = -0.034$, $p = 0.56 > 0.01$) and cosmopolitanism ($\beta = 0.045$, $p = 0.37 > 0.01$) had a negative but non-significant influence on Generation Y students’ materialistic values. While these findings are contrary to the aggregate of the eight country results reported by Cleveland *et al.* (2021), they are similar to some of their individual country findings. These findings are similar to those of Lysonski and Durvasula’s (2013) Nigerian young consumer sample in terms of openness to the global culture being a

significant predictor of materialistic values and exposure to global brand advertising having a non-significant influence on those values. However, unlike the current study, the Nigerian study also found exposure to Western media to have a statistical significant influence on those consumers' materialistic values. Interestingly, the results of the current study almost mirror those of Gonzalez-Fuentes (2019), who found that openness to the global consumer culture was the only positive and only statistically significant predictor of materialistic values in his USA consumer sample and the only positive but non-significant predictor of those values in his Japanese consumer sample. These results are depicted visually in Figure 1.

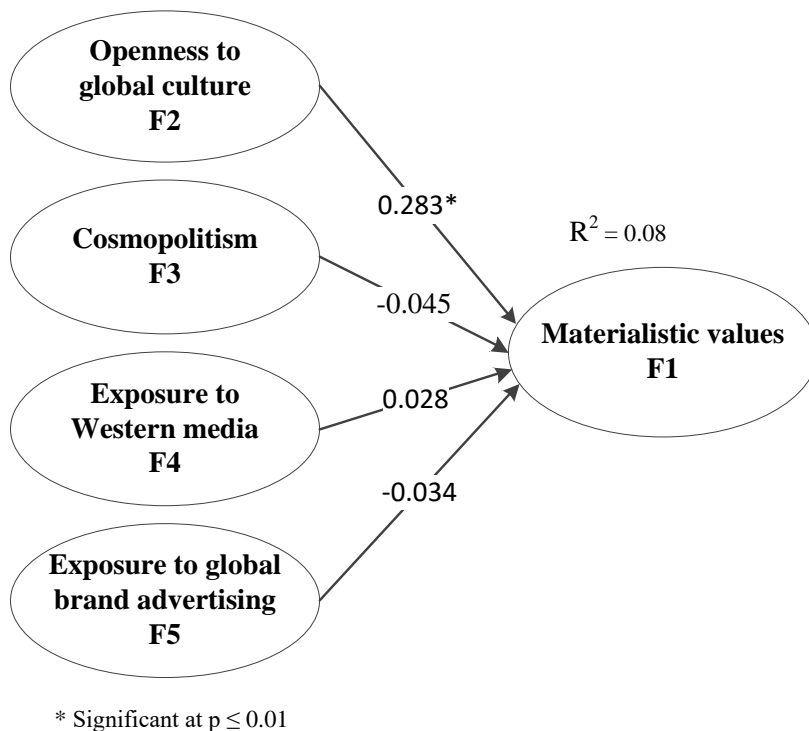


Figure 1: Structural model

As shown in Figure 1, with a squared multiple correlation of $R^2 = 0.08$ the global acculturation forces explain a negligible 8 percent of the variance in Generation Y students' materialistic values in South Africa. In terms of the model fit indices, this structural model also exhibited acceptable model fit with NFI of 0.911, TLI of 0.928, CFI of 0.941, SRMR of 0.049 and RMSEA of 0.056 (Malhotra, 2020).

The results of the two independent samples t-test conducted to ascertain if there were any significant differences between male and female respondents are reported in Table 6.

Table 6: Gender differences

| Latent factors | Means Males | Means Females | t-statistics | p-values |
|--------------------------------------|-------------|---------------|--------------|----------|
| Materialistic values | 4.203 | 4.113 | 0.841 | 0.400 |
| Openness to global culture | 4.053 | 4.286 | -2.712 | 0.007* |
| Cosmopolitanism | 4.854 | 4.952 | -1.330 | 0.184 |
| Exposure to Western media | 4.404 | 4.679 | -2.879 | 0.004* |
| Exposure to global brand advertising | 4.716 | 5.074 | -4.686 | 0.000* |

*Significant at $p \leq 0.01$

As presented in Table 6, while a higher mean was recorded for males on the materialistic factor, higher means were recorded for females on each of the global consumer acculturation factors. There were statistically significant differences between male and female sample participants on three of the five factors, namely openness to the global culture ($p = 0.007 < 0.01$), exposure to Western media ($p = 0.004 < 0.01$) and exposure to global brand advertising ($p = 0.000 < 0.01$). In each of these cases, higher means were recorded for the female participants. In terms of the four global acculturation latent factors, these findings echo those of Czarnecka *et al.* (2020), who also concluded that females are more acculturated to the global consumer culture than their male counterparts. Only a slightly higher mean was recorded for males on the materialistic values factor; however, this is in line with the findings of Cleveland *et al.* (2009) who also indicate that, overall, males exhibit higher materialistic values than their female counterparts. The latent factors where a statistical significant difference occurred were also practically significant; however, it is worth noting that with Cohn's d-values ranging from -0.229 to -0.405, the effects are only small (Cohen, 1992).

5. CONCLUSION

This study endeavoured to determine whether global consumer acculturation forces drive the materialistic values of Generation Y students in the context of the emerging market of South Africa. The evidence in the sample indicates that Generation Y university students in South Africa exhibit significant materialistic values and identify strongly with the global consumer culture. Furthermore, while males scored a non-significantly higher mean than female respondents on the materialism value factor, females scored higher on each of the global consumer acculturation forces, and significantly so on their openness to the global culture, exposure to Western media and exposure to global brand advertising. Despite the high mean scores recorded for materialistic values and each of the global consumer acculturation forces, the results of the path analysis indicate that only openness to the global consumer culture has a significant influence on those values, and a mere small-medium effect at that. Whilst this does not absolve globalisation forces, including Western media and global marketing efforts of playing a role in the spread of the consumer culture, it does show that the relationship is not as straight forward as sometimes portrayed. With the convergence of technology, media and financial markets, it is only natural that modernism will spread across the globe. This is not necessarily something evil and inherently materialistic as modernisation often leads to improved living standards. Marketers for their part, including marketers in multi-national organisations are guided by the principles of the marketing concept, particularly the principle of being customer oriented, which involves effectively satisfying consumer needs, including aspirations built on the knowledge of products and services available in more developed economies. Such aspirations do not necessarily translate into the avaricious pursuit of material possessions, as indicated by the results of this study. This study was cross-sectional in nature and, as such, provides only a snapshot in time. Furthermore, a non-probability sampling method was applied to gather the data, which places certain limitations on the extent to which the findings may be generalised to the target population. Moreover, the study only considered the influence of these global consumer acculturation forces on materialism, even though there is certainly scope for future research into their influence on Generation Y consumers' ethnocentrism towards South African made products and services.

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THE CONNECTION BETWEEN EMPLOYEE MOTIVATION AND SUPPLY CHAIN MANAGEMENT SUCCESS IN THE MINING INDUSTRY

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ABSTRACT

The productivity of employees in an organisation is regarded as a crucial component. To establish fruitful gains, there should exist some aspect of reciprocal effect between the employer and employee where both parties adhere to their roles and duties. From the employee's perspective, much is attributed towards the source of motivation and support provided by the employer, which gives them the courage to effectively carry out their duties. This paper investigated the factors contributing to employee motivation and supply chain success in the Palabora copper Mine, specifically the UMM contracting services company. To achieve an appropriate and well-informed outcome, the study collected data from 30 employees on the topic in question from a group of supply chain professionals and general staff within UMM contracting services. The paper employed a quantitative method using a questionnaire for data collection. A five-point Likert scale was employed, adopted from Fourie's (1989) motivation questionnaire on workplace motivations, which were identified as monetary aspects, employee development, reward recognition, interpersonal relations, and staff supervision. The results indicated that 90 percent of the population perceived that monetary aspects were the most prominent aspect motivating them to stay on the job. According to gender, the company is mostly dominated by males.

Keywords: Employee motivation, supply chain success, mining industry, Likert scale

1. INTRODUCTION

Employee motivation is crucial and has a huge influence on the overall performance in the mining industry for enhanced productivity. Top management plays a key role in ensuring that strategic decisions in the supply chain are executed. However, the employee's involvement in executing the strategic decisions in an organisation is vital as they drive those strategic decisions at operational level (Boundreau and Robey 2015:251). However, Dallas and Martin (2007:64) illustrate that employee's need development and training to drive strategic decisions from an operational level point of view. This is further argued by Kreisman (2002) that the greatest valued resources an organisation can have should incorporate consistent workers that are capable, fully committed, as well as efficient. The mining industry is a major contributor to South Africa's economic development and continues to play a significant role in empowering local communities through employment opportunities and development. The industry is, however, known for its hazardous working conditions that lead to chronic diseases, injuries, and deaths. The extreme working conditions tend to stifle the interest from females to enter this sector. However, as badly reputed, and hazardous as the industry is, it continues to attract new talent and retain its existing workforce.

Dessler (2003) contends that the lack of motivational tools or programmes to boost the morale of the workforce is one component that drives out employees from the hazardous sector and the industry, thus impacting on the sustainability of the industry. Armstrong (2010) suggests that if companies were to take into consideration what is required of them to motivate their team, in order to realise consistent outstanding results from the employees, which involves going as far as providing monetary rewards based on performance, it would help employees obtain the satisfaction and recognition for their work and motivate them to continue performing well by using incentives and rewards. Further, Bratton & Gold (2007) stipulate that rewards could be used attract but also retain the best qualified workers into the industry, attain organisational goals and generate more revenue. Caruth and Handlogten (2002) state that performance appraisals have been regarded as early pioneers of motivating employees. Hafiza et al. (2011) suggests that offering insufficient supporting programmes to the workforce, ultimately, has a negative impact on overall performance. (Carragher, Gibbson & Buckley, 2006), argues that there are various methodologies for encouraging team morale in the organisation, ranging from acknowledging the individual's accomplishments through praise and assign responsibility with benefits for outstanding outcome. Torrington, Hall and Taylor (2008) further contend that best performance in an organisation can be achieved in making sure of proving job security measures to all employees of which one aspect could be absorbing its personnel on a permanent job basis. In so doing individual employees can thus acquire goods that satisfy their personal needs such as a decent house, vehicle and assets. It has been argued that high levels of motivation lead to high levels of input from employees in their duties, thus maximising the organisational output (Bhattacharyya, 2007; Lawler 2003). Further Dougherty and Dreher (2002) argued that the way an organisation manages its staff influences its capacity to build and retain greater market share against their competition.

The mining industry plays a crucial part in contributing to the country's economic growth. It has been reported that the mining sector is largely male dominated, which could be attributed to severe and hazardous working conditions that otherwise scare females to enter the sector. Although mining professions often provide salary and individual fulfilment, they may also present dangerous threats to one's health & welfare. As a result, this paper intended to find the most effective motivator among supply chain employees within the Palabora Copper Mine in Limpopo province, which will ensure that miners have safe working conditions to achieve their objectives. The study found a lot of gaps in the literature on this subject; there have not been many studies done focusing on the motivation of employees in the mining industry, presenting a need for further research. This study will address the gap by determining what truly motivates workers already in the mining business. Despite health and safety measures established to make mining a safe working environment, it has also been reported that there have been so many incidents in the industry, such as the incident that occurred in the Palabora Mining Company in 2016, where a conveyor belt caught fire with three employees succumbing to the incident. However, most of the reports are anecdotal and are not backed by research findings.

The goal of this investigation is to quantitatively uncover the connection between employee motivation and supply chain success in the mining sector through looking at tools and strategies used by organisations within the sector to align the two aspects aimed at a successful supply chain.

2. LITERATURE REVIEW

This section reflects on the literature behind the topic in study, as stipulated by Brown, Squire and Blackmon, (2017) Fink (2018) & Aveyard (2010) of the importance of a literature review. Based on a study of previous studies, a conceptual framework is constructed in this research article and implications for human resource departments are presented.

The study published by Sekaran (2002) emphasised the significance of motivation in an organisation and demonstrated the need for effective inspiration to staff, the presumption that effective organisations would be those who best utilise their human resource as they would any other resource. The Hawthorne investigations sparked the human relations approach to management, in which senior management prioritise the interests and encouragement of their employees (Bedeian, 1993). Individuals, whether in office or commercial businesses, are viewed as one of the crucial variables for the accomplishment of business objectives, according to Golzadeh's (2001) research on elements impacting worker engagement. As a result, motivating elements amongst workforce must be identified to improve efficiency and production and then efforts must be made by the company to meet those demands of workers. As a result, motivation's comprehension and applicability are reliant on the information and abilities required to do so. In general, all managers must be aware of motivation as the source of encouragement leading to employee behaviours carried out in the company. The study on motivation provides solutions to issues about human behaviour, such as why do people work in organisations? Why some individuals are active, and others are not? What are the factors that influence job desire or boredom? These and other issues are relevant to the topic of motivation and the solutions may be sought throughout the context of employee motivation and motives. As a result, by mastering how to encourage people, managers may easily take some steps to achieve business objectives in collaboration with personnel while also effectively performing their primary tasks.

It is critical to increase employee satisfaction and willingness to participate in their tasks, as well as the attainment of corporate objectives (Abzare, 2010). It is advised to first develop long-term morale for employees in an organisation to succeed in today's harsh employment climate. On the research of the effect of supply chain performance and motivation on employee performance, Sabir (2020) argues that motivation is crucial in determining an organisation's objective achievement. With rewards, perseverance and team objectives, motivation supports behaviour for voluntarily tasks (Lehman & Creener, 2002). Several research in the field of organisational behaviour shows that employee encouragement has a beneficial impact on performance (Mathis & Jackson, 2010)

According to Baron (1983), not only could motivation impact performance, but performance too could inspire enthusiasm provided it is accompanied with incentives. Carraher (2006) argues that an appropriate and efficient incentive program should be in place to keep top performers in companies and that the incentive must also be linked to overall output. As a result, Baron (1983) finds that creating total compensation programs that focus on recognition and rewards policies might help businesses. Armstrong (2010) claims that a motivation approach is required for carrying out everyday duties and encouraging people toward shared business objectives. However, it requires not only the selection or collection of statements that represent the goal, but mostly the application of skills that achieve the goal (Palmer, 2005). The inspiration progression obeys defined company procedures that, as a result, should be assessed and maintained repeatedly to preserve their effectiveness (Green, 2000).

2.1 Employee motivation

Employee motivation is defined by Robbins (1993) as “the willingness to exert high levels of effort toward organisational goals, conditioned by the effort's ability to satisfy some individual need”, however, George and Sabapathy (2011) define it as “an action that stimulates an employee to take a course of action, which will lead to the achievement of some goal or to the satisfaction of some individual need”. Motivation is described by Robbins and Judge (2008) as the mechanisms that account for an individual's intensity, direction and persistence of effort toward realising goal. Page (2008) defines motivation as the process that accounts for an individual's intensity, direction and persistence of effort toward achieving a goal in his essay on non-monetary rewards in the workplace. Motivation, according to Cole (1996), is simply what motivates a person to work in a certain way and with a certain level of effort, which is internally produced, driven to attain a goal or take a specific course of action. Ramlall (2004) concludes the definition, articulating that employees that are highly driven concentrate their efforts on reaching specified objectives. As a result, it is the role of the organisation to drive individuals to perform their best work and further employees that are motivated are far less likely to call in ill, are more productive and can communicate effectively with customers and co-workers.

It is crucial, therefore, to understand the difference between internal and extrinsic drive. Simply said, intrinsic motivation stems from within, the pleasure derived from a work, the contentment derived from a good performance and the drive to succeed are all examples of intrinsic motivation. Extrinsic motivation, on the other hand, is triggered by external circumstances such as a bonus or some other type of reward. Extrinsic drive can also stem from avoiding punishment or a negative consequence. Motivation has a favourable impact on individual and group performance, which in turn has an impact on an organisation's success (Risambessy et al., 2012). Companies have recently recognised the importance of highly motivated employees on an organisation's overall success in reaching its goals and operating efficiently. As a result, heavy industrial sectors such as mining have included motivation strategies into their decision-making so that employees' inspirations are satisfied and that they are able to do their responsibilities effectively, resulting in the success of the organisation's supply chain.

2.2 Supply chain management practices

Supply chain management practices, according to Qusheri (2014), are a comprehensive collection of measures taken by firms to increase the efficiency of their internal supply chain. Supply chain management methods, according to Pettit and Beresford (2009), are strategies to manage the integration and coordination of supply, demand, and relationships to fulfil customers in an effective and profitable manner. The study agrees with Brown, Squire and Blackmon, (2017), who defined SCM practices as a collection of actions carried out in an organisation to enhance successful supply chain management. Employee motivating approaches are important in our research since it emphasises the effective application of good supply chain procedures, the ultimate objective of which is to make the company more efficient and lucrative in order to sustain market dominance in the sector. As a result, the far more essential aspects that drive the performance of the mining sector supply chain operations are the implementation of current employee methods and logistics technology, as well as an education campaign on staff motivation and reaction (Zhou, 2011).

In order to provide personnel motivation techniques that are appropriate for both men and women in the mining industry, it is necessary to first understand the distinctiveness of difficulties, which both male and females encounter in the sector, such that the encouragement or reward provided is appropriate for uniformity. As a result, when planning a motivation and incentive activity in any mining sector, the dynamics of the society within the company must be understood in order for the motivational techniques used to be effective, as men and women have different needs, which are influenced by different aspects. The atmosphere, business circumstances, beliefs, behaviours and personnel impressions of the firms in which they work are all shaped by supply chain performance. The success of an organisation's supply chain is a predictive factor that may boost productivity, accountability and effectiveness Haddouch, 2019 and Ernawan, 2011 emphasises the importance of establishing a workplace structure that fosters production efficiency and enhances employee performance. Following best practices, the organisation can recognise weaknesses in the current framework and approaches through collaborative efforts and interaction with its workforce; therefore, is able to correct and incorporate programs that would see workers being highly motivated and producing significant outcomes for the company, resulting in supply chain management success. In the end, employee morale will be boosted by factors such as fair compensation, job satisfaction and a safe and suitable work environment, which will ultimately help the company accomplish its goals. The next section addresses the methodology employed in the study.

3. METHODOLOGY

This section outlines the methodology for the paper.

3.1 Research design

The study used a questionnaire using a validated five-point Likert scale adopted from Fourie's (1989) motivation questionnaire on workplace motivation. The response options examine the effectiveness of motivational programs that each employee witnessed in the firm. The choice of the scale was based on the fact that it is easier to quantify the responses and compile statistical data and figures.

3.2 Sampling method and Research instrument

The study used a questionnaire consisting of 30 closed-ended questions, which were divided into two parts. The first part examined the socio-demographic and qualification characteristics of the employees in the UMM Contracting services. The survey included basic data on respondents concerning their age, gender, number of years of service in the business, completed education and job positions. The questionnaire was administered using a soft copy in English, which took approximately 15 minutes to complete. The target study population from the questionnaire was the mining workers particularly from the UMM contracting services, Phalaborwa, South Africa. Workers were sent information about the study and the copy of questionnaire survey to be filled. Participation in the study was voluntary and responses were kept anonymous and only used for academic purposes.

3.4 Data collection and data analysis

Due to the time the survey was conducted, to follow the COVID-19 protocols, it was not possible to administer the questionnaires face-to-face, rather a soft copy was sent through emails to 40 randomly selected respondents who were best fit for the study. The responses were sent back through the same system. After data cleaning, only 30 questionnaires were found suitable to be used. The responses were inputted and analysed using a Statistical Package for Social Science (SPSS). Das and Kumar (2014) compliment the use of SPSS as it enables researchers to build and validate predictive models using advanced statistical procedures. The study follows a quantitative method, which is less time-consuming; hence, the use of questionnaires. The research data gathered for this study were coded in short phrases and cleansed using Excel spreadsheets to make it easier to enter the analysing software for further analysis. Descriptive analysis for personal and company information of the supply chain member firm managers was performed. The next section presents the results of the study.

4. RESULTS AND DISCUSSION

4.1 Gender

Figure 1 presents results of the gender demographics of the study, which shows that 73 percent of the respondents were males while 27 percent were females, it is thus noted that the company has more male workers than women. Results show that females continue to fall behind males in terms of presence in the mining sector, this could be attributed to the hazardous nature of the mining sector, which leads to women diverting from the industry. Subsequently, a smaller percentage of women occupy the top supply chain positions such as the supply chain managers, procurement, and logistics. The results are line with prior research, which claims that females make up roughly 5 percent of senior supply chain management jobs at large corporations (Eshkenazi 2014). Eshkenazi (2014) further links the female's shortage in the mining industry due to the nature of the environment and their experience. However, lately organisations are embracing the concept of diversity and doing away with old and discriminatory treatment against women attempting to tap into the sector.

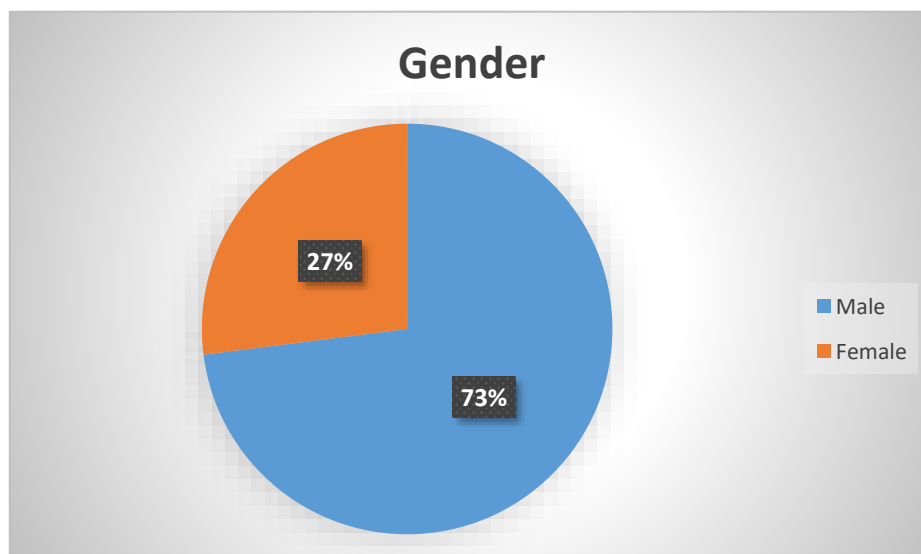


Figure 1: Gender dynamics

4.2 Respondent age

Table 2 presents results of age distribution; it shows that the majority of UMM workers (53, 3%) are aged between 30 to 40 while 13.3% are aged between 20-30 and above. 23.3% of the sample respondents are aged between 40-50 and 10% are between 50-60 years. It means that in this company there are more young people (30-40 yrs) than old people, this could be because of the intensive work that old people may not be able to cope with. The employee income distribution is discussed in the next session.

Table 2: Age distribution of the study

| | | AGE | | | |
|-------|-------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Age | 20-30 | 4 | 13,3 | 13,3 | 13,3 |
| | 30-40 | 16 | 53,3 | 53,3 | 66,7 |
| | 40-50 | 7 | 23,3 | 23,3 | 90,0 |
| | 50-60 | 3 | 10,0 | 10,0 | 100,0 |
| Total | | 30 | 100,0 | 100,0 | |

4.3 Respondent Income

Table 3 depicts the income distribution of UMM employees, with 63,3 percent earning between 20-40 thousand Rands monthly while 26,7 percent of respondents receive income between 40-60 thousand Rands, 6 percent of respondents get between 60-80 thousand with one person accounting for 3,3 percent of respondents receiving between 30-40 thousand, majority of respondent are in the category of 20-40 thousand Rands and looking at the amount it shows that it is quite reasonable amount that one would get. People working in the mining certainly get good money which lead to high employee motivation and thus able to produce outstanding performance and results for the organisation.

The salaries are satisfactory and competitive and serve as the motivational factor for enhanced performance and the willingness from respondents to stay within the mining industry until retirement. It is vital to note that when employees are well paid, they become extra motivated.

Table 3: Income distribution of population

| | | INCOME | | | |
|--------|-------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Income | 20-40 | 19 | 63,3 | 63,3 | 63,3 |
| | 30-40 | 1 | 3,3 | 3,3 | 66,7 |
| | 40-60 | 8 | 26,7 | 26,7 | 93,3 |
| | 60-80 | 2 | 6,7 | 6,7 | 100,0 |
| Total | | 30 | 100,0 | 100,0 | |

4.4 Distribution of Race

Table 4 shows that most of UMM contracting services workers are black people accounting for 76.7 percent with most of them being less skilled workers (General miners and operators); followed by whites accounting for 20,0 percent and 3,3 percent coloureds. The high number of black workers in the industry can be seen as the results of the people who have been previously marginalised and had to resort to the labour-intensive work opportunities. The main reason why blacks might be dominating the UMM workforce could be the organisation practice of corporate social responsibility to empower and uplift local communities, which are mostly blacks.

Table 4: Race of study population

| | | RACE | | | |
|------|----------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Race | Black | 23 | 76,7 | 76,7 | 76,7 |
| | white | 6 | 20,0 | 20,0 | 96,7 |
| | Coloured | 1 | 3,3 | 3,3 | 100,0 |
| | Total | 30 | 100,0 | 100,0 | |

4.5 Position held

Table 5 shows the distribution of positions held in the company; it shows that the black majority are in the low position ranks (general miner and operators). The company is committed to advancing career growth of its workforce and this is evident with the organisation incorporating continuous development and training of personnel in order to escalate lower ranked employees into better ranks.

Table 5: Position of respondents

| | | Position held | | | |
|-----------|----------------|---------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Positions | General miner | 8 | 26,7 | 26,7 | 26,7 |
| | Operators | 8 | 26,7 | 26,7 | 53,3 |
| | Supervisors | 3 | 10,0 | 10,0 | 63,3 |
| | Superintendent | 2 | 6,7 | 6,7 | 70,0 |
| | Miner | 3 | 10,0 | 10,0 | 80,0 |
| | SCM | 4 | 13,3 | 13,3 | 93,3 |
| | Shift boss | 2 | 6,7 | 6,7 | 100,0 |
| | Total | 30 | 100,0 | 100,0 | |

4.6 Highest qualification

Table 6 shows that 46,7 percent, which represents the majority of study population (general miners, operators and supervisors in the company) have high school certificates or less, while 33,3 percent are diploma holders. 20,0 percent of the respondents are first degree holders. These findings show that the mining industry is mostly associated with manual labour-intensive duties that do not necessarily require high levels of qualification; hence, we see high numbers of employees with low education (46,7%). Employees grow in the industry through their experiences as we saw other individuals occupying high ranks such as supervisor and superintendent without having a matric. The next section discusses the number of years worked.

Table 6: Level of education

| | | HIGHEST QUALIFICATION | | | |
|-----------|--------------|-----------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Education | Matric below | 14 | 46,7 | 46,7 | 46,7 |
| | Diploma | 10 | 33,3 | 33,3 | 80,0 |
| | 1st degree | 6 | 20,0 | 20,0 | 100,0 |
| | Total | 30 | 100,0 | 100,0 | |

4.7 Number of years worked

Table 7 shows the results on numbers of years worked in the company, its shows that most workers have worked for a long time in the mining sector with 57, 7 percent accounting for the longest time of between 9-15 years. This could be the reason they are earning more money because they have been in the company for so long. Regardless that they do not have a lot of skills in terms of qualification but because they have stayed in the company for a long time whereby, they have actually learnt a lot and mastered their work through the years, their salaries have been increasing.

Table 7: Experience of respondents

| | | NUMBER OF YEARS WORKED | | | |
|------------|---------|------------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Experience | 0-5 | 5 | 16,7 | 16,7 | 16,7 |
| | 6 to 8 | 8 | 26,7 | 26,7 | 43,3 |
| | 9 to 15 | 17 | 56,7 | 56,7 | 100,0 |
| | Total | 30 | 100,0 | 100,0 | |

4.8 Income cross tabulation

It is evident from table 8 that those employees that have degrees are the ones that earn more money, which means the higher the qualification the more money you will get paid. Higher educational level and work experience has a significant role on the employee income. These findings are in line with Walker, Di Sisto and Mc Bain's (2008:82) prior research, which found that the amount of education and training had an impact on the compensation package, particularly in the mining business. Low ranked workers are rewarded with good salaries for the type of work that they do. These employees gain more experience from the duties they do over the years therefore their salaries increase over the years.

Table 8: Income across educational level

| | | HIGHEST QUALIFICATION * INCOME CROSS-TABULATION | | | | |
|--------------|--------------------------------|---|--------|--------|--------|--------|
| | | INCOME | | | | Total |
| | | 20-40 | 30-40 | 40-60 | 60-80 | |
| Matric | Count | 12 | 0 | 2 | 0 | 14 |
| | % within HIGHEST QUALIFICATION | 85,7% | 0,0% | 14,3% | 0,0% | 100,0% |
| | % within INCOME | 63,2% | 0,0% | 25,0% | 0,0% | 46,7% |
| | % of Total | 40,0% | 0,0% | 6,7% | 0,0% | 46,7% |
| Diploma | Count | 6 | 0 | 4 | 0 | 10 |
| | % within HIGHEST QUALIFICATION | 60,0% | 0,0% | 40,0% | 0,0% | 100,0% |
| | % within INCOME | 31,6% | 0,0% | 50,0% | 0,0% | 33,3% |
| | % of Total | 20,0% | 0,0% | 13,3% | 0,0% | 33,3% |
| First degree | Count | 1 | 1 | 2 | 2 | 6 |
| | % within HIGHEST QUALIFICATION | 16,7% | 16,7% | 33,3% | 33,3% | 100,0% |
| | % within INCOME | 5,3% | 100,0% | 25,0% | 100,0% | 20,0% |
| | % of Total | 3,3% | 3,3% | 6,7% | 6,7% | 20,0% |
| Total | Count | 19 | 1 | 8 | 2 | 30 |
| | % within HIGHEST QUALIFICATION | 63,3% | 3,3% | 26,7% | 6,7% | 100,0% |
| | % within INCOME | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% |
| | % of Total | 63,3% | 3,3% | 26,7% | 6,7% | 100,0% |

4.9 Monetary aspect

Table 9 shows that most of the study population (80%) were satisfied with their salaries and other benefits within the organisation, which was mostly dominated by employees with low educational levels and thus find their remuneration packages fair and satisfactory and this is no surprise considering their educational level and the salaries they receive, with 63.3 percent of respondents ranging between 20-40 thousand rand. While 20 percent showed dissatisfaction with regard to the monetary aspects offered by the company and looking at the sample population, these are people with tertiary qualification and considering the investment they have made in acquiring these qualifications they surely believe they deserve better packages for their knowledge and expertise, we can however note that some tertiary education holders are not employed in the department of their professions and thus the dissatisfaction with their remuneration.

Table 9: Monetary aspect category

| | | MONETARY | | | |
|-------------|----------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Respondents | 1 to 10 | 6 | 20,0 | 20,0 | 20,0 |
| | 11 to 20 | 24 | 80,0 | 80,0 | 100,0 |
| Total | | 30 | 100,0 | 100,0 | |

4.10 Employee development

Table 10 indicates that 80 percent of the participants agree that they are motivated by the development of employees in the company with the majority of workers testifying that they are happy with their salaries. This can be true with over 56 percent of the participants salary ranging between 20-40 thousand rand per month and one has to take note that these are people with matric or below and it thus understandable. However, some respondents with diplomas and higher showed dissatisfaction with their salaries and were not merely motivated with the monetary benefits but it was rather the job that they were passionate about and hence their output would be positive because they are doing something they enjoy

Table 10: Employee development category

| | | EMPLOYEE DEVELOPMENT | | | |
|-------------|----------|----------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Respondents | 1 to 10 | 6 | 20,0 | 20,0 | 20,0 |
| | 11 to 20 | 24 | 80,0 | 80,0 | 100,0 |
| Total | | 30 | 100,0 | 100,0 | |

4.11 Interpersonal relationship

The majority of employees (96,7%) shown in table 11 attest that they enjoy a good relationship with their co-workers, which boosts their morale and are thus able to be effective in their tasks, leading to supply chain success. Almost 100 percent of the employees agreed that working in the mining industry is risky and mostly associated with labour-intensive activities; hence, it is male-dominated, although females are starting to enter the industry through non-labour-intensive ranks such as safety officers, finance, engineers and supply chain professionals.

Table 11: Interpersonal relationship category

| | | INTERPERSONAL RELATIONSHIP | | | |
|-------------|----------|----------------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Respondents | 1 to 10 | 1 | 3,3 | 3,3 | 3,3 |
| | 11 to 20 | 29 | 96,7 | 96,7 | 100,0 |
| Total | | 30 | 100,0 | 100,0 | |

4.12 Staff supervision

93,3 percent of the respondents presented in table 12 show that they are trusted with carrying out their duties with minimal supervision and this gives the employee confidence and are thus able to execute their tasks more effectively with less supervision. Less supervision applied on these employees could be attributed to that they have been in the industry for some time and that the majority have the experience to carry out tasks on their own. About 50 percent of the respondents say they are given chance to make decisions with over 92 percent of the respondents showing that their superiors listen to their suggestions and concerns and that goes to show the teamwork that exists within the organisation. About 45 percent expressed that the organisation is not loyal to

customers, it may be due to the organisation retrenching a lot of workers during the peak of COVID-19 in the country.

Table 12: Staff supervision category

| | | STAFF SUPERVISION | | | |
|-------------|----------|-------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Respondents | 1 to 10 | 2 | 6,7 | 6,7 | 6,7 |
| | 11 to 20 | 28 | 93,3 | 93,3 | 100,0 |
| Total | | 30 | 100,0 | 100,0 | |

5. CONCLUSION

The scope of this research study covered UMM Contracting services at Palabora Copper mine in South Africa. The main aim of this research intended to address the connection between employee motivation and supply chain success in the mining industry and particularly the UMM Contracting services.

Based on the research objectives, a quantitative research methodology was adopted to capture the respondents' thoughts. The data were then analysed through a descriptive method using SPSS tool. The survey questions were structured in such a way that they would be able to answer the objectives of the study. Therefore, the objectives of effectiveness of motivation programs were answered through analysis of respondent's data, which shows that the majority are content with the existing motivation program applied in the organisation. The other objective was answered by the study's analysis, which shows the correlation between supply chain performance and employee motivation. Supply chain performance is enhanced when employees are highly motivated and thus organisation's need to ensure they have an effective approach to motivate their workers, leading to supply chain efficiency and throughput.

According to the study, UMM Contracting employees are driven by intrinsic and extrinsic factors. The biggest motivator for workers in the mine sector has been recognised as decent compensation. According to the research, the workers happiness results in improved performance. Organisations must establish strong initiatives and tools, which workers should adopt in order for all of them to be devoted to their jobs. Lawler (2003) stipulates that the way corporations treat their personnel determines their success and sustainability in the market as well as their public image. One of the concerns that came up was management disloyalty. The study also found that despite the risks involved in mine business, Palabora Copper maintains a good health and safety strategy, since min regulators mandates organisations to implement measures to avoid probable work health & safety violations.

The study concluded that treating employees' right and giving them satisfactory compensation led to enhanced supply chain performance as the employees act in the best interest of the organisation when they are happy, which results in a win-win situation for both parties

5.2 Recommendations

Employee productivity must be assessed on a periodic basis by Palabora Copper to address variables, which inspire employees. As a result, the company will be always aware of the employees' most important needs and thus will try to meet them for enhanced employee motivation. The workforce should be issued with surveys for their perceptions and recommendations on the strategies to implement.

Worker's safety and health concerns must be taken into account in the future, primarily for workers who are exposed to unsafe toxins and dangerous substances and several other elements that have been acknowledged as impacting employee performance and productivity.

Policy makers must incorporate females so that there can be equality in the organisation as it can be seen from the study population that the company is male-dominated.

This study is likely to make significant contributions towards the collection of studies about employee motivation in the mining segment. The research is also intended to assist mining businesses and governments in understanding the importance of employing methods such as employee motivation aimed at the attainment of supply chain management success in the mining business.

5.3 Limitations

First, the study was confined to the respondents only in the UMM Contracting services, in particular the Palabora Copper, South Africa; therefore, the findings addressed the company in study. The results would be more informative if data from other mining companies were collected, examined and compared.

Due to COVID-19 protocols, it was not possible to conduct in-person interviews; instead, emails and help from employees in the company to distribute the surveys were the solutions used.

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CORPORATE SOCIAL RESPONSIBILITY AND CORPORATE IMAGE TOWARDS CUSTOMER REPURCHASE INTENTION: TESTIMONY FROM SOUTH AFRICA'S BANKING ENVIRONMENT

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ABSTRACT

Given the importance of corporate social responsibility (CSR) and its effects on stakeholder behaviour. Literature review identified factors used to investigate the impact of CSR and corporate image on banking customers' repurchase intentions. This study investigates the influence of banking customer-perceived CSR initiatives on relationship quality and repurchase intention, moderated by corporate image. Preceding studies found significant associations between CSR initiatives and relationship quality; however, no study, particularly in South Africa's banking environment, examined effects of CSR initiatives on customers' repurchase intentions, moderated by corporate image. A framework was designed applying cross-sectional quantitative research using convenience sampling through a survey questionnaire. Only 551 valid questionnaires from banking customers in Gauteng province of South Africa were analysed. The Statistical Package for Social Science (SPSS) and the Analysis of Moment Structures (AMOS), 26.0 versions, were applied. The findings show significant relationships exist between CSR measures and the study constructs. Results indicate that the banks' CSR initiatives are supported as precursors of relationship quality towards customer repurchase intentions and CSR has an insignificant relationship with corporate image. It can, therefore, be concluded that direct effects of the bank's CSR initiatives on relationship quality lead to customer repurchase intentions. Accordingly, the bank and marketing managers can employ CSR initiatives to enhance customer support and repurchase intentions in the quest to meet stakeholder expectations. Moreover, service marketers must realise that customer-perceived CSR initiatives influence second-order constructs in the South African banking context.

Keywords: Banking sector; corporate social responsibility; corporate image; relationship quality; repurchase intention

1. INTRODUCTION

In today's socially mindful marketplace, corporate social responsibility (hereafter CSR) has developed to be a relevant research topic that has received widespread attention from various researchers (Servera-Francés & Piqueras-Tomás, 2019; Pérez & Rodríguez Del Bosque, 2015). Motilewa and Worlu (2015) state that CSR can be considered a management system that service providers can use to improve competitiveness and intensify customer gratification toward positive repurchase behaviour (Servera-Francés & Arteaga-Moreno, 2015). In other words, CSR initiatives stimulate stakeholder (customer) satisfaction leading to favourable repurchase actions. The extant literature offers evidence of the effects of CSR on customer behaviour from different approaches,

through an examination of various constructs such as loyalty (Rivera et al., 2019); image and reputation (Alvarado-Herrera et al., 2017); as well as corporate image and purchase intentions (Huang et al., 2014). The findings from these and many other studies conducted mostly in developed markets reveal dissimilar outcomes in favour of organisations that engage in CSR initiatives. Many of these studies investigated the significance of customer CSR perceptions relative to improved business corporate image (Kim et al., 2015). Very few investigations, especially from developing markets, examine the impact of CSR on service quality and customer satisfaction (Bello et al., 2020). According to the researchers' best knowledge, no study has empirically examined the proposed study constructs, particularly in the South African banking environment as a developing market. Thus, in an attempt to mitigate this research gap, this study aims to investigate the influence of CSR initiatives on customer repurchase intentions in the banking service environment of a developing market. Pather (2016) denotes repurchase intention as customer behaviour resulting from their previous satisfying purchasing encounter of the same product or services, from the same organisation being an envisaged outcome for organisations that could lead to increased business profits (Blut, Frennea, Mittal & Mothersbaugh, 2015). The research question guiding this study is: What are the effects of the bank's CSR initiatives on relationship quality and corporate image, leading to customer repurchase intention from South Africa's banking service context?

2. LITERATURE REVIEW

2.1 CSR and the South African banking environment

Servera-Francés and Piqueras-Tomás (2019) state that CSR is an important marketing tool centred around available information related to organisational economic, legal, ethical, social and environmental obligations, which influences customer behavioural reactions. For example, a bank that offers customers free training on cash and money management tutorials to retain the upskilled client base, can suggest that the bank is truly committed to its responsibilities of accountability and engagement relating to social initiatives. In South Africa, commercial and private banks operate under the guidelines of the South African Reserve Bank, which ensures price stability is upheld to promote viable economic growth and an inspiring domestic banking system in the country (South African Reserve Bank, 2015). All the banks involved in this study are categorised as mutual and liquidation financial service providers, presented in alphabetical order as ABSA Bank, FirstRand Bank Limited (FNB), Investec, Nedbank Limited and Standard Bank of South Africa Limited (South African Reserve Bank, 2020). Lately, these financial institutions, including others, have promoted socially and environmentally responsible lending and investment practices that enhance their business image (Businessstech, 2020).

2.2 CSR measures

This study uses a more broadly used classification of CSR proposed by Carroll (1979; 1991), who explains CSR as a four-level model. From Carroll's (1991) work, the CSR pyramid consisting of four measures, namely ethical, legal, economical and philanthropic measures are considered fit to deal with the organisation's societal obligations (Maignan, 2001). The ethical measure deals with the managerial responsibilities aimed at ensuring honest operations and keeping up with moral societal norms (Galbreath, 2010). The legal measure oversees that organisational practices are

acceptable and protect the rule of law by implementing legal policies and obligations (Carroll, 1991). Economic measure relates to products and services presented to meet the market needs and requirements with the aim to gain profits (Ramasamy & Yeung, 2009), although not taking stakeholder interests to heart (Barnett, 2007). Philanthropic measure is regarded as commitment with the intent to engage in various social initiatives relating to community welfare, educational activities and the sporting fraternity (Godfrey, 2009). However, such initiatives can only be realised through the support of ethical and philanthropic measures (Yang et al., 2019). Figure 1 illustrates Carroll's (1991) four measures of CSR as a pyramid.

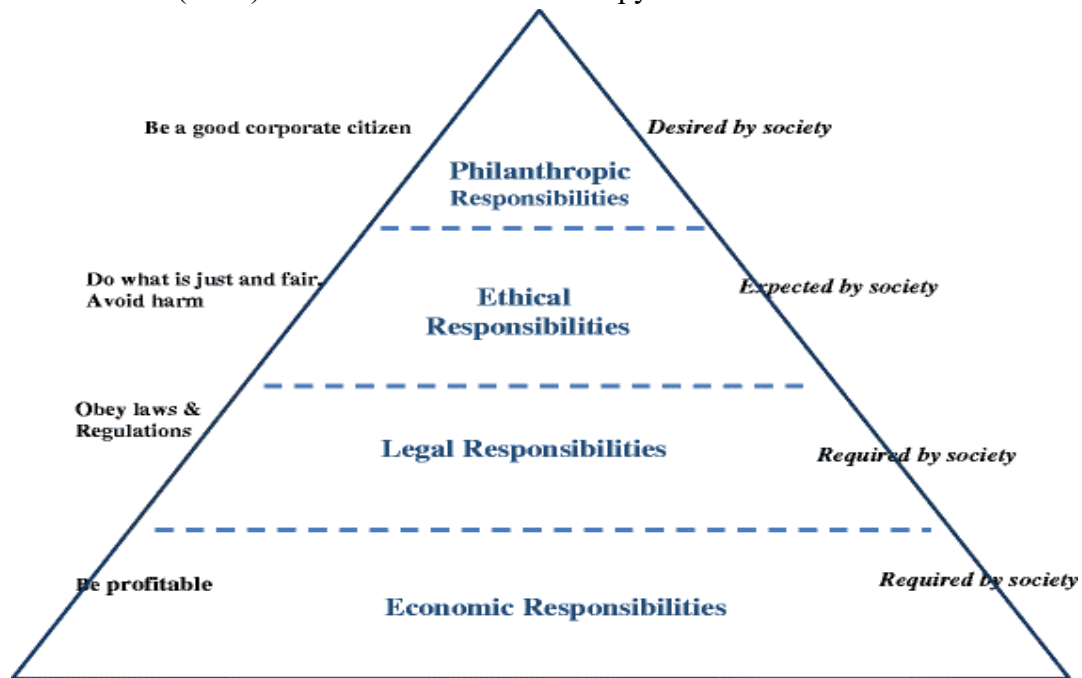


Figure 1: Carroll's (1991:39) pyramid of CSR

The economic responsibilities represent the basis of accountability upon which other measures are built. The legal measure ratifies that the organisations are legally held liable to fulfil their economic responsibilities, without contravening the laws of the territory in which they operate. Ramasamy and Yeung (2009) state that these may comprise tax laws, labour laws as well as health and safety rules. Ethical responsibilities represent undertakings associated with morality and social norms such as dealing with legal standards and obeying the laws concerning the hiring and firing of employees (Galbreath, 2010). The philanthropic responsibilities represent the organisation's humanitarian activities executed to deal with the ethical, social and charitable practices aimed at the well-being of communities in which the organisation is operating (Carroll, 1991).

2.3 Relationship quality

Relationship quality originates from relationship marketing theory and research, wherein, it aims to strengthen the existing customer relations and transform them into long-term business associations (Lin, 2013). De Canniere, De Pelsmacker and Geuens (2010) signify that relationship quality can be regarded as a customer's view of the association with a service provider concerning how well the partnership meets their expectations. Accordingly, the service provider's degree of relationship quality signifies the customer's inclination and interest in retaining and growing their relationship (Adjei et al., 2009). Thus, it must be borne in mind that customers who do not feel the

presence of a decent relational bond with their service provider, will remain indifferent resulting in deficient returns on investment due to declining customer support (Mende et al., 2013).

2.4 Corporate image

Corporate image is explicated as an overall feeling in the customer's mind following cumulative beliefs, views and encounters accumulated in memory turned into meaning and retrieved to form a mental picture recollected when the name of that organisation is heard or conveyed to the customer's mind (Bravo et al., 2009). In the banking environment, corporate image is a useful tool a bank can use to distinguish itself from the rest as an outcome of communication practices that organisations use to disseminate a particular message that represents strategic intents, reflecting their core values (Bravo et al., 2012).

2.5 Repurchase intention

Repurchase intention denotes a customer's positive conclusion to continue supporting their current service provider and continuously engaging in future transactions with them (Hume & Mort, 2010). In the banking environment, repurchase intention reveals customer desire to upgrade, modify or purchase new banking products on a continuous basis (Herjanto & Amin, 2020). For instance, a customer may want to increase a credit card account limit upgrade from traditional savings to a cheque account, or purchase alternative products such as wealth management or investment products. Accordingly, Tabrani, Amin and Nizam (2018) suggest that repurchase intention is equally a symbol of commitment and a sign that a bank is performing well in satisfying customer needs and requirements.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

The literature revealed that numerous scholars have developed models to examine the influence of CSR on essential concepts such as brand satisfaction and loyalty (Al-Ghamdi & Badawi, 2019), corporate reputation (Bianchi et al., 2019) and purchase intentions (Sharma, Poulouse, Mohanta & Anthony, 2018). However, no study provided a comprehensive view of how perceived CSR and corporate image influence customer repurchase intentions in the South African context. Accordingly, this study utilises a single model as a typical interactive measure to gain insight into, which perceived CSR and relationship quality measures mediated by corporate image leads to banking customers' repurchase intention. The model designs of Carroll (1979), as well as Tian, Wang and Yen (2011), focusing on CSR measures, were adopted. Figure 2 depicts the study's proposed model.

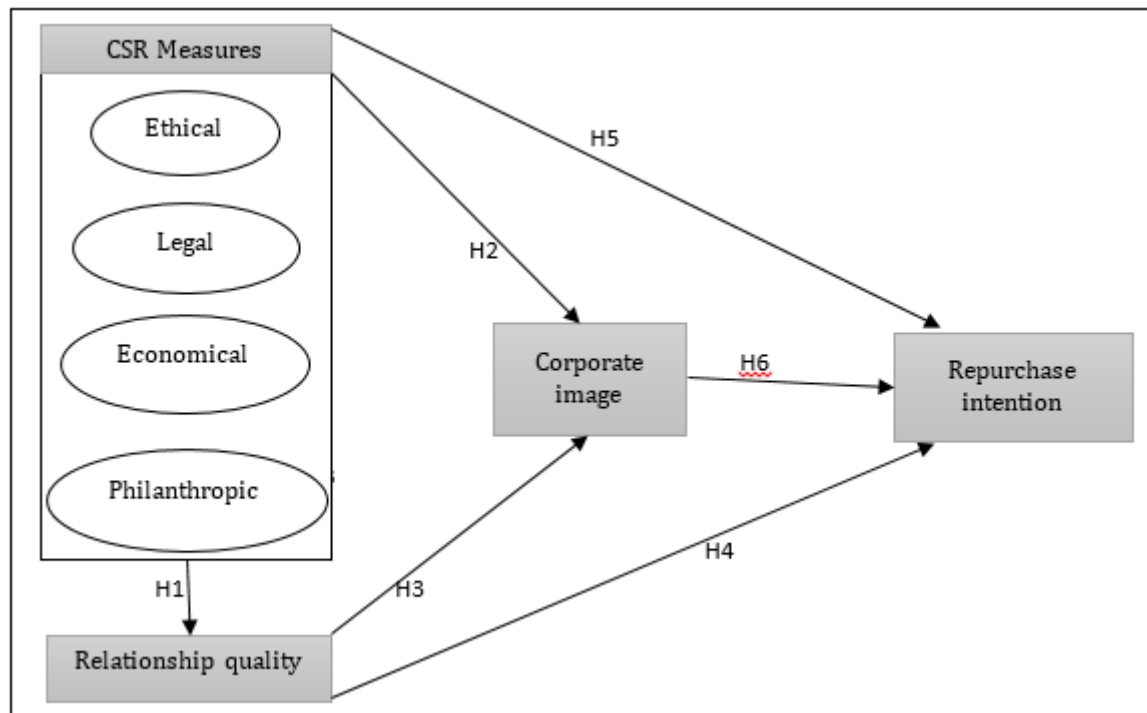


Figure 2: Study model

To test the influence and association between the banks' CSR measures and relationship quality leading to customer repurchase intentions, the following hypotheses were developed:

H1: There is a positive relationship between CSR and relationship quality.

H1a: Relationship quality is positively influenced by the ethical measure of CSR.

H1b: Relationship quality is positively influenced by the legal measure of CSR.

H1c: Relationship quality is positively influenced by the economic measure of CSR.

H1d: Relationship quality is positively influenced by the philanthropic measure of CSR.

3.1 CSR and corporate image

Corporate image has been established as a fundamental precursor to corporate valuations using rational susceptibility between organisations and their stakeholders (Alwi & Kitchen, 2014). It is argued that CSR influences corporate image intellectually and emotionally, even though the valence of its effect may differ from customer valuation procedures (Martínez & Rodríguez-del-Bosque, 2013). Some authors found that CSR does have a significant relationship with corporate image (Stoyanov, 2017; Wu & Wang, 2014). Thus, it is hypothesised that:

H2: There is a positive relationship between CSR and corporate image.

3.2 Relationship quality and corporate image

The influence of organisational relationship quality on its corporate image can be viewed as the basis for shaping and intensifying customer trust and commitment towards the organisation, especially if customer needs and requirements are fully met or satisfied (Wellyan, 2016). Kim and Kim (2016) posit that relationship quality significantly impacts customer decision-making processes when formulating an organisational corporate image to which they can commit to and trust. Thus, this study is underpinned on the basis that one key objective of banking institutions investing in CSR initiatives is to intensify corporate image that improves customer relations.

Wellyan (2016) found that a positive relationship between relationship quality and corporate image exists. Thus, in this study, it is hypothesised that:

H3: There is a positive relationship between relationship quality and corporate image.

3.3 Relationship quality and repurchase intention

Jiang, Shiu, Henneberg and Naude (2016) acknowledge that when customers perceive the quality of their relationship with a supplier to be strong, they tend to buy more and less likely to switch to other service providers. This suggests that a direct positive relationship exists between customer affective commitment as an antecedent of supplier relationship quality and customer repurchase intention (Bianchi et al., 2019). Customers will more likely develop a positive repurchase behaviour once they observe robust relationship quality levels, as presented by their service providers (Kim & Kim, 2016). Accordingly, it is hypothesised in this study that:

H4: There is a positive relationship between relationship quality and repurchase intention.

3.4 CSR and repurchase intention

Repurchase intention refers to customer decisions to re-buy similar products or services from the same supplier when it is beneficial for them to do so on a continuous basis (Vyas & Raitani, 2014). Banking customers also weigh the risks and costs involved with switching to alternatives (Lewis & Soureli, 2006). Uhlig and Mainardes (2019) also found that service providers' CSR initiatives encourage customer repurchase intention. However, this happens on the condition that the customer's previous buying experiences were satisfying. Thus, this study also hypothesises that:

H5: There is a positive relationship between CSR and repurchase intention.

3.5 Corporate image and repurchase intentions

Corporate image signifies how the organisation is perceived when customers see or hear the service provider's name (Bozkurt, 2018). Two components, namely emotional and functional elements that constitute corporate image (Foroudi, Jin, Gupta, Foroudi & Kitchen, 2018), influence customer decision-making processes of making repurchases or not, depending on their satisfaction levels fuelled by past experiences (Mulatsih et al., 2017). Kim, Song, Lee and Lee (2017) also found that a significant relationship between corporate image and repurchase intention does exist. Therefore, it is hypothesised in this study that:

H6: There is a positive relationship between corporate image and repurchase intention.

4. METHODOLOGY

4.1 Research approach

This study applied a deductive research approach to test the research hypotheses and examine the underlying relations among the study constructs. The study used a quantitative, self-completed, structured survey questionnaire to collect data and validate the association between the proposed study constructs as suggested by Burns and Bush (2014). Preceding studies utilised this method in examining the significance of CSR measures on customer perceptions, using constructs such as satisfaction and loyalty (Halim & Hermawan, 2017) and thus, this study also employed this approach.

4.2 Research measures

To operationalise the banks' CSR initiatives, relationship quality, corporate image and repurchase intention constructs, the study utilised question items that pursued assessment of different measures of CSR and the effect of relationship quality on corporate image. The study involved items that epitomise the four measures of CSR proposed by Carroll (1979). The scale items for all study constructs were adapted from previous CSR, corporate image, relationship quality and banking research studies. CSR activities were assessed using scales adapted from Vyas and Raitani (2014) to evaluate the ethical measure with four items and philanthropic measure with five items. The scales were verified by Martínez and Rodriguez-del-Bosque (2013). The scale items used to assess the economic and legal responsibility measure with four items each were adapted from Huang et al. (2014). In addition, the measurement scale for customer repurchase intention using four items was adapted from the same authors. The scales used were modified in terms of the wording to fit this study's context.

4.3 Research instrument

A self-completed structured questionnaire was used for its cost-effectiveness and due to its comparative ease of use to record and analyse data (McDaniel & Gates, 2013). This resulted in a slight adjustment in the wording of certain questions in the instrument. A five-point Likert scale anchored with 'strongly disagree' and 'strongly agree' was employed to rate the study participant's level of agreement with the items. The study questionnaire was reviewed by two marketing research professors and one industry expert to assess content validity and question structure and to acquire feedback on the design and precision of the instrument before the collection of data.

5. DATA COLLECTION

A non-probability convenience sampling method commonly used in consumer behaviour research in the banking environment was employed in this study (Wiid & Diggines, 2015). Data were collected from banking customers in the Vaal Triangle region of Gauteng province in South Africa. The bank intercept approach was applied to gather data from banking customers who had accounts and subscribed to any of the five selected retail banks alluded to earlier. The study respondents were given a consent form to sign in admiration of the research ethical standards and principles, before data were collected (Wiid & Diggines, 2015). A pilot study was first carried out with 40 banking service customers to assess the study instrument's reliability and validity and remove any undesirable items to eliminate errors (Malhotra, 2010). Subsequently, the main survey with 600 questionnaires was undertaken. Only 551 usable questionnaires were collected and deemed fit for analysis after discounting the incomplete and faulty forms. This represents a response rate of 92 percent.

6. DATA ANALYSIS

The Statistical Package for the Social Sciences (SPSS) 26.0 version and Analysis of Moment Structures (AMOS) 26.0 version were used to analyse the reliability and validity of data. Given its ability instantaneously test a series of dependent relationships, AMOS was used as it fosters the overall method of data analysis renowned as structural equation modelling (SEM) to test model causality (Arbuckle, 2013). The process of data analysis began with data cleaning for editing and coding purposes (Malhotra, 2010). Cronbach's alpha values (α) and composite reliability (CR)

were calculated to validate the consistency of the questions. Confirmatory factor analysis (CFA) was carried out (Kinnear & Gray, 2010) to validate construct fundamentals that formed sets of answers (Costello & Osborne, 2005). To assess the accuracy and determine the rigor of the study constructs in relation to what exists, the validity analysis recommended by Wiid and Diggines (2015) was performed. This was achieved through the use of CFA to establish whether the items could be put together and validated by incomprehensible constructs (Bagozzi, 1994). The convergent validity was verified using factor loadings of all items that had to be greater than 0.5, including confirmation of discriminant validity using the confidence interval greater than 0.5 and the average variance extracted (AVE) for each factor. In both cases, the minimum requirements for reliability, convergent and discriminant validities were met.

Prior to testing the hypothesised associations in the purported study model, the reliability of the focal constructs was assessed in conjunction with convergent and discriminant validities through CFA measurement model. The measurement model generated statistical values that corresponded with the recommended thresholds for a good model fit (Bagozzi & Yi, 2011). With the use of all items excluding those omitted following the pilot survey, satisfactory fit data (CMIN/DF 3.07; GFI 0.911; NFI 0.942; RFI 0.950; IFI 0.905; TLI 0.908; CFI 0.963), with a RMSEA value of 0.06 and SRMR at 0.038 were recorded and confirmed the absence of unidimensionality of the measures (Anderson & Gerbing, 1988). Although the chi-squared test was not significant in the confirmed study model, it was admitted being insistent and inapt to the sample size (Fornell & Larcker, 1981), thus, indicating the model fit. In contrast, Bagozzi and Yi (1988) assert that other fit indices such as CFI, RFI and RMSEA are better suited to measure the model fit. The CFI for the study sample was greater than 0.95, signifying that the measurement model represented a satisfactory fit to the applicable data. The validation of the measurement model was performed to evaluate the structural model. Arslan, Yilmaz and Aksoy (2012) state that the structural model summarises the relationships between latent variables by providing estimates of construct correlations. Following valuations of the measurement model's worth, the structural model was evaluated using AMOS version 26.0, to test statistical competence exercising the maximum likelihood estimates (MLE) (Bagozzi & Yi, 2011).

7. RESULTS AND DISCUSSIONS

7.1 Reliability and correlation analysis

The internal consistency of all measurement values surpassed the 0.70 boundary endorsed by Pallant (2020), henceforth offering satisfactory Cronbach alpha value (α) results. The Pearson correlation analysis was applied to examine the correlation between variables. The effect of associations was established at 0.5 to 1.0 (strong relationship), 0.3 to 0.5 (moderate relationship), 0.1 to 0.3 (weak relationship) and 0.0 to 0.1 (very weak or no relationship) at a significance level of 0.01, consistent with Choudhury's (2009) suggestion. The study results reveal that all constructs positively interrelate with each other as correlations are purged lower than 1, signifying the non-appearance of multicollinearity in the data set (Wiid & Diggines, 2015). The reliability and correlation coefficient matrix results are presented in Table 1.

Table 1: Descriptive statistics and correlation matrix between variables

| Variables | (α) value | Mean | SD | ETH | ECO | PHI | TRU | SAT | COM | CORP | REP |
|------------|--------------------|------|------|---------|---------|---------|---------|---------|---------|---------|-----|
| ETH | 0.77 | 4.40 | 0.54 | 1 | | | | | | | |
| ECO | 0.77 | 4.40 | 0.54 | 0.371** | 1 | | | | | | |
| PHI | 0.81 | 4.38 | 0.57 | 0.315** | 0.308** | 1 | | | | | |
| TRU | 0.90 | 4.33 | 0.72 | 0.422** | 0.292** | 0.444** | 1 | | | | |
| SAT | 0.90 | 4.44 | 0.72 | 0.342** | 0.290** | 0.364** | 0.692** | 1 | | | |
| COM | 0.88 | 4.25 | 0.66 | 0.186** | 0.237** | 0.273** | 0.426** | 0.435** | 1 | | |
| COR | 0.84 | 4.30 | 0.62 | 0.075 | 0.078 | 0.102* | 0.251** | 0.245** | 0.233** | 1 | |
| REP | 0.89 | 4.37 | 0.66 | 0.137** | 0.047 | 0.197** | 0.342** | 0.306** | 0.302** | 0.269** | 1 |

** Correlation is significant at the 0.01 level (2-tailed), ETH=Ethical; ECO=Economic and legal responsibility; PHI=Philanthropic; TRU=Trust; SAT=Satisfaction; COM=Communication; COR=Corporate image REP=Repurchasing intentions.

The following satisfactory data fit indices were recorded: CMIN/DF 2.441; GFI 0.884; NFI 0.879; RFI 0.863; IFI 0.925; TLI 0.914; CFI 0.925, with the RMSEA value of 0.061. Taking from the outcomes of the measurement and the structural model’s valuations, the next step was to examine and validate the proposed hypothesised construct associations. The path coefficients that emanated from SEM simplified all the suggested hypotheses and both statistically insignificant and significant associations of the hypotheses at a level of $p < 0.05$ and $p < 0.01$. The p value specifies a level of confidence that accordingly advocates that the hypothesis is significant and supported as proposed by Zikmund, Babin, Carr and Griffin (2013). Table 2 demonstrates the study’s hypotheses testing results.

Table 2: The hypotheses testing results

| Hypothesis statement of path analysis | Estimate | P-value | Result |
|---|----------|---------|------------------|
| There is a positive relationship between CSR and relationship quality. | 1.273 | 0.001 | H1 Supported |
| There is a positive relationship between CSR and corporate image. | -0.211 | 0.069 | H2 Not supported |
| There is a positive relationship between relationship quality and corporate image. | 0.312 | 0.001 | H3 Supported |
| There is a positive relationship between relationship quality and repurchase intention. | 0.714 | 0.001 | H4 Supported |
| There is a positive relationship between CSR and repurchase intention. | -0.690 | 0.001 | H5 Supported |
| There is a positive relationship between corporate image and repurchase intention. | 0.343 | 0.001 | H6 Supported |

According to the supported hypotheses, the banking customer’s fulfilment following their service provider’s relationship quality and the corporate image does significantly influence the envisaged customer repurchase intention outcome. The path coefficients that originated from SEM clarified all recommended hypotheses and both statistically significant and insignificant relationships of all the hypotheses at a level of $p < 0.01$ and $p < 0.05$. Five pathways from the proposed study model were supported. The p values point out a level of confidence, which, therefore, means that the hypothesis is supported and significant. CSR had a positive and significant influence on relationship quality at $p < 0.01$ and therefore H1 was accepted. H3 was also supported, indicating that relationship quality had a significant and positive influence on corporate image. This finding also corresponds with Wellyan’s (2016) finding in his study in Indonesia that there is a significant positive relationship between the two constructs in the passenger transport industry. H4 that purported relationship quality to be significant and positively impacted repurchase intention was

supported. This finding is consistent with Kim and Kim's (2016) finding in their study in the USA that a significant relationship does exist between the two constructs in the hotel industry. H5 was likewise supported as CSR had a positive and significant influence on repurchase intention. H6 hypothesised that corporate image has a positive and significant impact on repurchase intention, this hypothesis was also supported. However, H2 proposed that CSR has a positive influence on corporate image, unfortunately, it was not supported with a p-value of 0.069, which was greater than the $p < 0.05$ threshold.

8. MANAGERIAL IMPLICATIONS

This study offers valuable insights for marketing practitioners and academics regarding banking service providers' CSR initiatives and their influence on customer behavioural patterns. According to the researcher's knowledge, this study is the first to establish an empirical association between CSR measures and relationship quality leading to repurchase intentions moderated by corporate image in the South African banking context. Relationship quality appeared to be having a positive impact on corporate image and significantly influence customer repurchase intentions, corroborating Alhouti, Johnson and Holloway's (2016) findings that a positive relationship between CSR and repurchase intention does exist. When banking service providers engage in CSR initiatives, customers tend to be keen to repurchase their services. In addition, it is argued in this study that corporate image does not quite capture the impact of CSR on repurchase intention, owing to three possible reasons. First, customers may be doubtful of the exact intentions of the bank to embrace CSR. Secondly, CSR measures are perhaps viewed as part of the banks' role in enhancing corporate image and in turn, customers do not value this greatly in making decisions to repurchase banking services. Thirdly, customers could be paying more attention to economic and legal responsibilities and be less concerned with ethical and philanthropic tasks due to a possible lack of understanding of the banks' practice of CSR activities.

9. CONCLUSION

The objective of this study was achieved as the results showed sufficient statistical evidence suggesting the existence of differences in customer perceptions about CSR, relationship quality, corporate image and repurchase intention, as H1, H3, H4, H5 and H6 were supported. Remarkably, the study established that CSR wielded a negative and insignificant influence on corporate image and, hence, H2 was rejected. This implies that banks' CSR initiatives are less important in augmenting corporate image and promoting customer repurchase intentions in the South African banking environment. Moreover, the study offered practical strategies on how banking service providers should understand the interrelationship between the proposed study constructs. The use of suggested strategies geared towards understanding customer purchase behaviour and how to improve repurchase intentions could craft a competitive edge by integrating CSR initiatives that inspire relationship quality and corporate image in the banking environment of an emerging market. Therefore, the study concludes that first, the role of CSR as a source of competitive advantage should be established to improve the quality of relationships. Secondly, it is imperative to build marketing strategies that incorporate CSR initiatives that are customer-focused by commissioning the three validated constructs in the study model (relationship quality, corporate image, and repurchase intention).

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ASSESSING THE FACTORS INFLUENCING PROCUREMENT SUCCESS IN HIGHER EDUCATION INSTITUTION. THE CASE OF ONE UNIVERSITY OF TECHNOLOGY

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ABSTRACT

Procurement is a method used to find and source goods and services. This method involves the sourcing and purchasing and covers all activities from identifying of potential suppliers through to the delivery from the supplier to the user. The public procurement process needs to be understood by all parties involved. This study examined the factors influencing procurement success in one university of technology based in Gauteng, South Africa. The qualitative approach was adopted in this paper. In-depth interviews were conducted with the 12 participants who were selected through convenient sampling. The participants that are included in the sample size are the supply chain senior manager, one senior buyer, four assistant buyers and six interns. The research employed a thematic approach to analyse and interpret data. The findings of this paper revealed that just-in-time (JIT), procurement performance and information sharing are able to influence the procurement success in a higher education institution. The research aim was to investigate factors influencing procurement success in higher education institutions. Recruitment of non-qualified procurement staff, who are not competent enough to manage and conduct the procurement process, has led to the neglect of procurement activities. There must be a complement of employees within procurement that are young and old so that there is a balance of knowledge and experience. This will ensure that there is continuity and a strong legacy left behind when the old employees retire. Higher education institutions should adopt JIT principles in all their procurement processes so that unnecessary handling costs are avoided. The use of e-procurement systems is recommended.

Keywords: Just-in-time, performance of procurement, information sharing.

1. INTRODUCTION

Since the birth of South Africa's (SA) democracy, procurement has been used as a strategic instrument to allow the South African government to put transformation policies in place to improve the socio-economic status of the country (Turley & Perera, 2014). Traditional methods of procurement have come under pressure to change and they need to be replaced with the conventional approaches that will accommodate modern ways of business (Adagala, 2014). Abundant research has been conducted on procurement, but it is not clearly explained as to what specific factors influence procurement success in Higher Education Institution (HEIs), particularly universities of technology (UOTs). Procurement is a method to find and source goods and services; this method involves the sourcing and purchasing, while covering all activities from identifying of potential suppliers through to the delivery from the supplier to the user (Bekele, 2015). It is important that the acquired goods and services are sourced from the right source, are of the correct

quality, in the right quantity, at the right price and at the right time in order to maintain and manage the company's primary and supporting activities (Bekele, 2015).

2. LITERATURE REVIEW

This section provides the literature review on just-in-time (JIT) strategy within HEIs, performance of procurement and information sharing.

2.1 Adoption of just-in-time (JIT) by higher education institutions

The JIT concept has been welcomed by businesses as a method to improve performance and reduces cost within their processes to gain competitive advantage in a very competitive business environment (Taghipour, Hoang, & Cao, 2020). JIT is a tool introduced by Toyota Motor Corporation in Japan to eliminate any waste within the production line of cars to meet the customers' needs Shah and Patel (2018). The JIT philosophy advocates that no activity in the production line will take place without a need from the customers (Rahmani & Nayebi, 2014). The JIT technique can be used by any business, whether public or private. The aim of this concept is to improve the movement of goods and services just when they are needed. The concept of JIT can be used by HEIs in managing their resources and ensuring that they are operating optimally. Prudent inventory systems involve the economic order quantity (EOQ) model, fixed order system model and fixed order period system model (Muchaendepi, Mbohwa, Hamandishe & Kanyepe, 2019., Ondyeki, 2019). The economic order system is a model that is used by organisations to determine the number of items to order in order to reduce the handling cost and the cost associated with order processing (Meileni, Putra, Apriyanti, Satriadi & Oktapriandi, 2020). According to Sulaeman, Waluyo and Ali (2019), public higher education institutions are funded by state budgets; hence, they need to be accountable for their expenditure.

2.2 Performance of procurement

The aim of procurement is to source goods and service from reliable service providers to provide goods and services that are of high quality and be delivered on time and at an economical price (Duke Agyeman Fredua, Okyere & Adams, 2020). Procurement is one of the most important functions of any organisation and it plays a strategic role in ensuring that the organisation achieves its set goals. Kakwezi and Nyeko (2019) argue that "until an organisation measure purchasing performance, they will never know how well they are performing". For the procurement department to achieve its functions, performance must be measured to verify if it meets its objectives. Monitoring of procurement performance enables managers to evaluate how the procurement is performing and identify areas of improvement in order to improve the overall procurement performance (Saad, Kunhu & Mohamed, 2016).

Procurement performance relates to the reduction of operational cost while ensuring that the organisation remains profitable (Schütz, Kässer, Blome & Foerstl, 2020). Procurement's main area of concern is the effectiveness and reliability of a procurement system. Price variance, contract utilisation, supplier performance, procurement cycle time and variability, payment processing time, procurement cost and employee training are among the indicators on how well a procurement is performing (Saad *et al.*, 2016). When the university is engaging in supplier selection it needs to ensure that suppliers selected will be able to meet the mandate of the university in supplying goods

and services that are of high quality. Cost reduction, delivery on time and system flexibility are some of the key indicators of procurement performance (Okoth, 2019).

2.3 Information sharing

Information is one of the important aspects that an organisation can use to improve and achieve its goals. According to Lotfi *et al.* (2013) information sharing means distributing useful information for systems, people or organisational units

Several studies have shown that the sharing of information can yield positive results for the organisation's supply chain (Sheikhi, Goodarzi, Nowrozonejad, & Sheikhi, 2018., George & Pillai 2019). The sharing of information helps the organisation to coordinate its resources and all the supply chain activities (Wu, Yenyurt, Kim, & Cavusgil, 2006). Different organs of the organisation can collaborate and work together using information sharing to cut inventory cost and to improve the efficiency of the supply chain (Lotfi Mukhtar, Sahran & Zadeh 2013). Collaboration refers to two or more organisations joining forces to work together, sharing information and the buying power in pursuit of achieving a common goal (Meehan, Ludbrook, & Mason, 2016). Collaboration plays a strategic role in higher education institutions; it allows institutions to share knowledge, resources and sourcing power, and increases buyer side leverage (Meehan *et al.*, 2016). Collaboration can be used to form partnerships with suppliers in order to share resources and solve problems. The partnerships that are entered into during collaboration will assist the higher education institutions to share key resources such as technology and markets.

3. RESEARCH METHODOLOGY

This paper adopted the qualitative approach. The qualitative research approach is suitable for this research because it gives the researcher first-hand information from the participants pertaining to their personal experiences, which is difficult to collect when using a quantitative research approach (Abutabenjeh & Jaradat, 2018). Aspers and Corte (2019) state that the qualitative research approach uses existing studies to collect information from people's personal experience and utilises open-ended questions, comprehensive interviews and field notes. The use of the qualitative approach allows the researcher to use non-statistical methods to draw an understanding on the data collected. This means that the qualitative approach does not use a statistical method but it employs a number of realities, such as lived experiences, behaviours, social trends and different cultural dynamics that are found in the social settings and personal lives (Rahman, 2017). The employment of the qualitative approach gives the researcher a chance to draw deep insights into the problems presented to them (Tsushima, 2015). The qualitative approach gives the researcher the flexibility to interpret the data collected in different ways that they see fit for the particular scenario presented to them. In this way, the participants are given the freedom to express themselves and influence the direction of the research.

The target population for this study was the 17 employees that work in the procurement department in a higher education institution. Convenient sampling, a non-probability sampling method was deployed to select 12 participants from various levels of the organisation who could provide enriching responses and openly share their diverse experiences. Convenient sampling is a method of sampling that uses those that are conveniently available (Kapur, 2018). Pascoe (2014) explains that convenience sampling entails studying and extracting data from respondents within the target

population that are nearest to and readily accessible to the researcher. The participants included in the sample size were the supply chain senior manager, one senior buyer, four assistant buyers and six interns. Face-to-face, in-depth interviews were conducted to collect data. Kapur (2018) explains that open-ended questions are used to give a chance to the respondents to give their responses freely. The interview sessions were booked in advance with each participant. Each interview took between 20 and 30 minutes. The researcher ensured that saturation was reached during data collection by probing for more answers, but answers remained the same.

Thematic analysis was utilised to manually analyse data and derive meaning from the raw data collected. Thematic approach is a method used to put data into themes that bring meaning to the data collected. It organises information into patterns that make sense on the data set (Terry, Hayfield, Clarke & Braun, 2017) The themes that are found in the data set are focused on the lived experiences of the participants (Sundler, Lindberg, Nilsson & Palmér, 2019). Thematic familiarity is gained through understanding texts and becoming familiar with data and looking for special characters on the data findings. Search for meaning and theme is achieved through looking for meaning on lived experiences presented by participants and constructing patterns from the lived experiences. From the patterns constructed, the researcher begins to see themes coming together (Sundler *et al.*, 2019). After the researcher has constructed and understood the themes presented by data, the themes are organised and jotted down to bring meaning. The theme outcomes should be able to describe the actual meaning of the lived experiences.

The concept of trustworthiness was strictly observed to evaluate the quality of the study. A qualitative research's trustworthiness is measured by its dependability, transferability, credibility and confirmability (Korstjens & Moser, 2018).

In terms of dependability, the researcher ensured that the data collection methods were described in full detail and common understanding between the researcher and the participants was ensured. Moreover, participants' responses were recorded accurately to avoid misinterpretation and misrepresentation of data. Dependability is the consistency and reliability that is presented by research findings, which can be used by other researchers to support their work (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016). The transferability can be measured by how well the findings will be able to be transferred to other social settings by different researchers (Korstjens & Moser, 2018). In order to ensure transferability, convenient sampling was used to increase the trustworthiness of the data and the researcher further provided enough information and clarity about the context of the study. Moreover, credibility was enhanced through avoiding potential researcher bias and shifting the interpretation of what the participants said to fit a certain narrative. Credibility is the confidence that can be placed on the research findings and how truthful the research findings are (Nowell, Norris, White & Moules 2017). The credibility of the research is measured by the truthfulness the information gathered. Confirmability is found when the data accurately depicts the actual information provided by the participants (McInnes, Peters, Bonney & Halcomb, 2017). Confirmability was ensured by being neutral and not taking sides. The aim was to bring a fresh and new perspective to the body of knowledge.

4. ETHICAL CONSIDERATION

The researcher has the responsibility of protecting the dignity of participants, consider participants' safety and the wellbeing of the participants. The key ethical aspects of research were

adhered to. For instance, the researcher ensured that the study was approved through obtaining a permission letter. Participants were given full details of the study and were informed of their right to voluntarily participate as well as the right to withdraw from the study. The researcher further ensured that participants were not exposed to any harm or risk during their participation in the study. Moreover, all data collected were kept confidential and participants remained unanimous throughout the course of the study and the reporting process. The privacy of the participants involved in study was protected. This means that information provided during the study was strictly limited to the researcher and the supervisor of the study. A consent informed letter was developed that explained to participants what this research is all about and that they were free not to participate if they felt uncomfortable about the content contained in the research.

5. RESULTS AND DISCUSSION

This section provides the findings and the interpretation of the results. The findings are codified and themed. The findings relate to the research questions that this research set out to answer.

5.1. Themes

Certain themes emerged from the data and these themes are discussed below. The opened-ended questions were asked to allow respondents to share freely their opinion and lived experience (P denotes participant).

5.1 Adoption of just-in-time (JIT) by higher education institutions

Theme 1: Understanding of JIT

From the outcome of the question it showed that most of the participants understood and are familiar with the concept of JIT. The answers given by respondents are similar and show that the staff members know how JIT works.

P1: *“It helps to reduce cost with minimum inventory on hand”*. This is in line with Okoth’s (2019) argument that cost reduction, delivery on time and system flexibility are some of the key indicators of procurement performance. One participant did not know how the JIT concept is applied when sourcing goods and services. This shows that maybe the participant is not aware of how this concept works or was just confused with the terminology.

Sub-theme 1.1: Application of JIT when procuring goods and services

The responses gathered from participants showed that the JIT principle is used when sourcing for goods and services. P9 said *“goods and services are sourced when there are needed in order to minimise the holding stock and costs associated with holding stock”*. Muchaendepi et al. (2019) agree with this view and indicate that the (EOQ) model is used to determine the optimal order size for each inventory items, it reduces the ordering and carrying costs. Mankazana and Mukwakungu (2018) stress that to implement the JIT effectively, organisations need to have a sound relationship with their suppliers.

Sub-theme 1.2 Procurement systems

The information gathered from the participants shows that the procurement system is used to facilitate the procurement of goods and services in this institution. The respondents alluded that they use the oracle system.

P2: “This system registers suppliers and also perform due diligence in the supplier to check the risk. then the system invites the suppliers and all information related to the tender is being shared in the system to ensure compliance and transparency”.

The system is intelligent enough to do all the background checks on the suppliers and invite all the qualifying suppliers to bid. This is similar to the economic order system model that is used by organisations to determine the number of items to order in order to reduce the handling cost and the cost associated with order processing (Meileni *et al.*, 2020).

The responses show that the system has less human interruption and it is transparent when it comes to supplier selection. The awarding of the tender is given to best suppliers that meet all the specifications.

The respondents also mentioned that they make use of the requisition form to get needed goods from each department within the institution. *P7: “The requisition forms are completed on the system and shared with all the relevant people on the system”. “There is an online portal that is used to fill the requisition forms”. P10: “The use of technology minimises risk of corruption, speeds up time and ensures proper compliance with the process is done. The use of technology it enhances the speed, performance and turnaround time for procurement which gives it the ability to respond to customers’ needs on time. “*

This indicates that the procurement department is moving with the times in that it makes use of technology to complete requisition forms to avoid any errors and a time-consuming manual process.

Sub-theme 1.3 The turnaround time of receiving items procured from the supply

A participant’s response indicates that it all depends on the type of commodity that is being procured. *P5: “The lead time, for non-critical items it can take 1-2 weeks to be delivered. However, for critical and overseas foreign equipment it takes up to 12 weeks”.* It clearly shows that the minimum turnaround lead time is one week.

5.2 Measurement of performance procurement

Theme 2: Performance of procurement

The participants indicated that lengthy procurement processes impact procurement performance by reducing the targets that are set by procurement and that will affect the performance and profit of the institution.

P7: “Lengthy procurement processes impact the institution negatively in a way that the institution will not be efficient, customers will not be satisfied and lead to ineffective performance within departments in the institution”.

This indicates that lengthy procurement processes cause delays of procurement of goods and services and this will lead to other procurement goals not being met in the institution. This view coincides with Saad *et al.* (2016) that monitoring of procurement performance enable managers to evaluate how the procurement is performing. Anane and Kwarteng (2019) deliberate that performance procurement lays the basis of effective control of resources and validates the value of procurement functions within the organisation.

Sub-theme 2.1: Competency (skills and experience) impact procurement performance”.

The outcome from the question clearly indicates that lack of skills and experience does impact on performance of procurement as this will lead to not following proper procurement governance processes and procedures, which will lead to unnecessary expenditure. The majority of participants indicated that *“lack of skills and experience does impact the institution performance negatively and also efficiency of the institution does get affected”*. Okoth (2019) posits that the recruitment of non-qualified procurement staff who are not competent enough to manage and conduct procurement process has led to the neglect of procurement activities. However, P12 states *“skill and experience does not real affect procurement performance as people get skilled and experience as they continue to do their job”*. It clearly indicates that sometimes experience does not matter as long as you have experienced people around you who will train you to do the job. Most of the participants indicated that they have not yet experienced any problems with poor performance procurement. This clearly indicates that the institution’s procurement processes are performing well in ensuring that there is no poor performance.

Sub-theme 2.2 Planning culture among users of university and its impact on procurement performance

All the participants indicate that the implementation of planning culture is crucial as poor planning will lead to goods being delivered late and also put unnecessary pressure on procurement officers to perform the procurement process. P2: *“Planning culture increases efficiencies, promote customer satisfaction and reduces cost”*. The responses indicate that a culture of planning does drive the procurement performance as this will make sure that things are planned in advance to avoid unnecessary delays in deliveries and sourcing of goods and services. Anane and Kwarteng (2019) point out that there is a concern that procurement performance is rarely measured in the public sector. The inability to establish performance standards affects performance functions and leads to irregular anticipations, which affect decision making.

Sub-theme 2.3 Resource allocation (budget allocation) influence procurement performance

According to Sulaeman *et al.* (2019) public higher education institutions are funded by state budget hence they need to be accountable in their expenditure.

All the participants agree that budget allocation does influence procurement performance. The responses indicate that getting budget allocation on time is important as this will help the institution to do planning on time. Also, without an approved budget there will be no procurement process and suppliers will not be paid. P5 said *“The budget amount guides the purchasing officers on which processes to follow to obtain approvals”*. Procurement performance relates to the reduction of operational cost while ensuring that the organisation remains profitable (Saad *et al.*, 2016).

Sub-theme 2.4: Traceability or feedback influence performance of procurement?”

It was noted from participants’ responses that feedback is important as this will create accountability and responsibility from procurement officials. P11: *“Feedback helps the procurement to improve its processes and see where there are lacking. Customers and end users able to give feedback to procurement that will assist procurement to work on its processes”*

5.3 Information sharing

Theme 3: The importance of information sharing

George and Pillai (2019) posit that information is essential for everyday operations at each level of the supply chain due to its ability to connect various supply chain stakeholders and allows them to coordinate activities. Responses from participants indicate that collaborations with suppliers are important as this will massively, create employment for small companies which is good for the economy of our country. Through working with suppliers, the institute contributes positively to the growth of small businesses and enable them to be better enterprises that will be able to compete with bigger businesses.

P9: “Continuous sharing of information and making it available to key stakeholders in the supply chain allows quicker and more reliable business decisions that provide competitive advantage.”

Sub-theme 3.1: Training about information sharing

P1: “I believe that we should emphasise on more training with regards to information sharing. Employees and partners should know the importance and the power of information in the supply chain”.

This notion is supported by Anderson, Müller, and Pelletier (2015) that public procurement process needs to be understood by all parties involved such as suppliers, sourcing entities, businesses, government, professionals, and the public in general. As much as these guidelines have been put in place, most public entities do not adhere to these policies and procedures, which has led to the sourcing of wrong products. The responses can also be linked with Mathu (2019) who states that long cooperation and coordination of information exchange in the supply chain leads to an improvement in the competitiveness of the companies involved.

The responses from participants indicate that all procurement officials sign a non-disclosure agreement with the chief financial officer. P8: *“All the information shared through the institution one cloud drive so that there is transparency and information is stored in one place”.* This indicates that there is a process that is followed to ensure that institution information shared is not easily shared with outsiders. P6: *“other methods that are used by the institution to share information are meetings and engagement with different stakeholders”.* George and Pillai (2019) stress that information sharing is a key initiative for managing the supply chain in order to achieve higher performance gains, additionally offers many benefits such as reduced bullwhip effect, better coordination among various activities, taking better decisions and reduced uncertainties in supply chain and better understanding of customer needs and faster response to market changes. This view is also supported by Chopra Meindl and Kalra (2013) that supply chain coordination requires each stage of the supply chain to share information and consider the impact of its actions. P3: *“Sharing*

of information has helped the institution in a way that we all speak the same language, there is no repetition of work and it avoids duplication. The processes and procedures are well known to the entire organization when information is shared accordingly". It was also noted that sharing of information helps the institution with the dissemination of strategic goals and objectives at tactical and operational level to seamlessly execute and implement the tasks at hand.

Sub-theme 3.2: Collaboration with suppliers

Effective supplier management is directly linked to a higher level of performance and compliance. Strategic collaboration will certainly improve performance of supply chains (Mani, Gunasekaran & Delgado, 2018). P4: *"Through working with suppliers, the institution contributes positively to the growth of small businesses to be better enterprise that will be able to complete with bigger businesses. It increased understanding and improved service."* Mani et al. (2018) further alluded that companies have always been inclined to work with different types of suppliers in different ways. This increases the institution of Broad-Based Black Economic Empowerment (B-BBEE) regulatory status which increased savings and SMMEs delivery capability and create opportunities that will translate to job creation and improved inequalities. The above are some of the benefits of collaborating with suppliers that the institution will achieve.

This clearly shows that there is still room for improvement when it comes to procurement processes to ensure that users can receive what they requested. User training is one of the methods that can be used to train users on how to order goods and services.

6. LIMITATION OF THE STUDY

The study was only limited to looking at factors influencing procurement success in one particular institution and did not compare with other institutions. The views, experiences and perceptions shared in this paper may not necessarily reflect the general views of employees within the institution, as such diversity management issues may be context-specific. It must be acknowledged that the results of this study reflect the views of the organisation under study, therefore, should not be presumed to be universally applicable to all higher education institutions. The time limitation and COVID-19 regulations and protocols made it difficult to reach out for more participants to take part on the research.

7. AREAS OF FUTURE RESEARCH

The focus of the research was to assess the factors influencing procurement success in higher education institutions. The study only looked at one higher education institution and future research can look at other institutions and do a comparison on factors that influence their procurement successes.

8. MANAGERIAL IMPLICATIONS

The focus of this study was to investigate the factors influencing procurement success in higher education institution. The findings of this study will assist procurement managers in implementing JIT in their procurement processes and ensure that the information is shared with all stakeholders to promote high procurement performance.

9. CONCLUSION

The research aimed to investigate factors influencing procurement success in a higher education institution. The researcher used the existing literature to understand factors that influence the success of procurement so that the research question could be answered. The finding of the study indicates that there are many factors that influence procurement success and that contribute positively to the procurement success. These factors include Just-in-time, performance of procurement and information sharing. The flow of information should be seamless between the institution and their supply chain partners. The information that should be shared should be discussed beforehand with their partners and constantly be reviewed throughout the lifecycle of the relationships so that any changes to the conditions are communicated in time. Continuous supply chain training is important so that the management and the workforce stay informed, and they keep their skills up to standard at all times to ensure efficient and effective supply chain operations. The institution should constantly scan their technological environment for new trends and solutions to keep accurate information.

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SCULPTING SOCIAL INTERACTIONS AS AN ANTECEDENT OF ENTREPRENEURIAL INTENTION AMONG VAAL UNIVERSITY OF TECHNOLOGY STUDENTS

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ABSTRACT

Entrepreneurial intention has been described as the subjective thinking and mental state of an entrepreneur prior to the implementation of entrepreneurial behaviour. Grounded on the social exchange theory, this study sought to examine the influence of social interactions on entrepreneurial intention among university students. Social interaction has been a popular notion with the turn of the new millennium, and it will be interesting to discover how it influences entrepreneurial intention. Despite the significance of social interactions in behavioural and business contexts, it has remained largely under-researched in relation to entrepreneurial intention. This study adopted a cross-sectional descriptive survey design, with data collected through an online questionnaire developed in Google Forms. Confirmatory factor analysis was conducted, followed by structural equation modelling to test the hypotheses made in this study. The results from this study indicate that all the dimensions of information exchange, informal competition and social cooperation have significant positive effects on students' entrepreneurship intention. By examining social interactions in the context of novel dimensions like information exchange, informal competition and social cooperation, this study makes a remarkable contribution to theory and practice.

Keywords: Social interaction; entrepreneurial intention; information exchange; informal competition; social cooperation

1. INTRODUCTION

In both developed and developing economies, entrepreneurship has been regarded as a significant indicator of economic growth (Stamboulis & Barlas, 2014; Bosma *et al.*, 2018). As such, both policymakers and academics have continually sought means to enhance entrepreneurial activity among youth so that the country may yield noticeable financial, cultural and social benefits (Ho *et al.*, 2018). The drive to grow entrepreneurial activity has been encouraged globally because it has been identified as creating employment, high levels of competitiveness and innovation (Barba-Sánchez *et al.*, 2022). More recent scholarly research has also confirmed that organisations and economies that invest in entrepreneurial development among its human capital catalyse economic growth and development (Amoroso & Link, 2018; Stuetzer *et al.*, 2018; Karlidag-Dennis *et al.*, 2020; Zaring *et al.*, 2019). The central argument that these scholars bring forth is that in order to enhance the surgency and growth in new ventures, it is imperative that efforts to measure the level of preparedness among young graduates to start new ventures, at the same time preparing them for entrepreneurial activities (Bacigalupo *et al.*, 2016). According to Ndou *et al.* (2018), nurturing

entrepreneurial intention among university students does not only create a link towards economic development but also a link towards social development and innovation opportunities. With the arguments above in mind, there have been concerted efforts among scholars to measure the level of entrepreneurial intention, especially in developing economies. Entrepreneurial intention has been described as the subjective thinking and mental state of an entrepreneur prior to the implementation of entrepreneurial behaviour. Over the years, research on the entrepreneurial intention notion has increased exponentially, with the factors influencing entrepreneurial intention dominating (Nabi et al., 2018; Martínez-García et al., 2019; Acs et al., 2018). In South Africa, there has been remarkable interest in evaluating the factors that influence entrepreneurial intention among university students (Urban & Chantson, 2019; Letsoalo & Rankhumise, 2020; Nsahlai *et al.*, 2020).

For South Africa, the entrepreneurship drive is more urgent than it may appear, given that unemployment still remains a challenge in post-apartheid South Africa. According to the Quarterly Labour Force Survey (QLFS) released for the second quarter of 2019, the official unemployment rate increased by 1.4 points to 29.0% when compared to the first quarter of 2019 (Statistics South Africa, 2019). This implies that despite the increase in attention to entrepreneurial intentions among students, the economy is still battling with incapacity to create employment. In response to this challenge, this study sought to take up entrepreneurial intention from the viewpoint of a largely ignored potential antecedent of entrepreneurial intentions, social interactions. The majority of the studies have focused on environmental factors, such as entrepreneurial education and structural support, personality traits such as self-efficacy (Maheshwari, 2021), perceived fit (Hsu, *et al.*, 2019) and preferences and beliefs (Boldureanu et al., 2013;). The impacts of social interactions have been observed among individuals in relation to smoking and other habitual behaviours (Cutler & Glaeser, 2010; Fletcher & Marksteiner, 2017) and it is for this reason that this study proposed a relationship between social interactions and entrepreneurial intention. The underlying argument in this study is that by evaluating the dimensions of social interactions among students under the subconstructs, information exchange, informal competition and social cooperation, a relationship can be observed between these constructs and entrepreneurial intention. Therefore, this study aims to provide empirical support for the influence of the social interactions' variable, as measured in terms of the aforementioned subconstructs, on the entrepreneurial intentions of university students. The relevance of this study lies in its capacity to provide a basis for more social activities in the university's extra-curricular activities to promote entrepreneurial spirit among university students.

2. LITERATURE REVIEW

2.1 Theoretical framework

While most of the studies in entrepreneurial intention have been grounded on the theory of planned behaviour (Ajzen, 1991), these studies break away completely from the norm to build the conceptual model upon the social exchange theory. Because many studies were based on the theory of planned behaviour, the same arguments that entrepreneurial intention is a result of the influence of attitudes, subjective norms and perceived behaviour control have largely been presented. As mentioned above, this study is based on the social exchange theory (SET) tenets. In a nutshell, the SET proposes that social behaviour is moulded around an exchange process, the purpose of this

exchange being to maximise benefits and minimise costs. The notion of "social behavior as exchange" was first acknowledged by American sociologist George C. Homans in 1958 and since then this theory of social interaction has been widely used across many disciplines such as business, sociology, psychology and even economics. Social exchange "involves the principle that one person does another a favour and while there is a general expectation of some future return, its exact nature is definitely not stipulated in advance" (Blau, 1986:93). Although for Homans (1961), the dominant focus was on human behaviour and to explain the fundamental processes of social behaviour such as power, conformity, status and justice, SET sheds significant light into entrepreneurship today. There is a general consensus that social exchange, as understood in SET, involves a series of interactions that generate obligations among individuals (Emerson, 1976). Beyond the costs and the risks SET can be used to explain the development and continuation of relationships beyond what has been exchanged. In the context of entrepreneurship, it is logical to assume that entrepreneurial attitude can change due to positive values infused during social exchanges. As individuals exchange information, informally compete and cooperate on social issues, they solid their relationship, which can drive both of them towards a certain behaviour. In the words of Blau (1964:94), "the benefits involved in social exchange do not have an exact price in terms of a single quantitative medium of exchange", meaning social exchanges create enduring social patterns.

2.2 Conceptual model

Building on the social exchange theory tenets, this study explores how social interaction, measured in terms of information exchange, informal competitions and social cooperation, can influence entrepreneurial intention among university students at the Vaal University of Technology. The central hypothesis underlying this study is that social interaction needs to be promoted to increase entrepreneurial intention among university students. The direct relationships proposed in this study are represented in the conceptual model below.

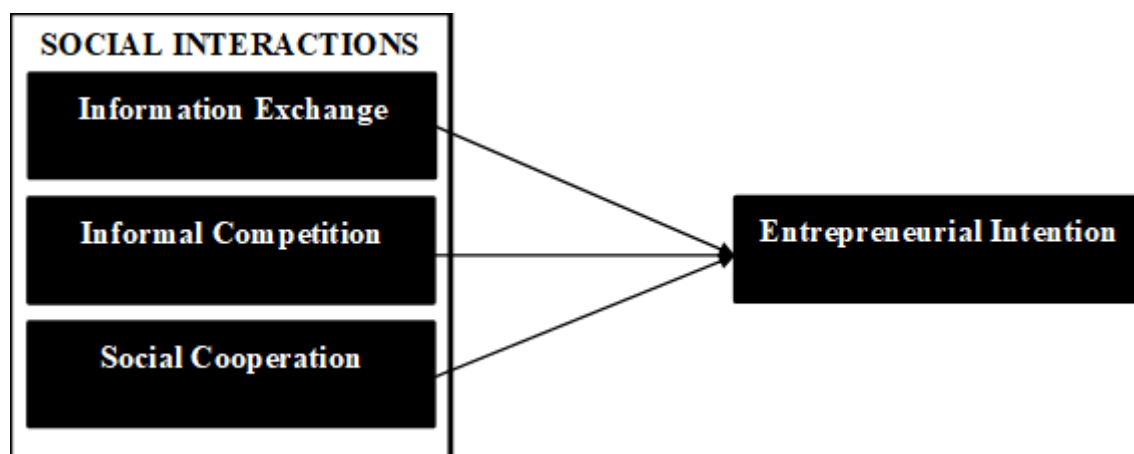


Figure 1: Conceptual model

2.3 Social interaction

In this study, social interaction relates to the direct or indirect exchange of physical and non-physical goods resulting in some level of social capital. In sociology, social interaction relates to the dynamic sequence of social actions between individuals or groups who modify their actions

and reactions due to the actions of their interaction partner(s). Social interactions can be differentiated into accidental, repeated, regular and regulated. According to Hong *et al.* (2004), these social interactions and peer effects affect several decisions, including the selection and financial assets. Woodward *et al.* (2018) believe that positive social interaction significantly affects individuals by decreasing stress among socioeconomically disadvantaged persons.

2.4 Entrepreneurial intention (EI)

EI has been defined as the orientation and willingness of an individual to start a new business and to accomplish this in future (Ridha & Wahyu, 2017) and this intention to start a new business has been central to the entrepreneurial literature. Generally, EI captures the cognitive state of individuals as they engage in decisions to create new businesses (Bullough *et al.*, 2014). In the literature, EI has been considered a critical factor that determines an individual's behaviour and is measured in terms of the desire or preference, self-prediction and intentional behaviour (Armitage & Conner, 2001).

2.5 Hypothesis Development

The above conceptual model follows the arguments and conclusions raised by Huang *et al.*, 2021) whose arguments, though not built on the same subconstructs, were that social interaction positively influences household entrepreneurship. Thus, the conceptual model mutates similar arguments around information exchange, informal competition and social cooperation as antecedents of entrepreneurial intention. Based on the arguments and empirical evidence, this study predicts the following hypothesis:

- H_1 There is a positive and significant relationship between information exchange and entrepreneurial intention among Vaal University students.
- H_2 There is a positive and significant relationship between informal competition and entrepreneurial intention among Vaal University students.
- H_3 There is a positive and significant relationship between social cooperation and entrepreneurial intention among Vaal University students.

3. METHODOLOGY

3.1 Research design

According to Ponto (2015), several methodological approaches can be used in research. The selection of a research design depends on the purpose of the research, the type of research questions to be answered and the available resources. This study adopted a cross-sectional descriptive survey design, using an online, self-report questionnaire based on a five-point Likert-type scale. This design was adopted because of its capacity to gather as much information as possible about a large population with some degree of accuracy (Rossi *et al.*, 2013). The descriptive survey design blends both quantitative and qualitative elements in order to provide relevant and accurate information. As such, it has also been regarded as a time-efficient research method, relevant in cases where people are at the centre of the research objective. Unlike other research designs like the experimental research, in a descriptive survey design, the researcher cannot manipulate any of the variables, but only observes and measures them.

3.2 Sampling method

This study was based on students at the Vaal University of Technology and in terms of sampling, the study adopted a probability sampling technique. In a quantitative study, probability sampling is regarded as appropriate because every member of the target population has a known chance of being included in the sample. Probability sampling methods include simple random sampling, systematic sampling, stratified sampling and cluster sampling, but this study chose simple random sampling. Out of an estimated 600 students enrolled for the Post Graduate Diploma in Logistics Management, Retail Business Management, Safety Management, Supply chain management and Retail Business Management in the first semester of 2022, the Google form link was sent to a randomly selected group of 300 students. As argued by Carland et al. (2001), this was done to ensure the appropriateness of participants and yield quality data.

3.3 Research instrument and data collection

To avert measurement errors and increase the validity and reliability of the research instrument, all scale items were adopted from previous studies. The research participants were required to rate their agreement or disagreement to a set of statements using a five-point Likert scale ranging from 1 ‘strongly disagree’ to 5 ‘strongly agree’. The outcome variable, EI, was measured using the scale developed and validated by Lin and Chen (2009), as moderated extensively by Karimi *et al.* (2016) and Miralles *et al.* (2016). The Social Interaction Self-Statement Test (SISST) (Glass, Merluzzi, Biever, & Larsen, 1982), the best-known cognitive endorsement procedure, which combines elements of a self-rating measure, was used in this study.

Table 1: Cronbach alphas for scales

| Construct | Cronbach alpha |
|--|----------------|
| EI Scale | 0.808 |
| The Social Interaction Self-Statement Test (SISST) | 0.756 |

A web survey was administered in this study, given the COVID-19 induced restrictions on movement and physical contact. In addition, web-based survey was preferred because unlike face-to-face and e-mail surveys, they do not require manual transfer of responses into a database, thereby saving on costs and reducing the amount of error biases (Dillman, 2007).

3.5 Data analysis

This study applied a structural equation modelling protocol using SmartPLS 3.3.9. According to Kock (2020), SEM allows researchers to build causal models with latent variables and over the years, partial least squares (PLS)-SEM methods have been increasingly popular. This view is supported by Ringle et al. (2020) who argue that PLS-SEM has become the key multivariate analysis technique for researchers, ensuring rigorous research and publication practices. As such, in validating the conceptual model and the hypotheses presented in Figure 1, PLS regression analysis has been adopted based on the questionnaire scale developed.

4. RESULTS AND DISCUSSION

Table 2: Background and demographic information of sample (N = 105)

| Items | Frequency | Percent | Items | Frequency | Percent |
|----------------------|-----------|---------|-----------------------|-----------|---------|
| Gender | | | Age | | |
| Male | 67 | 63.8% | Below 18 years | 0 | 0% |
| Female | 38 | 36.2% | 18-25 years | 81 | 77.1% |
| | | | 26-33 years | 21 | 20% |
| | | | 35 years & above | 3 | 2.9% |
| Race | | | Marital Status | | |
| Black | 104 | 99% | Single | 102 | 97.1% |
| White | 1 | 1% | Married | 3 | 2.9% |
| Coloured | 0 | 0% | | | |
| Year of Study | | | | | |
| First | 5 | 4.8% | Third | 13 | 12.4% |
| Second | 58 | 55.2% | Fourth | 29 | 27.6% |

From the results presented in Table 1, it can be observed that the majority of the respondents were male. The results show that the total number of male participants was 67 (63.8%) while female was 38 (36.2%). As expected among undergraduate students, the results indicate that the majority of the students (97.1%) are still single, while a meagre 2.9% are married. This has been the general trend among university students across South Africa and other countries. None of the respondents were below the age of 18 years and the majority fell into the 18-25 year category, which had 81 (77.1%). The second largest age group was the 26-33 year group with 21 (20%) participants. This was followed by the 35 years and above with 3 (2.9%).

4.1. Measurement scales' reliability and validity

Before one can test the hypothesis proposed in the conceptual model, it is important to test the validity and reliability of the measurement scale. Confirmatory factor analysis (CFA) was used to examine the construct validity and several indexes of the overall model fit were applied. The instrument's reliability was measured in terms of the Cronbach alpha and estimated loading factors (LF) of all the questionnaires (items). The composite reliability (CR) and the average variance extracted (AVE) of each construct were used to measure validity (Fornell & Larker 1981; Anderson & Gerbing 1988). Table 2 presents the scores for CR, Cronbach's alpha (α) and AVE obtained from this study.

Table 2: Descriptive statistics and confirmatory factor analysis (N = 105)

| Constructs and factors | Mean | S.D. | Factor loading | CR | AVE |
|--|-------|-------|----------------|-------------|-------------|
| Information exchange (Cronbach's alpha = .747) | | | | .873 | .635 |
| I frequently share business material, papers and notes with other students in my university | 4.847 | 1.144 | .887 | | |
| I frequently share entrepreneurship motivational speeches and advice based on my experience with other students in my university. | 4.720 | 1.141 | .669 | | |
| I always contribute ideas and thoughts to formal and informal discussions on business incubation with other students | 4.855 | 1.135 | .814 | | |
| I have participated in several online and face to face community interactions to share information and knowledge on entrepreneurship and business skills | 4.837 | 1.110 | .801 | | |

| Constructs and factors | Mean | S.D. | Factor loading | CR | AVE |
|--|-------|-------|----------------|-------------|-------------|
| Informal competition (Cronbach's alpha = .776) | | | | .880 | .646 |
| There is a general sense of materialistic competition among my friends and peers. | 4.873 | 1.079 | .760 | | |
| I generally feel I need to keep pace with my peers in terms of financial growth | 4.880 | 1.104 | .819 | | |
| There is a general tendency among my peers to compete for resources. | 5.094 | 1.195 | .821 | | |
| I always work to be the first to achieve a certain goal than any of my friends or peers. | 4.753 | 1.168 | .814 | | |
| Social cooperation (Cronbach's alpha = .831) | | | | .887 | .662 |
| I have collaborated with my friends or peers on several projects. | 4.597 | .963 | .894 | | |
| It feels good working together to achieve results or people helping each other out to achieve a common goal. | 4.606 | 1.017 | .795 | | |
| I have never ignored a friend or peer when they are facing a social or financial dilemma. | 4.563 | .966 | .805 | | |
| There are always mutual benefits from cooperating with other students within the university and community. | 4.511 | 1.110 | .755 | | |
| Entrepreneurial intention (Cronbach's alpha = .857) | | | | .897 | .687 |
| I am determined to create a firm in the future. | 4.695 | 1.109 | .878 | | |
| It's a good idea to start saving money to start a business now. | 5.049 | 1.047 | .756 | | |
| It is an investment to spend time learning about starting a firm. | 4.882 | 1.049 | .794 | | |
| My greatest achievement will be to start and run my own business. | 4.783 | 1.099 | .880 | | |

In SEM-based studies, the lowest acceptable factor loading is 0.500 (Borroso et al. 2010), composite reliability (CR) of each construct is 0.5 (Hair et al. 2011) and AVE is 0.5 (Urbach & Ahlemann 2011). Regarding the Cronbach's alpha, the general rule is that for reliability to be conferred, the alpha values for a construct should be above 0.700 and the results presented show that all the α scores were above the threshold.

Table 3: Discriminant validity of the model's constructs on Fornell-Larcker

| Construct | AVE | IE | IC | SC | EI |
|-----------|------|-------------|-------------|-------------|-------------|
| IE | .635 | .797 | | | |
| IC | .646 | .412 | .804 | | |
| SC | .662 | .454 | .451 | .814 | |
| EI | .687 | .344 | .521 | .442 | .829 |

NOTE: The elements of the diagonal (bold) are the square root of the variance shared between the constructs and their measures (AVE). The values below the diagonal are the correlations between the constructs.

Table 2 showed that the lowest Cronbach alpha was .747, showing the high internal consistency (Zhang, Li, Liu, & Ruan, 2019). The results in Table 3 show that the square roots of the AVE were all greater than the inter construct correlations. As such, reliability and validity were achieved. Confirmatory factor analysis (CFA) was used to further examine the goodness of fit of the model and the model fit the data well ($p < .001$; $\chi^2/df = 2.156$; CFI = .937; IFI = .929; TLI = .927; NFI = .916; RFI = .904; AGFI = .859; and RMSEA = .570). Thus, the CFA assessment indicated the structural models and is suited for hypothesis testing

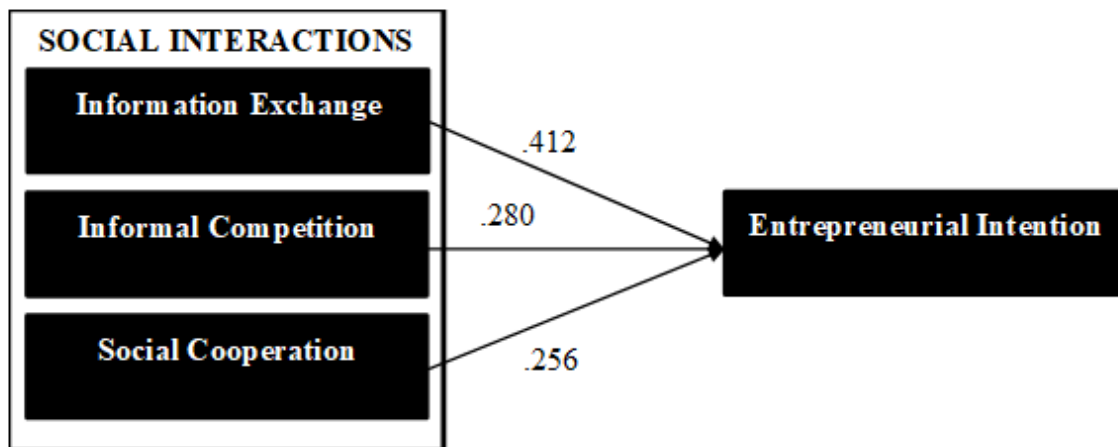
4.2 Hypothetical test

This study used structural equation modelling (SEM) in AMOS 20.0 to examine the mediating and moderating effects. SEM is a multivariate statistical analysis and multiple variables in this study can be analysed simultaneously (Tho, 2018). Further, it integrates two statistical methods: factor analysis and path analysis. SEM can deal with latent variables and indicators concurrently and simultaneously analyse the direct effect, indirect effect and over model fit (Liu, 2018). Besides, the model allows measurement errors in independent and dependent variables, while traditional analysis is difficult to solve.

Table 4: Hypothesis Testing

| Hypothesis | Direct Effect | t-Value | p Value | Decision |
|------------|---------------|---------|---------|-----------|
| IE→EI | .412 | 12.893 | .000 | Supported |
| IC→EI | .280 | 1.458 | .000 | Supported |
| SC→EI | .256 | 2.568 | .000 | Supported |

The results provided in Table 4 indicate that all the three hypotheses were supported at $p < 0.05$. H_1 proposed that there is a positive and significant relationship between information exchange and entrepreneurial intention and a path coefficient of .412 was obtained, confirming the proposition. Also, H_2 stated that there is a positive and significant relationship between informal competition and entrepreneurial intention and the result of a path coefficient of .280 is confirmation to that. Lastly, H_3 indicated that there is a positive and significant relationship between social cooperation and entrepreneurial intention. The results indicate a path coefficient of .256 at $p < 0.05$; hence, the hypothesis is supported.



The results imply that in order to influence entrepreneurial intention among university students, it is important that institutions and communities cultivate social interactions. As students exchange more information, compete informally among each other and cooperate at social levels, they are able to nurture their intention to start businesses. From the results it can be noted that information exchange has the largest influence of entrepreneurial intention and this is one variable that organisations should focus on.

5. CONCLUSION

The confirmation of the hypotheses made in this study allows for drawing several conclusions of interest in relation to the factors that influence entrepreneurial intention among university students

in South Africa, particularly in the Vaal University of Technology. Entrepreneurship has been an area of concern to institutions across South Africa and these conclusions must be made. Information exchange among students is a critical factor in the build-up to stronger entrepreneurial intention among South African students. Although other factors such as attitude have always been prioritised in discussions around intention, it has emerged that information exchange equally merits consideration. It is therefore important that universities, social clubs and communities, organise workshops and seminars on entrepreneurship so that the students are afforded opportunities to exchange information. There is need for students to be afforded several opportunities to interact and exchange information. Of note is the fact that informal competitions be encouraged among students. In this regard, it is important that universities organise entrepreneurial competitions within the university to encourage the spirit of competition. Lastly, entrepreneurial training can be used as a tool to enhance social cooperation. This is because one of the conclusions that can be reached from this study is that social cooperation is an important antecedent of entrepreneurial intention.

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A CRITICAL INVESTIGATION OF TEACHING PRACTICE MODELS IN FOUNDATION PHASE TEACHER TRAINING IN SOUTH AFRICA

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ABSTRACT

Teaching practice as a requirement for all undergraduate teacher qualifications in South Africa has not been very successful in terms of raising the quality of initial teacher education. Teaching practice outcomes are influenced by various contextual factors in the South African landscape. Guidelines provided by the South African policy framework (DHET 2018) only suggest time frames for teaching practice and vaguely mention a structured mentorship programme and proper supervision as a requirement, without providing any formal structure or guideline to ensure that this is possible. The purpose of this study was to investigate the shortcomings of teaching practice models with the aim to propose suggestions to improve teaching students' practical preparation. As a theoretical framework, this investigative case study drew from the human capital theory as well as the sociocultural theory (Tomer 2016; Vygotsky 1978). Adopting a qualitative research design, this case study identified four South African higher education institutions that train foundation phase teachers through an open distance learning approach. Four primary schools in the Gauteng province were also identified through random sampling. Data were collected through individual semi-structured interviews with lecturers, school principals and mentor teachers. In addition, questionnaires were used to collect data from students who were doing teaching practice at the four participating schools. Based on the fact that the findings have confirmed the undeniable value of teaching practice and the importance of proper mentoring, the recommendations focus on suggestions about how the policy framework could provide for formal internships and proper induction programmes for student teachers, as well as the introduction of teaching schools or schools of professional practice. The findings of this study have an implication on how the South African schooling system and institutions of higher education need to collaborate to create a policy framework that will provide for formal internship programmes of student teachers. Such a policy framework will regulate internships for students registered with distance education institutions as well as traditional residential universities.

Keywords: Internship, mentorship, professional practice schools, teacher assistants, teaching practice, work-integrated learning.

1. INTRODUCTION

Around the world, teaching practice forms an integral part of the undergraduate training of student teachers. The purpose of practical teaching is to give student teachers the opportunity to experience the implementation of theoretical knowledge in action and to provide students with an opportunity to practise teaching skills in a safe environment under the guidance of an experienced mentor. Unfortunately, the education landscape in South Africa is still characterised by inequalities nearly

26 years after the transition to a new democratic system. The Parliamentary monitoring group in 2015 (Parliamentary Monitoring Group 2015), reported that as many as 80% of South African schools are dysfunctional. The implication is that teaching practice may not add much value when student teachers are placed in dysfunctional schools and that the quality of newly qualified teachers may be negatively impacted as a consequence. There is, therefore, a great need for a teaching practice model with a set of uniform criteria that will enhance the quality of teacher training.

Teaching practice, also considered vocational focused education or work-integrated learning (WIL), includes both the theoretical classroom-based, and work-based forms of learning (Winberg, Engel-Hills, Garraway & Jacobs 2011). In South Africa, the policy document Minimum Requirements for Teacher Education Qualification (MRTEQ) (Department of Higher Education and Training) (DHET 2015)), provides the framework for initial teacher training programmes. According to MRTEQ's guidelines, school-based teaching practice is a form of work-integrated learning (WIL), and supervision and controlled teaching practice are requirements for the Bachelor of Education (B.Ed).

According to MRTEQ, the following guidelines for WIL must be met:

- It must be distributed over the course of the academic programme.
- It must take place in block periods of which the duration may vary.
- There should be a guarantee of good mentorship, placement in a suitable school and formal assessment of the practical component.
- WIL must take place in functional schools.
- It is the task and responsibility of every educational institution to set minimum standards that define competence (DHET 2015).

Qualities such as good organisation and management, flexibility, resilience, high quality of teaching and learning, high expectations and good discipline are prerequisites in schools where students are placed for teaching practice. If this is not in place, it leaves a question about the quality of mentoring that student teachers will be exposed to. In an education landscape where approximately 80% of South African schools are considered to be dysfunctional (Parliamentary Monitoring Group 2015), placement in affluent and popular schools is in high demand. Since distance learning students are spread across the country, they are also compelled to do teaching practice at their nearest school, regardless of the quality of teaching and learning at the school.

For the purpose of this study, teaching practice programmes of institutions of higher learning that train foundation phase teachers via an open distance learning approach, were explored. This decision is based on the fact that almost half of the nation's teachers are delivered through South Africa's largest distance learning institution, the University of South Africa (Unisa 2019). My interest in this study was sparked by the fact that I am the programme coordinator for teaching practice at a private distance learning institution and I was also driven by a desire to improve teaching practice experiences and the quality of teacher training of our students.

Based on the preceding background, the following research question was formulated:

What criteria should teaching practice models in the South African context meet to provide quality practical experience to students studying foundation phase teaching through open distance learning?

The aim of the study was to investigate the shortcomings of teaching practice models currently employed by open distance education institutions in South Africa, with the aim to propose suggestions to improve teaching students' practical preparation and, subsequently, the quality of newly qualified teaching students being delivered into the schooling system. I also aimed to explore, evaluate, and describe the type of teacher as well as the kind of environment essential for quality education. This information was evaluated and described against the challenges that schools and students experience during teaching practice. Teaching practice, as currently offered by open distance learning institutions in South Africa, has been interpreted using various theoretical frameworks and models that underpin teaching practice, with careful consideration of the South African context.

2. LITERATURE REVIEW

2.1 Theoretical framework

This study is grounded on the human capital theory of Smith (1776), Olaniyan and Okemakinde (2008), as well as the sociocultural theory of Lev Vygotsky (1978). The human capital theory originated in the 1700s, when Smith (1776) claimed that education forms the basis of human capital in every sphere of society and enables and sustains economic growth. Smith (1776) proposed that the acquisition of valuable skills and knowledge increase individual human capital, while at the same time increasing the overall wealth of the nation concerned. Kupe (2019) agrees that universities worldwide and in South Africa are expected to contribute to the advancement and development of their societies by investing in their graduates. In this regard, government, the private sector, and students themselves invest in obtaining human capital through, for example, appropriate university education of a high standard.

Tan (2014) also agrees with the tenets of the human capital theory in believing that education and training are considered the source of economic growth. Human capital theory argues that man's cognitive abilities are enhanced through education and training, resulting in increased productivity and higher incomes (Tomer, 2016; Olssen, Codd & O'Neill 2004). Quality training not only contributes to the physical and financial benefit of the student, but also to the skills demand of the school and community. High-quality training increases the number of graduates, thereby boosting the economy and attracting development investments. Higher levels of training and training proficiency also stimulate technological advances, which are employed in the classroom to increase quality education. Thus, a cycle of progress and growth is created to the benefit of individuals and the economy.

The use of technology and technological skills in teaching practice also has a significant impact on the acquisition of new knowledge. In the fourth industrial revolution, technological knowledge and skills increase occupational readiness and employability. Electronic searches for knowledge and the online study of skills through videos shorten the time spent learning and promote economic growth. In a technological world with internet access and quality education research data, education students gain access to a variety of educational practices.

On the other hand, Vygotsky's sociocultural theory (Vygotsky 1978) proposes mentoring as a critical component for new skills to be acquired. Teaching practice implies that the student (mentee) should be guided and supported by a more experienced person (mentor) to obtain the

relevant practical skills. Teaching practice is further influenced by Vygotsky's concept of scaffolding, where students learn to master practical skills in a progressive way, starting with observation in year one, moving to co-teaching until the student is finally in year four and ready to plan and present a lesson solo.

Student guidance and support should take place in what Vygotsky refers to as the zone of proximal development. This involves guiding the inexperienced student by identifying what they can do by themselves and what they need help and assistance with. Although Vygotsky's sociocultural theory primarily explains how young children learn, the underlying principles can also be applied to adults, and for the purposes of this study, to students.

3. METHODOLOGY

3.1 Research design

A case study design has been identified as the most appropriate research design as it allowed me to "listen" to the participants, whom I considered to be rich in data and to learn from their lived experiences (Braun & Clarke 2006). According to Creswell (2018) and Denzin and Lincoln (2013), a requirement of qualitative research is that it takes place in the natural world. As knowledge was gained primarily by "engaging" with reality, interpretivism was identified as the philosophical paradigm underpinning this study.

In this study, the emphasis was on an inductive way of working, where different teaching practice models and programmes were studied with the aim to identify shortcomings and best practices. International models of teaching practice were compared with the teaching practice models of the four identified South African teacher training institutions that train teachers through a distance learning approach. The aim was to identify possible patterns and to make recommendations that can be of value on a larger scale (Joubert, Hartell & Lombard 2016).

3.2 Sampling method

According to Mouton (2011), the target population is the group to be used in the research study, from which conclusions can be drawn. This study identified the target population as institutions of higher education that train foundation phase student teachers through an open distance learning approach. The schools that were invited to participate in the study also had to be representative of the country's demographics, diverse cultures, and languages.

The criteria for inclusion of the higher education and training institutions were as follows:

- • They must be an accredited educational institution in South Africa.
- • The B.Ed Foundation Phase programmes must be accredited.
- • Teaching and learning must be offered through a distance learning approach.

After the five institutions were identified, a lecturer involved with teaching practice at each institution was purposefully selected and invited to participate in the study.

Identification of the participating schools:

Four schools were randomly identified from a database of schools in the Gauteng province.

Participants in the identified schools:

- The principal and four mentor teachers from each participating school were purposefully selected because they were considered to be rich in data (Creswell 2018). The four mentor teachers at the participating schools were identified by the principal and were invited to participate in the study.
- Thirty teaching students who were doing teaching practice at any of the participating schools and who were enrolled at any of the four identified distance learning institutions were invited to participate in the study.

3.3 Research instruments

Semi-structured individual interviews were used to collect data from the lecturers, principals, and the mentor teachers. Questionnaires were used to collect data from the participating students who met the criteria of being enrolled at any of the four identified institutions.

3.4 Data collection

After all participants gave consent to participate in the study, interviews were scheduled at a time most convenient for them. Through open questions, the participants were prompted to share their own experiences, knowledge and insights. The nature of the semi-structured individual interviews also allowed for the observation of non-verbatim data, such as sighs or long silences (Maree 2020). With the permission of the participants, the interviews were recorded to be transcribed later. Biographical data such as age and gender were captured, and pseudonyms were used to ensure confidentiality.

Because the students were the larger group, questionnaires were handed out to those participating. The questionnaire questions differed from the interview questions in that they were more focused on the students' experience of teaching practice. The questionnaires had the advantage that students could complete them later, in their own time. They also allowed students to spend more time with some of the more difficult questions, without the discomfort of having to respond on the spot. The questionnaires also allowed for anonymity and therefore encouraged honest responses.

3.5 Data analysis

The interviews were transcribed and stored electronically. A master list was compiled to be used to verify and confirm the reliability of the encrypted data. Thereafter, the data that was collected through the interviews and questionnaires were sorted and labelled with the assistance of the ATLAS.ti, a computer programme considered one of the most powerful tools for qualitative research. Then the groups of interviews and questionnaires were analysed and interpreted through coding. After multiple readings and note-making, recurring themes and categories were identified. Diagrams were used to point out and summarise relationships between groups of participants.

In Table 1 below, the themes, categories, and codes that were identified, are outlined.

Table 1: Overview of themes, categories, and codes.

| Research questions | Themes | Categories | Codes |
|--|---|--|---|
| What requirements should teaching practice models meet to deliver the type of teacher envisaged by the South African education system? | Models underpinning teaching practice and theoretical frameworks | Requirements that underpin teaching practice | Scaffolding Mentorship Apprenticeship (Internship) Functioning schools (Good school management) Quality education training Partnerships |
| Do the current teaching practice models meet the need to ensure quality education? | The type of teacher envisaged to deliver quality education within the South African education landscape | Teaching practice within the South African education landscape | Problems in basic education affecting teaching practice The role of higher education Requirements for undergraduate teacher training programmes Methods for delivery Features of practice-based education |
| What factors affect the workability of teaching practice models currently used to prepare student teachers for the foundation phase? | Factors affecting the workability of teaching practice models | Factors affecting teaching practice | Partnerships between universities and schools Mentorship and mentoring Placement and time of practical teaching Assessment of skills during practical teaching |

4. RESULTS AND DISCUSSION

A confirmation of the value of teaching practice was the first theme to emerge. The data collected from the interviews and questionnaires unequivocally confirmed the value of practical teaching. Participants confirmed that student teachers were given the opportunity to experience the philosophical and pedagogical actions of teaching in action during teaching practice. Teaching practice further provided student teachers the opportunity to learn and practice skills in interpersonal relationships and conflict management. It also has the value of reducing a reality shock as is often experienced by many teachers entering the teaching profession. Some participants reported the value of exchange agreements between schools, providing teacher assistants employed in schools an opportunity to gain valuable experience in more than one school

The second theme that emerged from the participants' feedback confirmed the importance of good mentorship and a need for formal mentoring training. This was important to note, as formal mentoring training is not a requirement for one to act as a mentor to students in schools. Only two of the four universities that participated in the study offered mentor training to the schools where their students are placed. This finding confirms the need for accredited mentor training programmes, either through universities or through accredited private service providers.

The third theme that emerged was around the timing and duration of teaching practice cycles. From the feedback, it became clear that there was no ideal time for teaching practice, but a need for better communication and coordination between the schools and universities around student placement was raised. Participants also agreed that more time spent in schools will only be beneficial if students spend that time in functional schools. This was confirmed by students who were appointed as teacher assistants. They had the opportunity of working in schools throughout the year and were of the opinion that they were better prepared than students who only did a few

weeks of teaching practice each year. Unfortunately, it is only the more “wealthier” schools that have the additional funding to appoint students as teacher assistants.

The fourth theme that emerged was around the teaching practice portfolios and curricula requirements. These varied greatly between institutions, and this probably explains the difference in the quality of teaching practice between the participating institutions. Possible reasons for this were identified as follows:

- a) Each university, in consultation with the directives provided by the Council on Higher Education and the South African Qualifications Authority (SAQA), compiles its own learning programmes.
- b) Each university structures the practical teaching activities and portfolios differently, according to its own needs.

Some of the challenges that were reported are as follows:

- The portfolios and activities are not aligned with the annual teaching plan as prescribed by the Curriculum and Assessment Policy Statements. This means that students are often required to prepare and present a lesson based on a topic that was already covered or will only be covered later in the year.
- The mentor teachers often expect the students to teach the scripted lessons that are provided by their provincial department of education. These scripted lessons often vary from one province to the next and from one district to the other. Scripted lessons reduce a teacher to an end-user of a pre-prepared product and does not allow for any creativity on the part of the teacher or allow the teacher to respond to the needs of her unique group of students.
- Some students voiced their frustrations about the extra expenses brought about by having to buy material to make teaching resources, especially in schools where teaching and learning resources were limited. Students also complained about their workload during teaching practice, as they had to compile teaching practice portfolios in addition to their regular assignments.

The last theme that emerged was around a formal structure that will allow for collaboration between higher education institutions and schools and that will expand the pool of functional schools being used for teaching practice. Such a formal structure will also prevent schools located near universities being overused and build capacity in more rural provinces and areas. Such identified schools could become an entry point and a developmental path for young people in rural areas wanting to choose education as a career.

5. RECOMMENDATIONS

Figure 1 provides a visual representation of the challenges that were identified as well as recommendations to address these challenges.

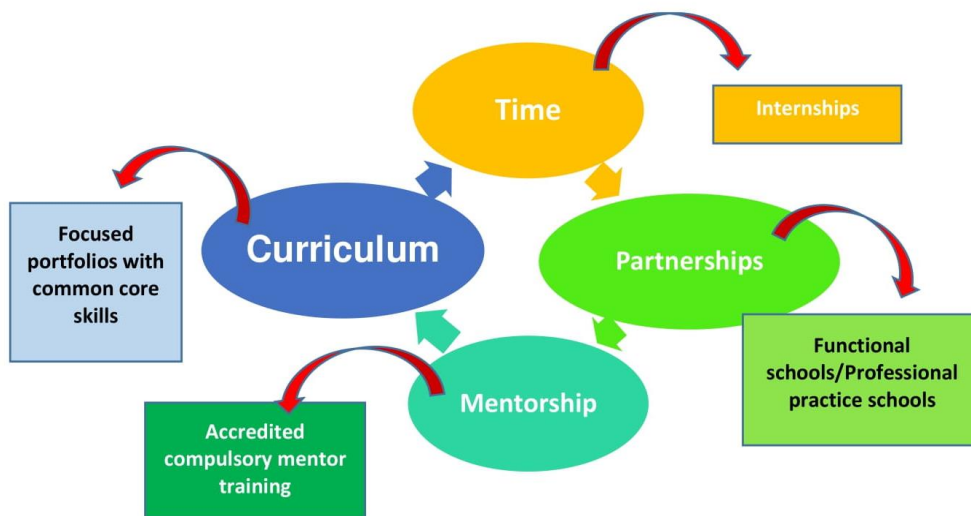


Figure 1: Recommendations to address challenges in teaching practice at distance learning institutions in SA

5.1 Internships

Although work-integrated learning (WIL) is a requirement for teacher qualification programmes, the current South African policy framework does not provide for formal internships in education. Similar to the South African Council for Health Professions (SACHP), which requires a compulsory year of internship for students graduating as doctors, occupational speech and physiotherapists, pharmacists, and so on, a formal one-year internship should be made compulsory for graduating teachers. Such a proposal implies that student teachers will only qualify for registration as a teacher with the South African Council for Educators (SACE) after having completed the internship year.

Such an internship model would also give contact students the benefit that distance learning students enjoy, of being appointed as teaching assistants. Another advantage of such an internship model is that rural schools could also be strengthened with human resource capital. Cameroon, which already follows such an internship model (Endeley 2014), can be used as a source for research in this regard. An internship model can do much to reduce teachers' workload, especially where an unfavourable learner-to-teacher relationship impacts negatively on quality education. Such a proposed internship model would require a restructuring of the budget allocated to basic education.

5.2 Compulsory accredited mentoring programmes

Although accredited mentoring programmes do exist, they are mainly offered by private providers, and accredited mentoring qualifications are not a formal requirement to serve as a mentor teacher. Apart from induction programmes that schools have, to welcome teacher students, the quality of mentoring experiences in teaching practice vary greatly. Formal compulsory mentor training could be offered as a short learning programme or skills programme within the Sector Education and Training Authority (SETA) framework. The South African Council for Educators already has a points system in place to promote continuing professional development (CDP). Such a requirement

would allow for a recognised designation for mentor teachers, as promotion opportunities within the education system are limited.

5.3 Focused portfolios with common core skills

Although higher education institutions are autonomous, and each is responsible for the content of its own learning programmes, there should be a common set of core skills that need to be assessed through teaching practice portfolios. A proposed forum between universities, the national departments of basic education, the nine provincial education departments and SACE could serve as a platform to facilitate a greater partnership between all role-players to align common goals and outcomes that will improve the quality of teacher training in South Africa.

Although the minimum competencies expected of newly qualified teachers are outlined in the new 'Minimum Requirements for Teacher Education Qualification' (MRTEQ) (DHET 2018), all role-players must ensure that the basic competencies of a teacher are included in the portfolio activities. The focus should not only be on how to plan and present a lesson, but also include soft skills such as adherence to the school's code of conduct, self-discipline, dealing with discipline of learners, knowing school policies, how to fill in attendance registers, attending subject and phase meetings, setting up assessments, marking and writing of progress reports, and attending parent-teacher meetings, to name but a few.

5.4 Professional practice schools

Although professional practice schools are common internationally, it is still a much unknown concept in South Africa. Unlike school laboratories sponsored by universities and operating independently, professional practice schools exist as part of the public schooling system and serve the public schooling system in general. Their aim is to provide a context for rethinking and reinventing schools for building and sustaining best practice, to contribute to initial teacher education and training and induction into the profession, and to provide for the continuing and professional growth of in-service teachers. It is envisioned that professional practice schools will provide the collective and collaborative structure to achieve quality education. Professional practice schools can provide a variety of learning environments for students, without compromising on quality. Identifying professional practice schools would ensure that schools across the country could be identified and developed with the aim of providing quality practical training to student teachers.

A proposed policy framework may need to be developed to provide requirements and guidelines of such identified schools, and to define the roles and responsibilities of the various role-players.

6. CONCLUSION

The aim of this study was to highlight some of the shortcomings, but also some of the best practices in teaching practice models used by participating distance learning institutions in South Africa. The study also tried to explain why the quality of teaching practice varies from institution to institution. The recommendations provided by the MRTEQ policy document have been found insufficient to provide a workable structure to ensure quality teaching practice. Recommendations emanating from this study offer practical and long-term proposals on how the existing guidelines can be strengthened to ensure quality practical teaching. The recommendations provide practical

solutions on how to provide for formal accredited mentor training, propose a solution for internships within the education sector, and how to address the need for a focused curriculum with clear assessment requirements. It further advocates for the identification of functional schools to become training schools or professional practice schools.

The findings of this study have a huge implication on how the South African schooling system and institutions of higher education need to collaborate to create a policy framework that will provide for formal internship programmes of student teachers. Such a policy framework will regulate internships for students registered with distance education institutions as well as traditional residential universities and ensure an improvement in the quality of initial teacher training across all types of institutions. Teacher training institutions from developing countries with a similar context to that of South Africa, may also benefit from this study.

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THE EFFECTS OF URBANISATION ON THE AVAILABILITY OF MEDICINAL PLANTS (RED DATA SPECIES) IN THE MALAMULELE AREA OF LIMPOPO PROVINCE, SOUTH AFRICA

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ABSTRACT

The aim of this study was to ‘explore the effects of urbanisation on the availability of medicinal plants (Red data species) in the Malamulele area of Limpopo Province, South Africa,’ thus, there are several negative factors that contribute to the survival of these plants. These include the loss of demarcated to habitat, increase of human population, urbanisation and threats brought by climate change, amongst others. This study applied the exploratory research design in order to achieve its aim. Thirty-six respondents were selected through purposive sampling to participate in the study. In-depth semi-structured interviews were employed for data collections. For data analysis; the Spiral Data Analysis was adopted to organise data aligned to the objectives of this study, while identifying relevant themes. The findings of this study indicates that the availability of medicinal plants in the study area are threatened by the factors mentioned above. The data that was collected indicates that all the participants hold the view that urbanisation poses a great threat to the survival of indigenous medical plants. Furthermore, they contend that available conservation methods to prevent indigenous medical plants from possible extinctions are either not implemented properly or are neglected.

Therefore, the discovered rapid loss of these plants might affect future preservations and protections. The expansion of the Malamulele city due to urbanisation contributes to the witnessed decreases of natural resources (Medicinal plants included). In conclusion, although majority of Malamulele residents still rely heavily on the use of medicinal plants for their primary health care because of their medicinal and therapeutic properties. These plants are also an important food source for the residents of Malamulele. These residents are, however, often unable to protect the plants from the threats posed by urbanisation. Necessary conservation methods should be looked at, as Malamulele residents heavily rely on the positive use of medicinal plants. It is also recommended that indigenous people and the Collins Chabane Local Municipality (CCLM) should take actions to protect these plants from extinctions.

Keywords: Medicinal plants Conservation, Effects, Extinction, Limpopo Province, Malamulele area, Urbanisation, South Africa.

1. INTRODUCTION

Indigenous people around the world possess an increased ability to influence the management and conservation of biodiversity (Steenkamp, 2002). Although the people who have acquired this indigenous knowledge are made to be reliant on the use of western pharmaceutical methods of herbal and medicinal activities (Hassan, 2012), they prefer to use their indigenous traditional practices. Medicinal plants are important to humanity and continue to be used worldwide as a source of food and basic healthcare (Hassan, 2012). Some of the medicinal plants are recommended because of their therapeutic values (Hassan, 2012). It is necessary to have good management and conservation methods of plant species for their continued availability (Stern, Bidlack, Jansky & Uno, 2000). However, the improper management of biodiversity leads to the destruction of resources, which in turn is essential for the survival of people (Steenkamp, 2002).

Several factors contribute to the extinction of medicinal plants. These include habitat loss, population increase, urbanisation and threats brought by climate change. Furthermore, there is a promising future for the use medicinal plants because there is an estimated number of around 500 000 of existing plants all over the world. Although most of them are known for their medical characteristics, some of them have not yet been fully investigated. These medicinal plants may contain ingredients that could be significant in the treatment of present or future diseases. They are often used for synergic medicine, support of official medicine and preventive medicine, among others (Hassan, Hadi, Kassim & Al-Hassany, 2012). According to Keskin (2018), there is approximately 1,000,000 plant species in the world, and almost half of these have been identified and named. These plants should be preserved and protected unlike with most animals (Raven, 2021). For example, there are over 115,000 plant species that have been identified and named around the world, over a quarter of the total estimated number, currently in cultivation in botanical gardens (Raven, 2021).

To address the negative factors such as urbanisation, habitat loss and population increase on medicinal plants, knowledge and skills about the management of biodiversity are required (Martin, 1995). Like in many other parts of the world, South Africa's indigenous plant systems are depleting and good management, as well as investing in conservation of biodiversity is necessary. This initiative can improve the preservation and protection of medicinal plants across the country (Mabogo, 1990; Rankoana, 2000, and Rankoana 2001). Subsequently, as in many other places of South Africa, the area of Malamulele is also facing the depletion of medicinal plants. Malamulele is located in the CCLM within the District of Vhembe in Limpopo Province of South Africa. Medicinal plants in this area are tarnished by various factors such as deforestation, illegal harvesting and over harvesting,-amongst others. Therefore, there is a need to assess the extent of damage that is caused by these kinds of actions to the existence of medicinal plants using recognised and acceptable methods. One of these methods is to control and cultivate these medicinal plants on a commercial level in order to ensure their sustainable supply for future use.

Medicinal plants are usually used and traded in their raw nature with less to no worth addition. This limits the financial benefit that is accumulated by beneficiaries and reflects on the limited bio-prospecting work being carried out on the plant species (Shumba, Carlson, Kojwang, Sibanda, Masuka & Moyom, 2009). Brower (2008) highlights that medicinal plants serve as essential anchors of an ecosystem, and if they are to disappear, symbiotic organisms and marine life will be severely affected. Since factors such as urbanisation impose a great threat on the availability of

medicinal plants, the future discoveries of the features of these plants are most likely to be affected by the rapid loss of the plant population. Most of the species are classified to be Least Concern (Brower, 2008). These plant species have been characterised by the International Union for Conservation of Nature. These plants may in the near future be extinct. As a result, making regional risk assessments even in data-sparse countries can aid in the planning of conservation management, and for urgent considerations (Kaky & Gilbert, 2019).

The International Union for Conservation of Nature Red Data List remains one of the highly recommended indicator in all the available conservation pointers; however, most of the developing countries have less or limited access to enough data with regards to making assessments (Kaky & Gilbert, 2019). Therefore, there is a necessity to find sustainable ways of harvesting medicinal plants that are found in the wild, as well as to educate locals on better and progressive measures to gather these plants in proper collection methods and train the people on how to uproot medicinal plants and grow them in a safe space (Shinwari, 2010).

Operationally, the Vhembe District Municipality Integrated Development Plan Review (2019/2020) defines the 'biosphere reserve' as a category that accommodates habitat to a number of plant species (Those vulnerable to a point of facing extinction included). The Biodiversity of Vhembe District considers rural communities as priorities. As a result, shelter, food; fuel wood, and medicinal plants are provided (Vhembe District Municipality Integrated Development Plan Review, 2019/2020). Du Toit (2015) cautions that as rural population decreases and cities expand, natural resources, i.e., plants, are threatened in that they are cleared to make way for urbanisation. This trend is also common in the area around Malamulele and has also been observed in the selected villages of '*Roodhuis, Mphambo, Xigalo, Xitlhelani, Madonsi, and Mavambe,*' as found in the CCLM. This study thus aims to understand the effects of urbanisation on medicinal plants with the focus placed on the selected villages under CCLM. This will also allow for the documentation and offering of empirical evidence on this subject, further leading to suggestive conservation and preservation measures.

2. LITERATURE REVIEW

2.1 The effects of urbanisation of medicinal plants

Several researchers (Du Toit, 2015; McKinney, 2008; Magoro, 2008, Wang, Li, Kuang, He, Chen, Huang and Łowicki, 2020, McKinney, 2006, and Van Wyk *et al.* 2002) have documented the effects of urbanisation on species scarcity. Most of these researchers mention that urbanisation is considered as one of the major contributory factors that lead to the extinction of medicinal plants. Based on geographical settings, urbanisation can either grow or decline the richness of rural species (Czech *et al.* 2000). Plants that are frequently used for the purposes of health care needs are largely affected by urbanisation. This subsequently causes scarcity of these plants, leading to extinction (McKinney, 2008).

In order to determine the effects of urbanisation on species richness, McKinney (2008) reviewed 105 types of species. His study concluded that approximately 65% of these plants showed to be increasing in species richness, based on moderate urbanisation. The other remaining 35% is affected by non-development factors, such as climate change. Bolund and Hunhammar (1999) share that biodiversity is the main output for urban environments and improvements. Urban

biodiversity aims to instil knowledge about the effects that urban populations have on medicinal plants as well as on the importance of protection and conservation of nature (Medicinal plants included). This involves the management of medicinal plants that are already facing extinction (Miller & Hobbs, 2002).

Furthermore, the trials that effect biodiversity should assist to better understand the growth of urbanisation and conservation methods (McKinney, 2008). This should be exercised while taking into account the effects that urbanisation have on medicinal plants availability and extinction, prioritising the complexities that surrounds the nature of the use of urban land and medicinal plants availability should be clear that it accommodates local rural biodiversity and related inspirations (Czech *et al.* 2002; and McKinney, 2006).

Mander *et al.* (2007) reveal that the African Health Care System of South Africa has always been dependent of medicinal plants. Due to the increase in urbanisation, the demand of medicinal plants also increases (Williams *et al.* 2013). Knowledge that people have about medicinal plants, such as the recognition, naming, use, and management of species, can be affected by urbanisation (Arjona-García *et al.* 2021). Importantly, the possible use of the Indigenous Knowledge Systems (IKSs) on medicinal plants should be adequately exercised, as South African rural citizens currently have unlimited access to the western health care services, as provided by the National government and private entities. Moreover, the loss of this indigenous knowledge and neglect of medicinal plants could be attributed to a decrease that is seen in areas of agriculture, agroforestry, and forest, since urbanisation reduces the areas in which medicinal plant are collected and destroys the existence of medicinal plants (Arjona-García *et al.* 2021). The trade of medicinal plants is currently greater than it was in the past because of the important indigenous values associated with medicinal plants, the high human population growth and rapid urbanisation (Wiersum *et al.* 2006).

2.2. Identifications of medicinal plants facing scarcity

Most of the people who reside in sub-Saharan Africa rely on plants for primary health services. Medicinal plants are considered a major single category of plants (Ganeshaiyah *et al.* 1998). Approximately 30 000 species fall under this group globally, and about 33% are said to be trees (Ganeshaiyah *et al.* 1998). From 6 377 plant species used in ‘Tropical Africa’, about 2 074 have medicinal applications. However, this is not only regarded to be their main use, because only 1 975 are primarily used for medical purposes (Magoro, 2008). From a cultural perspective, the healing and spiritual applications of plants are embraced. Nevertheless, Western medicine has disturbed the work of ‘African Traditional Health Practitioners (THPs) and South Africa’s Traditional Healing Folklore; although it is reported that this is diminishing.’ It is also hinted that the THPs find it difficult to access medicinal plants within their immediate surroundings because these plants are overexploited and threatened with extinction. Overexploitation of medicinal plants is a serious threat to the availability of these plants and this is due to their intensive harvesting in relation to high demand (Street & Prinsloo, 2013).

The use of medicinal plants for the purposes of primary health care needs is still a prosperous industry across South Africa, despite the pressing challenges mentioned above (Magoro, 2008). The majority of South African rural communities still prefer the use of medicinal plants for the purposes of their primary health care, in spite of the availability and accessibility of western medical care services provided by the government (Williams *et al.* 2013). De Wet, Nciki & van

Vuuren (2013) also state that majority of the South African population have access to the western health care facilities. However, they still prefer to use medicinal plants as the primary health care for the treatment of various diseases. The majority of people who use traditional medicines prefer them because of their affordability, easy accessibility and cultural acceptability (Maroyi, 2013).

2.2.1 Notable scarce medicinal plants and scientific names

Literature on the research topic indicates that the 24 medicinal plants listed below are scarce across [Rural] South African communities (Refer to table 1).

Table 1: Common names of scarce medicinal plants, scientific names, parts used and ailments treated

| Referral terms in South African contexts | Scientific names | The parts used | Ailments treated |
|--|-------------------------|----------------|---|
| <i>Aloe vera, Mangane</i> | <i>Asphodelaceae</i> | Leaf | Wounds, Diarrhoea and cough |
| <i>N'tita</i> | <i>Annonaceae</i> | Roots | Helminthiasis |
| <i>Thlathlangati</i> | <i>Phyllanthaceae</i> | Roots | Helminthiasis |
| <i>Combretaceae Xicucutse, Xiwondzwana</i> | <i>Combretaceae</i> | Roots | Diarrhoea, dysentery, helminthiasis, UTI, wounds |
| <i>Tsenga</i> | <i>Fabaceae</i> | Fruits | Wounds |
| <i>Mpfungura</i> | <i>Bignoniaceae</i> | Fruits | Deep wounds |
| <i>Xihaca</i> | <i>Cactaceae</i> | Stem | Cough |
| <i>Xinkwakwani</i> | <i>Loganiaceae</i> | Roots | Helminthiasis |
| <i>Xibaha</i> | <i>Canellaceae</i> | Roots/bark | Mouth ulcers, cough |
| <i>Ximufane</i> | <i>Apocynaceae</i> | Roots | Diarrhoea |
| <i>Batata Africana</i> | <i>Hypoxidaceae</i> | Corm | Helminthiasis, diarrhoea, dysentery, wounds, Haemorrhoids |
| <i>Mavumbule</i> | <i>Aristolochiaceae</i> | Rhizome | Helminthiasis, internal wounds |
| <i>Xihlangwa</i> | <i>Celastraceae</i> | Roots | Diarrhoea, dysentery |
| <i>Nhathelo, Palhakufa</i> | <i>Asteraceae</i> | Roots | Helminthiasis |
| <i>Chiuane</i> | <i>Tiliaceae</i> | Roots | Cough |
| <i>Iridaceae Halahingwa</i> | <i>Iridaceae</i> | Bulb/roots | Diarrhoea, dysentery/ helminthiasis, Schistosomiasis |
| <i>Bimbe, Mahimbe</i> | <i>Clusiaceae</i> | Root and stem | Helminthiasis, diarrhoea, cough, dysentery |
| <i>Vela vahleka</i> | <i>Amaranthaceae</i> | Fruit | Furuncle |
| <i>Rompfha</i> | <i>Annonaceae</i> | Roots | Wounds and cough |
| <i>Mabope</i> | <i>Mapilghiaceae</i> | Roots | Diarrhoea, haemorrhoids |
| <i>Chinamane</i> | <i>Asteraceae</i> | Leaf | Wounds |
| <i>Phakama la hlanga/Phakama</i> | <i>Orchidaceae</i> | Stem, leaves | Cough, tuberculosis |
| <i>Xirrole</i> | <i>Rubiaceae</i> | Roots | Helminthiasis |
| <i>Bimbe, Mahimbe</i> | <i>Clusiaceae</i> | Roots and stem | Helminthiasis, diarrhoea, cough, dysentery |

Source: Barbosa *et al.* (2020).

It has been recorded that medicinal plants revealed by the THPs remain crucial concerning their practices (Magoro, 2008). It should be considered that medicinal plants need to be harvested in order to sustain the livelihoods of rural people, and to assist with development of strategies that effectively address the existing impacts of medicinal plants harvesting. Medicinal plants and their importance should be recognised and be understood better as a unique epistemology, which is united with individuality to the local THPs and numerous resources should be channelled towards preserving and protecting of medicinal plants (Magoro, 2008).

The plant species mentioned in table 1 remain important in curing various diseases, such as wounds, helminthiasis, tuberculosis, dysentery, kidney troubles and schistosomiasis diseases, to name a few. However, their harvesting through uprooting leads to their vulnerability, as they are not appropriately gathered in most occasions, making it almost impossible to grow back sufficiently. Practices that are notable often relate to continuous land-clearance, uprooting the entire plants, wood collection by cutting off branches, deforestation, drought and veld fires, owing to urbanisation and related developmental challenges pressures (Magoro, 2008). Magoro (2008) further shares that traditional medicine is grown on communal land. However, the current disparaging harvesting techniques, involving unprincipled intermediaries in the collection of these plants without creating any safety space for their protection and preservation remains a challenge.

As confirmed by the THPs, uprooting of plants should be regarded as part of the work for medicinal plants collectors (Magoro, 2008). However, THPs do not uproot the entire plants. Rather, they focus on the soil that is covering the roots, and they gently reveal their root structure and setup (Magoro, 2008). Equally, this technique of harvesting does not destroy the plant, but rather, ensures that the plant can regrow effortlessly since only side roots are removed, and the taproot is left undamaged (Magoro, 2008). In other instances, roots are harvested during flowering period and during rainy season since this ensures sustainability of these plants (Magoro, 2008).

3. RESEARCH DESIGN AND METHODOLOGY

With the application of exploratory research design, this qualitative study purposively selected 36 participants. The semi-structured interviews were employed for data collection. For data analysis, the 'Spiral data' analysis was adopted to organise data aligned to the objective of this study, while identifying relevant themes. The adopted research design was used to 'explore the effects of urbanisation on the availability of medicinal plants (Red data species) in the selected villages around Malamulele township of Limpopo province of South Africa, as listed in section 1 of this study (Maluleke, 2016; and Maluleke & Mofokeng, 2018). Neuman and Dwyer (2011) explain that this research design is used when the research subject is still very new and we have little or no information about it. According to Bless and Kathuria (1993), the procedure that a researcher chooses while trying to find a strategy to follow when they are conducting their research relates to the set of techniques that channel them during the process of verifying a hypothesis and excluding all other possible outcomes or details. It allowed the researcher to reach conclusions between the tested variables. On the other hand, Polit and Hungler (1985) state that research design refers to the researcher's overall plan for attaining answers to the provided research questions.

This study adopted a non-probability, purposive sampling. This sampling technique is often used in instances where a researcher conducts research with a particular purpose in mind and is most likely to produce the most valuable information (Denscombe, 2017). The selection process was based on targeted groups of individuals who may have information concerning the extinction of plant species. The proposed study was limited to the selected villages, which are deemed as Population Concentration Points in the CCLM Integrated Development Plan (2021/2022). Historically, these villages had an abundance of medicinal plants. However, the introduction of urbanisation in the area, started the eradication of biodiversity, which had a direct negative effect on medicinal plants. The sample consisted of 36 participants. They included: One (01) Mayor, 01 Municipal speaker, 01 Chief Whip, 01 Municipal Manager, Two (02) Communications officers,

Six (06) Ward Councillors, 06 Traditional Leaders, 01 Steering committee member, 06 Community/traditional leaders and 11 community members' The researcher selected this sample to gather rich experiences, knowledge, opinions, and views on this subject.

For the purpose of this study, data was collected using the semi-structure interviews in order to get first-hand information from the participants. This study adopted Spiral Data Analysis to identify themes and patterns within the collected empirical qualitative data (O'Reilly & Kiyimba, 2015). Additionally, the researcher organised the obtained data through breaking responding to the objective of this study, with the use of index cards and by breaking down the large bodies of texts into smaller units, such as phrases. The researchers read the collected data several times to make sense of the shared perspectives and wrote down notes on the data in question. Themes and sub-themes were identified to give the researchers general sense of patterns in the collected data. Data was then integrated and summarised for the potential readers.

To this end, Creswell (2014) mentions that data analysis in qualitative research consist of preparing and organising the collected data and then reducing it into study themes. Thus, the employed data analysis method is described by Creswell (2014), as an analysis process used by researchers to organise the data, which they had obtained through breaking down the study objective, with the use of index cards and by breaking it down to large bodies of texts into smaller units such as phrases and keywords. To this end, the researcher read the collected data several times to get a perspective and wrote down notes on the reviewed literature studies and empirical data. Themes and sub-themes were identified to give the researcher a general sense of patterns in the-said data. This data was then be integrated and summarised for potential readers.

4. STUDY RESULTS AND DISCUSSIONS

For this specific section of data presentation, analysis and interpretation, the following questions were asked during the in-depth semi-structured interviews. Notes were taken and a voice recorder was used to record the participants' responses. Moreover, the referencing method for the conducted interviews in this study comprised a numerical sequence, adhering to the following notation example: (5:1:2). The 1st digit (5) relates to the folder number in the recording device. The 2nd digit (1) refers to the interview number, while the 3rd digit (1) cover the sequence of the cited interview, based on the conducted in-depth semi-structured interviews, guided by the same Interview Schedule Guide, consisting of the following 6 questions. All the selected participants were asked the following questions and their verbatim expressions are shared herewith:

- What is the nature of urbanisation to extinct medicinal plants in your area?
- Which plants species were used for health purposes in the past?
- Which of these plant species are no longer available in your area due to urbanisation?
- Which of these plant species are still available, but scarce due to urbanisation?
- In which places are medicinal plants still available in your area, despite urbanisation?
- What could have been done in order to preserve the plants' species that have come to an extinct owing to urbanisation?

The findings reported below were largely echoed by all the selected participants, regardless of the study location. For instance, their remarks regarding effects that urbanisation has on the availability of medicinal plants were similar. The participants indicated their knowledge on the

importance of medicinal plants, but these medicinal plants are mostly destroyed due to urbanisation in the area. On clearly understanding the nature of urbanisation to the extinct medicinal plants in your area, in this respect, Four (04) of the selected participants had the following to highlight:

In Malamulele area we still prefers to use medicinal plants to meet our primary health care needs regardless of the western health care services [public clinics and hospitals] that the government provide us with, hence the loss of medicinal plants that is influence by urbanisation affects our wellbeing. (In-depth interview-03:07:07)

In instance medicinal plants are found in the wild and when there are developments that are happening, like school building, and expanding of the city, amongst others, the wild is the targeted area for such development and medicinal plant are destroyed without any conservation methods to protect them. (In-depth interview-1:13:13)

One of the notable cases is the building of new Malamulele high school. The school is built at an area where people around the area used to collect medicinal plants to cue different diseases. The medicinal plants that were found in that particular area are Aloe vera, Mangane, Tsenga and Xibaha. Therefore, due to the large land that is used to build, the school majority of these medicinal plants were destroyed and no conservation measures were implemented during the course of clearing the land (In-depth interview-03:07:07)

Expansion of cities due to urbanisation, affects preservation and protection of medicinal plants in our area because in most cases we not even given an opportunity to suggest that medicinal plants should be protected before the developments resume. Thus, the larger portion of medicinal plants population is destroyed and lost due to urbanisation. (In-depth interview-01.01.01)

On the use of different plants species for health purposes in the past, 02 of the selected participants shared the following:

Majority of the indigenous people who reside in Malamulele areas depended in the use of medicinal plants that were found in the wild for their primary health care needs. In the past before most of these developments were implemented, when I have a toothache or stomach ache, I would just go to the wild to get leaves of Aloe Vera without even struggling because they were everywhere. Public clinics and hospital were far from where we reside and we will struggle to get transport to access those facilities, therefore we will rely on medicinal plants to cue different diseases since they were easy to access. I, personally preferred the use of medicinal plants be because of its free cost as compared to health care facilities that I had to pay for transport in order to access them. (In-depth interview-5:1:1)

Medicinal plants are organic and have less aftereffects as compared to western medicine, this is why I prefer the use of medicinal plants. In most cases people who have knowledge about the use of medicinal plant are indigenous people or better-known old people, and in order for that knowledge to remain existing our life time it is passed from one generation to the other. Old people share this indigenous knowledge with the young people through teaching them how to harvest and use those plants. Most of this knowledge is not not documented is not something that you can learn through reading a book but it is taught

verbally, this is the reason I am scared that the knowledge that has been existing for years might go in vain since these plants are getting extinct in the wild and I cannot share the same knowledge to my children and we are ending up relying on western medicine. (In-depth interview-1:13:13)

On which of these plant species are no longer available in their respective villages due to urbanisation, 02 of the selected participants revealed the following:

Urbanisation is good for our economic development, but it is damaging to our natural resources like medicinal plants. There are many medicinal plants that have come to an extinct in our area and are no longer found in the wild. Plants like Bimbe, Mahimbe, Vela vahleka, Rompfha, Mabope, and Chinamane are no longer found in the wild in Malamulele areas, meaning that they have come to an extinct in those particular areas, resulting in us abandoning the indigenous knowledge that was passed to us by our parents since we cannot access medicinal plants easily. Because of these medicinal plants that are already extinct in our area we are facing difficulty in meeting our primary health care needs in a way that we are used to. Most of the plants that are extinct are the ones that were found in areas where developments such as building of schools and shopping centres are implemented and all the natural resources were destroyed in those areas. (In-depth interview-01:12:13)

The plants that have come to an extinct due to urbanisation was because when those people were clearing the land they were uprooting and burning these plants leading to their existence to be completely destroyed. (In-depth interview-01:01:01)

In an attempt to understand which of these plant species are still available in the selected villages, but scarce due to urbanisation; 02 participants indicated that:

Medicinal plants such as Aloe vera, Mangane, N'tita, Thlathlangati, Combretaceae, Xicucutse, Xiwondzwana, Tsenga and Mpfungura are still found in the wild, however they are very scarce unlike in the past. Some of these plants are still available because we are able to plant them at the back of our yards. I have planted Aloe vera at my yard, so it makes it easier for me to access them, even though most of it is destroyed in the wild. (In-depth interview-02:03:14)

Urbanisation has had a greater effect on the availability and existence of medicinal and for us to access them is more difficult and because although most of the plants are already extinct some of them are still available but are very scarce and now we have limited access to these plants, because the natural supply of these plants is very low as compared to the demand from the general public. (In-depth interview-01:04:14)

The researcher was also interested in determining villages in which medicinal plants were still available despite various urbanisation processes, and the responses were as follows:

Urbanisation destroyed the majority of medicinal plants population in our area, but plants that are found by the side of the river and those that can be uprooted to be planted in another area are still available. Hence, we are most like to find medicinal plants that grows by the side of the river and the ones that we have planted in our own yards. The reason plants that grows by the side of the river are less likely to be affected by urbanisation is because most of the development activities are not done in such areas and the ones that plant in our own

are still available is because most of them is the leaf part that is used so it gives a plants a chance to grow again. **(In-depth interview-01:03:55)**

When the participants were asked what they thought could have been done in order to preserve and protect medicinal plants species that became extinct owing to urbanisation, 01 of the selected participants stated the following reason:

*Here in Malamulele we do not have lot of conservation methods that are used for the preservation of medicinal plants. If as a community had come up with various ideas of medicinal plants preservation against the effects imposed by urbanisation. We could have uprooted the medicinal plants and plant the in protected areas for their continued survival. Our leaders could have offered land that will be used as conservation area for the medicinal plants that have already come to an extinct due to urbanisation and the ones that are still available but scarce. **(In-depth interview-02:13:13)***

5. THE IDENTIFICATION OF STUDY THEMES AND CHALLENGES

- **Expansion of urban areas:** In Section 4 of this study, the participants state that the survival of medicinal plants is extremely affected by the expansion of urban areas into large portions of land in which these plants are found, particularly if they are not protected or preserved for future medical use.
- **The uncontrolled development activities:** In Section 4 of this study the results indicates that medicinal plants are facing extinction because of the uncontrolled development activities such as building of schools, shopping centres and development of roads. These developments affect the ecosystem and the availability medicinal plants in their natural habitat.
- **Indigenous knowledge:** Participants in Section 4 of this study point out that indigenous knowledge in Malamulele still plays a vital role in sustainable existence of a significant proportion of the Malamulele population of medicinal plants and that the knowledge of the use of these medicinal plants is passed on from one generation to the other verbally.
- **The removal of vegetation:** As indicated in Section 4 of this study participants agree that removal of vegetation from its roots, which is uprooting the entire plant and burning of land during urbanisation processes lead to completely destroying medicinal plant existence.

6. STUDY CONCLUSIONS AND RECOMMENDATIONS

6.1 Study conclusions

The aim of this study was to explore the effects of urbanisation on the availability of medicinal plants (Red data species) at Malamulele area of Limpopo Province, South Africa. The findings of this study point to the fact that urbanisation through the development of new settlements, the building of school and shopping centres, as well as the construction of roads, poses a threat to the survival of medicinal plants in the area under study. This urbanisation takes place as people who reside in villages around Malamulele relocate to urban settlements. This study also indicates that when urbanisation takes place and without the implementation of any measures to preserve or conserve medicinal plants, it leads to their destruction. Although there are institutions such as the Community-Based Natural Resource Management (CBNRM) that are established with the aim of

protecting and preserving medicinal plants, they are unsuccessful in protecting some of these medicinal plants.

As stated by McKinney (2008) in section 2.1 of this study, studies on the effects of urbanisation on the existence of medicinal plants indicate that urbanisation can either grow or decline the richness of the plant species, depending on various variables, and because the decrease in the richness of the species, it leads to medicinal plants becoming ~~to an~~ extinct or being scarce; thus making it hard for the rural community members to access these plants for their health needs. Thus, the issue of medicinal plants becoming extinct is recognised as a main problem in Malamulele and nearby areas. Summarily, studies indicate that urbanisation destroys the ecology of plants and therefore poses a threat to the survival of medicinal plants, and to the livelihoods and health of communities who depend on them.

In Conclusion, the purpose of this study was to explore the effects of urbanisation on the availability of medicinal plants in Malamulele area and to suggest possible ways to preserve and protect them while considering the importance of urban developments in selected Malamulele rural areas. The issue of urbanisation has been considered to have great effects on the availability of medicinal plants in this study. Recommendations are provided in the following section for possible applications by relevant stakeholders in Malamulele and the surrounding villages.

6.2 Study recommendations

This study can be used as a tool to provide relevant stakeholders with necessary information on urbanisation and its impact on the availability of medicinal plants. Further research studies could be conducted relating to this study area to ensure triangulation as a method of reliability. For the purposes of good practices to ensure that urbanisation does not further affect the availability of medicinal plants and to ensure that conservation methods are implemented for medicinal plants preservation and protection, this study makes the recommends that appear in Table 2 herewith.

Table 2: Recommendations to improve study aim and the identified themes and challenges

| Identified study themes and challenges | Recommendations |
|--|--|
| Study aim | The effects of urbanisation on the availability of medicinal plants (Red data species) in the Malamulele area of Limpopo Province, South Africa |
| Expansion of urban areas | While this study acknowledges that it is impossible to stop expansion of urban, it recommends that all plants that have medical applications and are found in those areas of the urban expansion should be preserved and protected in a safe space, which will be accessible to local communities. |
| Uncontrolled development activities | It is recommended by this study that during the process of development activities, most people, particularly traditional healers who are in need of medicinal plants on regular basis should be consulted and be given a platform to suggest how these medicinal plants could be preserved for future use. |
| Indigenous knowledge | This study recommends that local people with indigenous knowledge should be encouraged to share their knowledge with researchers in order for it to be documented and accessible when needed. They should also be allowed to be part of the conservation team and to participate in the documentation of medicinal plants. |
| The removal of vegetation | It is recommended that during urbanisation in which medical plants are uprooted, people should not destroy them but replant them in another area where they can be protected. |

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PERCEIVED BENEFIT FACTORS INFLUENCING GENERATION Y STUDENT ATHLETES' INTENTION TO USE PERFORMANCE MONITORING DEVICES

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ABSTRACT

There is a proliferation of performance enhancing devices in the sports technology sector as athletes increasingly use advanced equipment to measure their physical performance. The increased use of technology and its impact on athletic success prompted several companies to enter the lucrative market to manufacture performance monitoring devices (PMDs). It is predicted that the global sports technology market will be worth US\$30 billion by 2024, representing a significant growth rate of 20.63 percent since 2018. South Africa's wearable performance and fitness market generated \$2.43 billion in 2020, growing by 4.7 percent annually. The most prominent market segment regarding PMD adoption is the 18 to 34 year-old demographic, known as the Generation Y cohort. In light of student athletes' affiliation with the Generation Y cohort and their increased interest in purchasing and using PMDs, key perceived benefit (PB) factors that influence their intention to use (ItU) these devices were identified. In this regard, the technology acceptance model (TAM) (Davis, 1989) and the model by Yang et al. (2016:258) were used as a theoretical foundation to explain the PB factors, including perceived usefulness (PU), perceived enjoyment (PE_n) and perceived ease of use (PE_oU), influencing South African student athletes' ItU PMDs. In this regard, 26 universities were considered, where a purposeful sample of student athletes who compete under the auspices of University Sport South Africa (USSA) and who belong to the Generation Y cohort, was selected. The quantitative data were collected and analysed through a self-administered online survey, which included 315 viable questionnaires. Various statistical analyses, including reliability and validity analysis, descriptive statistical analysis and regression analysis were performed on the collected data. The findings indicate that PU, PE_n and PE_oU significantly influence South African student athletes' ItU PMDs. As such, PMD manufacturers and marketing practitioners should promote these devices' usefulness, advanced features and aesthetic appearance to increase student athletes' usage intentions.

Keywords: Performance monitoring devices; Generation Y student athletes'; Intention to use; South Africa

1. INTRODUCTION

Performance monitoring devices (PMDs) consist of diverse tracking mechanisms, including heart-rate monitors, smart shoes (Johnson, 2019), sensor sports bras (Schultz, 2019), wristband cardio trackers (Gibbs, 2015), smart sleeves (Seshadri et al., 2019:71), remote-controlled cameras (Fleischhacker, 2019) and sensor arrays (Tekscan, 2019). These devices are either worn by athletes or placed around the sports field where athletes train and compete (Ohio University, 2020). In this

way, coaches and sports scientists can accurately analyse athletes' performance during training sessions and competitions (Lazzarotti et al., 2019; Sanyal, 2018). The sportswear and PMD industries have recorded unprecedented growth within the global (International Data Corporation, 2017) and South African market segments (Business Tech, 2018; Muller et al., 2018:85), where key industry players have introduced an increasing number of PMDs to take advantage of this promising market (Pfeiffer et al., 2020:2). To put this into perspective, the global wearable PMD market is estimated to grow at a significant rate of 17.6 percent from 2020 to 2024, reaching a value of US\$30 billion (Market Intelligence Data, 2022), while South Africa's performance and fitness market is predicted to grow at a sustained rate contributing to a market volume of R2.91 billion by 2024 (Research and Markets, 2021).

Individuals aged between 18 and 34 years are most interested in adopting PMDs (Statista, 2019) given the advent of innovative technology and devices, which motivates them to keep up to date with the latest trends in their sport community (Wellnessliving, 2019). Markert (2004:21) conceptualises this group as part of the Generation Y cohort. The Generation Y cohort consists of individuals born between 1986 and 2005, a segment that student athletes form part of. It is well-known that Generation Y has been significantly shaped by growing up in the era of digital connectivity (Bevan-Dye, 2016:4), and comprised approximately 34.1 percent of South Africa's total population in 2021 (World Population Review, 2021). In order to tap into this opportunistic market, it is critical to determine how to drive effective marketing campaigns towards the student-athlete market (Pillay, 2020).

Student-athletes refer to individuals who devote themselves to the advancement of their own personal and professional sporting careers (Condello et al., 2019). Utilising PMDs to obtain specific training and competition data is integral to student athletes' holistic preparation and for evaluating their performance during competitions (Thornton et al., 2019:698). Student-athletes are viewed as the future stars of South African sport and the use of PMDs is essential not only to their success, but also for marketers seeking to take advantage of this lucrative growing market segment (Sanyal, 2018). Therefore, this study aimed to focus specifically on the perceived benefit (PB) factors influencing Generation Y student athletes' ItU PMDs.

2. LITERATURE REVIEW

There is a tendency for consumers to accept PMDs quicker when the possibility to gain several benefits from the device exists (Kim et al., 2019:142). The benefits of PMDs motivate consumers to use these devices when it is effectively advertised (Aksoy et al., 2020:228). PMD marketing practitioners must therefore emphasise the benefits of these devices in a persuasive manner to positively influence consumers' usage intentions towards PMDs (Lunney et al., 2016:218). This is particularly necessary, since a number of South African student athletes are not using PMDs regularly due to a perceived lack of benefits (Halson, 2014:140).

For the purpose of this paper, two important theoretical models have been found applicable in explaining the importance of specific PB factors influencing student-athlete's usage intentions towards PMDs, namely the technology acceptance model (TAM) (Davis, 1989) and the model of Yang et al. (2016). According to the TAM, perceived usefulness (PU) and perceived ease of use (PEoU) are the most important drivers of a user's attitude and intention to use (ItU) technology (Davis, 1989). This is strengthened by prior research that found various significant relationships

between PU and ItU technological devices (Byun et al., 2018:58; Kim & Chiu, 2019:118; Park & Chen, 2007:1357; Pfeiffer et al., 2016:10), as well as between PEOU and ItU technological devices (Chinomona, 2013:266; Revels et al., 2010:74; Wong & Mo, 2019:36). PU within the context of PMDs can be described as the value or benefits users believe they can obtain when they use PMDs (Lunney et al., 2016:115). The usefulness of PMDs is often based on factors associated with increased productivity, improved performance outcome, as well as allowing student athletes to access information anywhere and anytime, which strengthens their intention to use these devices (Talukder, 2019:181). However, consumers tend to have negative perceptions towards technological devices when it requires more effort to use or when perceived risks are present (Chang et al., 2016:520). To counter this phenomenon, manufacturers and marketing practitioners should promote the overall usefulness of PMDs in such an appealing way that consumers' usage intentions towards PMDs increase (Chang et al., 2016:520). Moreover, PEOU can be described as the extent to which an individual believes that technology usage will be free from mental effort (Davis et al., 1989:320; Turhan, 2013:376). As Park et al. (2016:719) explain, technological devices perceived as easy to use are also considered useful in daily tasks. The idea that technological devices are more useful for consumers when they are simple to operate is widely held (Kim & Chiu, 2019:114; Venkatesh, 2000:343). Consumers have higher intentions to use technological devices when they are easy to learn, simple to manage, understandable and able to be adapted to users' different activities (Davis, 1989:322), which could result in enhanced sales of these devices (Lunney et al., 2016:118).

The second theoretical model applicable to this study (Yang et al., 2016:258) focusses on the ItU of PMDs. Fishbein and Ajzen (1975:216) define ItU as “a measure of strength concerning one’s intention to carry out a certain behaviour”. Building on this definition, consumers’ usage intention towards technology is influenced by the devices considered useful to their lifestyle in general (Lunney et al., 2016:115). Therefore, it is evident that consumers’ ItU technological devices are influenced by their behavioural habits, where purchasing intentions and decisions correlate with the PBs they obtain from their daily routine (Choi & Kim, 2016:780). Yang et al. 's. (2016:258) model proposes that consumers’ ItU is influenced by their perceived value, which, in turn, is influenced by their PB and perceived risk factors of technological devices. However, for the purposes of this study, the focus will be on the perceived enjoyment (PE_n) PB factor from Yang et al. 's (2016:258) model, which is used as part of the theoretical foundation for this research. In accordance, PE_n is described as the happiness, fun or pleasure that consumers experience when using a particular technology, apart from any expected performance consequences (Lee et al., 2005:1099; Venkatesh et al., 2012:161). This notion is supported by Park et al. (2012:382) who suggest that consumers are more likely to accept and use innovative technologies if they find the product enjoyable. It should also be noted that users of PMDs have higher levels of perceived enjoyment when advanced features and capabilities are integrated into devices that increase users' ItU PMDs. Therefore, PMD manufacturers need to develop specific features enhancing student athletes' perceived enjoyment of PMDs (Naglis & Bhatiasevi, 2019:101146). Moreover, PE_n is classified as an important factor that encourages consumers to adopt specific technology and is therefore a direct influencer of ItU (Dickinger et al., 2008:4). Various research studies shed light on the importance of PE_n as a PB as well as the significant relationships between PE_n and ItU PMDs (Ha et al., 2017:281; Naglis & Bhatiasevi, 2019:101146; Pfeiffer, 2016:10). It is therefore imperative that PMD manufacturers and marketing practitioners gain deeper insight into the PB

factors that may influence South African student athletes' ItU PMDs, as this information will provide deeper insight for PMD manufacturers and marketing practitioners to produce and advertise according to student athletes PBs.

3. METHODOLOGY

3.1 Research design

In this study, a descriptive research design was employed in order to investigate a purposeful sample of student athletes forming part of the Generation Y Cohort. The aim of this research design is to identify and select individuals or groups who have specific knowledge or experience regarding a particular topic (Cresswell & Clark, 2011:175).

3.2 Target population

The target population of the study comprised South African Generation Y student athletes aged between 18 and 34 years. The target population is described as follows:

- Element: Student athletes aged between 18 and 34 years.
- Sampling unit: Student athletes who competed under the auspices of University Sport South Africa (USSA participants).
- Extent: South Africa, hockey, rugby, netball, cricket and basketball university teams
- Period: 2020–2021

3.3 Sample size

The sample size of this study was 500 student athletes. Taking into consideration that the research relating to PMD is limited, the sample size of this study was based on previous research studies that consist of the adoption of new technology and activity-related wearables, such as Dwivedi et al. (2019) (sample size 459), Muller (2019) (sample size 480), as well as Ooi and Tan (2016) (sample size 459), which is, therefore, deemed sufficiently large.

3.4 Measuring instrument and data collection technique

In light of the COVID-19 lockdown and total sports event suspension during data collection, the researcher used online data collection by approaching USSA, sport managers and coaches at university clubs to post the questionnaire link on the sports team's WhatsApp group. Using this approach, student athletes were not directly contacted and were able to complete the online questionnaire voluntarily and anonymously. The measuring instrument comprised existing scales used in previous studies. According to Heggstad et al. (2019:2617) an adapted scale is merely the adaptation of the wording of scale items, without altering the context or antecedent. It is crucial to gather data in support of a scale's validity during the adaptation process (Korb, 2012). The questionnaire comprised three sections. The questionnaire entailed a section regarding the demographic information of student athletes and a section where student athletes were required to answer scaled questions based on previous publications. The adapted scale of Park and Chen (2007) was used to measure PU (six items), while the four-item PEOU scale was adapted from Kim and Chiu (2019). Student athletes' PEn towards PMDs (four items) was measured by adapting the scale of Sweeney and Soutar (2001) and Venkatesh (2000); whereas Hsu and Lin's (2015) scale were adapted to measure student athletes ItU PMDs (four items). Scaled responses were measured

on a four-point Likert-type scale, ranging from 1 = strongly disagree to 4 = strongly agree. The captured data were analysed using IBM SPSS Statistics 27 and Analysis of Moment Structures (AMOS), Version 27.0.

4. RESULTS AND DISCUSSION

The results for this study’s data set were computed using IBM SPSS Statistics 27. Numerous statistical techniques including outlier statistics, internal-consistency reliability, descriptive statistics, correlation analysis, regression analyses and an independent samples t-test were undertaken to reach the objectives set out for the study.

When working with smaller sample data sets it is highly advisable to screen the sample for case subjects who may be outliers, as these cases may skew data results (Pallant, 2013:127-128). These “outliers” are cases that appear outside of the general norm, either above or below the average response consensus (Hair, Black, Babin & Anderson, 2010:65; Pallant, 2013:127-128). As such, a Mahalanobis static analysis was undertaken on this data set in order to determine if any outliers were present in the sample. Owing to the study containing four variable constructs, the Mahalanobis statistic cut-off level was set at 18.467 (chi-square value for $\alpha=0.001$ at 4 df). As a result, any case achieving a statistic higher than the cut off level would then be liable for removal from the data set. The identifying case numbers were set as the dummy dependent variable and the measuring constructs were set as independent variables. Table 1 below displays the top 10 Mahalanobis distance statistics from the data set.

Table 1: Outlier statistics

| | Case number | Statistic |
|-----------------|--------------------|------------------|
| Mahal. Distance | 1 | 57 |
| | 2 | 314 |
| | 3 | 195 |
| | 4 | 67 |
| | 5 | 290 |
| | 6 | 107 |
| | 7 | 9 |
| | 8 | 252 |
| | 9 | 209 |
| | 10 | 13 |

Note: Bold cases were deleted

As can be seen in Table 1, only one of the Top 10 Mahalanobis statistics were greater than the cut-off level of 18.467 (chi-square value for $\alpha=0.001$ at 4 df). Subsequently, it was deemed that the removal of Case 57 from the data set would not warrant any concern and was then deleted. As such, the data set now contained 330 viable responses for statistical analysis.

4.1 Internal-consistency reliability

The internal-consistency reliability of the measuring constructs was assessed using the popular Cronbach’s alpha statistic. The statistical range for the Cronbach’s alpha is 0 to 1 where values below 0.50 indicate unacceptable internal-consistency reliability and values equal or greater than 0.70 are considered to be good to excellent reliability (Zikmund & Babin, 2013:257; Malhotra, 2010:319). Table 2 displays the Cronbach’s alpha values for the constructs used in this study.

Table 2: Reliability analysis

| | Items (n) | Cronbach's alpha |
|-----------------------|-----------|------------------|
| Perceived usefulness | 6 | 0.88 |
| Perceived ease of use | 4 | 0.90 |
| Perceived enjoyment | 4 | 0.91 |
| Intention to use | 4 | 0.85 |

The data sets internal-consistency analysis yielded Cronbach's alpha values above 0.80 for all measuring constructs. This is an indication that all constructs possess excellent reliability. The two highest recorded scores were that of perceived enjoyment and perceived ease of use (PEoU) obtaining values of 0.91 and 0.90, respectively. Therefore, the measuring instrument may be deemed as reliable for achieving the studies objectives.

4.2 Descriptive statistics

Descriptive statistics were computed to closely inspect the sample characteristics in terms of means, data shape and distribution. Additionally, a samples t-test was conducted to assert the significance of each of the constructs means. The measuring questionnaire used a 4-point Likert scale, resulting in an expected mean level of 2.50. The significance level was set at $\alpha = 0.05$ and the results are depicted in Table 3.

Table 3: Descriptive statistics

| | N | Means | SD | t-value | p-value | Skewness | Kurtosis |
|-----------------------|-----|-------|------|---------|---------|----------|----------|
| Perceived usefulness | 330 | 3.34 | 0.51 | 117.65 | 0.000 | -0.32 | -0.43 |
| Perceived ease of use | 330 | 3.28 | 0.52 | 113.68 | 0.000 | -0.02 | -0.60 |
| Perceived enjoyment | 330 | 3.29 | 0.57 | 104.65 | 0.000 | -0.29 | -0.52 |
| Intention to use | 330 | 3.35 | 0.48 | 124.70 | 0.000 | -0.09 | -0.79 |

p-value: two-tailed significance

Each measuring construct surpassed the expected mean threshold of 2.50 and each said mean was statistically significant at the $p \leq 0.05$ level, as can be seen in Table 3. The consensus of these results implies that Generation Y student athletes perceive PMDs as useful, easy to use devices and have great enjoyment when using them. Moreover, this generation displays a positive ItU these devices in the near future.

In terms of the data sets normality and distribution, the skewness values of each construct were between the recommended range of -2 and +2. Moreover, all kurtosis values fell between -7 and +7 indicating no cause for concern (Kalkbrenner, 2022; Berndt & Petzer, 2011).

4.3 Correlations analysis

A Pearson product-moment analysis was performed to see if any of the measuring constructs had underlying relationships among them. The Pearson value (r) ranged from 0 to 1 in which an $r \geq .50$ equates to a strong associating relationship, $r \geq .30$ indicates a good or moderate relationship and $r \geq .10$ denotes a weak relationship between construct variables (Pallant, 2016:150; Pallant, 2013:139). Table 4 below represents the correlation matrix of the data set.

Table 4: Correlation matrix

| Constructs | 1 | 2 | 3 | 4 |
|-----------------------|---------|---------|---------|---|
| Perceived usefulness | 1 | | | |
| Perceived ease of use | .355**M | 1 | | |
| Perceived enjoyment | .454**M | .431**M | 1 | |
| Intention to use | .639**S | .510**S | .582**S | 1 |

**Correlation is significant at the 0.01 level (2-tailed)
W = Weak relationship; M = Moderate relationship; S = Strong relationship

As can be seen in the correlation matrix table above, each measuring construct displayed a statistically significant positive relationship at the $p \leq 0.01$ level among each other. Regarding the strength of the relationships, ItU PMDs displayed strong relationships with each of the independent variable. ($r \geq .50$). The largest relationship was between PU and ItU ($r = 0.639, p = 0.000 < 0.01$) PMDs, while smallest relationship, yet still significant and of medium strength, was between perceived ease of usefulness and PEoU ($r = 0.355, p = 0.000 < 0.01$). These associations indicate that Generation Y student athletes perceive PMDs as enjoyable, useful, easy to use and intend to purchase or use these devices in the future.

Regarding the data sets nomological validity and multicollinearity, there were no reasons for concern. Each pair of latent factors achieved significant correlation values at the 0.01 level, indicating that the data set has nomological validity. In addition, none of the correlation coefficients surpassed the 0.90 level indicating that respondents identified each variable as the researcher intended and the data set displayed no signs of multicollinearity (Hair et al., 2010; Malhotra, 2010:321).

4.4 Regression analysis:

Regression analysis was conducted to determine if and how much predictability was present for the independent variables of PU, PEoU and perceived enjoyment of ItU PMDs for student athletes. The results are depicted in Table 5 below:

Table 5. Regression analysis

| Variable | Standardised Beta | Adjusted R ² | t-value | Significance level |
|---|-------------------|-------------------------|---------|--------------------|
| Dependent variable: Intention to use | | | | |
| Independent variables: | | | | |
| Perceived usefulness | 0.425 | | 10.091 | 0.000* |
| Perceived ease of use | 0.288 | | 6.594 | 0.000* |
| Perceived enjoyment | 0.235 | 0.555 | 5.647 | 0.000* |

*Significance at the 0.05 level (2-tailed)

The regression results indicate that Generation Y student athletes' intention to purchase PMDs are positively influenced by their PU ($\beta = 0.425, p = 0.000 < 0.05$), PEoU ($\beta = 0.288, p = 0.000 < 0.05$) and perceived enjoyment ($\beta = 0.166, p = 0.000 < 0.05$). The largest contributor was that of PU with a β value of 0.425, therefore student athletes find PMDs useful and as such this will influence their intent of obtaining a PMD. The independent variables collectively explained 56 percent of the variance in ItU a PMD. As a result, it may be inferred that the independent factors can predict Generation Y student athletes' ItU PMDs.

5. CONCLUSION

The sports industry has greatly been transformed from recent innovations in performance monitoring and wearable technologies. This new innovative monitoring technology has influenced

sporting success from novice sportsmen/women to professional sportsmen/women and taken the world by storm, increasing interest in wearable technologies. Furthermore, the South African market is no exception to this interest, especially with the tech-savvy and economically strong Generation Y youth. As such, organisations have invested largely in this market resulting in both remarkable growth and profit generation. PMDs can offer a distinctive advantage over competitors and allow coaches to analyse the performance of athletes during both training sessions and competitive formats. This information may prove to be vital as the sporting industry is a multibillion-dollar industry.

This study illustrates the increasing interest the South African Generation Y student athlete has towards adopting a PMD. These individuals perceive PMDs as useful to their sporting activities and consider them as easily usable items. Furthermore, these individuals enjoy using these devices and display a positive intent to purchase a PMD. Consequently, organisations must capitalise on this new interest over these devices. Organisations should emphasise the need for performance monitoring devices by emphasising the competitive benefits of monitoring performance. Organisations should target athletes at all levels, not just professionals, to maximise profits.

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DEVELOPING A CONCEPTUAL MODEL FOR ADDRESSING THE COMMISSION OF RAPE DURING HOUSE ROBBERY

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ABSTRACT

There is an urgent need to address rape committed during a house robbery, as potential victims are subjected to unbearable victimisations, involving economic and sexual violations from perpetrator's ill actions. As a result, this paper offers a conceptual model to address the commission of rape during house robbery. This paper adopted a qualitative research approach, guided by the Grounded Theory research design. Twenty-three participants, namely: 15 offenders; 5 social workers; and 3 clinical psychologists, were selected using purposive sampling technique. A standardised semi-structured schedule of interview questions was implemented for the interviews. The collected data was analysed using the MAXQDA qualitative data analysis software. Moreover, with Grounded Theory methods of data analysis, aided by the MAXQDA software, open-, axial- and selective coding were applied to the data collected. A conceptual model, informed and guided by the motivational factors of committing rape during a house robbery, was developed. These factors included the following: unstable family background; aggression; dominance; opportunity; substance use; vulnerability; and mob mentality. This study concludes and recommends that the following selected factors: positive socialisation; sexual violence curriculum; liquor regulations; stringent firearms control; and target hardening, can best be used to respond effectively to the commission of rape during a house robbery. It is shared that an understanding of these factors can lead to the attainment of healthy morals and ethics in children from a young age. Furthermore, assist in reducing and/or eliminate the existing criminogenic factors that lead to sexual offending, as well as equipping and informing individuals about the nature and consequences of rape and house robberies.

Keywords: Conceptual model; house robbery; rape

1. INTRODUCTION

House robbery and rape are two distinct crimes. However, a direct link of violence and sexual victimisation exists between these crimes. Harris, Pedneault and Knight (2012) have highlight that if the assumed lack of financial and sexual motivation during house robbery and rape is removed, the committed crimes become one of power, invasion, control, or thrill. The number of common possibilities has resulted in a dearth of literature studies on the linked co-occurrences of these crimes. Accordingly, rape perpetrated in the context of house robbery is often viewed as an opportunity crime and qualifies as a 'bonus' to theft in commission (Warr 1988; Pedneault et al 2015).

As a result, a notable example of house robbery leading to rape being regarded as a 'bonus', occurs when a robber breaks and enters into a residence to commit theft and rapes a victim afterwards.

This often occurs when an offender, during a house robbery, encounters a powerless victim without guardianship to deter the criminal victimisation and chooses to rape the unprotected victims. This explanation is in accordance with the so-called ‘opportunistic rapist’ (Scully & Marolla 2014). It is against this background that there is an urgent and serious need to develop a conceptual model to address the commission of rape in a house robbery.

2. LITERATURE REVIEW

The conceptualisation of house robbery and rape

House robbery

House robbery is the term formulated by the South African Police Services (SAPS) to describe a robbery where the perpetrators overpower, detain, and rob the residents (occupants) of a residential premise (Zinn 2010; Zinn 2017). The author(s) assert that house robbery is the unlawful entering into a household with the intention to commit robbery while the occupants of the house are present. A house robbery involves careful planning of the routine activities of the victims, since it is only committed in their presence. The perpetrators can be profiled as individuals motivated by financial gain, since, in many instances of house robbery, wealthy households are the primary target. From this understanding, it can be deduced that house robbery is a planned and calculative criminal act wherein the perpetrators learn the routine activities of the victims and, upon entry into the household, there is the use of force that can result in the commission of other crimes, such as rape – as discussed in this paper.

Moreover, house robbery can occur with aggravating circumstances if weapons, such as knives or firearms, are used to scare the victims into submission and eliminate any actions of retaliation or response by the victims. In most incidences, access to the premises can be in two forms, either by force or the victims could unknowingly allow the perpetrators into the house (Alwinco 2015). The households that are mostly targeted are those that are wealthy and will make the crime rewarding (Van Raalte 2013; Chowles 2016). Zinn (2010) mentions that the information about the households is obtained from observation or the people currently working or who once worked on the premises such as domestic workers, gardeners, or security guards.

Newham (2008) further maintains that the perpetrators of house robberies are part of the criminal syndicates who quickly distribute the stolen goods, package them as second-hand goods and launder the money obtained from the stolen items. This is supported by Van Raalte (2013), who states that stolen items consist mainly of cash, jewellery and electronics. It would, therefore, appear that economic gain is one of the primary contributing factors in house robberies, since the perpetrators participate in these robberies to obtain quick cash. This analysis can be attributed to the Strain Theory, which states that people commit crimes because of the limited legitimate resources accessible to them within societies (Van der Westhuizen 2011).

Furthermore, they gain experience in stealing goods by committing petty/street crimes before criminal career progression to house robbery. Normally, robbers commit a substantial number of crimes before they are apprehended for a house robbery (Zinn 2010). Accordingly, in this regard, as proposed by the Broken Windows Theory of Wilson and Kelling (1982), the perpetrators of petty crimes must be arrested, prosecuted and convicted to deter their progression into more serious

criminal activities. Consequently, for the successful completion of the crime, the victims are usually subjected to different kinds of violence ranging from: torture; assault; physical abuse; to rape and murder (Zinn 2010).

***Modus Operandi* of burglars at residential premises**

Nee (2010), in his study of convicted burglars, emphasised three main factors concerning a burglary at residential premises. The first aspect is the decision made to commit a crime that follows a certain pattern. The first decision happens away from the scene, based on a certain motivation, which may, for example, be a need for money. This is followed by searching for an area that is vulnerable until they find a suitable target, namely, in this instance, a suitable residential property.

The second aspect is their interest in the cues that alert them about how accessible is the property, the occupancy, i.e., who lives there, surveil ability and security installed at the target residence. The last aspect refers to how the burglar carefully considers a specific *modus operandi* to gain entry to target residence. De Wet, Potgieter and Labuschagne (2010) highlight the variables that indicate the vulnerability of a potential victim to the perpetrator. These include victim being a woman; the victim's age range; being reliant on public transport in general and the need to get employment. Accordingly, the conceptualisation of rape is as follows:

Rape

According to Section 3(1) of The Criminal Law (Sexual Offences and Related Matters) Amendment Act, No. 32 of 2007 (SOAA):

“Any person (“A”) who unlawfully and intentionally commits an act of sexual penetration with a complainant (“B”), without the consent of B, is guilty of the offence of rape. It further refers to incidences wherein the offender penetrates the vagina or anus of the victim with a body part other than the penis or an object manipulated by the offender.”

It is noted that the 2007 Act was amended in 2021 and the new act was signed into law on 28 January 2022 as The Criminal Law (Sexual Offences and Related Matters) Amendment Act Amendment Act, No. 13 of 2021. Additionally, Section 261 of the Criminal Procedure Act (CPA) No. 51 of 1977 stipulates the elements that must be proven beyond a reasonable doubt in rape cases such as unlawfulness, intent, no consent, and penetration. Toates (2014) further suggests that sexual assault is the result of a motivational mechanism in which dominance/aggression and sensation seeking can interfere with sexual desire. The stance taken by Toates (2014) is endorsed by Fiske and Rai (2014), namely that: superiority and the assertion of authority are usually part of the motivational basis for rape. Darke (1990); Jewkes, Sikweyiya, Morrell and Dunkle (2010); and Mann and Hollin (2010), take much stronger stances and declare that the reason for rape seems to play a role in the urge to dominate and humiliate. This view was reinforced by Hazelwood and Burgess's (1987) Federal Bureau of Investigations (FBI) typology, based on the work of Groth and Birnbaum (1978), which states that power-reassurance offenders commit rape in an attempt to challenge their sexual doubts and perceived inadequacies.

Furthermore, a study conducted by Holmes and Holmes (2009) highlights that most male sex offenders were sexually, physically, and verbally abused as children and this is an instrumental

factor in their hostility towards women. Additionally, Zinn (2017) states that the use of alcohol and drugs plays a vital role in the commission of the crime of house robbery. That is, alcohol eliminates moral constraints and consequently, vulnerable victims are attacked during a house robbery when the desire for sex becomes unbearable and irresistible. A study, conducted by Bruce, (2007) concurs with the views of Zinn (2017), and highlighted that alcohol and drugs emerged as the most significant disinhibiting factors amongst the majority of interviewees undertaken with sexual crime offenders, and specifically in the instances of rape.

Therefore, rape in the context of this paper, can be defined as a sexual penetration with a female without her consent influenced by power, dominance, opportunity and the victim's vulnerability. Rape committed in the context of house robbery can be attributed to the victim as a powerless woman with the act enabled or facilitated by the opportunity provided, given that it was not the perpetrator's initial motive to commit a rape during the commission of the house robbery. From the above, it can be deduced that the perpetrators of house robbery and the occurrence of the subsequent rape are categorised as: 'opportunistic dominance rapists'.

2.1 Theoretical framework

Power Control Theory

The Power Control Theory explains that gender differences in delinquency are based on the power structures displayed within a family unit and the differential parental controls exercised over boys versus girls. According to Lilly, Cullen and Ball (2011), the balance of power and control between parents affects the child's preference for taking risks and delinquency. The key issues in the Power Control Theory are the differences in the mother's and father's occupational authority (egalitarian and patriarchal respectively). In a patriarchal family, the father's job puts him in a 'command' role, while the mother is obliged to follow an 'obey' role. Thus, the children in patriarchal families are socialised by their parents to reproduce gender relations (Lilly, Cullen & Ball 2011). This means that daughters are taught to be feminine and prepared to be homemakers, while on the other hand, sons are taught to be breadwinners and are allowed to experience the world.

Therefore, the occurrence of rape in the context of this paper results from the poor socialisation and parents' lesser control over the male versus female children in the family. Additionally, males exposed to poor socialisation in these households can be prone to criminality when confronted with a powerless victim. Rape in this context is not just about sex, but about domination, social control and violent acts directed at women – all perpetuated by poor socialisation. In essence, women are viewed as belonging to the 'obey' position, while men are seen as 'commanders.' Women are obliged and forced to obey anything that a man commands without their consent. Sexually violent acts are no exception to this dictum.

3. RESEARCH METHODOLOGY

3.1 Research design

A Grounded Theory research design was employed in this study, since it is embedded in behaviours and social movements. The use of this research design was to open up a space for the development of a new, contextualised theory. Glaser and Strauss (1967) define Grounded Theory

as the discovery of theory from data systematically obtained from social research. Additionally, according to Creswell (2009), Grounded Theory research design is "...a qualitative strategy of inquiry in which the researcher derives a general, abstract theory of process, action, or interaction grounded in the views of participants in a study". The author(s) endeavoured to use the 'voices' of participants to develop a theory on house robberies that result in rape through the use of Grounded Theory.

3.2 Sampling method

Purposive sampling was applied in this paper to guide data collection and generation of data. The participants were purposefully chosen to answer the research questions (Chun Tie, Birks, & Francis, 2019). The target population sample comprised of incarcerated offenders of house robbery and subsequent rape from correctional facilities in the Gauteng and Limpopo provinces of South Africa. The sample included a select few social workers and clinical psychologists. The target population sample consisted of 23 participants, namely: 15 offenders; 5 social workers; and 3 clinical psychologists.

3.3 Research instrument

The semi-structured face-to-face interviews with reference to the 'Interview Schedule Guide' channelled this process to define the topic under research and provide opportunities for both interviewer and interviewee to discuss some topics in detail. Semi-structured interviews allow the researcher to prompt or encourage the interviewee to provide additional information. According to Barclay (2018), this offers the freedom to "probe the interviewee to elaborate or to follow a new line of inquiry introduced by what the interviewee is saying" and this blended in well with the requirements of the Grounded Theory methodology. The interview process was first implemented at the Thohoyandou Correctional Centre in the Limpopo Province, and then moved on to the Kgosi Mampuru II Correctional Centre in Pretoria in the Gauteng Province,. Moreover, the offenders were housed at Medium B and C Max Maximum security) sections at both Thohoyandou and Kgosi Mampuru II correctional centres.

3.4 Data collection

Data collection through Grounded Theory is directed by purposive sampling. Its advantage is that it enables the selection of subjects that maximise the potential to discover as many dimensions related to the phenomenon as possible. Qualitative one-on-one interviews are best suited for understanding people's perceptions, experiences and for gaining in-depth knowledge on the interview topic directly from interviewees (Blandford 2013). In addition, the interviewees can discuss their perceptions and interpretations regarding a given situation. Therefore, semi-structured interviews were used to allow participants the freedom to express their views (Crabtree & Cohen 2006).

3.5 Data analysis

(Chun Tie, Birks, & Francis, 2019) provides that concurrent data generation, collection, and analysis is essential in grounded theory research design. Therefore, before proceeding with further data collection/generation, the researcher collects, codes, and analyses the initial data.

Additionally, purposeful sampling provides the researcher with the initial data for analysis. Theoretical sampling then begins, with the codes and categories developed from the first data set. As the study progresses, theoretical sampling is used to identify and follow clues from the analysis, fill gaps and clarify uncertainties (Chun Tie, Birks, & Francis, 2019). Theoretical sampling is described as the process of continually gathering data through the analysis process to explain and validate emerging concepts (Charmaz 2014). It is further defined as the process of collecting, coding and simultaneously analysing data to subsequently formulate a theory (Glaser & Strauss 2012). This process commonly entails soliciting specific participants that will provide further facts on the specific concept under investigation. An advantage of the application of theoretical sampling is that it provides a structure of data collection and analysis processes.

The collected data was analysed using the Grounded Theory, through the MAXQDA qualitative data analysis software, which utilises a process of breaking down, organising and reassembling data to develop a different understanding of phenomena (Strauss & Corbin, 1998). The first phase of data, which was collected from the Thohoyandou Correctional Centre, was analysed using open coding of concepts and categories. The categories/themes generated from the data were used as a framework to modify the interview schedule for the second phase of data collection, which was implemented at the Kgosi Mampuru II Correctional Centre. The process was facilitated by a constant comparative method, which is deemed an original way of organising and analysing qualitative data in Grounded Theory (Chun Tie, Birks & Francis 2019). Data analysis continued until there were no new emerging categories or themes. It was at this stage when a theory was developed. The themes that emerged were, namely: opportunity (to commit a rape presented during a house robbery); unstable family background; substance use; aggression; (need to establish) dominance; (victim) vulnerability; and mob (gang) mentality.

4. RESULTS AND DISCUSSION

The analysis raised five concepts connected to rape committed during a house robbery. These include: i) Positive socialisation; ii) sexual violence curriculum at schools (life orientation) from the primary level; liquor regulation; enforcement of stringent firearm control and target hardening. The house robbery and subsequent rape conceptual model is highlighted and explained as follows:



Figure 1: Conceptual model to address the commission of rape during a house robbery

Positive socialisation

In the majority of African and Western households, norms and values are clearly and verbally learned through ‘word of mouth’ within a family environment. Therefore, positive socialisation of the offsprings plays an enormous role in shaping future law-abiding citizens. A family is the first and primary unit of socialisation that plays a positive role for individuals. As a result, parents play positive roles in shaping existing behavioural patterns of their offspring. This can be done through their own exhibiting and teaching their children positive norms and values, to avoid the latter falling prey to delinquent behaviour.

Moreover, a sexual violence culture can be mitigated by abolishing dominant patriarchal ideologies that perpetuate male superiority. In addition, working on social and cultural inferiority that undervalues women, is crucial in this context. Furthermore, families should account for and refrain from any abuse that may hamper the socialisation of a child. Sexual, physical, emotional, and psychological abuse during childhood has been proved to contribute, later in life, to an offending behaviour. Additionally, during the perpetration of rape in a house robbery, the consequential factors of these patriarchal ideologies are domination, accompanied by aggression. Therefore, the imparting, from a very tender age, of positive socialisation to offspring can serve as a proactive factor to curb the occurrence of rape during a house robbery.

Sexual violence curriculum

Knowledge will always be a powerful weapon that can be used to fight any crime and social ills. Knowledge about sexual violence imbued within the schooling environment, can assist individuals to develop conscience whenever confronted with the opportunistic circumstances for the commission of rape during a house robbery. The schooling environment reinforces all the ideas and norms about sex, relationships, and bodily autonomy. There is a need for the incorporation of the sexual violence curriculum within primary and secondary schools, as well as tertiary institutions. Children need to be familiar with the details and literature of sexual violence and popularise the application of ‘consent’.

Additionally, for rape to occur a certain element needs to be proven beyond reasonable doubt, such as: lack of consent and therefore there is a need to educate children on what ‘consent’ entails with regard to rape. Schools are in a great position to carry out the difficult, grassroots task of educating children about the nuances and various aspects of sexual violence. Overall, it is imperative to incorporate sexual violence curriculum right from the primary school level, with a primary focus on sexual violence and related consequences. This curriculum could then also be enhanced by providing monthly/weekly views on identified emerging trends on the crime of rape. This can assist in the creation of further insight into this crime scourge and help in the development of best practices in dealing with it.

Liquor regulations

The majority of the participants in the study revealed that they were under the influence of alcohol during the commission of a house robbery and the subsequent rape. This factor, also highlighted the provision in the liquor licensing conditions that refers to the serving of alcohol to already intoxicated patrons, which is a punishable offence. The stricter regulation of liquor is of utmost importance given the negative consequential nature associated with binge drinking. Therefore, there is a dire need for liquor license holders to comply with all the conditions as set out in the legislation and regulations that impose controls on the sale and provision of alcohol, in particular to underage youth. The use of breathalysers (alcohol testers) at liquor outlets should be a mandatory condition imposed on license holders by the Liquor Board. The use of breathalysers would enable liquor license holders to check individuals that are already intoxicated and restrict the sale of alcohol to them. This can be a proactive measure to avoid circumstances wherein individuals become intoxicated and proceed to commit house robbery and subsequent rape. Moreover, the use of alcohol has proven to facilitate the commission of these crimes and the

excessive use of it by the perpetrators can have detrimental effects on the victims of house robbery and subsequent rape.

Enforcement of stringent firearms control

The weapons such as firearms play a key role in the commission of house robbery and subsequent rape, since they are used as a threat of violence to scare and intimidate the victims into submission and to control the proceedings of the crime. Although South African history on firearms cannot be disputed, wherein the firearms that were used during the apartheid era are not all destroyed and confiscated. There were many legally licensed firearms from the apartheid era that were actually stolen post 1994 and circulated by criminals, for instance, readily available at the right price. Moreover, the problem is the implementation and incompetence of the Firearms Register Centres of the SAPS for its failure to curb firearms theft and implement proper control over licensed firearms. Added to this is the fact that the Central Firearms Register has been in absolute disarray with licence renewals not being done, compounded by incompetence and corruption in the issuance of licences. In addition, certain corrupt policemen have actually been apprehended for selling firearms to criminals. This calls for greater and stricter implementation of the existing firearms control regulations.

In terms of issuing of firearms to security companies, Minnaar, (2008) mentions that a security company in need of accreditation to use firearms for 'business purposes' should submit detailed information of the scope of the security service(business); secondly, a full motivation for the use of firearms in this scope of business. Thirdly, a detailed description of the exact firearms (with serial numbers) to be used as well as a detailed motivation of how those particular firearms would be used. Fourthly, it is imperative to provide a description of the security measures to be implemented in terms of safe handling, transportation and storage of the firearms. Fifthly, the total number of persons who would be issued with firearms to be used in the business to be licensed before issuing; and finally, a description of the premises from where the (security) business would be conducted. All these requirements are mandatory and therefore can play a crucial role in issuing accreditation of firearm use to the compliant security companies and control thereof.

Therefore, it is imperative that the Firearm Control act no (60 of 2000) be properly enforced, and the central firearm registers (CFR) be cleaned up and for it to start working properly and that stolen firearms must be reported. Additionally, the Firearms Control Act imposes on every registered firearms dealer to only sell ammunition to a licensed firearm owner on the presentation of the owner's firearm licence or the dealer accessing the Central Firearms Register database on the presentation of the firearm owner's identification(ID). In circumstances wherein there is a serial number, a firearm can be traced if the expended bullet and cartridge case are retrieved by the police and the bullet tested for striations (from the 'rifling' inside the barrel), as well as the firearm pin mark on the back of the cartridge case. All of this also presupposes the police have the actual firearm that fired the bullet and firing tests have been recorded by the firearm dealer that sold then legal weapon to an owner.

Target hardening

Crime prevention and control is a complex phenomenon and can only be maintained if there is a partnership between law enforcement agencies and community members. Communities' role in

crime prevention can be in terms of an active community Police Forum (CPF), community organised patrols, and other neighbourhood watch activities. Partial reference can be made to traditional policing to understand how target hardening can be maintained. Target hardening relates to control and security to limit, deter and restrict potential criminals from committing crimes and reduce possible opportunistic circumstances. Preferred neighbourhood wide CCTV managed by the Private Security Companies (PSCo) which can be paid by the community, alarm systems, electric fences, and domestic animals such as dogs can be used to alert and warn home dwellers of the early detection of an intruder on their property. The alarm systems within a household should be designed to detect the perpetrators whilst trying to bypass or penetrate the outside gate/wall (perimeter of property). The placement of alarm beams in a garden are another means of an alarm system providing early warning of any intrusion onto the property even before they enter the house itself. In essence, the vulnerability of a victim is exacerbated by easier entry of the perpetrator into the targeted house by the absence of any of the abovementioned security measures. Moreover, the wealthy households are prey to the perpetrators of house robbery and rape. Additionally, the same applies to the marginalised and low-security households.

Overall, a house alarm system should have the latest technological advancements installed, such as a cell phone application that is connected to the alarm system wherein a signal is sent to the home dwellers whenever there is an intruder on the property or any tampering of the security systems. Since the alarm system is linked to a private security company, the alarm is simultaneously sent through cellphone signal both to homeowner's and to the PSC's control room. Consequently, after receiving the alarm signal, the PSCo can immediately send an armed response team to the affected residential premises.

Additionally, visible policing can be a proactive measure to supplement the security features wherein the members of the SAPS and private security companies make regular patrols at identified crime hotspots in high-crime neighbourhoods, i.e. areas marginalised by being unable to afford private security company services. In this manner, the planning and studying of the routine activities of the home dwellers and free movement around neighbourhoods by criminals (house robbers in particular) in search of opportunities to commit a crime would be dramatically minimised and reduced.

5. CONCLUSION

This study analysed the conceptual model that was developed to understand the occurrence of rape during a house robbery. Furthermore, provided a detailed explanation of how these crimes can be more effectively addressed. This was accomplished through an explanation of the key categories of the model, namely: Positive socialisation; implementation of a sexual violence curriculum in schools and tertiary institutions; enforcement of liquor regulations; the stringent enforcement of firearm control and all the requirements stipulated in the Firearms Control Act; and target hardening of residential premises.

Therefore, an understanding of these points can lead to the achievement of healthy morals and ethics of children from a young age; the elimination of the criminogenic factors that lead to sexual offending; well-equipped and informed individuals about the nature and consequences of sexual violence and offending. Liquor license holders who comply with the conditions of the licenses of not selling alcohol to already intoxicated individuals. The control of firearms; and more stringent

security measures at homes coupled with additional visible policing patrols in high-risk areas for the prevention and/or reduction of the opportunistic circumstances for the commission of house robbery and subsequent rape.

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THE ACCESSIBILITY OF SOCIAL FACILITIES BY RURAL AREAS IN SOUTH AFRICA: IS IT A MYTH OR A REALITY?

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ABSTRACT

There has been a continuous debate on whether residents in rural areas of South Africa have access to social facilities such as education facilities, health facilities, community centres, sports centres, parks and other social facilities. The debate arises in lieu of Section 29 of the South African constitution which gives every individual a right to education. The state is responsible to ensure that everyone, be it in rural or urban areas, has access to social facilities. This paper is a theoretical intervention and relies on a literature-based methodology to investigate whether access to social facilities by rural areas in South Africa is a myth or a reality. A review of documents including newspapers, scholarly journal articles and government documents in relation to the accessibility of social facilities by rural areas in South Africa was conducted. Seemingly, access to social facilities by South Africa's rural areas is a myth, and not a reality. Numerous rural areas remain without access to social facilities. Consequently, people are forced to travel or walk many kilometres to access health, education and other facilities. The paper concludes that, decisions made regarding the accessibility of social facilities by rural areas in South Africa are merely a declaration without implementation. Hence, the paper recommends that the government of South Africa together with its stakeholders should examine the policies that were introduced to ensure that the constitutional mandate is fulfilled and realised.

Keywords: Social facilities; poverty; development; rural areas; South Africa

1. INTRODUCTION

There has been continuous debate on whether residents in rural areas of South Africa have easy and convenient access to social facilities such as education, health, community centres, sports centres, parks, among others (Mahaj, 2019). Section 29 of the South African Constitution gives every individual a right to education (Mahaj, 2019). One of the key principles supposedly undergirding the government of South Africa is to ensure that access to social facilities by all the citizens is improved and made easily available (White, Blaauw and Rispel, 2020). The provision of physical infrastructure for easy access to social facilities by communities is critical (Sulemana and Dinye, 2014). The infrastructure should be distributed spatially in such a way that it is logically centred on communities where they can easily access social facilities (Chisholm, 2012). The government is gravitating towards establishing more social services through the internet and other electronics (Mahaj, 2019). However, most social services require physical infrastructure, more especially rural areas (White, Blaauw, *et al.*, 2020). Eminent living environments are confidentially well provisioned and gain access within a workable gap to all the government amenities required to be in control of a treasured life (Chisholm, 2012). The society needs schools, health services, police stations, recreational spaces, etc., in their communities (Sulemana and Dinye, 2014). They also require access to social facilities such as the office of the Department of

Home Affairs and South African Social Security Agency (SASSA) as well as municipal services to manage their lives (Mahaj, 2019). However, for rural areas that are dispersed over the land, it becomes difficult for most services to be viably provided at all locations (Sulemana and Dinye, 2014). That there are difficulties should not be taken to imply that rural areas' access to significant services is not compulsory.

Existing development forms depict an unsatisfactory progress in the delivery of facilities (Chisholm, 2012). The design sometimes follows past settlement forms or income disparities; other forms demonstrate little levelheadedness, whereas others evince previous and current radical doctrines and/or political models that protract prejudiced social facility delivery (Sulemana and Dinye, 2014; White, Blaauw, *et al.*, 2020). Numerous guidelines, containing the Constitution and Public Services Regulations, place the responsibility on departments to advance access to services, to improve access ethics for their services and eradicate blockades that impact on access (Mahaj, 2019). The state must ensure that everyone, be it in rural or urban areas, has access to social facilities (White, Blaauw, *et al.*, 2020). However, there is still a huge number of rural areas without essential social facilities (White, Blaauw, *et al.*, 2020). Consequently, people are forced to travel or walk many kilometres to access health, education and other facilities (Chisholm, 2012). The people's rights to voice out the development they need is encouraged and even documented in South Africa; however, no action is ever taken to meet the need. This is why South Africa is still far from reaching the goal of poverty alleviation, equity and full employment. The purpose of this paper is to investigate whether the rural areas' access to social facilities is a myth or reality. It also seeks to examine the policies and other legal interventions that were introduced to ensure that the constitutional mandate that guarantees "the right to access social services or facilities" in South Africa is realised.

The paper comprises five sections. The first section introduces the paper. The second section is the literature review, which contains four sub-sections, namely: The theoretical framework; The legacy of apartheid; Rural areas and access to social facilities; The Constitution's obligations. The third section provides the methodology used while the fourth section provides the outline and discussion of the results of the investigation. The last section concludes the paper.

2. LITERATURE REVIEW

This section discusses the theoretical framework, the legacy of Apartheid on social facilities, Rural areas and access to social facilities, and the Constitution's obligations as follows:

2.1. Theoretical Framework

There has been a continuous debate on whether residents in rural areas of South Africa easy access to social facilities have to sustain their well-being (White, Blaauw, *et al.*, 2020). In view of this, this paper adopted the Social Welfare Theory because it purports the need to ensure the well-being of all societies (Mazibuko and Taback, n.d). The paper ascribes the responsibility of social welfare and well-being of all communities in South Africa to the government of South Africa. The theory further proffers that the dignity and eccentricity of a society should be valued through the delivery of social capitals (Mazibuko and Taback, n.d). During the provision of social facilities, the government and other stakeholders providing the social facilities are responsible to ensure that residents in rural areas are valued, respected and appreciated.

2.2. The lingering effects of Apartheid on social facilities

From a social welfare perspective, societies often have different levels of access to social facilities (Mahaj, 2019). In apartheid South Africa, even though white individuals were in the minority, they were still accorded better social well-being facilities than other ethnic groups (Gibson, 2003). Apartheid laws, policies and protocols (e.g. Populations Registration Act of 1950; the Pensions Circular 66 of 1966 and the National Welfare Act No. 100 of 1978), guaranteed that white individuals in South Africa would grow and protect economic resources (buy land and own the means of production) leaving other non-white peoples with minimal to no opportunities of access to economic development and prosperity (Gibson, 2003; cf. Chisholm, 2012; White, Blaauw, *et al.*, 2020). The gap between the rich and the poor in the country continues to widen in South Africa (Mahaj, 2019).

One of the greatest and substantial apartheid laws which categorised, endorsed distinct growth and engrained apartheid ideology is arguably the Populations Registration Act 1950 (Mahaj, 2019). This Act lucidly defined ethnic exceptionalism and exclusion among South African citizens, racially categorising them as White, Coloured, Indian and Black. However, in this categorisation, white citizens, acknowledged as genuine South African residents, were accorded voting rights while the other ethnic groups were marginalised and correspondingly taxed and denied freedom of the country as well as the privileges conferred upon white people (Mahaj, 2019). To this end, social welfare services were discriminately distinguished through monthly pensions in 1987; for example, white citizens received R 218; Coloureds and Indians received R 167 and the Black majority received R 117 (Patel, 2005).

Furthermore, the apartheid government formed an immense bureaucratic structure to legitimise the radical philosophy of distinct growth (Mahaj, 2019). To this end, 18 social welfare service departments and homelands were created to deliver social facilities and welfare services. Correspondingly, the departments of education, home affairs, and health were established at gigantic costs to the management of the government (Chisholm, 2012; Chipps and Jarvis, 2016). This tact by the government had key economic insinuations, which plunged the apartheid government into a massive liability. It can be contended that the apartheid government was not only accountable for the underdevelopment of most black South African citizens (White, Blaauw, *et al.*, 2020), but also for their current inability to access most social facilities conveniently.

Numerous laws were enforced to ensure a distinct progress of races in South Africa (Mahaj, 2019). The Department of Social Welfare and Pensions Circular 66 of 1966 is a suitable example (Chisholm, 2012). This department instructed social facilities and welfare groups to implement apartheid rules that would perpetuate disparate and distinct facilities for diverse race clusters established by the apartheid regime. Moreover, according to this Act, social labours could only render services to their own race groups whereas distinct panels of administration had to serve numerous race groups (Gibson, 2003). This racial regulation deliberately ensured that the apartheid regime existed mainly for the benefit and preservation of white people (Chisholm, 2012; Chipps and Jarvis, 2016). The effects of this regulation are still notable in the current gap between the rich and the poor in South Africa (Chipps and Jarvis, 2016).

The enactment of the National Welfare Act 100 of 1978 indelibly informed the creation of local well-being panels grounded beside racial outlines (Chisholm, 2012). A multi-racial nationwide

well-being panel was also created to guide the management of well-being apprehensions (Chipps and Jarvis, 2016). Black social workers could not render efficient services to their own race due to apartheid laws founded upon ethnic discrimination, which resulted in the well-being of black people being at a disadvantage even post-apartheid (Gibson, 2003; Mahaj, 2019). The prejudicial allocation of social facilities and welfare service societies, homes, and social welfare resources predominantly to white people meant that black people would on the contrary settle either for poor or no social facilities at all (Mahaj, 2019). Furthermore, the National Welfare Act 100 of 1978 Act provided an income for the organisation to manage and adjust global donor funding, which ensured that certain parties, i.e. white-led parties, had a backup of facilities for their (white) groups (Chisholm, 2012). However, some non-profit organisations received global backup for attempting to address the dilemma constantly faced by underprivileged societies (Gibson, 2003).

The Population Registration Act, 1950 categorised all South Africans into 1 of the 4 ethnic groups based on appearance, recognised origin, socio-economic rank and social lifestyle (Mahaj, 2019). Places of residence were determined by ethnic categorisation. Between 1960 and 1983, about 3.5 million Africans were detached from their homelands and forced into separated neighbourhoods because of apartheid legislatures, with the chief among them being forced removals (Chipps and Jarvis, 2016). These removals were intended to restrict the black population to 10 designated ethnic motherlands, also known as Bantustans, 4 of which became technically self-governing states. The individuals that were forcefully removed ultimately lost their South African nationality after being placed at the Bantustans (Chipps and Jarvis, 2016).

Apartheid glimmered a substantial world-wide and national antagonism, after some of the greatest and powerful worldwide communal activities of the 20th century (Gibson, 2003). The United Nations brought about a widespread arms and trade restriction to South Africa (Mahaj, 2019). During the 1970s and 1980s, an internal confrontation of apartheid became progressively aggressive, encouraging brutal restrictions by the National Party's management and prolonged denominational viciousness that left thousands either dead or in detention (Chisholm, 2012; Chipps and Jarvis, 2016). Some reforms of the apartheid system were commenced, including allowing for Indian and Coloured political activism in the assembly, but these procedures botched to mollify most activist groups (Chipps and Jarvis, 2016).

Between 1987 and 1993, the National Party entered into two-sided discussions with the African National Congress (ANC), the leading anti-apartheid political movement, for ending exclusion and announcing majority rule. In 1990, prominent ANC figures such as Nelson Mandela were freed from custody. Apartheid legislature was repealed on 17 June 1991, leading to multiracial elections in April 1994 (Turok, 1994). The election was held on the 27th of April 1994 and went off serenely throughout the country as about 20 million South Africans cast their ballots (Turok, 1994). There was a struggle in arranging the elections in rural areas; nevertheless, individuals patiently waited time and again to vote (Turok, 1994). An additional day was added to provide everybody with the opportunity to vote. Worldwide spectators agreed that the votes were fair. The European Union's report on the voting process accumulated at the end of May 1994, published two years after the election, critiqued the Independent Electoral Commission's lack of readiness for the elections, the scarcities of election resources at several election places, and the absence of operative precautions to combat corruption during the vote count (Gibson, 2003; Turok, 1994). There was a sense of discomfort that worldwide spectators had not been permitted to be present when party congresses

engaged over doubtful ballots (Turok, 1994). This meant that both the constituency and the world were just left to guess the final result.

The ANC won 62.65% of the vote, which was less than the percentage (66.7%) that would have permitted it to revise the constitution (Turok, 1994). About 252 of the 400 seats went to members of the African National Congress. The NP captured most of the White and Coloured votes and became antagonistic party (White, Blaauw, *et al.*, 2020). In addition to deciding the national government, the voting also decided provincial administrations. The ANC won in seven of the nine provinces of South Africa, with the NP winning in the Western Cape and the IFP in KwaZulu-Natal, respectively. On 10 May 1994, Nelson Mandela was inaugurated as the new President of South Africa. The Management of National Unity was established, with its cabinet made up of 12 ANC representatives, six from the NP, and three from the IFP (Turok, 1994). Thabo Mbeki and de Klerk were made deputy presidents. The anniversary of the elections, 27 April, is celebrated as a public holiday known as Freedom Day in South Africa (Turok, 1994).

2.3. Rural areas and access to social facilities

➤ Access to education facilities

Most rural communities in South Africa remain underprivileged compared to their equivalents in town areas (Aziz, Nisar, Koondar, Meo, and Rong, 2020). Clearly, egalitarianism contributes to the challenges that are experienced by rural societies. The Minister of Education, Ms Angie Motshekga, stated that the problems faced in rural areas of South Africa, though to some extent restricted to rural learning, are in fact widespread to fluctuating grades in the formerly disadvantaged groups (Aziz, Nisar, *et al.*, 2020). Regulations geared towards restitution, admittance, objectivity and comparability evidently need further orientation towards rural areas (Amoah, Edusei and Amazu, 2018). The Ministerial Committee on Rural Education recommended that in undertaking the difficulties of rural progress and education in particular, policies should aim at ensuring stability in the government's rural expansion approach, in which admittance to financial proceedings is prolonged to lessen poverty, consider human rights and communal fairness and expand living circumstances (Aziz, Nisar, *et al.*, 2020). The remark by the Ministry specifies a tacit salutation of the lack, as well as the unavoidable responsibility to discourse rural education as a public fairness matter (Amoah, Edusei, *et al.*, 2018). The value of learning, mostly among rural and archaeologically disadvantaged people, should be examined as a human rights matter. Most schools in South Africa in rural areas are poorly built, which puts learners at a disadvantage (Amoah, Edusei, *et al.*, 2018). The rural situation is depraved, not only in terms of human basic needs, but also in learning and livelihood conditions (Aziz, Nisar, *et al.*, 2020). Peter Kallaway laments the disposition to release educational inspirations that try to find or to make straight interventions into matters of development as attempts to control and subordinate rural people (Amoah, Edusei, *et al.*, 2018). This was done to the emigrant order or to release rural people as features of ineffective collectivist research, or even see in them only the conspiracies of apartheid communal manufacturing, as tossing out the baby with bathwater (Amoah, Edusei, *et al.*, 2018).

Rural employment in South Africa is clearly associated with apartheid and the colonial policies of deprivation, immigration and a systematic marginalisation from opportunities, as exemplified by

disparities in rural areas (Aziz, Nisar, *et al.*, 2020). The main structures of a rural outline in South Africa include detachments from towns; poor roads and bridges to schools; a lack of or incomplete access to Data Communications Technologies; a lack of facilities such as running water, electricity, sanitation, health and educational facilities; low economic status and little access to all-time education occasions (Chipps and Jarvis, 2016). One of the most ubiquitous features of rural neighbourhoods is poverty. Food insecurity and poor education are major problems in rural areas. Furthermore, rural communities are characterised by high illiteracy levels (Amoah, Edusei, *et al.*, 2018). The problems of rurality are further compounded by continued under-resourcing of schools relative to need (White, Blaauw, *et al.*, 2020). The government's commitment to equal and fair treatment has unfortunately yielded a meagre change in rural schools. In relation to education, the lack of basic services (water, sanitation, etc.) affects access to quality of education, further exacerbated by inadequate infrastructure in schools (buildings, ICTs, etc.) and the long distances learners must travel to schools (Chipps and Jarvis, 2016). The attributes of rurality that adversely affect the quality of education include: a lack of qualified teachers, multigrade teaching, unreasonable teacher-learner ratios, irrelevant curricula, and competing priorities between access to education and domestic chores, while the teaching staff seem to be imbued with poor morale and motivation (Aziz, Nisar, *et al.*, 2020). Teachers may be unwilling to move to rural areas where social and cultural opportunities are limited, and salaries may not contain an enticement peg (Mahaj, 2019). Even when teachers are willing to work in rural areas, working conditions are likely to make them reluctant to stay for the long term (Amoah, Edusei *et al.*, 2018).

The debate above dramatically validates the defect methodology with which rural areas have come to be practically identical (Gumede, 2008). The school is the greatest significant public institution in a rural society and also exemplifies the economic status of the community. Literature argues that rural communities live in their neighbourhoods by choice; and their determination to live in a rural place should not impact the value of their children's education (Mahaj, 2019). While rural places commonly face significant economic and social disputes, they also retain a number of assets that are often overlooked (Amoah, Edusei *et al.*, 2018). The community capital present in many rural communities makes them attractive places in which to live and raise a family (Mahaj, 2019). There is a strong bond that exists among rural community members, which fosters a firm responsibility to safeguard and encourage children (Chipps and Jarvis, 2016). With their communal inhabitants, lower crime rates, beautiful open areas and a common sense of society, many rural places offer a welcome break from the difficulties of urban and suburban living (Gumede, 2008). Rural people are strong advocates of public education and community-based schools: Rural communities are strong supporters of local schools and public education (Chipps and Jarvis, 2016). They view excellent education as crucial to an efficient rural economic improvement plan, because good schools produce a quality local workforce that, in turn, builds upon already present community capital (Mahaj, 2019). A school is the most important public institution in a rural community, a rallying point for services to poor families and children, a polling place, a library, and a community centre (White, Blaauw, *et al.*, 2020). Poverty: In many countries the term 'rural' is synonymous with poor. On average, the rate of child poverty in rural communities is higher than in urban areas (Gumede, 2008). Poor children lack adequate housing, access to quality health care, proper nutrition, and adequate childcare. There is a general agreement that these factors contribute to limited access to quality education for rural children. Ageing population: With the loss of younger people to urban areas, rural places tend to have an ageing

population (Mahaj, 2019). While there are advantages to an ageing population, especially where seniors have a substantial retirement income, in low-income rural places, this trend can reduce purchasing power and increase the cost of social services that compete with education for funding (McKague and Karnani, 2015). Smaller schools: Rural schools are frequently smaller than other schools, either because of a community's sparse population or by choice (Mahaj, 2019). Rural people tend to choose smaller schools because their common sense confirms what research shows, that they are better places to educate children (McKague and Karnani, 2015). Overwhelmingly, education research has found many advantages of smaller schools over larger schools, including better achievement, higher graduation rates, fewer discipline problems, and higher rates of participation in extracurricular activities (Chipps and Jarvis, 2016).

➤ Access to health care facilities

After the first independent elections, South Africa saw a quick rise in yearly recorded deaths, increasing from 317,727 in 1997 to a high-level of 614,014 in 2006 (Sulemana and Dinye, 2014). This then dropped to 453,360 in 2014. The prevalence of AIDS, and the preliminary rejection to introduce anti-retroviral (ARV) therapy and consequent presentation of the biggest ARV programme worldwide, have been significant in this development (McKague and Karnani, 2015). The blue shaded blocks relate primarily to non-contagious diseases such as circulatory disease, cancers, diabetes and mental health; the carrot shaded blocks, which include maternal and child health problems such as diarrhoea, neonatal problems and nutritional deficiencies; the green shaded blocks relate to injuries; and the maroon block refers to HIV and tuberculosis (TB) related deaths (Sulemana and Dinye, 2014). The impact of the HIV epidemic, and associated increase in TB prevalence, yielded the single biggest cause of deaths during the period 2005-2010. With the presentation of a gigantic ARV programme, non-contagious illnesses are now the biggest cause of death. The 2015 summary of cause of death vividly illustrates what is known as the multiple problem of disease, where South Africa faces significant death in all 4 of the major groups of death cases (Sulemana and Dinye, 2014).

The public sector is the key provider of health care services in South Africa and is used by the complete variety of socio-economic classes; even the greatest income quintile utilises public sector services, albeit essentially at the central hospital level. Guaranteeing value health services within the public health sector should therefore be a strategy importance. Public services at primary health care facilities and district hospitals are most commonly utilised by lower socio-economic groups (Sulemana and Dinye, 2014). Campaign for reasonable approach to value health care thus needs a specific prominence on confirming value within these facilities (McKague and Karnani, 2015). There is a restricted use of higher-level recommendation hospitals by lower socio-economic groups; given that the greater weight of ill health around a broad variety of disease classifications indicates that this should not be the case. Approaches of encouraging reasonable approach to these facilities involves consideration (Gumede, 2008). McKague and Karnani (2015) contended that, private health care workers play a corresponding role, with private hospitals being mainly utilised by medical system participants and private primary care suppliers being more than broadly employed, but still by a sector of the inhabitants. Processes for taking on these suppliers to enhance access to value health care need attention (Sulemana and Dinye, 2014).

The distance individuals need to travel to a health facility is a crucial component of the readiness measurement of admittance (McKague and Karnani, 2015). There are substantial alterations in families' closeness to a health facility among rural and urban areas, across provinces and amid socio-economic sets in South Africa (McKague and Karnani, 2015). For instance, one examination of General Household Survey (GHS) information for the period 2002-2008 specified that, about 20% of households in the lowermost income quintile survived an hour or extra time from the closest public clinic and 36% lived an hour or more from the closest hospital, compared with less than 5% of families in the uppermost income quintile (McKague and Karnani, 2015; Tirivangasi and Rapanyane, 2021). A very comprehensive home examination united with a topographical data scheme examination in the Hlabisa sub-district of KwaZulu-Natal found that families within 30 minutes of a clinic were 10 times more probable to utilise a clinic than households, if they were to travel for 90-120 minutes to a clinic (McKague and Karnani, 2015). These differences persist even in relative to serious health facilities, where absence of entree can have serious penalties for untimely death, such as concentrated distributions (Sulemana and Dinye, 2014). An examination of the NIDS information found that children in homes that lived more than 2km from the closest clinic were 8% points less likely to have had a doctor or nurse present at birth than those within 2km of a clinic (McKague and Karnani, 2015). According to McKague and Karnani (2015), the amount and circulation of health facilities evidently effects numerous societies' closeness to a health facility. The accessibility of health workers is also a crucial component of contact to quality health care (McKague and Karnani, 2015).

➤ Access to sports facilities

Learners whose schools are in the rural pouches of an urbanised province such as Gauteng Province, can be solitary due to the secluded sites where they find themselves (White, Blaauw, *et al.*, 2020). It is problematic for these learners to partake in local associations for the sporting ciphers they have at their schools (Gumede, 2008; Van der Merwe, 2012). Those inter-school sports competitions which are as regular as the sun rising in most regions, are unlikely for farmhouse and rural schools. An absence of infrastructure, lengthy distances among schools and high transport charges contribute to the learners' inability to afford (Omomowo, 2018). This condition means schools in rural areas are often side-lined from partaking in organised sports events (Mahaj, 2019). Majority of the farm schools do not have the resources for sports. Learners need to be exposed to such amenities (Omomowo, 2018; Du Plessis, 2018).

In October 2019, the Gauteng Department of Sports, Arts, Culture and Recreation hosted the Farm and Rural School Sport Festival at the Vaal University of Technology, Sedibeng, aimed at providing schools in rural areas with a chance to engage in competition with other schools (White, Blaauw, *et al.*, 2020). Learners from both primary and high schools in Devon and Bantubonke in Sedibeng; Kwa-Sokhulumu in Tshwane and Hekpoort in West Rand met to contest against each another, some possibly marching onto the luxurious greenery of a game ground for the first time (White, Blaauw, *et al.*, 2020). They contested in ciphers, including football, volleyball, netball, chess and the native codes of *kgati* and *morabaraba*, a traditional two-player strategy board game (White, Blaauw, *et al.*, 2020).

2.4. The Constitution's obligations

Section 29 of the South African Constitution gives every individual the right to education. The state's responsibility is to ensure that everyone, be it in rural or urban areas, has access to social facilities (Ngang, 2014; Mahaj, 2019). The rights to education should be understood considering the aim of education. In terms of Section 29, everybody has the right to basic education, including grown-up basic education and to further education, which the government, through sensible actions, must make gradually available and reachable. The rights make it the duty of the government to ensure full respect of all the people's right to education (White, Blaauw, *et al.*, 2020). The government also shoulders the responsibility to encourage and deliver education by implementing and sustaining an education scheme that responds to the desires of the country (Mahaj, 2019). Education should be absorbed to the complete growth of the human character and to the reinforcement of admiration for human rights and essential liberties (Chipps and Jarvis, 2016). The right to education as defined above is grounded on the idea that education is a prerequisite for the application of other rights. Access to education has a significant bearing on other human rights, enabling people to contribute evocatively to human progress and civilisation (Mahaj, 2019).

3. METHODOLOGY

This section outlines the methodology that was used to investigate whether rural areas' access to social facilities is a myth or reality in South Africa.

3.1 Research design

This is a theoretically paper, which relied on a literature-based methodology. A normative research design was adopted to investigate whether rural areas' access to social facilities is a myth or reality in South Africa. The normative research design is relevant for this paper because it uses secondary data as the source, and does not control variance. The normative research design is criticised for being too remote from practical reality, in that it devotes itself to the analysis of the ideal at the expense of the considerations of applications of normative thinking to practical problems. However, this did not affect the investigation done on this paper.

3.2 Sampling method

This paper used the purposive sampling design to select journal articles published between 2003 and 2021; government documents and newspapers published between 2012 and 2021. The purposive sampling design enabled the researcher to sample the relevant journal articles, government documents and newspapers. In addition, the sampling method enabled the researcher to locate the relevant and or required information on whether rural areas' access to social facilities is a myth or reality in South Africa.

3.3 Research instrument

This paper adopted the qualitative research method, owing to the limited and rare nature of research on rural areas' access to social facilities as a myth or reality in South Africa. The qualitative method provided flexible guides on how the study should progress. According to John (2020), the qualitative research approach is often used to get an in-depth understanding of a

subject, particularly when there is little information about the phenomenon and the researcher suspects that the present knowledge or theories may be biased. In this paper, it was important to use the qualitative approach, as very little information is available on whether rural areas' access to social facilities in South Africa is a myth or a reality.

3.4 Data collection

The data for this paper was collected through a desktop study, where documents such as newspapers, scholarly journal articles and government documents in relation to the accessibility of social facilities by rural areas in South Africa was conducted.

3.5 Data analysis

For the purpose of this paper, data was analysed using document analysis. Document analysis is a qualitative research process involving evaluating electronic and physical documents to interpret as well as gain an understanding of their meaning and improve upon the knowledge they deliver (Blustein, 2019). Using the document analysis enabled the researcher to obtain underlying reasons, opinions, and motivation behind the continuous investigation on whether rural areas' access to social facilities is a myth or reality in South Africa. Different resources were gathered, information was collected and authenticity was ensured by making references to other scholars who conducted studies on a similar topic. This paper drew its conclusion based on the data collected through a desktop study.

4. RESULTS AND DISCUSSION

➤ From the journal articles reviewed:

The paper found that the accessibility of social facilities in rural areas of South Africa is not a reality but a myth. Most rural communities in South Africa remain underprivileged compared to their equivalents in town areas. Most schools in South Africa's rural areas are poorly built, which put students at a disadvantage (Amoah, Edusei *et al.*, 2018). Poor children lack adequate housing, access to quality health care, proper nutrition, and adequate childcare. The paper found that public services at primary health care facilities and district hospitals are most frequently operated by lower socio-economic groups (Sulemana and Dinye, 2014; John, 2020). In addition, there is a limited use of higher-level suggestion hospitals for lower socio-economic groups; given that the larger weight of ill health around a wide diversity of disease categories indicates that this should not be the case. According to the Constitution of South Africa, everyone has the right to a healthy environment (Ngang, 2014; Mahaj, 2019). However, literature reveals that there is still a significant number of rural areas who are still struggling to access health care centres to receive medical treatments (Du Plessis, 2018; Mahaj, 2019).

➤ From the government documents and newspapers reviewed:

It was found that the Minister of Basic Education in South Africa stated that the problems faced in rural areas affected learning in those areas, owing to fluctuating grades in the formerly disadvantaged groups (Mazibuko and Taback, n.d). Most learners in rural communities must still travel long distances to receive education (Chisholm, 2012; Omomowo, 2018). It is difficult for them as the little income they have for food to sustain them, should be spent on transportation to

receive either medical care or education. Majority of the rural areas do not have sports grounds (Omomowo, 2018), making it difficult for young people to discover and improve their talents or even participate in sports activities such as football, netball, rugby and tennis, just to mention a few.

5. CONCLUSION

The paper concludes that, decisions made regarding the easy accessibility of social facilities by rural areas in South Africa are merely declared on paper and never practically implemented. Numerous rural areas do not have easy access to social facilities. Hence, the paper recommends that the government of South Africa together with its stakeholders should examine the policies that were introduced to ensure that the constitutional mandate is realised. Residents in rural areas should be put at the centre of their development. In other words, they should be allowed to define their own development. The government and other private sectors should ensure that residents are allowed to voice out the development they need. In addition, the government and private sectors should also ensure that the development for the people is delivered accordingly.

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I AM NOT ONE AND SIMPLE, BUT COMPLEX AND MANY: THE INTERSECTION BETWEEN SOUTH AFRICAN FEMALE FOUNDERS' SOCIAL ENTREPRENEURIAL IDENTITY AND NEW VENTURE ASPIRATIONS

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ABSTRACT

This paper synthesises social identity theory and South African female entrepreneurs' aspirations when engaging in a process of business concept exploration. Conceptual integration across multiple theoretical perspectives, linking independent views in a novel way and in so doing, offering an enhanced perspective of social identity theory and female entrepreneurs' aspirations when engaging in new venture creation. The study found that the intersection of social identity and aspirations influences new venture exploration choices, with South African female entrepreneurs who have progressed further in the development of their businesses demonstrating a stronger entrepreneurial identity, with aspirations to develop higher-growth potential businesses than those who very recently initiated a venture. Developing an understanding of the potential role that the development of higher-level female entrepreneurial identity might play in bringing about a shift in business aspirations, would be beneficial. Based on the findings, enterprise development programmes for South African female business owners should be geared to support both women with a pure economic interest and those that seek to empower and support their communities. The study contributes to the body of knowledge by focusing on social entrepreneurial identity as an important factor that shapes female entrepreneurs' aspirations when engaging in new venture creation. Furthermore, the study provides constructs for potentially enhancing new venture development programmes aimed at female entrepreneurs, by elucidating how the development of social identity could enhance the process of business concept exploration.

Keywords: Social identity, entrepreneurial identity, aspirations, female entrepreneurs, new venture

1. INTRODUCTION

The existential question - Who am I? - has sparked countless debates and philosophical ponderings, ranging from Plato's proposition that the answer to personal identity lies within the soul, to Locke's opposing view that each person starts with a clean slate – a tabula rasa – and that individuals' sense of self are shaped by personal experiences, reflections and sensations (Greene & Brush, 2018). Identity is considered to be multi-dimensional, with personal- and social identity intersecting to form the whole, but more recently, scholars have begun to explore the social aspects of identity, focusing on individuals' group affiliations as a topic of inquiry, with the main approaches including personal identity, social identity theory (Tajfel, 1982) and identity theory (Stryker & Serpe, 2012). This is substantiated by the study conducted by Morris et al. (2006) which

found that three independent variables were significant predictors of female entrepreneurs' growth orientation, namely female identity, equity ownership and the perception that women face unique obstacles in marketing and selling. Interestingly, the study found that growth orientation is significant amongst women with a stronger female identity. Our interest lies in exploring social identity and its influence on female entrepreneurs' aspirations when engaging in a process of new venture creation.

When engaging in new venture creation, founders have the freedom to pursue opportunities that match their preferences and business goals, whilst also choosing how they explore these opportunities and business goals (Sieger *et al.*, 2016). Consequently, a new venture becomes a manifestation and reflection of the entrepreneur (Fauchart *et al.*, 2011). This view is supported by a growing body of literature that recognises that entrepreneurial activities are infused with meaning, since they are an expression of the individual's identity or self-concept (Cardon *et al.*, 2009; Hoang & Gimeno, 2010). Given that new venture creation is inherently a social activity, with organisations themselves being social constructs, the social aspects of a founder's self-concept are of significance when considering the process of initiating a new venture (Whetten & Mackey, 2002). Since social identity is critical to shaping the beliefs, values, feelings and actions in a social context – including new venture creation – applying social identity theory can provide an in-depth assessment of an individual's sense of self (Hogg & Terry, 2000). This view is supported by Fauchart and Gruber (2011) who held that applying social identity theory could serve as a valuable lens through which to gain a better understanding of the heterogeneity of the meanings associated by founders with their entrepreneurial endeavours, as well as the effects of such heterogeneity on firm creation.

Generating the cognitive knowledge-structures (Mitchell *et al.*, 2000) and developing the motivation to successfully identify and explore opportunities to become an entrepreneur (Shane & Venkataraman, 2000), takes time and persistence. Most entrepreneurs start a business to generate personal profits or autonomy, rather than aiming to achieve innovation, job creation or economic growth (Locke & Baum, 2007; Shane *et al.*, 2003). However, as Hessels *et al.* (2008) postulate, individual entrepreneurial motivation may determine the goals and aspirations for the venture, which in turn, may determine economic outcomes. Scholars have proposed a strong link between entrepreneurs' self-concept – in other words, identity – and subsequent outcomes and although relatively little is known about the role of self-identity in motivating entrepreneurial action (Farmer *et al.*, 2011), it is accepted that social identity is critical to the beliefs, feelings, values and actions in social contexts, including new venture creation (Hogg & Terry, 2000; Tajfel & Turner, 1979).

In the context of the influence of social identity on aspirations, our application of the term 'aspirations' refer to the entrepreneur's aims or ambitions when engaging in a new venture creation process – in other words, what does an individual really want to achieve with her entrepreneurial endeavours? Traditionally, aspirations are associated with high-growth entrepreneurship with aggressive funding goals and the pursuit of venture capital funding. However, Sieger, Gruber, Fauchart, and Zellweger (2016) postulates that these aspirations are stereotypically masculine, rather than feminine (Gupta *et al.*, 2009; Gupta & Turban, 2012), so it should be acknowledged that non-monetary expectations, such as status and self-realisation, are also of importance to female entrepreneurs, as elucidated by Manolova *et al.* (2012).

When considering identity and business aspirations in the context of entrepreneurship, particularly female entrepreneurship, a thought-provoking question arises: *How does the intersection of social identity and aspirations influence new venture exploration choices?* To answer this question, this paper considers the relationship between the social identity of female entrepreneurs and their venture aspirations when engaging in a process of business development exploration. This paper contributes to the body of knowledge by focusing on social identity as an important factor that shape female entrepreneurs' aspirations when engaging in new venture creation.

2. PERSONAL IDENTITY, SOCIAL IDENTITY, SOCIAL IDENTITY FORMATION AND SOCIAL ENTREPRENEURIAL IDENTITY

A distinction is made between personal- and social identity, with personal identity encompassing individual attributes, values, traits, beliefs and so on. Social identity, on the other hand, refers to the individual within a group (which could be founded on either demographic characteristics or affiliations with specific beliefs, such as political party or religious denomination) (Hogg et al., 1995; Tajfel, 1982) – in other words, social identity is concerned with ‘the group in the individual’ (Hogg & Abrams, 1988). The following sections explicate the distinct differences and relationships between these concepts (personal identity, social identity and social identity formation). Furthermore, we discuss the social identity theory within entrepreneurship.

2.1 Personal identity

Personal identities are mostly static and consistent, but over time, their life experiences and interactions with social norms influence their personal identity. Hence, an individual's identity is the result of intertwined personal and social identities (Berger & Luckmann, 1966). Some scholars (Hogg et al., 1995; Tajfel & Turner, 1979) suggest that a person's identity not only serves as a cognitive frame for interpreting experiences, but also influences individuals to act in ways which are consistent with their identity. This is supported by Fauchart et al. (2011), who found that the identities and self-concepts of founders are imprinted on the key dimensions of new ventures.

2.2 Social identity

A *social identity* can be regarded as “belonging to a certain world, and can only be understood, in subjective terms, together with that world” (Viseu & Ponte, 2009). The social identity of an individual is influenced by a combination of external and internal influences that function as a unit. The formation of a person's social identity is dependent on how they communicate (language), their cultural heritage, social stance, political and religious beliefs, and role that they adopt when engaging within their social context or with others when they conduct business. The social identity is fluid and dynamic, with individuals moving from one group to a next as contextual changes occur (Hogg et al., 1995). The social identity of an individual is constantly constructed and reconstructed as they interact with others within their current environment. All individuals have an inherited identity (*who I am*) and a desired identity (*who I want to become*). When a person interacts within a group, as a member of the group, s/he adopts two roles - the one acknowledged as a member of the group and the other as a participant within the group. When these two roles are combined, it strengthens the social identity (Chasserio, Pailot, & Poroli, 2014). Therefore, over time, as an individual interacts with others within different contexts, their identities are reformed. Consequently, social identity theory provides a theoretical connection that can aid

in developing a rich understanding of how individuals' social identity influences the new venture creation process and the subsequent differences in the outcomes of their firms (Hogg *et al.*, 1995; Stets & Burke, 2000).

2.3 Social identity formation

There are three key elements to social identity formation. Firstly, crucial to the development of an individual's identity, is their subjective and figurative interaction with others. This interaction permits the individual to (i) appraise how s/he socially compares with others within the group, and (ii) determine which social groups s/he wants to be associated with (Tajfel & Turner, 2001). Belonging to a specific social category or group (*I am part of this group*) enable individuals to conduct a self-evaluation, as well as to evaluate individuals who do not belong to the group (*You are not part of my group*). "Thus, a person's social identity serves as a system of social orientation and plays an instrumental role in establishing self-worth" (Hogg, Terry, & White, 1995).

Secondly, the social self-categorisation of individuals can differ, depending on their level of inclusivity. A person's self-categorisation ranges from the most extreme level of social self-categorisation - known as the self, as a unique entity with own goals and dreams (*This is what I want and this is what I want to become*) (Brewer & Gardner, 1996) - to conceiving themselves as part of a group and therefore portraying concern for others (*I am because we are*) (Harb & Smith, 2008).

Thirdly, social identity theory enables people to predict what others will choose and how they will act and behave (Tajfel & Turner, 2001). A person's identity, through their cognitive processes, allows them to be thoughtful and interpret experiences with sensitivity. Therefore, people act in a particular way, consistent with their identify (Hogg *et al.*, 1995; Stets & Burke, 2000).

2.4 Social identity theory in entrepreneurship

Social identity theory in entrepreneurship, on the other hand, provides a theoretical lens through which different types of entrepreneurial identities can be recognised. This is possible by looking at the distinct differences of the following three main aspects: (i) basic social motivation, (ii) in the basis of self-evaluation, and (iii) in the frame of reference as an entrepreneur (Fauchart & Gruber, 2011).

When entrepreneurs start their business ventures they are motivated by various aspects and their actions are consistent with their inherent identities and thus they imprint their self-concepts on key dimensions of their emerging firms, including the process of early-stage opportunity identification. According to Fauchart and Gruber (2011), entrepreneurs can typically be categorised as one of three "pure" types of founder identity, namely Darwinian, Communitarian or Missionary. *Darwinian* founders typically start their business ventures for own economic self-interest and competition with other firms, whilst *Communitarian* founders commence with a business to empower and support a particular community where both parties will benefit from the venture. *Missionary* founders, on the other hand, see their businesses as a means of political empowerment for the broader community. As this article focuses on female founder identities within a South African context, the identity names were adapted to reflect females who made a relevant contribution to the history of women in South Africa, namely Maxekes (Darwinians), Tamas (Communitarians) and Zainabs (Missionaries). Charlotte Manye Maxeke was one of the first Black

women graduates in South Africa. Dora Tamana was a true communitarian, involved in starting self-help programmes ranging from a food committee, a women's sewing cooperative, to a childcare programme. Zainab Ebrahim Asvat was a political activist, Transvaal Indian Congress (TIC) Member and medical doctor who challenged the political ideology in South Africa, stood-up against the violence, and denounced South African discriminatory laws (South African History Online, 2020). Table 1 illustrates the distinct differences between the three types of founders, as identified by Fauchart and Gruber (2011):

Table 1: Three dimensions of founder identity

| Maxekes <i>Darwinian</i> | Tamanas <i>Communitarian</i> | Zainabs <i>Missionary</i> |
|---|--|---|
| <i>Who am I?</i> <i>This is what I want and what I want to become</i> | <i>I am because we are</i> | <i>Who am I?</i> <i>Who am I not?</i> |
| Basic social motivation | | |
| The primary goal is to establish a strong and successful business | The primary goal is to develop a business to support a group of like-minded individuals | The primary goal is to start a firm to advance a greater cause |
| Focused on ensuring the success of the firm | Focused on uplifting the socio-economic status of the community in which they reside | Focusing on acting responsibly is considered to be critical |
| The industry within which they operate, the markets they serve or the greater social cause bear no- or relatively little meaning | The industry and greater social cause are important | Closely connected to social entrepreneurship |
| Generating profits and better possibility of success, changing ventures is not seen as a problem, and they are open to engaging in new ventures in completely new areas of business | Creating an authentic identity is important to be fully one with the social group, to share intimate knowledge of the community and to be able to serve it from the inside | Embraces a social entrepreneurial identity, has a need to distinguish themselves from and deny closeness to profit-seeking identities |
| Basis of self-evaluation | | |
| Based on self | Based on others | Based on self and others |
| Frame of reference/relevant others | | |
| Competing firms Other Maxekes | Not change the industry Creates new and more efficient means to serve their community or social context | Social status of social entrepreneurs |
| Social group | User-entrepreneur who generates an idea through their own use then shares it with the broader community Collective creative activity prior to venture creation | |

Adapted from (Alsos, Clausen, Hytti, & Solvoll, 2016; Bacq & Janssen, 2011; Fauchart & Gruber, 2011; Sonali & Tripsas, 2007; Van Praag, 1999).

3. METHODOLOGY

This study forms part of a larger project on the development of a guiding framework for female entrepreneurial identity development in South Africa. It was imperative to first ascertain the founder identities of women within the South African context, as no previous research had been conducted on female entrepreneurial identity development and their venture aspirations when

engaging in a process of business development exploration. Therefore, as a starting point, an initial web search was conducted to identify prospective candidates to interview, which constituted the sample for this paper.

Three types of entrepreneurs were used to identify the sample, namely (i) *successful entrepreneurs* with an annual turnover in excess of ten million rand; (ii) *up-and-coming entrepreneurs* with an annual turnover not exceeding ten million rand and (iii) *start-up entrepreneurs* who were participating in an entrepreneurial development programme at the time of the study. The final sample included thirty-nine female entrepreneurs - thirteen per category. A web analysis of these entrepreneurs was conducted to determine how the intersection of social identity and aspirations influence new venture exploration choices.

As we aimed to move beyond existing theoretical boundaries to offer an enhanced perspective of social identity theory and South African female entrepreneurs' choices when engaging in new venture creation, theory synthesis was undertaken, with the study divided into two phases, namely summarising and integrating concepts (MacInnis, 2011). The summarising phase sought to unravel extant knowledge of social identity and its theoretical constructs, whilst also considering the choices made by female entrepreneurs when engaging in a process of new venture creation. Integrating concepts entailed the proposing of relationships between distinct phenomena, integrating the multiple independent theoretical perspectives and finally, generating novel insights (Jaakkola, 2020), particularly within the South African context.

4. FINDINGS

Table 2 summarises the founder identity-characteristics of the thirty-nine female entrepreneurs, in the South African context.

Table 2: Sample characteristics of female entrepreneurs

| Sample Characteristics | | | | |
|--|---------|---------|---------|---------|
| Successful entrepreneurs | | | | |
| (Annual turnover in excess of ten million rand) | | | | |
| Characteristics | Maxekes | Tamanas | Zainabs | Hybrids |
| Number of entrepreneurs in sample | 9 | 2 | | 2 |
| Average firm age (at time of data gathering) | 18 | 5 | | 14 |
| Average age of founder (at time of founding) | 32 | 28 | | 29 |
| Highest education level | | | | |
| University: Post-graduate | 4 | | | |
| University: Graduate | 3 | 2 | | 2 |
| High School | 2 | | | |
| Other | | | | |
| Industry | | | | |
| Agriculture | 1 | | | |
| Construction | | | None | 1 |
| Education | | | | |
| Financial Services | 1 | | | |
| Health and Wellness | | 1 | | |
| Hospitality | | | | |
| Manufacturing | 1 | | | |
| Media and Communications | 2 | | | 1 |
| Professional Services | 1 | | | |
| Retail and Wholesale | 2 | | | |
| Other | 1 | 1 | | |
| Company founded by individual partnership | | | | |
| Individual | 7 | 1 | | 1 |

| Sample Characteristics | | | | |
|--|---------------|----------------|----------------|----------------|
| Successful entrepreneurs | | | | |
| (Annual turnover in excess of ten million rand) | | | | |
| Characteristics | Maxeke | Tamanas | Zainabs | Hybrids |
| Partnership | 2 | 1 | | 1 |
| Up-and-coming entrepreneurs | | | | |
| (Annual turnover not exceeding ten million rand) | | | | |
| Characteristics | Maxeke | Tamanas | Zainabs | Hybrids |
| Number of entrepreneurs in sample | 9 | 2 | | 2 |
| Average firm age (at time of data gathering) | 5 | 5 | | 11 |
| Average age of founder (at time of founding) | 35 | 22 | | 38 |
| Highest education level | | | | |
| University: Post-graduate | 4 | 1 | | 2 |
| University: Graduate | 3 | | | |
| High School | 1 | | | |
| Other | 1 | 1 | | |
| Industry | | | | |
| Agriculture | | | | |
| Construction | | | | |
| Education | 2 | | None | 1 |
| Financial Services | 1 | | | |
| Health and Wellness | 2 | 1 | | |
| Hospitality | | | | |
| Manufacturing | | | | |
| Media and Communications | 1 | | | 1 |
| Professional Services | 2 | | | |
| Retail and Wholesale | 1 | 1 | | |
| Other | | | | |
| Company founded by individual partnership | | | | |
| Individual | 6 | 2 | | 1 |
| Partnership | 3 | | | 1 |
| Start-up entrepreneurs | | | | |
| (Participating in entrepreneurial development programme at time of study) | | | | |
| Characteristics | Maxeke | Tamanas | Zainabs | Hybrids |
| Number of entrepreneurs in sample | 10 | - | | 3 |
| Average firm age (at time of data gathering) | 0,30 | | | 0 |
| Average age of founder (at time of founding) | 34 | | | 30 |
| Highest education level | | | | |
| University: Post-graduate | | | | |
| University: Graduate | 2 | | | 1 |
| High School | 5 | | | |
| Other | 3 | | | 2 |
| Industry | | | | |
| Agriculture | | | | 1 |
| Construction | | | | |
| Education | | | None | |
| Financial Services | | | | |
| Health and Wellness | 2 | | | |
| Hospitality | 1 | | | 1 |
| Manufacturing | | | | |
| Media and Communications | | | | |
| Professional Services | 1 | | | |
| Retail and Wholesale | 1 | | | 1 |
| Other | 5 | | | |
| Company founded by individual partnership | | | | |
| Individual | 9 | | | 3 |
| Partnership | 1 | | | |

The study revealed that the majority of female entrepreneurs in the sample could be classified as having one of two pure identities, with seventy-two percent demonstrating a Maxeke identity and

ten percent demonstrating a Tamana identity. Fifteen percent of both the successful and up-and-coming entrepreneurs in the sample demonstrate a hybrid identity of Maxeke-Tamana. However, the identity of the start-up sample paints a slightly different picture, with seventy-seven percent demonstrating a pure Maxeke identity, whilst twenty-three percent demonstrate a hybrid Maxeke-Tamana identity. Interestingly, in the South African context, none of the entrepreneurs in the sample demonstrate a Zainab identity. Consequently, it could be deduced that South African female entrepreneurs do not generally initiate a business to advance a greater cause, whilst current start-ups seemingly have a stronger desire to also make a societal contribution with their ventures than their successful and up-and-coming counterparts, who have been in business for much longer.

In terms of the average founder-age at the time of initiating the business, a negligent variance is observed between the three categories, with the average age being thirty, thirty-five and thirty-four for successful, up-and-coming and start-up entrepreneurs, respectively. The study, however, reveals a significant variance in the level of education, particularly between successful entrepreneurs and start-up entrepreneurs, with eighty-five percent of successful entrepreneurs being graduates or post-graduates, whilst only fifteen percent of the start-up entrepreneurs in the sample are graduates. Seventy-seven percent of up-and-coming entrepreneurs are either graduates or post-graduates.

The study reveals a shift in industry focus between the three categories, with successful entrepreneurs - who have been in business for an average period of twelve years - focusing largely on Media and Communications (twenty-three percent), Professional Services (fifteen percent) and Retail and Wholesale (fifteen percent). The up-and-coming entrepreneurs have been in business for an average period of five years, with a focus on Education and Health and Wellness (twenty-three percent each), whilst the balance operate largely in the Media and Communications, Professional Services and Retail and Wholesale industries (fifteen percent each). The concept choices of the majority of the start-ups (thirty-eight percent) - who have been in business for less than a year - are more dispersed, with a significant proportion of these businesses being classified as lifestyle businesses, such as beauty salons, catering, cleaning and laundry services. Whilst the general shift in industry focus could be attributed to market conditions, it can be surmised that the business concepts of start-up entrepreneurs are more dispersed since they are still in the process of concept exploration and have not yet developed the entrepreneurial identity and business confidence to aspire to developing a high growth-potential business.

Although the majority of the businesses (between sixty-nine and ninety-two percent) in each of the three categories were initiated by the founder, rather than as a partnership, it is notable that only eight percent of the start-ups in the sample were initiated as a partnership. As with the industry focus, this, too, could be attributable to the absence of a strong entrepreneurial identity and business confidence.

The findings demonstrate that the aspirations of female entrepreneurs in the sample who demonstrate a Tamana or hybrid Maxeke-Tamana identity, particularly those in the start-up phase, are less geared towards developing a high-growth business, as they are more concerned with having a positive societal impact whilst developing their businesses. Thus, it can be inferred that there is indeed a correlation between social identity and entrepreneurs' aspirations when exploring new venture creation.

5. CONCLUSION

The study sought to synthesise social identity theory and female entrepreneurs' aspirations when engaging in a process of business concept exploration, with the focus being on female founder identities within the South African context. The study was initiated on the understanding that most entrepreneurs start a business to generate personal profits or achieve autonomy, rather than aiming to achieve innovation, job creation or economic growth (Locke & Baum, 2007; Shane et al., 2003). However, although seventy-two percent of the female entrepreneurs in the sample can be categorised as having a Maxeke identity (economic motives), ten percent demonstrate a Tamana identity (social motives), whilst a further eighteen percent demonstrate a hybrid Maxeke-Tamana identity. Thus, a significant number of the founders in the sample view their businesses as a catalyst for community development and social change. This is particularly evident amongst the start-up entrepreneurs. Interestingly, the sample did not reveal any Zainabs, so it can be deduced that initiating a business is not typically seen as a vehicle for advancing a political cause by South African female entrepreneurs. It can further be surmised that there is a strong link between founder identity and the industry within which the female business owners operate, with the study revealing that those with an entrepreneurial identity developed over a more extensive period tend to aspire to higher business growth. Conversely, start-ups' aspirations appear to be less ambitious, with their venture choices often being lifestyle businesses, with less potential for sustainability and scalability.

Within the South African context, the implications are that entrepreneurial identity research should incorporate deeper exploration of the Tamana and Maxeke-Tamana identities, as gaining a better understanding of the content and formation, as well as the upkeep or change of entrepreneurial identity will contribute to developing important insights into the broader new venture creation process. Furthermore, developing an understanding of the potential role that the development of higher-level female entrepreneurial identity might play in bringing about a shift in aspirations from small, livelihood- to value-creating businesses, would be beneficial. This knowledge would be a critical input into the development of a guiding framework for female entrepreneurial identity development in South Africa. Finally, enterprise development programmes for female business owners should be geared to support both women with a purely economic interest, as well as those that seek to empower and support a particular community with both parties benefiting from the venture, whilst still working towards developing a profitable business.

In summary, the study revealed that the intersection of social identity and aspirations influences new venture exploration choices and that female entrepreneurs who have been in business for a longer period appear to have a stronger entrepreneurial identity and operate higher-growth potential businesses than those who very recently initiated a venture.

6. COMPETING INTERESTS

The authors declare that there are no financial or personal relationships that may have inappropriately influenced the writing of this article.

7. AUTHOR CONTRIBUTIONS

The authors designed and implemented the research, the first author analysed the findings of the web-based data and both authors contributed to the writing of the paper.

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9. DATA AVAILABILITY

The data that support the findings of this study are available from the first author, upon reasonable request.

10. DISCLAIMER

The views expressed in this paper are those of the authors and do not reflect an official position of the University.

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MALL SHOPPING MOTIVATIONS AMONGST GENERATION Y CONSUMERS

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ABSTRACT

Shopping malls are the most recognised site for shopping and play a significant role in consumers' lifestyles. As consumers, members of Generation Y have a fondness for shopping and their impact on shopping is prevalent worldwide. Having grown up in an era where shopping has become a form of entertainment in a retail setting, this generation perceives shopping as a form of leisure and as a way of spending time socialising with others. Therefore, it is not surprising that Generation Y consumers frequently visit shopping malls, where they enjoy looking for the latest trends, new sensory experiences and entertainment, earning them the title of 'mall-rats'. The purpose of this paper is to determine Generation Y consumers' mall shopping motivations within the South African context, in order to guide the formation of marketing strategies for effectively targeting this market. The primary data were collected by means of a self-administered questionnaire completed by a convenience sample of 322 Generation Y consumers. The statistical analysis of the collected data included descriptive statistics and a one-sample t-test. The findings of this study suggest that Generation Y consumers' most important motives for visiting a shopping mall are the desire for shopping convenience, followed by the aesthetic stimulation of the mall and the desire for flow; that is, having the opportunity to lose sense of time because of the pleasurable state of absorption. Additional motives include the need to enact a role, such as shopping for bargains and sales, as well as to socialise with others. These results suggest that shopping mall developers, managers and marketers should focus on various aspects to attract Generation Y consumers to shopping malls. Focus should be placed on offering a convenient shopping experience, continuously enhancing the look and ambience of the shopping mall with the aim of stimulating multiple senses and streamlining the layout and decor of the shopping mall to promote an attractive and entertaining environment. Furthermore, attention should be given to the proposed location of the mall, operating hours and the different types of stores available.

Keywords: Retailing, shopping malls, mall shopping motivations, Generation Y consumers, South Africa

1. INTRODUCTION

Shopping malls are the most recognised site for shopping and play a pivotal role in consumers' lifestyles (Calvo-Porrá & Lévy-Mangín, 2018). A shopping mall is a large retail development comprising different types of retail outlets and often other establishments, such as offices, hotels, and restaurants, housed in one or a series of connected or adjacent buildings, with interconnected walkways (Rajasekar & Chadar, 2016). Triggered by suburbanisation, higher economic growth and mass ownership of cars, following the end of World War II (Carter, 2009), the shopping mall

concept was introduced in the 1950s in the United States of America (Rajasekar & Chadar, 2016). Over time the role of shopping malls in consumers' lifestyles has evolved and proliferated globally as a contemporary retail trend (Sarhaddi-Blue & Edwards, 2021), from selling needed products to providing one-stop convenience shopping, ambience and entertainment (Elmashhara & Soares, 2019) to increasingly more empowered, sophisticated and demanding consumers (Venkatachalam, 2014). The significant increase in the number of shopping malls globally, coupled with the growth in population size, income and expenditure levels, has resulted in consumers becoming accustomed to more, as well as larger shopping malls (Prinsloo, 2018).

South Africa has a strong mall culture (Collins, 2020). Viewed as the gateway to Africa (Lodestar Marketing Research, 2015), the country's shopping mall retail sector is a lucrative market (Terblanche, 2013) comprising more than 2 300 shopping malls in 2021 (Muller, 2021). Compared to other African countries, South Africa has modern and well-developed shopping malls, attracting shoppers from across the continent (Lodestar Marketing Research, 2015). In 2017, the South African shopping mall retail sector contributed 65 percent towards the total income of over 1 trillion ZA rand of the retail industry (Prinsloo, 2018) and ranked sixth globally in terms of the highest number of shopping malls per country (SACSC, 2017). Coupled with a transport infrastructure and consumers who are keen to splurge, the country continues to attract an array of retailers including international luxury and fast-fashion retailers to enter and establish outlets in various shopping malls (Collins, 2020), such as Prada, Burberry, Gucci, Giorgio Armani, Mango, Hennes & Mauritz, Cotton On, and the like (Lodestar Marketing Research, 2015). Shopping malls in South Africa cater for consumers' entertainment needs, such as modern movie theatres, and have pleasant food courts and a variety of restaurants within a secured and enclosed environment. Furthermore, the majority of shopping malls are conveniently situated near major highways, have ample parking available and high security, offering shoppers peace of mind while shopping (Van Melsen, 2013). In terms of the average number of visitors in total to shopping malls in the country, this number varies between 40 000 and 60 000 visitors during weekdays, and between 70 000 and 80 000 visitors on weekends, making mall shoppers a lucrative target market for marketers and retailers (Business Tech, 2016).

Generation Y includes individuals born between 1986 and 2005 (Markert, 2004) and are of particular interest to shopping mall retailers and marketers given the size of this segment and their significant and growing spending power (Hassler, 2017). As consumers, members of the Generation Y cohort have a fondness for shopping (Kestenbaum, 2017) and their impact on shopping is prevalent worldwide (Lachman & Brett, 2013). They have ample time and sufficient money to spend (Netzer, 2020) and are likely to spend fast and easily (Kim & Jang, 2014). Having grown up in an era where shopping has become a form of entertainment in a retail setting, this generation perceives shopping as a form of leisure (Petra, 2016) and as a way of spending time socialising with others, including family and friends (Lachman & Brett, 2013). Therefore, it is not surprising that Generation Y consumers frequently visit shopping malls, where they enjoy looking for the latest trends, new sensory experiences and entertainment (Lachman & Brett, 2013), earning them the title of 'mall-rats'. In South Africa, members of the Generation Y cohort accounted for around 35 percent of South Africa's population, standing at 59.6 million in 2020 (Stats SA, 2020). The university student segment of this generation, generally defined as being between 18 and 24 years (Kumar & Lim, 2008), represent the intellectual elite of their generation and are also,

typically, the most economically viable of the generation given that a graduate qualification often translates into a higher earning potential, and, hence, greater spending power (Bevan-Dye & Akpojivi, 2016). The considerable size of the Generation Y market segment renders them important to marketers as well as those engaged in marketing shopping malls.

In contrast to alternative shopping locations, such as markets, separate autonomous stores and online stores, shopping malls are characterised as a distinct type of shopping environment, offering the consumer several advantages (Rajasekar & Chadar, 2016). Apart from simply being a place to shop, people visit shopping malls for social and recreational activities (Chithralega, 2016), such as interacting with others, including friends and relatives or simply to break away from everyday life (Fantoni et al., 2014). Owing to the integration of shopping and entertainment, shopping malls are increasingly becoming a leisure destination (Levy & Weitz, 2018), offering consumers an inexpensive form of entertainment while shopping (Avello et al., 2011). In addition, shopping malls offer consumers diverse products, such as clothes and household goods, a variety of services, such as banking and entertainment, from different types of stores, including supermarkets and boutiques, and different service providers, such as banks and cinemas, all in one location (Zolfani et al., 2013). Furthermore, due to shopping malls being enclosed, climate-controlled areas, mall visitors can visit throughout the year without being concerned about the weather condition, such as hot summers and cold winters (Levy & Weitz, 2018). However, shopping malls also pose various challenges for marketers and retailers. These include high mall occupancy costs, strict mall management control, distant parking areas and intense competition amongst stores in the shopping mall (Levy & Weitz, 2018). In addition, the significant increase in the number of shopping malls drives the intense competition amongst different shopping malls (Calvo-Porrall & Lévy-Mangín, 2018).

Consumers regard shopping as an important part of their lives and due to their changing needs, it is constantly changing (Terblanche, 2013). Apart from acquiring a product or a service, there are various personal- and social reasons (Tauber, 1972) why people shop, such as seeking the best value for money, socialising, escaping from the routine of daily life (Tiwari & Abraham, 2010), the influence of individual and psychological consumer characteristics (Hinson et al., 2012), cultural (Dhurup, 2008), social and environmental influences, promotional strategies (Hinson et al., 2012), as well as for experiential and emotional reasons (Singh & Sahay, 2012). Furthermore, shopping involves various senses, including sight, smell, taste, touch and hearing, which form the foundation for selecting or declining specific brands, products, and, more generally, retail environments (Ahmed et al., 2007; Apparel, 2014). As such, various behavioural impulses motivate consumers to purchase products or services.

As a distinct form of consumer behaviour, consumers' motives for shopping at a mall differ significantly from one individual to another; hence, two consumers can have different motives for shopping at the same mall. While consumers visit shopping malls for different reasons, they all expect an exceptional experience from visiting a mall (Tiwari & Abraham, 2010). As such, it is important that shopping mall marketers and retailers create a unique experience to ensure customer attraction and continuous retention (Anselmsson, 2016). Therefore, as the number of shopping malls continues to grow, and the competition among the different shopping malls continues to intensify, it is imperative for mall marketers and retailers to understand consumer's mall shopping motives in order to differentiate themselves from one another to remain competitive.

2. CONSUMERS' MOTIVES FOR MALL SHOPPING

Mall shopping motives is a valuable marketing tool that can be used for market segmentation and developing strategies for targeting a particular market segment and are therefore essential to marketers and shopping mall managers (Bloch et al., 1994). The theory on mall shopping motivations was developed by Bloch et al. (1994), as well as Ahmed et al. (2007) which, in turn, is based on the theory of shopping motivations developed by Tauber (1972). From an extensive search of the literature, eight dimensions pertaining to consumers' motivations for visiting shopping malls have been identified, including enjoying the aesthetic stimulation of the mall, a means to escape (Bloch et al., 1994; Ahmed et al., 2007; Anning-Dorson et al., 2013), in search of diversion (Tauber, 1972; Krishnan & Sivaraj, 2018), the desire for flow, the desire for exploration, the need to enact a role, to socialise with others (Ahmed et al., 2007; Bloch et al., 1994) and the desire for shopping convenience (Ahmed et al., 2007; Calvo-Porrá & Lévy-Mangín, 2018).

2.1.1 Aesthetics stimulation

The aesthetic stimulation of the mall, also known as atmospherics (Ahmed et al., 2007), pertains to the architectural and interior design of the mall, including the layout and the design features, such as high ceilings, floor finishes, lighting, displays, the use of colours, music and scents (Tauber, 1972; Chithralega, 2016). The atmospheric features of the mall are likely to have a positive influence on consumers' shopping experience and behaviour (Tauber, 1972; Kim et al., 2020). As such, physical attractive features of the mall are an essential component to attract mall visitors (Said et al., 2020). A mall with excellent atmospherics will motivate shoppers to stay longer, extend the amount of time they shop, repeat their visits, and entice visitors to visit the mall for leisure, social, and community activities (Hedhli et al., 2013).

2.1.2 Escape activity

A means to escape pertains to visiting a shopping mall to get away from the demands and stress at work or home (Yoon & Uysal, 2005). Shopping malls have a positive effect on a consumer's mood, as such; consumers visit a mall to alleviate emotional stress and to relax (Terblanche, 2013). Mall shopping offer consumers an opportunity to relax by experiencing high levels of sensory stimulation including seeing different products such as clothes and jewellery, smelling food, and hearing music and other people talking (Anning-Dorson et al., 2013). Furthermore, visiting a mall offers the consumer something to do when he/she is bored and lonely and, hence, is a form of recreation (Ahmed et al., 2007). In addition, visitors to a shopping mall can enjoy low-cost family entertainment, browsing as well as interacting with and observing other people (Tauber, 1972; Ahmed et al., 2007). Ahmed et al. (2007) further explain that visiting a mall not only provides for family entertainment but also offers budget entertainment, as shopping malls offer free entry.

2.1.3 Searching for diversion

Diversion refers to consumers visiting a mall to get away from their daily life routine (Anning-Dorson et al., 2013). A shopping excursion is a form of recreation, offering a consumer the chance of diversion away from the routine of daily life (Telci, 2013). Mall shopping give consumers a sense of relief from their habitual routine of work and personal responsibilities, due to their exciting, extravagant and stylish shopping environment (Tiwari & Abraham, 2010). Consumers

who are motivated to shop because of their need for diversion seek out opportunities to avoid undesirable situations, such as bad weather and traffic congestion (Arnold & Reynolds, 2012). As such, Anning-Dorson et al. (2013) opine that shopping malls offer visitors with a need for diversion, an opportunity to abscond from their hectic daily life and seek much needed solace, such as being away from work and congested traffic.

2.1.4 Preference for flow

The desire for flow pertains to having the opportunity to lose sense of time because of the pleasurable state of absorption (Bloch et al., 1994). Ahmed et al. (2007) explain that flow pertains to the consumer being completely focused and involved in a specific activity, such as shopping. The main characteristic of flow is a sense of spontaneous pleasure, even euphoria, while doing a task. Consumers who are motivated by the flow dimension will browse or wander through shopping malls (Tauber, 1995). Ahmed et al. (2007) compare a consumers' state of mind when in a shopping mall as similar to being for example in a Las Vegas themed casino which is famous for their elaborate décor and displays where visitors become unaware of cues such as the time and weather. Thus, one may think that the achievement of flow whilst in a shopping mall may persuade and encourage visitors to stay longer (Tiwari & Abraham, 2010). Offering consumers, a pleasant, attractive and entertaining environment to ensure a desirable state of mind, may entice visitors to spend more time in the mall, such as cinema theatres, restaurants, game arcades and exhibitions (Khare, 2011).

2.1.5 Desire for exploration

Consumers are attracted to shopping malls because of the opportunity to learn about new fashion, trends and technology; hence, to explore (Tauber, 1972; Dahari, 2020). Consumers are constantly looking for new trends and improved products and this desire can only be met by exploring what is currently available on the market (Anning-Dorson et al., 2013). Mall shopping offers consumers a unique opportunity to explore new trends and improved products, as they provide consumers with a sense of entering a different universe of exciting sights, smells, and sounds which motivate them to explore (Hemalatha & Ravichandran, 2009). Consumers who visit shopping malls to explore in search of possible new fashion, trends and technology, certain shoppers, especially trendsetters, are likely to purchase new items (Tiwari & Abraham, 2010). Therefore, malls with a variety of stores and tenants will attract many different consumer market segments and may appeal to those consumers wanting to explore, touch, smell, and hear new things and, hence, enhance consumers' mall experience as well as the performance of the shopping mall (Ahmed et al., 2007).

2.1.6 Role enactment

Role enactment pertains to the satisfaction derived from shopping for other people instead of for oneself (Arnold & Reynolds, 2012). Consumers often partake in activities, which they consider essential to their roles in life (Sadeh & Samadi, 2014). Many consumer activities are learned behaviours that are usually anticipated or recognised by a specific role in society. A consumer internalises these behaviours as necessary, which motivates them to take part in the required activities (Ahmed et al., 2007) and therefore influences his/her shopping motives (Khare, 2011). Karande and Merchant (2012) explain that consumers who feel they have to enact a role engage in shopping because they need to purchase products and services to fulfil this role; therefore, have

little or no inherent satisfaction from the shopping activity itself. Therefore, while many consumers enjoy shopping for other people and enjoy the positive feelings they experience from finding the perfect gift for someone, various consumers visit malls because they are propelled by motives for enacting social roles (Khare, 2011).

2.1.7 Social interaction

Social interaction involves socialising with others, such as meeting with friends or making new acquaintances (Guido, 2006). Shopping at a mall provides consumers the opportunity to socialise with friends, peer groups or new acquaintances as well as to communicate with people who have similar interests and hobbies (Karande & Merchant, 2012). Furthermore, Hemalatha and Ravichandran (2009) found that consumers enjoy purchasing gifts for friends and family members, and in doing so, fulfil a social need. Shopping excursions commonly end in planned or unplanned encounters with friends. Hence, the social benefit of connection with other people makes shopping malls an appealing place to visit for leisure purposes. Malls offer visitors various recreational options, such as going to the theatre, eating at restaurants and playing games. In addition, since shopping malls offer free entry for visitors, they provide affordable entertainment facilities for families (Ahmed et al., 2007).

2.1.8 Shopping convenience

Shopping convenience refers to the mall's operating hours, the location of the mall and the expansive assortments of products and stores to facilitate one-stop shopping (Tiwari & Abraham, 2010). In contrast to travel to different stores, a key motivation for rather shopping at a mall is the convenience it offers consumers, namely saving time, energy and travelling costs. In addition, mall shopping offers consumers' convenient shopping hours, as well as the convenience of selecting and evaluating between different product-assortments available in one location (Breytenbach, 2014). Moreover, in response to changing consumer needs, such as busy lifestyles and schedules, shopping malls offer one-stop shopping convenience with the inclusion of service outlets and entertainment facilities, such as food courts, restaurants, game arcades, movie theatres and hair salons (Calvo-Porrall & Lévy-Mangín, 2018). Compared to alternative shopping environments, mall shopping offer consumers a convenient, climate controlled indoor shopping environment away from extreme weather conditions (Beals, 2011).

Therefore, it is important to explore if these eight dimensions, namely aesthetic stimulation, escape activity, search of diversion, desire for flow, desire for exploration, role enactment, social interaction, and shopping convenience are strong motivators for Generation Y students to visit a shopping mall. Although a growing body of academic literature relating to consumers' motives for visiting and shopping at a mall exists (Baker & Wakefield, 2012; Correia-Loureiro & Roschk, 2014; Calvo-Porrall & Lévy-Mangín, 2018), there is a lack of research on Generation Y consumers' mall shopping motivations. This is essential information for both locally and international marketers and retailers seeking to enter the South African shopping mall retail sector. As such, the purpose of this study was to determine Generation Y consumers' mall shopping motivations within the South African context, in order to guide the formation of marketing strategies for effectively targeting this market.

3. RESEARCH METHODOLOGY

This study adopted a descriptive research design, using a single cross-sectional sampling approach.

3.1 Sampling method

The target population used for the empirical part of this study was defined as full-time undergraduate Generation Y students, aged between 18 and 24, registered at public higher education institutions (HEIs) within South Africa. The sampling frame comprised 26 registered South African public HEIs, as listed by the Higher Education in South Africa (Higher Education in South Africa, 2019). From this sample frame of 26 HEIs, two HEI campuses situated in the Gauteng province were selected by means of judgement sampling – one a traditional university and the other a university of technology. Using a non-probability convenience sampling method, 400 full-time undergraduate Generation Y students (200 per institution) was selected as the sample. This sample size is in the range of other studies of a similar nature such as Hemalatha and Ravichandran (2009) (sample size of 300), and Bevan-Dye and Akpojivi (2016) (sample size of 400).

3.2 Measurement instrument and data collection procedure

In order to gather the necessary data, a self-administered survey questionnaire comprising structured questions was employed. The questionnaire comprised two sections. The first section gathered the student's demographic information and the second section included the 31-item scale pertaining to mall shopping motivations. This scale comprised eight dimensions, namely aesthetic stimulation (four items), escape activity (five items), need for diversion (three items), desire for flow (four items), desire for exploration (three items), role enactment (three items), social interaction (four items) and shopping convenience (five items). The students' responses were measured based on their agreement or disagreement with the statements that relate to the various shopping motivation dimensions. These statements were adapted from an existing validated scale by Ahmed et al. (2007) who, in turn, developed the scale based on the theories of, Bloch et al. (1994) and Tauber (1972) respectively. Scaled items were measured using a six-point Likert scale ranging from strongly disagree (1) to strongly agree (6). The questionnaire included a cover letter describing the nature and purpose of the study and confirm the confidentiality of the data gathered.

After receiving ethical clearance, permission for the distribution of the questionnaires was requested from lecturers at the two HEI campuses chosen for the study. Once permission was granted, fieldworkers administered the questionnaires to the identified sample. Participation was strictly voluntary and the questionnaire's cover letter guaranteed the confidentiality of the participant's information. The captured data was analysed using the IBM Statistical Package for Social Sciences, Version 25. The data set was analysed using reliability and validity analysis, descriptive statistics and a one-sample t-test.

4. RESULTS

4.1 Participants

From the 400 questionnaires distributed to the sample, 322 completed and usable questionnaires were returned, which shows an 81 percent response rate. The sample consisted of participants from

all of the specified age groups and all of the 11 official South African languages. The largest portion of the sample were 21 years of age (20.2%), followed by those who were 20 years of age (19.6%) and those 22 years of age (18.9%). The majority of the participants' mother-tongue language was indicated as Sesotho (25.2%) and the Gauteng Province (42.5%) as the province of origin. The sample comprised fewer male (47.8%) participants than female (52.2%) participants. Table 1 represents a description of the sample participants.

Table 1: Sample description

| Age | (%) | Language | (%) | Gender | (%) | Province of origin | (%) | Institution | (%) |
|-----|------|------------|------|--------|------|--------------------|------|---------------|------|
| 18 | 7.8 | Afrikaans | 0.3 | Male | 47.8 | Eastern Cape | 5.3 | Traditional | 46.9 |
| 19 | 13.0 | English | 0.3 | Female | 52.2 | Free State | 10.2 | university | |
| 20 | 19.6 | IsiNdebele | 0.9 | | | Gauteng | 42.5 | University of | 53.1 |
| 21 | 20.2 | IsiXhosa | 11.5 | | | KwaZulu-Natal | 1.9 | Technology | |
| 22 | 18.9 | IsiZulu | 14.3 | | | Limpopo | 23.9 | | |
| 23 | 13.0 | Sepedi | 11.2 | | | Mpumalanga | 5.6 | | |
| 24 | 7.5 | Sesotho | 25.2 | | | Northern Cape | 0.9 | | |
| | | Setswana | 11.8 | | | North-West | 9.3 | | |
| | | SiSwati | 1.9 | | | Missing | 0.3 | | |
| | | Venda | 11.2 | | | | | | |
| | | Tsonga | 9.6 | | | | | | |
| | | Other | 1.2 | | | | | | |
| | | Missing | 0.6 | | | | | | |

4.2 Descriptive statistics and One-sample t-test

In order to assess the reliability of the measuring instrument in the main survey, a Cronbach alpha value of 0.88 was computed for the overall scale measuring mall shopping motivations. The Cronbach alpha values for the eight individual constructs, namely aesthetics, escape, diversion, flow, exploration, role enactment, social interaction and shopping convenience were computed. With the exception on one construct, all Cronbach alpha values was equal to or above 0.70 which are above the recommended range of 0.6 (Malhotra, 2019), indicating acceptable internal consistency reliability. The reliability of role enactment is slightly lower as recommended at 0.55. However, as this construct only had 3 items the average inter-item correlation value was also considered, which at 0.29 is within the recommended range of 0.15 and 0.50 (Clark & Watson, 1995), suggesting internal consistency reliability. Moreover, an assessment of the corrected item-total correlation values indicated values above 0.3 ranging from 0.324 to 0.398. Therefore, providing further proof of reliability, as well as suggesting that the scale exhibited both convergent and discriminant validity.

Means above 3.5 were returned on seven of the eight mall shopping motivation constructs. The highest mean was recorded on shopping convenience motives, followed by aesthetic stimulation motives, desire for flow motives, role enactment motives, social interaction motives, desire for exploration motives and escape activity motives. The lowest means were recorded for the need for diversion motives. In order to determine whether these calculated means were statistically significant, a one-sample t-test was conducted for means above expected mean 3.5. The level of significance was set at the typical 0.05 ($\alpha = 0.05$) and the expected mean was set at mean > 3.5 (that is, in the agreement area of the scale). The computed means, standard deviations, standardized Cronbach alpha values, standard errors, t-statistics and p-values are presented in Table 2.

Table 2: South African Generation Y students' mall shopping motivations

| Mall shopping motivations constructs | Means | Standard deviation | Standardized Cronbach alpha | Standard error | t-values | P-values |
|--------------------------------------|-------|--------------------|-----------------------------|----------------|----------|----------|
| Shopping convenience | 4.70 | 0.80 | 0.70 | 0.045 | 26.860 | 0.000* |
| Aesthetic stimulation | 4.50 | 0.97 | 0.79 | 0.054 | 18.443 | 0.000* |
| Desire for flow | 4.26 | 1.07 | 0.75 | 0.060 | 12.758 | 0.000* |
| Role enactment | 4.24 | 0.98 | 0.55 | 0.055 | 13.532 | 0.000* |
| Social interaction | 4.19 | 1.00 | 0.72 | 0.056 | 12.312 | 0.000* |
| Desire for exploration | 3.98 | 1.02 | 0.71 | 0.057 | 8.540 | 0.000* |
| Escape activity | 3.85 | 1.21 | 0.83 | 0.067 | 5.231 | 0.000* |

*Significant at the 0.05 level

As reported on in Table 2, significant p-values ($p = 0.00 < 0.05$) were computed on all the seven constructs of mall shopping motivations, indicating statistical significance. This infers that the desire for shopping convenience, the aesthetic stimulation of the mall, desire for flow, need to enact a role, desire to socialise with others, desire for exploration and desire for escape activity are strong motivators for Generation Y students in South Africa to visit a shopping mall.

5. DISCUSSION, MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS

This study investigated Generation Y consumers' mall shopping motivations in terms of aesthetics motives, escape motives, diversion motives, flow motives, exploration motives, role enactment motives, social motives and convenience motives. Like previous studies, this study established that aesthetic motives, escape motives, exploration motives, convenience motives (Ahmed et al., 2007), flow motives, exploration motives, role enactment motives and social motives (Hemalatha & Ravichandran, 2009) are important mall shopping motivations. The findings of this study suggest that Generation Y consumers' most important motives for visiting a shopping mall are the desire for shopping convenience, followed by the aesthetic stimulation of the mall and the desire for flow. Additional motives include the need to enact a role, such as shopping for bargains and sales, as well as to socialise with others. The results of this study will aid shopping mall managers, marketers and retailers seeking to profile and target the lucrative Generation Y consumer shopping market in South Africa.

Based on the evidence in the sample the results suggest that Generation Y consumers view the desire for shopping convenience as the most important motive for visiting a mall. This suggests that Generation Y consumers like the convenience offered by shopping at a mall, due to malls being conveniently located, offering convenient shopping hours and being a one-stop shopping place, and having different types of stores available. As such, for shopping mall developers, managers and marketers to attract Generation Y consumers to shopping malls, it is essential to offer a convenient shopping experience and focus their marketing strategies on promoting one-stop shopping, easy access and sufficient parking.

Preference for aesthetic stimulation were ranked the second most important motive for visiting a mall, suggesting that Generation Y consumers view the aesthetics of malls as appealing, indicating that they find the interior design, the layout and the mall environment attractive. To adhere to Generation Y consumers' preference for aesthetic stimulation as a mall shopping motivation, shopping mall management and marketers should develop strategies to improve and continuously enhance the look and ambience of the shopping mall, such as offering modern décor designs, including incorporating glass roofs, green terraces and glass domes, exciting mall themes; they

should frequently update the interior of the mall and give attention to the mall's music, lighting and colour usage. In addition, the desire for flow, that is, having the opportunity to lose sense of time because of the pleasurable state of absorption, were ranked the third most important mall shopping motivator. By implication, for Generation Y consumers in South Africa the achievement of flow while visiting a mall is a significant positive mall shopping motivation. As such, it is advised that mall management, marketers and retailers create an environment for them to relax and lose track of time by giving attention to the layout of the mall to enable them to stroll, and to browse products on display.

Furthermore, the need to enact a role motive was ranked the fourth most important motivation for visiting a shopping mall. This suggests that Generation Y consumers perceive themselves as being sensible shoppers who are good at finding the best deals and who compare products and prices to get the best value for their money. Owing to these consumers' desire to finding bargains, do comparative shopping and shop sensibly as a responsibility towards their family, mall managers and marketers should offer price bargaining and sales. Specific marketing strategies should be developed to cater for different mall shopper types. Further initiatives to attract Generation Y shoppers to shopping malls include, having information desks, interactive touch-screen platforms that provide instant customer information, visible and attractive signage, humanoid retail robots who are fluent in different languages to enhance customer service, maximise the use of mall catalogues to advertise the stores and informative advertising displays to make shopping easy.

The desire for social interaction were ranked the fifth highest motivation for visiting a mall suggesting that Generation Y consumers find the mall to be a good place for socialising with other people, such as meeting new people and spending time with their friends. In order to attract Generation Y consumers to visit the mall, shopping malls should offer an exciting, fun and experiential mall experience by offering various entertainment options such as theme parks, mega movie theatres, bowling alleys, go-kart tracks, beauty spas, a wide selection of fast-food outlets and restaurants where consumers can socialise. Mall management and marketers should promote these entertainment options as a social gathering place for consumers to meet with their friends.

The desire for exploration and escape activity were also indicated as strong motivators that influence Generation Y consumers to visit a mall, ranking sixth and seventh highest respectively. This suggests that Generation Y consumers visit a mall to explore and learn about new fashion and trends, as well as to escape from the demands and stress at work or home. This study recommends that in order to motivate Generation Y students to visit a mall, mall managers and marketers should ensure that there is a wide variety of different tenant mix, use technology for consumers to explore and experience stores, such as virtual stores whereby consumers use their smartphones to browse virtual aisles and add items by touching the screen. In relation to the other motives for shopping at a mall, the lowest means were recorded on the desire for diversion motives suggesting that Generation Y students do not visit a mall to avoid bad weather or traffic congestion.

6. LIMITATIONS OF STUDY AND FUTURE RESEARCH

Certain limitations in this study are identified, thereby presenting numerous opportunities for future research. The most important limitation is that a non-profitability convenience sampling was used to survey the study's participants, which must be considered when interpreting the results. This study was limited to students enrolled at only two universities in one province and

one country. Moreover, this study employed a single cross-sectional research, providing only a snapshot in time; hence, an opportunity exists for a longitudinal study comprising a larger and more geographically diverse sample and market segments, such as members of Generation X, which may provide value to current mall shopping motivations literature, as well as changes in consumers' mall shopping motivations.

7. CONCLUSION

Various factors attract consumers to shopping malls. Developing effective marketing strategies to attract a specific target market is very important in the current competitive shopping mall industry. Understanding how and why consumers visit shopping malls is pivotal in developing effective shopping mall marketing strategies. Consumer shopping behaviour controls the success or failure of a shopping mall, and therefore it is essential for shopping mall developers, managers, marketers and retailers to understand the shopping motivations of their consumers.

This study strove to uncover Generation Y students' shopping mall motives. The findings suggest that Generation Y consumers' most important motives for visiting a shopping mall are the desire for shopping convenience, followed by the aesthetic stimulation of the mall, the desire for flow, the need to enact a role, as well as to socialise with others. Understanding these motives and taking notice of the findings and recommendations made by this study, shopping mall managers, marketers and retailers can develop marketing strategies to attract and retain Generation Y consumers. As a result, such shopping malls will be different from competing malls, and competitively positioned in the consumer's mind.

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RISK LEADERSHIP IN A SOUTH AFRICAN PROVINCIAL GOVERNMENT DEPARTMENT

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ABSTRACT

This exploratory qualitative study focuses on risk leadership as a specified and important part of the leadership required in a South African provincial treasury department. This is a particularly topical issue given observed public sector failures and the expectation for treasury departments to provide leadership over equitable allocation and optimal utilisation of provincial resources. The study sought to explore risk leadership in a South African provincial treasury government department as reflected in annual reporting. It began with a literature review, from which an initial thematic codebook was derived to provide the basis for the study. Next, a document analysis was completed of audited annual reports of the selected provincial treasury department, focusing on the period 2017–2019. This provides a baseline for risk leadership in a provincial treasury department before the National State of Disaster was pronounced in March 2020 to counter the COVID-19 pandemic. Twelve codes were generated from the literature review and compared to the codes extracted from the document analysis of the annual reports. The findings present a two-sided view of risk leadership in the provincial treasury environment. It relates to internal risk leadership, within the treasury itself, and external risk leadership offered to the public sector institutions overseen by the treasury. A critical question that emerges from this main finding is whether the treasury is sufficiently well-positioned and capacitated to execute its external risk leadership mandate effectively. The study also offers a useful reference point for conceptualising future academic studies on risk leadership in the crucial public sector context.

Keywords: Tone from the top; risk leadership; decision-making; oversight; public sector; performance

1. INTRODUCTION

A treasury department can be viewed as a ‘ministry of finance’ headed by the finance minister. Some countries have a treasury department detached from the Ministry of Finance, such as the Australian government where a treasurer and a finance minister co-exist (Hawke, 2007). The South African National Treasury department is materially different: here, the treasurer and finance minister roles are consolidated into one position. South Africa’s National Treasury regulates financial management in both the national government and provincial government institutions by focusing on areas such as revenue, expenditure, assets, and liabilities in bodies that include government departments, municipalities, and public entities (National Treasury Strategic Plan, South Africa, 2020/25). This qualitative study explored risk leadership in a South African provincial treasury department.

In a way that is similar to the South African National Treasury Department, South African provincial treasury government departments are responsible for the equitable allocation and optimal utilisation of resources at provincial levels (National Treasury Strategic Plan, South Africa, 2020/25). To this end, a provincial treasury government department is expected to provide leadership over these resources. It does not offer services directly to members of the public; its role is, rather, to support the province's service delivery institutions. This support may be provided through capacity-building initiatives, setting provincial norms and standards, monitoring the application of the legislative prescripts, and enforcing legislation (South African National Treasury Public Sector Risk Management Framework, 2010). One of the priorities of such a department is to monitor the alignment between provincial budgets and the priorities of socio-economic transformation and to improve the application of the various policy instructions and systems (National Treasury Strategic Plan, South Africa, 2020/25). Masuku and Jili (2019) postulate that the treasury's role can be deemed fundamental for the effectiveness and efficiency of the country's public sector institutions whose work has been marred by underperformance, maladministration, allegations of corruption, and weak governance and internal controls. Accompanying these weaknesses are the pervasive challenges that South Africa faces as a result (Masuku & Jili, 2019).

In the light of these factors, the principles of good governance, as well as improved service delivery, are required for a coherent and coordinated public sector. These are underpinned by the treasury's ability to provide quality advice and support, as well as effective monitoring and enforcement of compliance and resource utilisation (Public Finance Management Amendment Act, South Africa, No. 29 of 1999). As explained earlier, provincial treasury government departments are expected to provide leadership over resources allocated to provinces. The focus of this exploratory qualitative study was on risk leadership. Literature on risk leadership is available, with particular emphasis on the private sector, and specifically the banking industry (Sheedy & Griffin, 2018, Osman & Lew, 2020, Gontarek, 2016 and Djaparov, 2017). However, no risk leadership literature could be found in the government department setting, nor specifically related to South African government departments.

The purpose of this study was to explore how risk leadership is manifested in a South African provincial government department. The research question was: How is risk leadership reflected in a South African provincial government department based on the audited annual reports of these departments? The investigation was based on a literature review and a document analysis of audited annual reports of the selected provincial treasury government department. The paper is structured as follows. The literature review section provides a review of academic journal articles, the King IV Report on Corporate Governance (2016) and the South African National Treasury Public Sector Risk Management Framework (2010), with a focus on risk leadership. It is followed by a description of the study method, which entailed a review of the literature, the development of a codebook based on the literature, and a codebook based on the document analysis of audited annual reports of the government department under study. Finally, the findings on how risk leadership is reflected in the audited annual reports are discussed, and recommendations are suggested for the way forward.

2. LITERATURE REVIEW

The role of a South African provincial treasury government department

The provincial treasury department can be instrumental in highlighting red flags in a timely manner through its monitoring and oversight functions and provide recommendations to provincial public sector institutions. Treasury departments are key to managing various risks, from an advisory and oversight perspective, which can address some of the challenges facing the South African public sector.

Synopsis of South African public sector challenges

Curristine (2005) postulates that governments are required to address challenges – some of which are complex, and others simple – relating to service delivery. These challenges can significantly impact a country's ability to attract investment and grow its economy (Fourie David & Poggenpoel, 2017). Instead of looking at each challenge in isolation, the challenges facing the South African public sector may require a multifaceted approach. The South African National Development Plan (2013) highlights the extent to which the country continues to struggle with difficulties such as high rates of unemployment, unavailability of housing, increased incidents of crime, deteriorating education standards, poverty, corruption, the state of healthcare, poor infrastructure and the state of internal controls. Paramount is the government's ability to strengthen the institutions that enforce accountability of public resources as pronounced in the South African National Treasury Strategic Plan 2020/25 and to reduce the possibility of failure. To this end, treasury departments can be expected to demonstrate an ability to provide and report on the extent of risk leadership provided to stakeholders. Sound risk culture can therefore be vital (Gendron et al., 2016).

Risk culture

The concept of risk culture gained substantial interest after the 2007–2009 global financial crisis, particularly in the financial services sector, where regulators and leaders began to pay attention to this element of risk management (Palermo et al., 2017). This focus came at a time when the crisis at hand was to some extent attributed to human behaviour and attitudes (FSB, 2014; Lam, 2009; Bushman et al., 2018). Ring, Bryce, McKinney, and Webb (2016) define risk culture as values, beliefs, and understanding regarding risk, shared by a group of individuals with a common intended purpose, particularly leaders and employees of an organisation.

Risk leadership

Risk leadership is one of the behavioural-based indicators of risk culture drawn from risk culture indicators developed by the Financial Stability Board (FSB, 2014) and, the Dutch Central Bank, (DNB, 2015). It can be defined as the risk tone of the organisation, which determines implicit risk-related messages sent by the decision-based behaviour of the leaders in the organisation (FSB, 2014).

For Djaparov (2017), risk leadership is instrumental to the establishment of effective risk culture. The tone from the top is a key component of risk culture, where individuals in strategic positions are accountable for strategic decision-making (Yihui et al., 2017). Harrison and Pelletier (1995) proposed that strategic decisions are taken at the top of the organisation, which then translates into

decisions and actions taken at more operational levels. Organisations are therefore affected by the way leaders behave, and this includes their risk preferences (Yihui et al., 2017). The view is supported by Osman and Lew (2020), who highlight the fact that leadership is a crucial element of a business, as leaders should 'practice what they preach'. Suardini et al. (2018) suggest that risk culture can be built through leadership, understanding, and commitment. Constant direction at leadership level is foundational, as this would include and enhance communication of strategy, risk appetite thresholds, and values of the organisation in its entirety (Suardini et al., 2018). The responsibility of leaders may translate into a greater oversight role, which can promote stakeholder accountability and monitoring of outcomes. Osman and Lew (2020) support this idea by proposing that leaders should ask thought-provoking questions and ultimately take advantage of opportunities and mitigate risks effectively.

Gontarek (2016) advocates for risk governance features, culture and conduct, which expand to areas such as strategy setting, ethical behaviour, incentives and rewards, and recruitment. In addition, training, communication, accountability, data quality, decision-making, governance structures, policy frameworks, and performance are presented as fundamental. These areas can provide a foundational reference when one is exploring risk leadership in an organisation. The measurement of performance in the public sector can be seen as a practice applied by most governments. For instance, public sector performance measurement has gained mounting interest in England (Akira et al., 2010). Annual reports contain a comprehensive overview of an institution's activities throughout a financial year and can be used as a tool to report on measured performance of the preceding year (Adèle, 2012). To this end, the South African government has adopted the use of annual reports to reflect the financial position, performance against predetermined objectives, and overall governance of government institutions (Adèle, 2012). To provide stakeholders with assurance regarding the credibility of reported information, annual reports are structured to include the independent auditor's report (Moloi, 2016).

Notwithstanding the availability of literature pertaining to leadership and the role played by leaders in the South African public sector (Mario & Daniel, 2003; Gilson et al., 2014), risk leadership has not been explored as a leadership requirement in this context. The present study explores risk leadership in a South African provincial treasury government department as reflected in its annual reports. A thematic codebook on risk leadership was developed based on the literature, the King IV Report on Corporate Governance South Africa (2016), and the South African National Treasury Public Sector Risk Management Framework (2010). A total of 12 risk leadership themes were extracted from the literature and compared against the annual reports, as presented in Table 1.

Table 1: Codebook of risk derived from the literature and annual reports

| No | Code | Code description | Code indicators | Examples from the literature | Examples from annual reports |
|----|---------------------------------|--|---|---|---|
| 1 | Tone from the top | Tone from the top of the organisation is determined by the implicit risk-related messages sent by the decision-based behaviour of the leaders in the organisation. | Strategy setting, policymaking and directing | “Importance of risk culture is strategic decision-making”. | “Addressing issues causing high staff turnover and reduced vacancy rate/turnover rate”. |
| 2 | Risk communication | Risk communication refers to providing and receiving verbal, written, and non-verbal risk-related information; in this case, the information needed to be able to include risk when decisions are made. | Empowerment of employees | “Improved communication and sharing risk information”. | “Continued its program on minimising conflict of interest by raising awareness amongst officials”. |
| 3 | Risk accountability | Risk accountability refers to perceived and actual accountability for taking risk into account effectively when making decisions; this will directly affect the risk culture of the organisation. | Managing performance | “Allow for transparency and accountability”. | “All members of the SMS must conclude and sign performance agreements within specific time frames”. |
| 4 | Behaviours, values, and ethos | Behaviours, values, and ethos refer to practices, rituals, heroes, and symbols within an organisational context. | Prescription of ethos and value systems | “The board encourages communication of the importance of ethical behaviour”. | “All SMS Members accordingly declared their financial interests through the e-disclosure system”. |
| 5 | Risk information | Risk information refers to the quality of available risk information available for use in decision-making. | Weaknesses found during risk assessment raised with management | “Automated tools for capturing, organising, storing and interrogating data, as well as communicating and tracking information”. | “Risk assessments conducted in the Provincial Treasury revealed certain weaknesses, which were raised with management”. |
| 6 | Risk understanding | Risk understanding refers to a shared understanding of risk and the value of risk to the organisation, and the risk management framework. | Training interventions at all levels to promote shared risk understanding | “To enhance the user’s understanding of the Framework and to facilitate its implementation”. | “Risk awareness workshops are conducted to create awareness of risk management to all levels in the Provincial Treasury”. |
| 7 | Risk management framework (RMF) | The RMF contains the organisation's risk strategy, risk appetite framework (including risk limits), processes (e.g., internal controls), data, and functions intended to support the execution of the organisation's business strategy. It provides the formal symbolic structure within which risk decisions are made | Risk management policy, strategy and implementation plan | “The requisite number of people with the right skills is fundamental to implementing the risk management strategy”. | “The Provincial Treasury has an approved Risk Management Policy, Risk Management Committee Charter and Risk Management Strategy”. |

| No | Code | Code description | Code indicators | Examples from the literature | Examples from annual reports |
|----|--------------------------|--|---|--|---|
| | | by providing tools, resources, and information to do risk management. | | | |
| 8. | Risk role | The risk role means that each board, management, and other staff members must have a clear and shared view and understanding of their role in managing risk in the organisation, including how and when risk should be included when decisions are made. This is informed by the RMF and influenced by the risk culture in the organisation. | Delegation of responsibilities for risk management | “The Risk Champion should not assume the role of the Risk Owner but should assist the Risk Owner to resolve problems”. | The Internal Audit Unit conducts its activities as per the Internal Audit Plan that is based on the risk assessment and approved by the Audit Committee”. |
| 9 | Norms and standards | Norms and standards refer to the uniform norms and standards which the provincial treasury should prescribe for government institutions. | Prescribing and customising systems of risk management by adopting standard principles | “The Framework has been developed in terms of the prescripts”. | “Implementation of financial recovery planning targeting the identified distressed municipalities”. |
| 10 | Monitoring and assessing | Monitoring and assessing entail that the provincial treasury should monitor and assess, among other things, the implementation of risk management, including any prescribed norms and standards. | Monitoring the realisation of organisational and industry objectives and goals | “Monitor and assess, among other things, the implementation of risk management, including any prescribed norms and standards”. | “Adhering to compliance on payment of suppliers within 30 days after receipt of an invoice”. |
| 11 | Capacity building | Capacity building refers to the efforts by the provincial treasury to assist and support provincial government institutions in, among other things, building their risk management and overall capacity. | Assistance to provincial institutions to build their risk management capacity | “Assist provincial departments, provincial public entities, municipalities, and municipal entities, in, among other things, building their capacity for efficient, effective and transparent risk management”. | “Support and coordination to the six infrastructure departments”. |
| 12 | Enforcement | Enforcement entails that the provincial treasury should impose the legislation and any prescribed norms and standards for, among other things, risk management. | Enforcing the legislation and any prescribed norms and standards in provincial institutions | “Enforce the legislation and any prescribed norms and standards for, among other things, risk management in provincial departments, provincial public entities, municipalities, and municipal entities”. | Non-compliance letters were issued to the Accounting Officers”. |

Notes:

(1) Codes 1–8 are specific to internal risk leadership dynamics; codes 9–12 are specific to external risk leadership.

(2) The literature includes the South African National Treasury Public Sector Risk Management Framework (2010) and King IV Report on Corporate Governance South Africa (2016).

3. METHODOLOGY

3.1 Research design

This qualitative study was based on a literature review and a document analysis of three sets of audited annual reports prepared by a provincial treasury government department. The study began with the creation of an initial study-specific thematic codebook, whose themes the researcher derived from the three sources – the set of six anchor journal articles, the King IV Report on Corporate Governance for South Africa (2016), and the South African National Treasury Public Sector Risk Management Framework (2010). Thereafter, these themes were compared to the themes derived from the document analysis of the annual reports.

3.2 Sampling method

Two sets of documents were downloaded from electronic platforms and databases for the purpose of conducting the literature review. These documents included, first, peer-reviewed English-language indexed academic journal articles on risk culture that focused on risk leadership. The search period was limited to the years 2002–2020. Second, the analysis involved formal guidelines relevant to the conduct of a South African government treasury department, namely, the King IV Report on Corporate Governance for South Africa (2016) and the South African National Treasury Public Sector Risk Management Framework (2010). For the purpose of the document analysis, the study focused on audited annual reports of a South African provincial treasury government department over a period of three years (2017–2019). The scope of the study ended just before the National State of Disaster (pronounced on 26 March 2020), thus providing a baseline for assessing risk leadership in a South African provincial treasury department before any COVID-19 complications came into play.

3.3 Research instrument

Purposeful sampling, the method used in this study for selecting the relevant information-rich scholarly material for anchoring the project and for coding purposes, is commonly used in qualitative research to identify information sources related to the phenomenon of interest (Palinkas et al., 2015). The search yielded 31 risk culture related academic journal articles from which themes aligned to the keywords ‘risk tone’ and ‘risk leadership’, ‘risk decisions’, ‘tone from the top’, and ‘decision-making’ were used as selection criteria that yielded the six articles relating to risk leadership. The six articles which served as anchor articles for the study are Gontarek, 2016; Djaparov (2017); Yihui, Siegel, & Yue, 2017; Sheedy & Griffin, 2018; Suardini, Rahmatunnisa, Setiabudi & Wibowo, 2018; Osman & Lew, 2020.

3.4 Data collection

Literature-based thematic codebook

A thematic codebook based on themes from the selected articles, the King IV Report on Corporate Governance for South Africa (2016), and the South African National Treasury Public Sector Risk Management Framework (2010) formed the basis of this study. This thematic codebook was used as a standard of comparison with the codebook derived from the audited annual reports for the

period 2017–2019 of the provincial treasury government department under study. This comparison was intended as a starting point for assessing the extent to which reporting themes related to risk leadership in the annual reports aligned with the treatment of those themes in the literature.

3.5 Data analysis

Document analysis was considered the most suitable approach for this study. Among its advantages, Bowen (2009) views document analysis as a non-reactive research method and explains that the use of documents provides mechanisms for tracking changes and developments as well as the opportunity to substantiate information from other sources. The information in the annual reports selected for analysis was restricted to narrative information relating to policy, non-financial performance, and governance. To make sense of the data from the annual reports for the period 2017–2019, the process of coding entailed developing a sequential strategy to structure the codebook in alignment to the codes from the literature review as presented in Table 1. Relationships among codes were closely observed and these codes were subsequently gathered together in terms of their relationships to determine their pattern so as to detect the most dominating and the least dominating features and to look for analytical explanations, as suggested by Saldaña (2016).

3.6 Ethical considerations

Quality criteria were incorporated by describing the methodological strategies employed during the study to enable replication. Furthermore, reflexivity was practised to minimise unacknowledged biases. Reflexive research entails continuous self-critique and self-appraisal on the part of a researcher, which positions him or her in the research process (Koch & Harrington, 1998; Patnaik, 2013). Braun and Clarke (2006) emphasise the importance of experienced researchers' guidance on qualitative data analysis, particularly when using thematic analysis, to ensure the credibility of results and conclusions. In this study, the first author was guided, trained, and overseen in this process.

4. RESULTS AND DISCUSSION

In summary, the study findings indicate that, unlike other government departments, the provincial treasury is expected to provide and reflect on two sides of risk leadership: first, the side that is internal to the treasury itself and, second, that which is applied to the public sector institutions overseen by the treasury. This two-sided phenomenon of risk leadership presents increased complexity because one must consider both the internal risk leadership architecture and the external risk leadership expectation of the provincial treasury under study. Both categories are presented in this study. The 12 codes from the literature were compared to the codes derived from document analysis of annual reports for the period 2017–2019 for the provincial treasury government department under study (Table 1). The frequency of eight codes, namely, tone from the top, communication, behaviours, risk accountability, risk information, risk understanding, risk management framework, and risk roles was observed in the internal risk leadership themes of the provincial treasury. These codes were not observed in the external risk leadership assumptions of the provincial treasury, that is, oversight that the provincial treasury provides to public sector institutions. The eight internal risk leadership codes aligned well with the academic journal articles and the King IV Report on Corporate Governance South Africa (2016). The four external risk

leadership codes, namely, norms and standards, capacity building, monitoring and assessing, and enforcement aligned well with the South African National Treasury Public Sector Risk Management Framework, 2010. The results reveal areas of strength and weakness in the way in which risk management is conducted in the treasury department under study, as discussed in this section, theme by theme. The implications of findings from the comparison of codebooks derived from the literature and from annual reports are discussed.

Tone from the top

All three annual reports reflected themes connected with tone from the top, which pointed to specific weaknesses in the key area of staffing. It appeared that government's policy to manage the public sector wage bill by abolishing vacant posts may have had detrimental effects. High staff attrition was shown as weakening the department's ability to function properly and to deliver on its mandate. Staff attrition, combined with extended temporary acting replacements as cause for concern, is supported by the literature, which specifies recruitment and retention of suitable employees as key to a successful organisation (Osman & Lew, 2020; Sheedy, 2016). Another key feature that consistently emerged in all the annual reports is that the department's risk appetite was not defined and performance against set levels was not measured. The literature frequently points to risk appetite levels as a theme related to risk tone. According to Sheedy (2016) and Ruchi and Sanjay (2018), setting risk appetite levels and stating them clearly is a pivotal exercise for promoting a shared understanding of the amount of risk an organisation is willing to accept. The absence of such statements in any of the annual reports, therefore, indicates the need for further attention to risk appetite by the departmental leadership team. Omissions in this area in the department's annual reports suggest that it could usefully focus on the specific tasks of setting and monitoring risk appetite thresholds.

Risk communication

Risk communication themes appeared in all the annual reports, but in some areas the appearance revealed weaknesses. Although the treasury consistently "minimised conflict of interest by raising awareness amongst officials", signifying verbal risk-related communication which can be applied as a criterion for ethical conduct and embedded in various processes, the themes did not indicate clearly the manner in which the treasury provided verbal, written, and non-verbal risk-related information. In particular, risk communication to operational employees did not appear in Years 1–3. Shefrin (2016) emphasises the fact that the responsibility for integrating the risk management process into day-to-day activities rests with operational employees. As such, employees who occupy more operational roles should be familiar with the risk management process. The findings showed room for improvement in the provincial treasury's risk communication to enhance a shared risk-approach when employees carry out their respective roles.

Risk accountability

Although risk accountability themes were observed in the annual reports, the themes showed areas of weakness, which included inadequacies in holding employees accountable for mitigating risk. Employees should be held responsible for their actions, and this can be done through measurement tools such as performance appraisals (Salamah & Wijanarko, 2020). Such tools are simplified evaluation apparatuses designed to support supervisors and employees in meaningful performance

management processes (Camilleri, 2021). Although senior managers signed performance contracts and agreed to various deliverables for all three financial years, their performance was not consistently assessed. The treasury should consider consistently evaluating the execution of assigned responsibilities by monitoring the correlation between risk exposure reductions and overall departmental performance.

Behaviours, values, and ethos

The treasury developed, approved and communicated expectations with regard to expected behaviours, ethos and value systems consistently through the period under study. However, “irregular expenditure” still occurred and “misconduct cases” were observed. These instances contrast sharply with precepts in the literature that indicate the instrumental role that culture plays in value creation and the shaping of employee conduct. The right kind of shared behaviours and values contributes to creating trust and building a positive reputation among internal and external stakeholders (Gontarek, 2016), and the opposite is also true. The treasury could consider introducing organisation-specific initiatives to improve behaviours, values and ethos.

Risk information

Although risk information is gathered through a risk assessment process, no themes were observed that illustrated how risk intelligence was included in decision-making. The IRM (2012) recommends that the inclusion of risk information in key documents enables senior management to make timely informed decisions. Disclosure of risk information, which includes but is not limited to a change in risk limits or introduction of new risk approaches, shapes risk culture and improves governance (Djaparov, 2017). It is on this basis that structured efforts are recommended to improve this area.

Risk understanding

Although risk understanding was consistently reflected in the reports, some weaknesses were observed. The treasury did not explicitly indicate how shared risk understanding, the value of risk to the department, and the risk management framework promote inclusion of risk in decision-making. For Hillson (2013), the value of shared risk understanding is highlighted in defining culture as the values, knowledge and understanding, shared by a group of people with a common purpose.

Risk management frameworks

A framework for risk management can be defined as a set of documented principles that form structure and approach relating to an organisation’s risk management process (Moraru & Băbut, 2010). Guidelines of this kind can be regarded as a leadership responsibility as they provide direction for organisational risk management. Risk management framework themes were consistently observed and no recommendations for further improvement emerged from analysis of this area as the treasury’s annual reports aligned with the literature.

Risk roles

The risk role themes observed highlighted how the “appointment of risk and governance committees” promoted oversight over risk governance. Sheedy (2016) finds that the success of risk management hinges on employees fully appreciating their role in the risk management process and the behaviour that is expected of them. Although risk roles for management and risk structures were explicit in the annual reports, there were observed weaknesses as no mention was made of more operational roles as suggested by the South African National Treasury Public Sector Risk Management Framework (2010). To this end the treasury department could consider exploring this area further.

Norms and standards

Although themes relating to norms and standards were observed in the annual reports, these were minimal in all three annual reports, as distinct from themes of capacity building and monitoring, and assessing. "Improving the utilisation of systems including IT capability" was a consistent theme in all three years. Fischer et al. (2021) focus on the impact of digitisation in the public sector and emphasise how automation can be used as an instrumental tool for efficiency and performance. The treasury may need to endeavor to enhance sound governance and institutionalise business processes by prescribing and customising various frameworks to suit the dynamics of the province. This promotion of uniformity in understanding and application of frameworks may be instrumental in achieving optimal risk maturity levels and achieving the government's governance goals.

Capacity building

The treasury invested great effort in building capacity within public sector institutions. A significant number of codes under this theme were observed in all the annual reports. Public sector policies require a capable government to implement them, and this is central for the success of this sector. Capacity-building programmes seek to improve performance and service delivery in the public sector by optimally aligning resources with pragmatic activities (Farazmand 2009; Fukuyama 2013; Rothstein 2015). Therefore, no recommendations for improvement in this area are suggested, as the codes in the annual reports align clearly with the literature.

Monitoring and assessment

Monitoring and assessment themes were consistently observed in the annual reports, thus showing a strong presence throughout the period under study. In particular, emphasis on areas such as “monitoring the realisation of the goal of a clean financial administration and inclusive economic development” and “monitoring the spending on compensation of employees and ensuring that the percentage is decreased” was frequently observed. The government's wage-bill reduction policy was discussed earlier, under the theme of tone from the top, where the year-on-year workforce reduction was found to have dire consequences. This result may be applicable to other public sector institutions in the province where employees may be "stretched" and unable to achieve service deliverables as desired. The treasury should consider performing a province-wide analysis of the impact of workforce reduction. There are however, no recommendations for improvement in relation to this code given the observed alignment between the annual reports and the literature.

Enforcement

Few enforcement themes were detected in any of the annual reports. Government failure to ensure policy implementation perpetuates a state where rules are promulgated yet remain unapplied and ineffective, which leads to governance collapses and undesirably impacts on the citizenry (Huisman, 2019). To avoid such situations, the treasury is advised to consider more efforts to enforce legislation; by so doing the department can positively impact the overseen public sector institutions from a risk leadership perspective. Such efforts may also contribute to improvements in the state of public institutions and perhaps assist in addressing some of the challenges observed in the public sector.

5. CONCLUSION

This qualitative study explored risk leadership in a South African provincial treasury department, prompted by a curiosity to better understand challenges observed in the public sector and the role that the treasury department plays. The South African provincial treasury department under study presented a two-sided risk leadership phenomenon, with internal responsibilities as well as external ones. This not only complicates the type of risk leadership the treasury should exemplify and reflect in the annual reports but also illustrates the complexity of the treasury's work. The study showed accord between the literature and internal risk leadership themes within the treasury, which may be a potential contributor to the treasury having obtained and maintained a clean audit opinion from the Auditor-General (AGSA) for the period under study. Although this alignment was reflected, certain weaknesses were observed. The external risk leadership themes indicated that the treasury had invested effort to build a capable state by assisting, supporting and training government institutions as well as monitoring regulations and guidelines. The evidence from the literature suggests that this is partially in line with the treasury's risk leadership role relating to public sector institutions overseen by the treasury. The treasury could, however, consider increasing efforts to enforce guidelines and legislation, as shortcomings in this area were consistently found in the document analysis for the period under study. As with all research studies, this one has limitations. Data comparability is a potential limitation to be considered when drawing conclusions from the study results, as the various South African provincial treasury departments may reflect on risk leadership in different ways in their audited annual reports. This issue could be explored further. A critical question that also arises from the findings is whether the treasury is sufficiently well-positioned and capacitated to enforce legislation, as this emerged as a shortcoming of the external risk leadership provided to public sector institutions. A future academic study could possibly provide the answer to this question. Finally, and more broadly, the present exploratory study offers a useful reference point for conceptualising future academic studies on risk leadership in the overview it provides of specific risk leadership issues and insights generated specifically from documents in the public domain.

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GOING GREEN ON LOGISTICS PERFORMANCE IN THE CONSTRUCTION INDUSTRY: A CASE OF SOUTHERN GAUTENG IN SOUTH AFRICA

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ABSTRACT

The development of a sustainable environment has recently been advocated for most economic sectors. The construction industry, one of the pollution generators which creates destruction to the environment, is by no means exempted from it. Construction companies have gradually adopted different environmentally friendly practices promoting the preservation of the environment. Generally, many of these practices are carried out in the area of green supply chain management (GSCM) and logistics performance where there is a great potential to reduce the rate of pollution generated. Therefore, the purpose of the study is to explore the impact of green information system, green packaging and reverse logistics necessary to improving the logistics performance of their companies. This paper intends to fill this gap by analysing the impact of environmentally friendly practices such as green supply chain practices and logistics performance in the construction industry in Southern Gauteng. This study considered green information system, green packaging, reverse logistics and logistics performance as sustainable or environmentally friendly practices. The study used a quantitative approach. A judgmental or purposive sampling technique was applied to collect data from 400 respondents. Data was analysed with the aid of two software, namely, Statistical Package for Social Science (SPSS 27.0) and Analysis of Moment Structures (AMOS 27.0). In addition, Confirmatory factors analysis and Structural equation modelling was used to analyse relationship between constructs and testing the hypotheses. The results of the study implied that construction companies which comply with the different laws and regulations that have established development and implement a green information system as well as a good reverse logistics system are more likely to reduce the environmental impact of their activities, while optimising their economic viability. All the five hypotheses were positive and significant in the study. It concludes that by adopting GSCM and improving their logistics performance, construction companies will be able to improve their environmental performance. Therefore, it is recommended that construction companies keep giving more attention to GSCM and logistics performance as it is the most innovative means by which they can get cost efficiency and environmental responsibility simultaneously.

Keywords: Green supply chain management; logistics performance; reverse logistics; green packaging, green information system.

1. INTRODUCTION

The construction industry contributes largely to the pollution that destroys or harms the natural environment as well as the socio-economic wellbeing of humans. Indeed, Banihashemi, Fei and

Chen (2019) and Gelzinis (2021) explained that construction activities generate various environmental problems such as greenhouse gas emission, indoor and outdoor environmental pollution and more. In an attempt to resolve these problems, construction companies all over the world are encouraged to shift their traditional ways of construction to a safer and environmentally friendly one (Wilcox 2021). This necessitates the implementation of new technologies, new processes and management styles to reduce the environmental impact of construction activities (Abdel-Baset, Chang & Gamal 2019). The adoption of green or environmentally friendly practices have been introduced world-wide as a response to environmental issues. Davidavičienė and Al Majzoub (2021) noted that the construction industry in developing countries such as South Africa are lagging behind despite their ability to generate growth. Bahrami and Jafari (2019) claimed that this situation is related to the urban development in developing countries. Effectively, Li and Huang (2021) explained that in an attempt to meet the growing demand, massive investment in infrastructure such as houses and bridges are made. As a result, construction companies exploit natural resources excessively and expand aggressively, which cause significant stress on the natural environment (Abebe, Bahn, Chalak & Yehya 2019). In addition, Wilcox (2021) stated that in developing countries like South Africa, the limited understanding of sustainability development as well as the pursuit of cost reduction makes many construction companies uncertain in adopting sustainability in their projects. Indeed, Li and Huang (2021) pointed out that knowledge, consciousness, and understanding the consequences of an individual's actions determine the pace of action regarding sustainable application. Also, the use of green practices increases the capital cost of a construction project, which makes it difficult for an industry that is already struggling (Banihashemi *et al.* 2019; Davidavičienė & Al Majzoub 2021).

Furthermore, most prior research on moving construction towards sustainable development is more focused on developed countries and relatively low attention has been devoted to developing countries such as South Africa, leaving little information to contribute to the research gap (Abdel-Baset *et al.* 2019). This study contributes to the knowledge by analysing the impact of environmentally friendly practices such as green information system, green packaging and reverse logistics on the logistics performance of construction companies in Southern Gauteng. The reflection is expanded on the basis of literature review, research methodology, tests of measures and accuracy analysis statistics and the discussion of the results.

1.1 Conceptual Model

A framework was conceptualised after an intense literature review specifically to study the relationship between green information system and green packaging, which are perceived as predictor variables, one mediating variable, that is reverse logistics, and one outcome variable, which is logistics performance. The figure below shows a framework of the constructs and the hypothesised relationships investigated in the study.

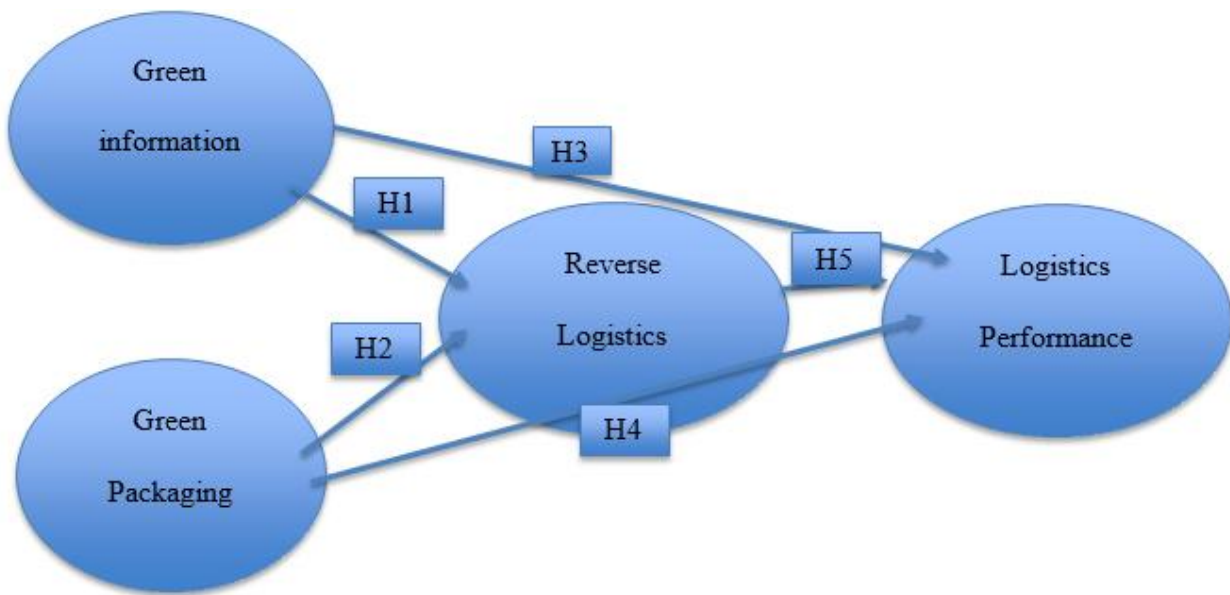


Figure 1: Conceptual model (created by the researcher)

2. LITERATURE REVIEW

The literature review outlines the theory applied to this study and its major concepts, which includes green information system, green packaging, reverse logistics and logistics performance.

2.1 Eco-efficiency theory

To acquire adequate background and structure for this study, the theory of eco-efficiency is well established to equilibrate business activities with environmental factors. Eco-efficiency is a strategic theme for global business in relation to the commitments and activities directed at ecological development (Abebe *et al.* 2019). More precisely, eco-efficiency is about reducing environmental damage whilst maximising the efficiency of a company production process, which in turn lead to cleaner production (Korhonen & Snäkin 2015; Yan, Cheng, Wang & Li 2021). Yang and Yang (2019) noted that eco-efficient importance lies in its ability to combine performance along with sustainability, environment and economy. To achieve eco-efficiency, Li, Sarwar and Jin (2021) claim that organisations must decrease resource consumption, extend product or service utility, maximise sustainable use of renewable resources and increase service intensity. Therefore, in this study, eco-efficiency is used to provide a theoretical mechanism through which it is possible to explain the relationship between green information system, green packaging, reverse logistics and logistics performance.

2.2 Green information system

Information systems (IS) consume an immense amount of natural resources, the energy to power them as well as the difficulty that arises in the disposing of the obsolete hardware damage to the environment (Srivastav & Gaur 2015; Ergen 2021). GIS is therefore a practical tool necessary to reduce the amount of pollution generated by it. In the words of Bokolo (2019), green information systems (GIS) can be regarded as organisational systems designed to collect, process, store and distribute information in order to achieve environmental sustainability.

Within an organisation, GIS are needed to drive high-level strategic plan to achieve sustainability. In fact, referring to Ergen (2021), an organisation that pursues a sustainability agenda needs to consider the importance of GIS. The authors explain that to achieve sustainability with relevant and accurate information on environmental-related costs, it is necessary to determine which activities are harmful to the environment and take corrective action. Accordingly, Gelzinis (2021) posits that construction companies can adopt GIS to capture, monitor, utilise and standardise data necessary to manage and coordinate with their customers in terms of eco-design, production, packaging, transportation, recycling, disposal and scrap ratio. Moreover, how well the product and services are delivered to consumers mostly depend on the coordination within organisational processes (Pahlevi & Suhartanto 2020; Bahrami & Jafari 2019). Organisations need to collect huge amounts of data in order to improve the forward or backward delivery flow of goods and services. For instance, construction companies can decrease energy and improve supply chain efficiency by switching their reports from hard copies to soft copies, or by decreasing printed items and having them available online. Based on the report of Abdel-Baset *et al.* (2019), when it stops printing and starts using the internet to publish its reports, a construction company's cost for printing can be reduced by 10 per cent. In addition, transportation costs can be reduced by providing online facilities for reporting, registering and delivering of goods and other everyday items (Banihashemi *et al.* 2019). Therefore, organisations need to adopt green information systems to revamp their companies' processes in order to effectively meet sustainability goals and achieve efficiency. Based on the literature above, the following hypotheses can be stated:

H1: There is positive and significant relationship between green information systems and reverse logistics.

H3: There is positive and significant relationship between green information systems and logistics performance.

2.3 Green packaging

Green packaging, also known as “environmentally friendly packaging,” refers to any actions taken by product manufacturer or service provider to reduce the environmental impact of the materials or processes involved in packaging the products and services while deployment to their end-user (Choudhary, Nayak, Dora, Mishra & Ghadge 2019; Wilcox 2021). Green packaging is prone to degradation, recyclability, re-use, biodegradability and customer cooperation. Referring to Auliandri, Thoyib, Rohamn and Rofiq (2018), green packaging (GP) has become an increasingly important segment of the overall push in industry towards environmentally-conscious companies to increase competitive advantage. Bahrami and Jafari (2019) postulated that the information displayed on the packaging can serve as a marketing strategy, which can increase the appeal of the items to consumer, resulting in less stock going unsold. Green packaging then represents an opportunity for construction companies to foster a positive image and conveys a business firm's concern towards the environment and the public (Abdel-Baset *et al.* 2019).

Moreover, Banihashemi *et al.* (2019) claimed green packaging can be implemented to enhance the efficiency and effectiveness of logistics activities. Abebe *et al.* (2019) explained that packaging plays an important role in storing, handling and transportation of goods. For instance, green packaged goods are generally lighter and smaller than the normal one, which make it easier for trucks to load them more efficiently. Also, the number of trucks needed is reduced and construction companies can save, next to transportation cost, on carbon emissions and contribute to a greener

environment. This is beneficial for companies in order to control inventory and manage the logistics of their product assortment (Wilcox 2021). Therefore, green packaging has facilitated the forward and backward flow of goods and as result enhances the performance of logistics activities. Because of the above assertion, it can be hypothesised that:

H2: There is positive and significant relationship between green packaging and reverse logistics.

H4: There is positive and significant relationship between green packaging and logistics performance.

2.4 Reverse Logistics

Reverse logistics (RL), also known as closed loop supply chain, refers to a set of activities conducted after the sale of a product to recapture value and end the product's lifecycle (Hansen, Larsen, Nielsen, Groth, Gregersen & Ghosh 2018; Abebe *et al.* 2019). Bahrami and Jafari (2019) claimed that RL covers several dimensions related to materials management, physical distribution and distribution planning, which opens the door to a wide array of potential applications of environmentally friendly strategies along logistics chains. Accordingly, Agrawal, Singh and Murtaza (2015) suggested that RL is an opportunity for companies to reduce and recycle their wastes generated by the logistics activities from the production of the products to recovery and treatment when their lives come to an end. Simply put, RL is one of the best possible alternatives to enhance the efficiency and effectiveness of logistics activities of any company with less environmental effects. If well implemented, RL can boost the logistics performance of construction companies through reducing costs, improving quality, enhancing flexibility and speed of the logistics network (Davidavičienė & Al Majzoub 2021; Sharma, Kumar, Verma & Luthra 2021). In addition, Butler (2018) states that RL enhances customer experience. The author further explained that with rising competition, it is primordial that construction companies provide a unique service in order to attract and retain customers. Furthermore, proper and streamlined management of goods and materials travelling back up the supply chain can result in reduced losses as well as additional revenue (Banihashemi *et al.* 2019). Based on the literature above, the following hypothesis can be stated:

H5: There is positive and significant relationship between reverse logistics and logistics performance.

2.5 Logistics performance

Logistics performance is a multidimensional concept whose definition varies from one company to another. However, in this study, logistics performance refers to efficiency and effectiveness of a company to perform logistics activities with less environmental impact (Davidavičienė & Al Majzoub 2021). Accordingly, Abebe *et al.* (2019) and Magazzino, Adewale-Alola and Schneider (2021) agreed that as logistics sectors have been known as one of the main contributors to global warming through noise and air pollution, it is crucial that the logistics provider make efforts to reduce the carbon footprint generated by their activities (Bahrami & Jafari 2019). By reducing the transportation emission, shortening the transportation distance, decreasing waste products, lowering the energy consumed, aligning with government regulations and increasing environmental awareness among customer bases, logistics can contribute or promote economic and environmental sustainability (Agrawal *et al.* 2015).

Referring to Tuan (2018), companies can rely on logistics services to keep their business strong and more efficient. The author further explains that a successful logistics system can be used by

construction companies to gain an edge over their competitors. Effectively, by delivering the goods at the right place, time, quality and quantity, logistics services empower organisations to effectively and efficiently meet the need of individual customers and create value (Banihashemi *et al.* 2019; Abdel-Baset *et al.* 2019). Therefore, enhancing LP should be the focus of any organisation that desires to expand and grow.

3. METHODOLOGY

The research methodology section provides an overview of the research approach, sampling design, procedures for data collection, instrumentation and data analysis used in this study. The quantitative approach was applied for this study as it can be used for a large sample which is representative of the population, data can be collected with ease and organised using graphs and charts (Shekhar, Prince, Finelli, Demonbrun & Waters 2019). Also, this method is suitable since the study involved the testing of five hypotheses, which suggest the existence of relationships between four different variables.

3.1 Target Population

The unit of concern in this study was the South African construction companies in Southern Gauteng province. Because the knowledge and the experience of supply chain managers or professional employees are needed to obtain accurate results, purposive sampling was selected to draw 440 respondents relevant to this study (Quinlan, Badin, Carr & Griffin 2019). These 440 respondents consisted of purchasing managers and professional employees. Respondents were typically selected from the logistics, supply chain and operation's department as the research area was somehow relevant to the activities of these departments. A total of 440 questionnaires were initially distributed to respondents. A total of 50 unusable questionnaires were discarded in the screening process, culminating in 86.6 % (n=381) response rate.

3.2 Measurement Instruments

Data were collected through the distribution of questionnaires developed from past literature. The existing items were adapted to suit this study. For this reason, questions were reformulated. A green information system was measured with seven questions extracted from the study of Liu *et al.* (2018). Green packaging was measured with four questions adapted from the study of Salhieh and Abushaikha (2016). Reverse logistics was measured with five measurement items adapted from Ye, Zhao, Prahinski and Li (2013), while logistics performance was measured with nine questions extracted from the study of Aharonovitz, Vidal-Vierra and Suyama (2018). The response options were arranged in a five-point Likert scale configuration calibrated as follows: 1=strongly disagree; 2=disagree; 3=moderately agree; 4=agree; and 5=strongly agree. The five-point Likert-type scale was used in this study because it is less confusing, comprehensive and allows respondents to assess the strength of agreement or disagreement about a statement (Hair, Woflinbarger, Money, Samouel & Page 2015).

4. TESTS OF MEASURES AND ACCURACY ANALYSIS STATISTICS

4.1 Reliability results

To assess the reliability and validity of the research constructs, three tests known as Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) were conducted. Table 1 below equally provides the results of the means, standard deviation, item-to-total correlation and factors loading.

Table 1: Scale accuracy analysis

| Research constructs | | Cronbach's test | | C.R Value | AVE Value | Factor loading |
|--------------------------|-----|-----------------|----------------|-----------|-----------|----------------|
| | | Item total | α Value | | | |
| Green information system | GS1 | 0.593 | | | | 0.687 |
| | GS2 | 0.721 | | | | 0.739 |
| | GS3 | 0.632 | | | | 0.689 |
| | GS4 | 0.738 | 0.867 | 0.867 | 0.527 | 0.805 |
| | GS5 | 0.630 | | | | 0.727 |
| | GS6 | 0.700 | | | | 0.706 |
| | GS7 | 0.484 | | | | 0.475 |
| Green packaging | GP1 | 0.714 | | | | 0.791 |
| | GP2 | 0.762 | 0.863 | 0.863 | 0.608 | 0.820 |
| | GP3 | 0.757 | | | | 0.789 |
| | GP4 | 0.628 | | | | 0.717 |
| Reverse logistics | RL1 | 0.542 | | | | 0.553 |
| | RL2 | 0.645 | | | | 0.765 |
| | RL3 | 0.736 | 0.846 | 0.846 | 0.522 | 0.831 |
| | RL4 | 0.701 | | | | 0.745 |
| | RL5 | 0.650 | | | | 0.690 |
| Logistics performance | LP1 | 0.643 | | | | 0.634 |
| | LP2 | 0.704 | | | | 0.726 |
| | LP3 | 0.733 | | | | 0.740 |
| | LP4 | 0.757 | | | | 0.782 |
| | LP5 | 0.778 | 0.914 | 0.914 | 0.523 | 0.801 |
| | LP6 | 0.776 | | | | 0.811 |
| | LP7 | 0.751 | | | | 0.778 |
| | LP8 | 0.511 | | | | 0.591 |
| | LP9 | 0.664 | | | | 0.671 |

During the cleansing process or the scale purification, item-to-total correlations were computed and expected to be above the minimum threshold of 0.5 (Hair, Babin, Anderson & Tatham 2010). Using this criterion, except GS7 that was disregarded because its item-to-total correlations was less than 0.5, all the factors loading of the measurement items were acceptable for their range from 0.553 to 0.831. To assess reliability of each construct, the Cronbach alpha test and the Composite reliability tests were computed. According to Hulland (1999), the recommended minimum value for the two tests is supposed to 0.7 in order for measurements scale to be classified as reliable. Table 1 showed that all the Cronbach's alpha value for each research construct ranges from 0.846 to 0.914. The lowest value is 0.846, which is above the recommended threshold. Therefore, it indicated a higher degree of internal reliability and consistency of the measures used. In this study, the validity was tested by means of convergent and discriminant validity. To assess convergent validity, factor loadings for the individual scale items were computed. For consistency when assessing the items, factor loadings should be greater than 0.5 (Fraering & Minor 2006). Using this recommendation, the majority of the factor loadings are further checked using the Average Variance Extracted (AVE). AVE was calculated using the formula of Fornell and Larcker (1981),

who recommend that the AVE values should be greater than 0.5. As the AVE value represented from Table 1 range from 0.522 to 0.608, a good representation of the latent construct by the items is therefore authenticated. To check for discriminant validity, inter-construct correlation matrix was used. The study followed Chinomona’s (2011) recommendation that correlation coefficients less than 1.0 are an indicator of adequate discriminant validity.

Table 2: Inter-construct coefficient

| Research construct | Construct correlation | | | |
|-------------------------------|-----------------------|----------------|----------------|-------|
| | GS | GP | RL | LP |
| Green information system (GS) | 1.000 | | | |
| Green packaging (GP) | 0.412** | 1.000 | | |
| Reverse logistics (RL) | 0.336** | 0.425** | 1.000 | |
| Logistics performance (LP) | 0.435** | 0.478** | 0.498** | 1.000 |

An analysis of Table 2 reveals a significant inter-factor correlation ranging between $r=0.336$ and $r=0.498$, which all fell within the recommended threshold values. Effectively, according to Chinomona (2011), the discriminant validity is to assess if the correlation between the research constructs is less than 1.0. As indicated in Table 2 above, the inter-correlation values for all paired latent variables are less than 1.0, hence confirming the existence of discriminant validity.

4.2 Structural equation modelling

After approving the reliability and validity of the measurement instruments (reported in Table1), the study proceeded to test the proposed hypotheses. The study has anticipated that regulatory pressure, green information system, green packaging and reverse logistics have a significant influence on logistics performance of construction companies in Southern Gauteng.

Table 3: Results of hypotheses testing (path modelling)

| Proposed hypothesis relationship | Hypothesis | Path coefficient estimates |
|--|------------|----------------------------|
| Green information system → reverse logistics | H1 | 0.381*** |
| Green packaging → reverse logistics | H2 | 0.474*** |
| Green information system → logistics performance | H3 | 0.510*** |
| Green packaging → logistics performance | H4 | 0.535*** |
| Reverse logistics → logistics performance | H5 | 0.500*** |

^aSignificance level $p<0.05$; ^b significance level $p<0.01$; ^c significance level $p<0.001$

4.3 Discussion of the results

This study aimed to test the relationship between green information system, green packaging, reverse logistics and logistics performance in construction companies in Southern Gauteng. The first research objective was to examine the relationship between green information system and reverse logistics. The path co-efficient for hypothesis three (H3) is 0.381, which indicates a reasonable relationship between the two variables. Effectively, green information system can help managers to find strategies to reduce the use of hazardous materials and maximise energy efficiency during the reverse process, which in turn reduce responses time and enhance the performance of reverse logistics systems (Zhao & Zhu 2017). Accordingly, the current study validates and supports that green information system has a direct impact on reverse logistics. The second hypothesis (H2) showed that green packaging is positively related to reverse logistics. The relationship is validated, based on the results of the path coefficient ($r=0.474$). This denotes that green packaging has a positive and relatively strong influence on reverse logistics. Based on the

results, it can be indicated that the greener the packaging, the more effective reverse logistics practices will be. H3, green information system has a positive influence on reverse logistics. The path-coefficient of $r = 0.510$ shows a strong and significant relationship between the two variables. The results obtained following the test of H4 verified that there is a relationship between green packaging and logistics performance, when a coefficient of ($r=0.510$) was revealed. This connotes that green packaging has a positive and strong relationship on logistics performance. The results therefore substantiate the relationship as hypothesised. The last objective was to examine the relationship between reverse logistics and logistics performance. A coefficient of 0.500 was realised after testing H5. The results therefore validate the relationship as hypothesised. Fong *et al.* (2020) add that the integration of reverse logistics in logistics network has increased the performance of logistics services and their ability to satisfy customers' needs and requirements.

The results of the study demonstrated by adopting green practices such as GIS, GP and RL, construction companies can green their logistics activities. In other words, green practices represent an opportunity to perform logistics tasks efficiently and effectively with low environmental impact. The results also showed that green information systems, green packaging; reverse logistics and logistics performance can be used to achieve eco-efficiency. Effectively, the theory demonstrates throughout the study that GIS, GP, RL and LP can be used to preserve and recover new supplies of energy from the environment and as result lead to environmental performance. In addition, fulfilling the needs of environmentally conscious consumers, GIS, GP, RL and LP can serve as drivers of competitiveness and profitability. Simply put, GIS, GP, RL and LP can be used to maximise environmental efficiency while creating social and economic value for companies.

5. PRACTICAL IMPLICATIONS

The study provides relevant knowledge on environmental practices that can further improve current environmental performance of construction companies. It reveals that GIS, GP, RL and LP will enable companies to increase delivery efficiency, reduce cost, minimise raw material wastage and augment cleaner production practices, eventually resulting in increased productivity. In this regard, managers should implement GSCM and logistics performance not only to achieve sustainability but to maximise overall stakeholder's value.

6. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Although this study provides valuable insights, it has limitations, which should serve to stimulate further research. Firstly, the single-country limitation establishes that the results of the study can only be explained in the South African setting, and thus the study results cannot be generalised. In line with this, future studies could be conducted in other provinces, which is likely to provide the results of the study within a broader context. Another limitation is the restriction of the study to the construction industry. In this regard, its procedure and findings could be restructured and implemented in other industries. Moreover, the study was restricted to four environmental protection strategies. This gives opportunity for future study to explore other strategies such green training, green image and more. Moreover, the usual limitations surrounding a survey method of data collection is acknowledged in this study. Future studies could therefore use a different method such as mixed-method to get a better picture of the study.

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TRAINING PROGRAMMES MATTER IN SOUTH AFRICAN (SA) MUNICIPALITIES: THEY BOOST CAPACITY AND COMPETENCE OF MUNICIPAL EMPLOYEES FOR IMPROVED SERVICE DELIVERY

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ABSTRACT

The success of any municipality depends on the competence and capacity of its personnel. No institution can produce adequate results if its personnel are incompetent, unfit, incapacitated, or incapable. Job descriptions are all unique and different. Each of them necessitates a specific skill or ability from employees in order for the municipality to succeed over time. Hence, training for local government employees has become popular in modern times. Many municipalities consider introducing training programmes as tools to strengthen their employees' capacity and competence. Training programmes are essential because the core objective of any municipality is to provide services. As a result, training programmes could assist local government employees deliver services successfully. Municipalities, it could be argued, are defined in a constantly changing environment, requiring employees to continue investing in training programmes to improve service delivery. Nonetheless, this article aims to highlight the role of training programmes in enhancing the capacity and competence of employees in South African local government. The article relied on secondary sources, which were successfully applied in context to unpack the topic under investigation. According to the findings of the study, training programmes provide an opportunity for personal development, improve an employee's level of performance, and advance their career path. On the negative side, the study found that trainers sometimes transfer skills that do not match the training needs of trainees, who in this case are municipal employees. This then becomes a setback for the institutions in question. Finally, the study recommends that training programmes be tailored to the specific needs of each municipality.

Keywords: Capacity, competence, training programmes, improved service delivery.

INTRODUCTION

To provide a brief overview of what training programmes are, Dulworth and Bordonaro (2005) believe that training can be defined as a stage in which a municipality invests in capacity-building programmes in order to improve the individual performance of employees. While Koma (2010) holds a view that training programmes provide the labour force with an opportunity to enhance their potential and simplify their tasks in the municipal environment. Recently, training programmes have been used to develop employee functions and levels of thinking in order to encourage employee effectiveness (Anwar & Abdullah, 2021). This is why municipalities are assigned a task to identify and assess the training needs of their personnel and therefore align them with institutional objectives. While the article acknowledges skills shortages as one of the causes of service delivery backlogs in South African communities, the South African Local Government Annual Report (2012) draws attention to the fact that skills development and training programmes should be perceived as part of important tools to improve the end results of employees and service

delivery. Nevertheless, Section 195 (1) of the Constitution of the Republic of South Africa (1996) emphasises the need for good human resource management and career development practices to maximise human potential (Constitution of RSA, 1996). It is for this reason that the article argues that training programmes are some of the career development practices in SA municipalities, as far as maximizing and strengthening employee potential for improved individual performance and service delivery are concerned. Notably, Section 195(1) further states that people's needs must be responded to and efficient, economic, and effective use of resources must be promoted (Constitution of RSA, 1996). Arguably, these principles could be achieved provided South African municipalities continuously invest in training programmes that improve employee performance. This is emphasised by Kum, Cowden and Karodia (2014), as they hold the view that, in terms of service delivery, South African municipalities are going through a serious phase of decline. This has resulted in little investment in the development of human capital (employees) and a noticeable exodus of the available skills, which has exacerbated the severe skills gap in the sector. Therefore, a major investment in human capital could help to address these skills. Given this context, the researcher is of the view that people's needs cannot be responded to with incompetent, unskilled, and incapacitated employees. Given this background, this article unpacks the role of training programmes in boosting employee capacity and competence in South African municipalities. The article further elaborates on two theoretical frameworks, which enhance the article's perception of the role of training programmes in South African municipalities. Other sections of the article address the concept of training programmes, the nature (traits) of training programmes, challenges hindering successful implementation of training programmes, the methodological approach the study followed, and role players responsible for the successful execution of training programmes. Lastly, a conclusion and recommendations are provided at the end of the article.

THEORETICAL FRAMEWORK

This article adheres to a hybrid theoretical framework that incorporates instructional design theory as well as Maslow's Hierarchy of Needs theory. The theory of instructional design focuses on navigating a path for municipalities to properly expose local government employees to new ways of doing things and individually grow in the workplace. According to this theory, learning and development are related but not limited to emotional, social, and cognitive development. In general, it dissects the learning process (Reiguluth, 2013). In line with this, the article claims that training is another process of learning in the sense that local government employees can improve, develop, and acquire advanced ways of performing distinguished tasks, especially in a constantly changing work environment that requires employees to be trained and capacitated on a regular basis. Because the article follows a hybrid theoretical framework, instructional design theory is important for educational problems. It is also important for skill nurturing and enhancement in the local government sphere because newly hired personnel should be mentored and guided to successfully achieve the core objectives of their respective municipalities (Reiguluth, 2013). In attempting to explain Maslow' Hierarchy of Needs, Spector (2006) believes that every person possesses a natural trait that pushes him or her to perform to the best of his or her ability. Moving on, it is worth noting that the drive may be thwarted by factors outside the employee's control. This also applies to municipal employees. As a result, all of these external factors have the potential to influence an employee's performance below targets or expectations. For these reasons, the article considers training programmes to be important tools that can improve one's performance

over time. While it is critical for municipalities to continuously capacitate their personnel, it is also important to note that training programmes should always be aligned with employees' training needs. As a result, the researcher concludes by emphasising the importance of training programmes in improving employee performance. The following section will unpack the study's research approach in order to successfully discuss the role of training programmes in refining capacity and competence of municipal employees in South African municipalities.

RESEARCH APPROACH

The article employed a conceptual research design. This type of design is commonly known for the extensive review of readily available data. To simplify this, conceptual research is a type of qualitative research. The article uses this type of research approach because research is undertaken by observing and analysing patterns already available in the literature on the topic under concern. It is related to abstract concepts or ideas. For the past few years, philosophers have used the conceptual research approach as a guide to formulate new theories or explain already available theories (Jaakkola, 2020). Therefore, the article followed this type of research approach because it presents the researcher with an opportunity to identify gaps in the existing literature and build new ideas based on them. Because conceptual papers ultimately produce new knowledge by drawing from carefully chosen sources of data combined in accordance with a predetermined set of norms (Hirschheim, 2008). Conceptual research is a researcher's combination of prior research and related work that aids the study in explaining the occurring phenomenon in the context of training and capacity building programs. It systematically explains the actions needed in the course of the research study based on the knowledge obtained from other ongoing research and other researchers' points of view on the subject matter (Jaakkola, 2020). Equally, conceptual research represents the researcher's synthesis of literature on training programmes and how to explain various concepts (Regoniel, 2015). The study finds this type of technique relevant because it maps out the actions required in the course of the study, given the researcher's previous knowledge of other researchers' points of view and his observations on the subject of training programmes in the South African municipalities (Regoniel, 2015; Mamokhere, Mabebe & Kgobe, 2022).

TRAINING PROGRAMMES AS A CONCEPT

The article defines the concept by stating that it refers to programmes designed specifically by municipalities to improve a person's ability to complete a specific task successfully. Furthermore, training programmes are designed to simplify complex activities. This is why some jobs require employees to first go through training. Training programmes, according to Werner and DeSimone (2012), are initiatives put in place to boost employee morale and help the municipality achieve its goals, while also preparing individuals to remain relevant in the workplace. According to Varma and Budhwar (2014), training programmes are the foundation for positive results in every workplace, because personnel development is influenced by the municipality's vision and trajectory, and a highly capacitated workforce not only benefits itself but also contributes to the institution's development. The article then views this as a win-win situation because the impact of training programmes is mutual (benefits both the employer and employee). Raliphada, Coetzee and Ukpere (2014), on the other hand, argue that training programmes are dependent on the ability of the person being trained to apply their skills and knowledge. Simply put, training programmes become effective only when the trainee is able to apply new skills learned in the municipality.

Municipalities that do not invest in training programmes, even when there is a need, may be preventing their employees from being exposed to new skills and more efficient ways of performing various tasks (Elnaga & Imran, 2013). Arguably, societal needs change over time; some of these needs necessitate specific skills, which is why employees should constantly advance their skills in order to provide dignified municipal services. In other words, a lack of certain skills would have an effect on the level of service delivery and individual productivity in some way. In this context, a skill is an acquired ability or talent that an individual possesses simply to perform a set of tasks over a specific period of time (Mabeba, 2019). In light of this, the researcher concludes that training programmes provide a platform for educating employees about new or alternative ways of carrying out work-related activities.

THE ROLE AND CHALLENGES OF TRAINING PROGRAMMES

This section discusses the role of training programmes in refining the capacity and competence of municipal employees in South African municipalities for improved individual performance and service delivery. To avoid bias, the article also highlights some of the challenges municipalities face in implementing training programmes. To achieve this, the article uses available literature to uncover the topic under deliberation. According to Koma (2010), local government is one of those important stakeholders at the hand of community members, and their employees are facilitators of service delivery. This scholar discovered that capacity-building programmes give employees an opportunity for personal development, enhance their level of performance, and advance their career path. It is for this reason that the researcher sees it appropriate to argue that the state of service delivery in South African communities could improve if only local government employees could be supported through competency and capacity building programmes. In other words, one of the roles of training programmes is to improve service delivery. Werner, Schuler and Jackson (2012) ascertain that should capacity-building programmes in municipalities be aligned to employees' needs that could turn their attitudes around and make them feel a sense of belonging. Notably, employees could develop an interest in doing daily activities provided they have the ability and skills to carry out their duties effectively. Sometimes employees may not develop an interest, maybe because they lack certain skills or attributes to perform certain tasks. Katcher and Snyder (2003) agree, stating that if training programmes are properly implemented, the effects of such training can encourage growth within the worker as well as the municipality itself.

Additionally, some of the tasks are too complex, so they could impact an employee's daily performance. Certain jobs necessitate training and certification in order for an employee to properly complete the minimal employment requirements associated with that position. In addition to facilitating the development of training and limiting liability in the event of human error on the part of these employees, Frost, Vos and Dreyer (2000) and Anwar and Abd Zebari (2015) added that training is viewed as part of education in the sense that employees are taught in order to improve their current status of competency and abilities.

Hence, this is where municipalities should apply training programmes to curb circumstances such as human error. On the other hand, Branch, Gustafson, Nieveen and Plomp (2012) accentuated that training and development help institutions achieve their vision while motivating employees to be loyal to their employer. Above all, training and development benefit not only municipalities but the community and the entire nation. This article goes further to state that skilled, trained, and

capacitated municipal personnel assist municipalities to smoothly render public services. Therefore, competent personnel will, in one way or the other, meet the socio-economic needs within their areas of operation.

According to Abib-Pech (2013), training and development assist those in senior management echelons to excel in career management while also assisting with strategic thinking in the local government context. Training programmes further empower leaders in strategic positions to strive for change in their respective institutions. This applies to municipalities as well. Jehanzeb and Bashir (2013) and Memon (2014) added that training and skills development assist senior managers and organisations, inclusive of municipalities. Local government employees acquire soft and technical skills as demanded by their job responsibilities. Consequently, this strengthens career competencies, making employees have a sense of belonging to the institution and perform their tasks smoothly (Jehanzeb & Bashir, 2013; Memon, 2014). Another gain from training identified is that effective training has the potential to produce quality work. As a result of potentially fewer errors, Rothwell and Kazanas (2006); Kum, Cowden and Karodia (2014) believe that training assists employees to perform much better and boost output as well. An increase in human performance guarantees an increase in institutional performance (Kum, Cowden & Karodia, 2014). Rothwell and Kazanas (2006) added that training could also assist in cutting institutional costs.

For instance, a well-skilled and trained employee could apply the most efficient ways of using resources while delivering exceptional services. This article then argues that some municipalities still lack the ability to use resources efficiently. Hence, training and skills development interventions become relevant under such circumstances. This is backed up by Iqbal, Ahmad and Javaid (2014), Padamanaban and Shakeel-Ul-Rehman (2013), and Elanga and Imran (2013), as they claim that institutional efficiency relies on the manner in which organisations train and develop employees. As it was stated above that this article will also look into the challenges of training programmes, it is worth shifting attention to some of the challenges that various scholars have identified regarding training programmes. On that note, some municipalities are still confronted with training programmes that transfer inappropriate skills to municipal employees (Republic of South Africa: Department of Cooperative Governance and Traditional Affairs, 2009). Therefore, a dilemma of this nature could mean that the skills transferred to employees do not match the training needs of employees. In other words, the skills transferred to employees should be able to address the capacity challenges identified in certain directorates within the municipality. On the other hand, Mozael (2015) explains that some institutions spend more than what is required on training. This then makes institutions use more money while neglecting institutional output. While this scholar admits that dynamic training improves employee performance to a certain extent, it is argued that dynamic training contributes to more institutional spending, particularly on the finance part. Additionally, dynamic training interferes with institutional activities because employees spend most of their time attending training programmes. Consequently, employees have to create more time to cover up the work or time lost. The purpose of training in any municipality is to address a lack of skills and knowledge (Mozael, 2015). However, here is the trick. The skills and knowledge transferred during formal training may mismatch with the actual tasks that employees have to fulfil in the workplace, especially if employees prolong application or use of what they have gained during training. Given this context, the article submits that learning (training) without application sometimes makes training less important. In essence, the trainees

should, upon completing the training, create time to put into effect the new skills they have acquired. Furthermore, Ugoji, Mordi and Ajonbadi (2014) accentuated that the tracking of qualified trainers who are able to meet the training needs of the organisation is another challenge emanating from training programmes. Employees would not be able to track their development, and programme facilitators wouldn't be able to gauge the effectiveness of their initiatives if municipalities and trainees did not analyse training by offering feedback (Kum, Cowden & Karodia, 2014).

TRAINING PROGRAMMES AND THEIR TRAITS

In addition to investigating the role and pitfalls of training programmes in South African municipalities, the researcher believes it is important to discuss the nature and types of training programmes that employees are frequently exposed to. Therefore, the purpose of this section is to provide a background on the nature and type of training programmes that South African municipalities normally arrange for their employees, particularly when the need arises. This will also assist in evaluating the interface between training programmes and their role in the overall process of skills transfer. Considering the opinion of Grobler, Warnich, Carrel, Elbert and Hatfield (2004), for municipalities to arrange a certain type of training, first it is important to have a list of training needs for various employees. In this case, the manager responsible for training and capacity building must first consult with their employees regarding their training needs. Training must be structured in such a way that it is able to address an employee's skills development needs and is aligned to their daily activities.

From this view, the process of identifying training needs should not be treated like a one-man show. The employer should work hand in hand with employees to determine skills that employees lack. Since training is meant for employees, employers should allow employees to be involved in decision-making regarding the nature of training programmes to be organised. The American Society for Training and Development emphasises that employees should at least spend a minimum of 40 hours a year attending capacity-building programmes (Kreitner & Kinicki, 2007). This article stresses that this will assist employees to remain relevant in a continuously changing work environment. Adding to the arguments above, McConnell (2004) suggests that there should be a collaboration between employees and their employers in order to identify training needs and, more importantly, to outline the objectives of every training programme. Employee involvement does not only make the training programme a success; it also helps to uplift their morale (McConnel, 2004). According to Smit and Cronje (2003), there is a type of training called on-the-job methods. Literature has deliberated much on managerial and learning and skills development in South Africa that emanates from on-the-job experience. This study holds the view that managers learn most from assessments that require critical thinking (Anwar & Abdullah, 2021). Therefore, a programme of management education should consist of assessments and job rotation plans that motivate managers to go the extra mile (Grobler, Warnich, Carrel, Elbert & Hatfield, 2006). Another type of training is off-the-job training. This type of training takes place outside the employee's work environment. This includes conferences, seminars, and group teachings. This type of training requires a conducive environment that allows maximum engagement between trainers and trainees (Anwar, 2017). Off-the-job training is organised in such a way that advanced skills are successfully transferred to employees (Anwar, 2016). Therefore, training programmes differ from one institution to the next depending on the different training needs of employees

(Prabhu, Abdullah & Mohan, 2019). The next section unpacks key role players and their roles therein in the process of arranging and implementing training programmes.

WHO SHOULD CAPACITATE EMPLOYEES?

This section defines the role of South African municipalities in identifying employee training needs. While training programmes are important in the process of improving competence and service delivery, the researcher believes that it is the responsibility of the South African Local Government domain to play an active role in identifying training needs of its personnel. This viewpoint is supported by the Skills Development Act 97 (1998), which requires South African local governments to implement skills development programmes in order to improve the skills and abilities of municipal practitioners. The aforementioned regulation aims to address all issues concerning insufficient skills and incompetence, particularly in South African municipalities. In accordance with the provisions of the Skills Development Act 97 of 1998, a municipality should have a skills development facilitation office, unit, or section that deals with capacity-building programmes within the municipality (Skills Development Act, 1998). In order to achieve this objective, the article believes that municipalities should periodically monitor the performance of their employees and, where necessary, identify elements that prevent them from successfully performing certain tasks. If one of these elements is a lack of skills, the municipality in question should take appropriate action. Kum, Cowden and Karodia (2014) emphasise this by stating that senior management commitment is required for training programme execution. To ensure the success of training and development, top management will not only allocate resources, but will also ensure that training programmes are well implemented. Furthermore, municipalities vary in nature, as do their training requirements. In other words, training requirements should be tailored to each municipality's personnel and competency level. However, once training needs have been identified, it is critical to make arrangements with institutions or an accredited body that can provide training services to the municipality in question. This article emphasises that individuals' competence and skills must be given adequate attention because failure to do so will jeopardise the municipality's overall performance while affecting service delivery. While the Skills Development Act is clear about municipalities' roles in the process of skills and training development programmes, it is worth noting that key policy drivers have been identified as a priority for the Local Government Sector Education and Training Authority (LGSETA) (Skills Development Act, 1998). In light of this, one of the policy drivers that went into effect in 2009 was the Local Government Turnaround Strategy (LGTAS). The aforementioned turnaround strategy focuses heavily on increasing the capacity of Local Government Practitioners to successfully carry out their assigned responsibilities. Although this policy driver does not necessarily require investment in skills development programmes, it is worth noting that the LGSETA must play a significant role in organising skills development and training programmes in order to produce skilled and competent personnel who will eventually deliver sustainable services to residents (Sector Skills Plan, 2016). In terms of skill development programmes, the LGSETA focuses on programmes that help municipal leaders, councillors, and employees who work with municipal finances (Sector Skills Plan, 2016). Koma (2010), on the other hand, stated that municipalities are important stakeholders who are accessible to residents, and thus their employees are service delivery facilitators. This scholar also emphasised that municipalities should identify their personnel's strengths and weaknesses, align them to the municipalities' skill

requirements, and invest their time in providing capacity-building programmes for their workforce. The researcher concludes that South African local governments must collaborate closely with the LGSETA to address skills shortages and training needs in various municipalities.

CONCLUSION AND RECOMMENDATIONS

The article accomplished its aim by investigating the role of training programmes in enhancing the capacity and competence of employees in South African local government. This was accomplished by utilising secondary data (journal articles, conference proceedings, dissertations, and books) that addressed the topic under investigation. On a positive note, it is worth noting that training programmes continue to be important in South African municipalities in order to prepare employees for improved service delivery. In terms of implications, it has been discovered that some skill development or training facilitators are unable to meet the training needs of municipal employees. In the sense that the skills learned during training do not correspond to the needs of the individual. As a result, the article is suggesting that municipalities establish a skills development unit to deal specifically with capacity building and training programmes. Municipalities should appoint competent personnel with the necessary skills and knowledge of skill development and capacity building programmes. This will help them address skill shortages in their respective municipalities. According to the article, some municipalities spend more money on training programmes while others spend less. As such, the article recommends that municipalities organise training and skill development programmes when they are needed, rather than simply because the funds are available. Finally, it is worth considering how effective training programmes should be. Therefore, trainees should be given the opportunity to evaluate the overall training session by comparing what they have learned to their training needs. This will also assist trainers and municipalities determine how effective training sessions are and how well they can address skill and incompetency concerns in their respective institutions.

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RISK CONSIDERATION DURING DIGITAL INNOVATION AT A COMMERCIAL BANK

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ABSTRACT

Banks must continually adjust their business models to include new digital technologies in response to rapidly changing customer needs, Fintech entrants, and competitors' innovative offerings. Implementation of innovative responses to these three challenges carries significant risks. While literature on digital innovation in banks and emerging risks from such innovation exists, there is very little written about risk consideration during the innovation lifecycle, the focus of this study. The topic is therefore relevant in the light of changing market conditions. An adverse internal audit report of the studied bank suggested that risk-taking during digital innovation was not given adequate consideration. The report did not address the contribution of behavioural factors causing non-compliance to policy and framework requirements. To address this gap in the present study, senior managers involved in decision-making of innovation projects (innovators) were interviewed to investigate their perceptions of how risk management was included during the digital innovation processes. The semi-structured interview data were analysed using a risk culture indicator model to guide the coding. When prompted about challenges posed to innovation, participants raised concerns regarding the risk management framework, which was not keeping pace with industry changes. Innovators' accountability for the risk management process also emerged as an issue, because of their lack of understanding of this process. For the sake of expediency in meeting changing customer demands, participants chose speedy project delivery and avoidance of missed opportunities over comprehensive risk consideration. Participants' recommendations for improving risk management during digital innovation included increased awareness of the risk management process. Based on this study's findings, more in-depth studies on risk management practices during digital innovation at more financial institutions are recommended.

Keywords: Digital innovation; risk consideration; behavioural factors; risk culture; decision-making

INTRODUCTION

Digital technology has become part of everyday life, significantly shifting how value is created in various fields and industries (Philbeck & Davis, 2018). Recognising that the future is digital, the financial services industry has been adapting and improving its offerings through new technologies (Das et al., 2018). Although the opportunities are abundant, there are risks attached. Risk management, as a tool, can mitigate potential issues introduced by digital innovation, but there is a perception among innovators that risk management is an inhibitor to innovation (Peretti-Watel,

2003). This study focuses on risk consideration during the digital innovation process at a South African commercial bank.

Digital transformation refers to the adaptation of an organisation's business model and strategy to implement digital technology and to manage change with the customer in mind (Bowers & Khorakian, 2014). Such changes may be disruptive to operating models since, as Li et al. (2017) observe, advanced new products have altered customer expectations and require strategic adjustments, such as improved service capability.

Studies of risk management in digital innovation projects are limited and, at best, focused on theory rather than real-world application (Ferri et al., 2021; Shrivastava & Rathod, 2017). Currently the topic of digital innovation receives the highest priority in most organisations owing to the pressure to remain relevant in relation to changing customer needs, competitor responses and new entrants. Bearing in mind the importance of digital innovation, the risk it introduces, and the scarcity of published information on risk-taking during digital innovation projects, this study investigated risk consideration and aspects of risk-taking behaviour during digital innovation at a commercial bank.

Participant feedback indicated a high correlation to the following aspects of the risk indicator model (RiDC) that we applied: *'Risk Management Frameworks'*, *'Risk Role'*, *'Risk Understanding'*, and *'Risk Accountability'*. We also found that there were varying levels of understanding between more established and recently formed innovation teams. These outcomes could be vital in the responses by innovators and the risk function to the fourth industrial revolution. Understanding what balance, if any, is struck between changing quickly and changing safely could clarify the extent to which the risk management process supports and enhances the innovation lifecycle and how best the banking opportunities on offer can be optimised for the industry and for its customers. The outcomes of the present study also pave the way for further studies of the risk management process during digital innovation projects at banks.

LITERATURE REVIEW

Impact of digital innovation on organisations

It is widely accepted that digital innovation in current market conditions creates economic value for those taking part (Philbeck & Davis, 2018). In banking, digital innovation offers customers choice and convenience (Rahman & Abedin, 2021); it also enables institutions to cut back on their geographic footprint, which significantly reduces operating costs (Mbama & Ezepue, 2018). Businesses across various industries must adapt to customer expectations (Li et al., 2017; Schwab, 2016), and banks' operations are changing as technology significantly shifts its models from banking in branches to "banking from everywhere" (Rahman & Abedin, 2021).

Competition from emerging entrants puts further pressure on banks to change their business models and product offerings (Das et al., 2018; Flejterski & Labun, 2016). Furthermore, the speed of technological developments reduces the time available for decision-makers to reflect, with companies not heeding the call to reach quick decisions doomed to fail (Rahimnia & Molavi, 2021). Several studies refer to the direct relationship between competition and the pressure both to innovate more and to assume potentially riskier projects than would have been the case without competition (Akande et al., 2018; Duong & Swierczek, 2019; Rahimnia & Molavi, 2021). Such conditions require executives to take decisions at speed.

Tupa et al. (2017) refer to the need for risk management processes to adapt to the changing conditions and to new risks associated with the digital innovations of the fourth industrial revolution. As Sareen (2013) explains, risk management policies are intended to introduce principles that allow organisations to make good decisions and thus to improve performance – deviation from such policies can expose the bank to increased risks beyond its risk appetite. Risk appetite can be an extension of the risk culture of an organisation (Power, 2009), so it is important to understand what the risk culture is during the process of digital innovation, through which an organisation has much to gain, and potentially much to lose.

Challenges introduced by digital innovation

Tupa et al. (2017) highlight the importance of considering the risks of not pursuing an opportunity and Qazi et al. (2021) discuss the threat of missing an opportunity altogether. Such considerations could prey on the minds of decision-makers, potentially clouding their perception of risk management through the belief that taking time to consider risk may derail delivery of their projects. Rahimnia and Molavi (2021) also argue for considering the risk of missed opportunity in the context of innovation. They explain that quick decisions can increase the success of innovation, while risk considerations could cause delays.

It is critical to appreciate the environment in which financial institutions currently operate to understand their risk culture. Organisations seek to develop ways in which they can create competitive advantage to keep opposition at bay (Rahimnia & Molavi, 2021). Competition is an important consideration in any banking environment, which makes banks more likely to exhibit risk-taking behaviour (Akande et al., 2018; Arping, 2014).

Considering the competitive market, need for innovation, and time pressure under which banks find themselves operating, behavioural aspects of senior management need to be considered, given that the perceived benefits of being first to market have a potential influence on decisions and actions (Rahimnia & Molavi, 2021; Robinson & Min, 2002). To the best of our knowledge, the behavioural aspects that influence risk culture during digital innovation projects has not been examined in previous studies.

Consideration of risk during digital innovation

In the banking organisation studied here, a group internal audit (GIA) report, which examined innovation projects delivered by the bank, noted several findings that cast doubt on whether risk was being considered during digital innovation. The GIA found high levels of deviation from and non-compliance with risk management policies; insufficient third-party risk management, security and vulnerability management; and a lack of technically skilled resources. The report tested compliance with policy requirements, without considering behavioural aspects of decision-making. The root cause of deviations that it described were behaviour related, but the GIA performed a compliance check only. The present research explores reasons behind such behaviour, and how it may have been influenced by the prevailing risk culture in digital innovation projects.

Alosaimi and Alnuem (2016) and Tupa et al. (2017) stress the importance of risk management during digital innovation, since new risks inevitably arise as the market changes. Risk management employs systematic means to identify, assess and manage threats to the organisation effectively (Sareen, 2013). Ferri et al. (2021) propose that the strategic and operational impact of considering

risk during decision-making processes should be determined, as pointed out earlier by Caldarelli et al. (2017). Both the Ferri and Caldarelli studies discuss the value of risk perception among decision makers in their adoption of new technology but stop short of addressing risk management practices associated with such initiatives. Despite the growing prevalence of digital innovation, the various aspects of risk related to it remain overlooked. Furthermore, viewing the risk management function as a hindrance could undermine understanding of its critical role and contribution in the digital innovation lifecycle (Peretti-Watel, 2003).

Previous academic studies have indicated emerging risks introduced through new technology, and how risk management should be applied to ensure that implementation of new technology aligns with business strategy. Research has also indicated that risk management practices and policies need to keep pace with the changing market landscape. Therefore, the issues identified by GIA are supported in the literature reviewed.

Risk culture indicators as an analytical tool

In their systemic approach to risk culture, Zaaïman et al. (2021) used the Financial Stability Board’s indicators (FSB, 2014) in combination with the work on risk and culture by the Central Bank of the Netherlands (DNB, 2015) to create a systemically integrated model of risk culture (Figure 1). The model, which we used for coding, consists of structural and behavioural indicators, and the model views risk culture as the consideration given by groups to risk during the decision-making process.

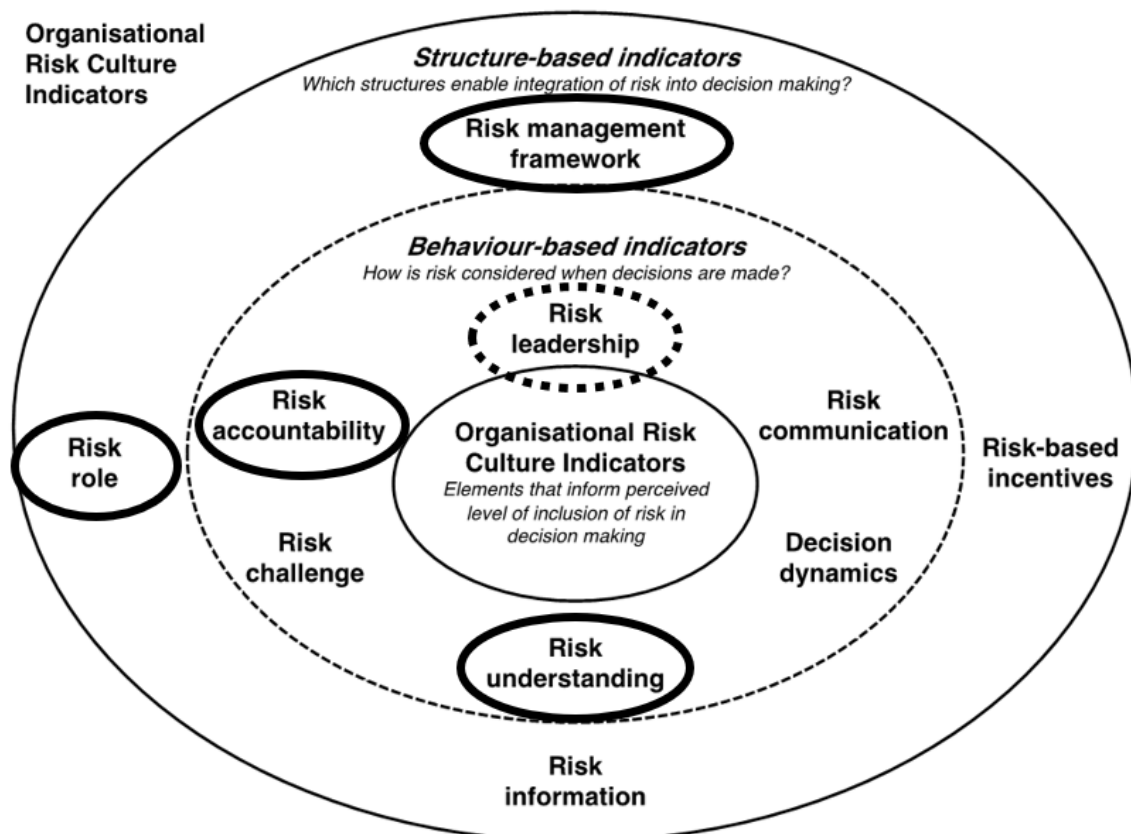


Figure 1: The Risk Indicator (RiDC) model, indicating study specific indicators.

The indicators (in italics) initially thought to be relevant to the study based on the literature review are circled with a solid line and comprise ‘*Risk Management Framework*’, ‘*Risk Role*’, ‘*Risk Understanding*’, and ‘*Risk Accountability*’. Based on the findings of this study, ‘*Risk Leadership*’, circled with a dotted line, was found to be a potential underlying cause of issues identified related to prevalent indicators.

METHOD

Research design

A qualitative study was conducted in the retail segment of one of South Africa’s largest commercial banks and specifically limited to the business unit accountable for the initial phases of digital innovation projects. An interview-based approach was followed to provide indicative feedback about perceptions of risk management during digital innovation projects. As no published literature on risk culture in the context of digital innovation projects was found, an exploratory design was used by means of semi-structured interviews. Vasileiou et al. (2018) argue that qualitative studies yield “richly-textured” information, necessitating the careful selection of participants, so the purposive sampling method was employed. The benefit of this data collecting method is the opportunity it offers to gain detailed understanding of why and how certain things happen, through the personal experiences, opinions and feelings of the individuals intricately involved in the process (Jain, 2021), thereby yielding the intended “richly-textured” information. Once disseminated, this information could pave the way for future more in-depth investigation into risk associated with digital innovation.

Data collection

Participants

The participants were all senior members of staff in the digital innovation portfolio, including senior managers and executives, who were involved in strategic and operational decision-making. The selected individuals were intricately involved in digital innovation projects. They were either digital product or channel owners, involved with the daily operations of these products and channels, or innovators conceptualising new services beyond the scope of current banking products.

Sampling

The sample population consisted of 56 senior staff members. Initially, we expected that interviewing 25% (14) of the total population would yield adequate thematic saturation to provide a representative indication of decision maker views on the topic under consideration. Ultimately, 19 staff members (34% of total population) involved in decision-making during digital innovation projects participated.

Instrument

A semi-structured interview guide was crafted, with three demographic and four open-ended questions, aimed at providing insights into risk culture during the decision-making processes in digital innovation projects. The questions below were expected to provide insights into

impediments in the digital innovation lifecycle, and potentially into participants' attitudes to the risk management process.

- What do you consider to be the biggest risk management impediments to digital innovation in this bank? And could you explain why?
- How and where is risk formally considered during digital innovation?
- How is risk included when decisions are made that may negatively impact the outcomes of digital innovation projects?
- How can the active inclusion of risk in digital innovation projects be improved?

Procedure

Before the interviews were scheduled, the questions were piloted with the Head of Risk for the group's technology cluster. The purpose of this pilot was to make sure that questions posed to the participants would be clearly understood. It resulted in the first question being adapted to specify risk process impediments, as the initial question seemed too vague. The Head of Risk also suggested asking participants how and where risk was formally considered, as distinct from only asking "how", in the hope that participants would focus their feedback on the risk management process itself. This question, however, still turned out to be the most confusing one with a few participants asking for further clarity.

Each interview was scheduled to last 60 minutes, to allow time for follow-up questions. Probing questions were posed when necessary to gain further clarity. Interviews were recorded for transcription purposes and recordings were destroyed after the conclusion of the study. Transcripts were safely stored for a three-year period for auditing purposes.

Ethical considerations

An informed consent form was sent to participants before each scheduled interview, clarifying the purpose and aim of the study, potential risks and benefits of participation, and the process that would be followed. Participation was voluntary, and consent included confirmation that participants understood the risks and still chose to participate. Each participant was also informed that they were allowed to exit the interview at any time.

The data were anonymised to ensure that neither the company nor the interviewee could be identified in the study transcripts. Confidentiality, involving removal of personal and identifiable information from the data they provided (Coffelt, 2017), was applied to safeguard participants.

It was also important to keep in mind potential biases and limitations of interviews throughout the research process. This was managed through constant consultation of the interview guide during interviews, and transcripts during data analysis. Random samples of the anonymised transcriptions were reviewed by the study supervisor, to assist in producing unbiased results.

Data analysis

The RiDC by Zaaiman et al. (2021) was used for structuring the primary data. Themes were extracted from the RiDC codebook, and sub-themes were developed based on data collected from participants, as summarised in Annexure 1. A view of the references sought is indicated under each sub-theme, together with the number of participants who provided feedback under each sub-theme.

FINDINGS AND DISCUSSION

Participant A best summarised innovation in banking when he stated that: “True innovation, for me, is proper disruption or something that differentiates you from your competitors. Something that gives you a step ahead”. As innovation is necessary to ensure the survival of any business in a competitive environment, this holds true for banks as well (Rahimnia & Molavi, 2021; Robinson & Min, 2002). Banks expand and improve their digital products and services through innovation, thereby attracting more clients (Mbama & Ezepue, 2018).

Initial coding indicated that participants’ feedback focused on the ‘*Risk Management Framework*’ (RMF), ‘*Risk Role*’, ‘*Risk Accountability*’, and ‘*Risk Understanding*’ as described in the RiDC model (Zaaiman et al., 2021). Interpretation of the feedback revealed indications that leadership’s risk tone may be at the root of many issues identified by participants. However, this feedback was untested against past studies, as ours was the first to explore the concept of risk management during digital innovation in the banking industry.

Annexure 2 summarises indicative findings, following the interviews conducted, to identify how risk was considered during digital innovation. Participants were segmented into their specific areas: digital product and channel owners (DCO), charged with DCO delivery of products and features, and the maintenance of digital channels; digital innovators (DI), creating services beyond traditional banking; and daily operations (DO) such as Support, Design, and Customer Engagement. The generally accepted practice within the digital division called for the creation of a digital delivery team prior to commencement of planning the delivery of a new feature. This team consisted of management, technical staff, project managers, designers, and product owners. The teams were supplemented by various other functions, including risk management, who were expected to provide resources and support to these teams. This risk resource had to ensure that the correct risk subject matter expert (SME) support was requested where necessary.

Changing landscape

The fourth industrial revolution and associated technology have created a shift in the market (Schwab, 2016), and study participants recognised this change and the need to respond swiftly. Most notably, concerns about the changing landscape pertained to regulation and its interpretation by the subject bank. The participants believed that regulation itself was a barrier to innovation. This view converged with their concern that new entrants, such as retailers and Fintechs, were able to enter the same market with ease because the same regulatory rulesets did not apply to them. Most of the participants showed concern about the change in the market landscape and the uncertainty it had brought.

The greatest concern for DI participants was the threat posed by new entrants. Just over 70% of this group cautioned that new entrants were disintermediating banks from their customers because new entrants were not as heavily regulated as the banks. The DCO participants were concerned that the incumbent financial services competitors were less risk averse in their interpretation of regulations and were therefore much quicker to respond to changing customer needs; this concern was shared by DO participants. There was a collective understanding among participants that the change in market context required an agile response to changing customer demands.

Risk Management Framework

According to Fraser and Simkins (2007), lack of understanding of enterprise risk management results in the function being seen as a burden, requiring needless “paperwork”, and causing frustration, which casts doubt on the value it delivers. These authors believe that a “process-driven” mindset needlessly spends effort and energy on long exercises. Participants widely referred to tick box exercises when discussing the contribution of the risk management function in the past. In DCO, where this function was more embedded into their design and maintenance processes, participants noted that it was part of the team and took care of their interests. Participants involved in DCO agreed, however, that risk processes were cumbersome and, as Participant A remarked, required “jumping through multiple hoops”. Some two-thirds of these participants felt that the risk management framework – the policies as well as the mindset used in applying risk practices – was an inhibitor to innovation.

Many participants discussed the need to move to market first. Participant D called the gap in the market “white space”, which closed extremely quickly. Anderson (2011) had observed that the need to act quickly is pitted against the need to weigh and consider the risks associated with potential innovation. The study participants asked how the risk function would adjust current processes to adapt to this new landscape, an issue also raised by Alosaimi and Alnuem (2016). Participants generally felt that current policies and frameworks had created governance structures which required multiple layers of approvals. Participant O stated outright that the ability to make decisions quickly was impacted by the subject bank’s governance structures, in that the bank was devising strategies beyond traditional banking, while current policies and frameworks were still addressing products and offerings of a traditional bank.

Half of the DO staff acknowledged the inflexibility of current risk management practices, but they were mainly concerned that risks were expressed in the context of the legislative framework, and in the risk-averse way the letter of the law was interpreted in the subject bank. This approach reduced the base of potential customers and increased the time required to find solutions to legislative requirements. Participants across all the areas of innovation agreed that the risk management framework was an obstacle to innovation in the context of the fast-changing market landscape.

Risk Role

There was general confusion about the role of the risk management function within the digital delivery teams, and that of the innovation teams regarding risk management during digital projects. Half of the DCO participants believed that the risk resource should be included in their delivery teams to influence the outcome of the project and de-risk their projects to mitigate any potential reputational risk. Participants in DO also thought that the innovation team’s risk resource should be co-accountable for the outcome of digital projects, conflicting with another’s view that innovators own the risk and that the risk resource should provide innovators with the tools to understand risk considerations. According to participants, the risk resource only factored downside risks into the decision-making and not upside risks.

There seemed to be consensus among our participants that the risk resource should be engaged as early as possible, in stark contrast with the feedback received by Bowers and Khorakian (2014)

that risk management would be more appropriate during later phases to allow innovators to be more creative. Their study concluded that consideration of risk stifles ideas and innovation and would therefore be better suited later in the process. Our participants largely disagreed with this view, believing that later consideration of risk would require too many retrospective changes, therefore increasing time to launch.

In the more established DCO area, participants believed that the risk function should be included at the inception phase, during strategic planning, when ideating their competitive responses. Participant E demonstrated this point best:

I think the risk team plays an absolute balancing act right, because on the other side of the scale, you know, the risk guys have always been seen in a negative light, as blockers to growth, and I think the risk team can be your friend when you have [the] sort of scenarios that can blow up to an extent that destroy all your brand value and trust.

The DO participants emphasised the lack of clarity about the risk function's mandate in the decision-making process. Despite the confusion, however, a couple of participants demonstrated a particularly good grasp of what the risk management function's role should be in the digital innovation lifecycle, as Participant D in DCO said:

Operating model must facilitate partnership and collaboration between all the parts of the value chain.

Risk Accountability

Participant G remarked that the innovation world is built on breaking the rules, and, according to the participants, there exists what they called “natural friction” in banks between innovation, on the one hand, and governance rules and mindsets on the other. As risk management is meant to aid decision-making and assist management during problem solving, the best time to consider risk in the innovation process would be when initial decisions are made (Fraser & Simkins, 2016). In an earlier paper, Fraser and Simkins (2007) suggest that the time for considering opportunity risk versus the downside of pursuing a digital innovation project should be during initial strategic planning. As many as five participants called for risk management to be involved during the annual strategic planning, and to get involved in the ideation phases of innovation projects. Some participants in DI, however, openly admitted that they considered risk too late in the process, citing the speed at which they were required to work to go to market. Participant H explained that delaying the consideration of risk could derail the project altogether: We'd come up with ideas, and then only push it through a risk committee and funnel [...] after the effect, and then you actually [have to] close off the idea.

The subject bank faced missed opportunity where innovators did not own their accountability for ensuring that risk identification was included as early as possible in the innovation lifecycle. DCO participants stressed that failing to include risk in decisions early could result in waste of time and energy retrofitting initiatives to cater for requirements not previously considered:

If you don't have that risk mindset as part of the design process, you will be delayed and there will be somebody who will go to market quicker than you.

There seemed to be a disparity between the care taken to involve risk management in decision-making between DI and DCO, presumably to the varied past involvement of this function. As a more established area, DCO had had more exposure to the risk management function and a more balanced view than DI.

Risk Understanding

Emerging risks are a reality emanating from the changing landscape, which is to be expected according to Tupa et al. (2017). The expanding landscape has increased the number of emerging risks, therefore requiring the intervention of specialists in the risk function. Our findings indicated positive trends in terms of '*Risk Understanding*' as it pertains to the appropriate and effective inclusion of risk when decisions are made during the digital innovation lifecycle. Participants understood that their risk profile had changed along with changing market conditions.

We detected non-adherence by participants to the formal risk management process. It seems there is a domino effect starting with participants' lack of understanding of risk management. Participants had a negative perception of risk management, as they considered the RMF to be process-driven and cumbersome, which frustrated them. These decision-makers were therefore averse to their role in the risk management process, and as a result, to their accountability for owning this process. Our findings indicated a general disregard of risk in decision-making, which could result in failure to report strategic and potentially systemic risks to appropriate governance forums.

CONCLUSION

This study sought to investigate risk consideration during banks' implementation of digital technology to keep pace with the rapid evolution of the market in which they operate. Our participants recognised the changing landscape, the risks it brought, and the need to adapt. Their collective view was that less regulated entrants were able to play in this emerging market much more efficiently than the banks. Participants were concerned that there were other banks that had been able to prepare suitably quick risk-adjusted responses.

The participants' consensus opinion was that the risk management framework was not fit for purpose in the new market context, as it addressed only traditional bank offerings. Innovators were finding it challenging and time-consuming to create new products and services when the rules allowed things to be done only in the old ways, hence they indicated that risk management frameworks should be adapted to permit quicker innovation.

The role of the risk management function was clearly misunderstood. However, participants felt strongly that partnership with the risk function throughout the ideation and design phases of the project was of paramount importance. They indicated that engaging the risk management function early in the process could limit delays later in the process, potentially reducing time to market. Confusion concerning the risk role of innovators contributed to a lack in their taking accountability for their role in the risk management process. Feedback during the interviews indicated that the negative perception of the risk function was due to innovators' frustration with the risk management framework, which in turn created an adverse attitude towards risk management. Resolving innovators' lack of understanding of risk management requires large-scale awareness.

Innovators must be educated about their accountability in the risk management process, the risk function's role, and the value of each.

There was a collective feeling among participants that the risks inherent to innovation needed to be embraced by the leadership, who then needed to create a safe environment in which innovators would be able to ensure that both risks and rewards were considered, not only the rewards. Owing to a push for results, participants favoured changing quickly over changing safely, with risk consideration taking a back seat to speed of delivery.

The limitations of the present study included the narrow view of what occurs around the risks associated with digital innovation in banks, whereas the financial services sector is much broader. A more comprehensive view could be provided by examining digital innovation in other commercial banks and expanding investigations further to investment and insurance players. The study was also limited in terms of opportunities to compare its findings to other similar studies, as the concept of risk management in innovation projects in the banking sector had not, to our knowledge, been considered in the published academic literature. One of the critical contributions of our investigation is that it is starting this conversation.

Our study not only indicates the need for awareness among decision makers in innovation regarding risk management in large organisations, but it also calls for decision-makers in the innovation lifecycle to embrace risk management throughout the innovation lifecycle, starting at inception of ideas. This in turn requires the risk management function to reconsider its frameworks, practices, and tools to cater to the changing needs of business. Accordingly, this study calls for a mindset shift among all the parties involved to facilitate the survival of large banks in the everchanging financial services landscape of South Africa.

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Annexure 1. Overview of themes derived from the Risk Culture Model and interview feedback.

| Theme | Sub-theme | Literature Review | Interview Feedback* | | |
|--|------------------------------------|---|---------------------|--------|--------|
| | | | DPC (8) | BB (7) | SF (4) |
| <i>Landscape Change</i> The need to transform the bank's operations to embrace opportunities afforded by the ever-changing environment and evolving markets. | New entrants | (Das, Verburg, Verbraeck, & Bonebakker, 2018) | 3 | 5 | 1 |
| | New technology | (Qazi, Daghfous, & Khan, 2021); (Li, Hou, & Wu, 2017) (Rahimnia & Molavi, 2021) | 1 | 3 | 1 |
| | Competition | (Rahimnia & Molavi, 2021) | 3 | 3 | 2 |
| | Customer needs | (Li et al., 2017); (Schwab, 2016); (Rahman & Abedin, 2021); (Rizwan et al., 2014) | 2 | 1 | 1 |
| <i>Risk Management Framework (RMF)</i> The RMF consists of the bank's risk management policy and strategy, risk methodology and processes, risk appetite framework (inclusive of tolerance limits), and resourcing and governance arrangements to enable embedding. The bank's operating model and risk attitude inform the risk management strategy. | Governance/policies and frameworks | (Sareen, 2013); (Rahimnia & Molavi, 2021); (Racz, Weippl, & Seufert, 2010) (Alosaimi & Alnuem, 2016); (Tupa, Simota, & Steiner, 2017) | 5 | 6 | 1 |
| | Interpretation of legislation | (Das et al., 2018) | 6 | 6 | 1 |
| | Organisational structure | (Duong & Swierczek, 2019); (Fraser & Simkins, 2007) | 8 | 6 | 2 |
| <i>Risk Role</i> All the board and staff members must have a clear and shared view and understanding of their individual roles in the risk management, as assigned by the bank's RMF. | (Timing of) formal inclusion | Bowers and Khorakian (2014); (Fraser & Simkins, 2007); (Rahimnia & Molavi, 2021) | 8 | 6 | 2 |
| | Risk management partnership | (Duong & Swierczek, 2019); (Ferri, Spanò, Maffei, & Fiordella, 2021) | 8 | 6 | 2 |
| <i>Risk Accountability</i> Perceived and actual accountability for taking risk into account effectively when making decisions. | Risk management mandate | X | X | X | 1 |
| | Time pressure (leadership tone) | (Qazi et al., 2021); (Rahimnia & Molavi, 2021) | 1 | 4 | 1 |
| <i>Risk Understanding</i> Appropriate and effective inclusion of risk when decisions are made by the innovation project teams. This includes the timely identification and escalation of emerging risks that could adversely impact the bank's innovation strategy. | Cybersecurity risk | (Brockett, Golden, & Wolman, 2012); (Camillo, 2017); (Sareen, 2013) | 2 | 1 | X |
| | Conduct risk | (Sareen, 2013) | 4 | 2 | 1 |

DPC Digital Products and Channels (8 participants).

BB Beyond Banking (7 participants)

SF Support Functions (4 participants)

ANNEXURE 2: SUMMARY OF THE COLLECTIVE FEEDBACK PROVIDED BY PARTICIPANT CATEGORIES ACROSS THEMES.

| Theme | Digital Products and Channel Owners | Digital Innovators | Daily Operations |
|---|--|--|--|
| <i>Changing Landscape</i> | The Bank is in constant danger of losing competitive advantage, due to its slow response to customer needs. | Concerned about new entrants to the market and their opportunity to disrupt, as they are less regulated. | Specifically noted the threat posed by other established banks that are more agile than the subject bank. |
| <i>Risk Management Framework</i> | Risk practices create multiple governance layers, which increase the boundary to entry into market, and time to market. | Risk practices were suited to established banking products and the rigour required for such products – but these practices were not agile enough to cater to the dynamic environment in which the division operates. | Participants were most concerned with legislation and the risk averse interpretation applied within the subject bank. They also acknowledged the rigidity of the RMF. |
| <i>Risk Role</i> | Participants believed that the risk function should identify and mitigate risks. The organisation’s operating model should facilitate the effective inclusion of risk management, and educate innovators better on the Risk Role. | By design, the risk function should be included every step of the way; this requires sufficient resourcing to ensure the right participation. | Misunderstanding regarding risk function’s role. Participants felt that the risk function should be part of the outcome of the innovation lifecycle. They pointed out that the risk function understands only the potential risks and not the rewards. |
| <i>Risk Accountability</i> | Certain components of the digital innovation project may need to be refactored if risk management is not considered up front – this could mean delays, and competitors beating you to market. | Severe time pressure results in corners being cut – one of these is that the risk management process is often ignored. | The subject bank is extremely risk averse and tends towards risk avoidance as distinct from mitigation of risk. This results in the subject bank in some instances reducing its own potential market. |
| <i>Risk Understanding</i> | Being more invested in banking products, and therefore transactional capability, these participants acknowledged that cyber risks were the greatest emerging threat, as they could impact the trust that clients have in the bank. | These participants noted the updated regulation regarding customer privacy and the fact that our conduct needs to reflect a customer-first mindset when developing new initiatives. | These participants were concerned that the bank was not able to serve potential customers as it was too risk averse in interpreting regulations. |

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EMPLOYEE UNDERSTANDING AND EXECUTION OF DIFFERENTIATION STRATEGIES IN THE BANKING SECTOR

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ABSTRACT

Competition for market share in the South African banking industry has compelled players to develop effective retention strategies to attract and maintain loyal clients. Successful organisations develop relevant strategies and the challenge is the ability of its employees to understand and execute these strategies. The Intention of this study was to investigate the role of employee understanding of differentiation strategies and their involvement in the development of the strategy. This study investigates the drivers of market orientation and the organisational culture that effectively influence the differentiation approaches. A thorough understanding of these drivers will benefit banks to effectively address customer frustrations and in due course establish and maintain a competitive advantage. A qualitative study was conducted to gain a deeper understanding of the interpretations of product owners as employees in banks in relation to the objectives of this study. Through purposive non-probability sampling technique, a sample of twelve participants from the Bank of SA were selected. Data was obtained from each participant by means of semi-structured, face-to-face recorded interviews and qualitative content analysis was employed to analyse the data. The study revealed that a thorough understanding of differentiation strategies, understanding of market orientation and organisational culture play a definite role in the effective execution of differentiated strategies. This study infers that a comprehensive understanding of strategy, market-orientation and organisational culture play a substantial role in effective execution of differentiation strategies. Recommendations for managers, banks and the banking industry, as well as recommendations for further studies were proposed

Keywords: Differentiation Strategies, Market-orientation, Organisational Culture

1. INTRODUCTION

Globally, the banking industry has become progressively competitive over recent years and the South African banking sector is no exception (Potwana & Akhalwaya, 2020). The introduction of new entrants in the environment further influences strong competition for market share resulting in the innovation of effective operational strategies to gain a competitive advantage (Magotra, Sharma & Sharma, 2018). Therefore, customer satisfaction is a major strategy that is being adopted by players in the banking sector and prominence is being placed on employees to provide better customer contentment. Employee involvement in the participation and implementation of strategic differentiation helps them to gain a better understanding of strategies and encourages high levels of innovativeness (Kohli, cited in Nwinyokpugi 2018).

According to Coetzee (2018), the banking landscape will significantly change over the next decade as technology and consumer preferences dictate how banking will be conducted. The advent of

digitisation in the fourth industrial revolution and changes in customer behaviour has pressurised banks to better equip employees to deal effectively with customer demands (Kotarba, 2016). These demands indicate that customers demand knowledgeable employees who can effectively implement sound customer relationship strategies to ensure customer satisfaction leading to retention and customer loyalty.

Customer satisfaction can be described as a feeling and perception about the quality of a product or service that meets (or fails to meet) expectations and this in turn creates loyal customers (Kotler, Keller, Sivaramakrishnan & Cunningham, 2013). In a volatile business environment a 5 percent increase in customer retention could mean an escalation of between 25 and 95 percent net present value (Dawkins & Reichheld, 1990; Ferreira, Jalali, Ferreira, Stankeviciene & Marques, 2015). When customers are informed about the benefits of a product, it can create a competitive advantage, improves performance which can lead to profitability in the banking sector. According to Ferreira et al, (2015) it is imperative for employees in the banking sector have a thorough understanding of business strategies to better serve customers.

To enhance better customer service, Jalali, Ferreira, Ferreira & Meidute-Kavaliauskiene (2016) iterate that employees working in the banking sector need to be familiar with six factors: (1) better understanding of the target market; (2) understanding of customer preferences and needs; (3) ability to create customer profiles; (4) designing advertising campaigns to target customer needs; (5) realising the profit value of each customer; and (6) training to provide better customer service. Developing and implementing strategic differentiation (Moghadam, 2013) in service organisations create a culture of cooperation and teamwork that play an important role in fostering positive customer relationships. Therefore, the aim of this research is to determine the drivers that influence the effective execution of differentiation strategies in the banking sector.

The banking sector is becoming more digitised and with high levels of competition, banks are compelled to differentiate themselves be creative and innovative in the creation of new products and services including improving existing ones (Kotarba, 2016). With digitisation, challenges arise with non-integrated IT systems that are not interconnected, yet customers demand better communication and cooperation from their bank (Sola, Gonzalez & Lazaro, 2015). Schmidt, Drews & Schirmer (2016) note that customer needs are continually changing and information regarding behaviour and money management are necessary variables required to create more personalised financial products that will improve customer loyalty and collaboration.

Various studies reveal that during strategic sessions, only senior managers are involved and employees are instructed to implement the strategies (Thanyawatpornkul & Siengthai, 2015). However, without proper understanding of the strategies, effective implementation is rendered useless (Kilic & Aktuna, 2015) as implementation is the key factor in the strategic process (Patten, 2015). In order to gain and maintain a competitive advantage, organisations need to implement strategies, be market oriented and maintain a strong organisational culture (Ahmed & Othman, 2017).

Therefore, the primary research question is as follows: What are the drivers that impact the effective implementation of differentiation strategy in the banking industry?

The secondary research questions are as follows:

- Does employee understanding and involvement in the development of differentiation strategy result in its effective execution and implementation to better fulfil the needs of the market?
- How does organisational culture influence employees when executing differentiation strategies?

2. LITERATURE REVIEW

Michael (2014) dictates that management needs to get employees involved at every stage of planning as this creates a high level of employee commitment and involvement that will lead to more innovativeness. Involvement in strategic participation provides employees to display intellectual, emotional and psychological development to help identify problems and awards them the prospect to contribute meaningfully to continuous improvement and productivity (Michael, 2014). Employee involvement will lead to empowerment on overall performance to drive innovation, customer satisfaction, retention and loyalty as well as create a competitive advantage in the banking industry (Al-Omari, Alomari & Aljawarneh, 2019).

2.1 Understanding of strategy through communication

According to Thanyawatpornkul, Siengthai & Johri (2016) employees are not involved in strategy participation, only five percent of employees understand strategy. This makes making it difficult for implementation. There are two evident steps that need to be taken for employees to clearly understand and implement strategy namely; creating an awareness through communication channels that include meetings and e-mail communication and the second step is to allow employees to provide feedback after implementation to test its effectiveness (Holt & Diggins, 2010). To implement strategy, top management has to ensure that effective continuous communication to all employees is understood clearly and correctly (Thanyawatpornkul et al, 2016).

Senior executives are often shocked when they realise that less than 20% of employees comprehend strategy, 65% of formulated strategies are not executed effectively, while more than 70% of strategies are not applied at all (Kandie & Koech, 2015). Communication of strategies need to be clarified to all business units, people and processes to create synergy between strategy and actions. Moreover, employee motivation needs to be reinforced so that employees realise their actions contribute to organisational effectiveness (Teixeira & Carvalho, 2018).

2.2 Strategy formulation and employee involvement

Strategy formulation is carried out by top management and managers should realise that employee involvement in matters that influence their work is imperative of high-performing teams as it awards them with a sense of fulfilment and control (Parkes, Scully, West & Dawson, 2007). These authors further elaborate that employee involvement is a two-tiered effect. Both top management and employees need to contribute and influence decision-making. Dandira (2011) argues that performance contracts are a useful tool to ensure employees align their objectives with strategic objectives and that employees should be involved in the early stages of the strategic process to guarantee buy-in.

2.3 Market orientation in effective strategy execution

Market orientation begins with an internal market in which high quality goods and services are exchanged among employees and departments (Kaur, Sharma & Seli, 2009). Internal market orientation has to ensure that suitable structures are in place to ultimately exhibit itself to the external market. Employees treat their customers the same way they are treated within the organisation and thus it is essential to have satisfied and committed employees (Kaur et al, 2009).

Market orientation in banks enhances employee morale and commitment to the organisation which in turn escalates customer satisfaction and organisational performance (Mahmoud, Kastner & Akyea, 2011). According to Narver & Slater (1990) there are three elements that are linked to behaviour, namely, customer-orientation, competitor orientation and inter-functional coordination. Mahmoud et al (2011) sum up this definition as it relates to the banking industry as market orientation should contain the following four factors: (1) generating the intelligence, (2) disseminating the intelligence, (3) responding to the intelligence, and (4) marketing culture.

2.4 Marketing orientation in banking

In the banking environment, market orientation should be organisation wide in which employees play a crucial role to ensure customer-centricity in order to fulfil customer needs and satisfaction (Hyder & Chowdhury, 2015). Market-orientation, like organisational culture, is an important element that affects success and organisations that adopt a market-oriented culture tend to perform better than their competitors (Jogaratham, 2017; Byrne, Dwyer & Doyle, 2018). This kind of culture needs to be created by leaders who inculcate behaviour that creates greater value for customers (Narver & Slater, 1990).

2.5 Organisational Culture in effective strategy execution

Organisational culture can have both a positive and a negative influence (Scholl, 2003). The positive aspect is that culture provides team members with a sense of association and encourages stability. Negative culture is linked to destructive behaviour that leads to obstacle to diversity, discourages change and innovation and forms a barrier for teamwork (Scholl, 2003). Similarly, culture can be viewed as either weak or strong. Even though a strong culture can help drive effective execution, it is not enough to drive implementation unless it is supported by strong reward programmes (Bushardt, Glascoff & Doty, 2011).

A strong and positive organisational culture is the driving force to achieve strategic goals and in today's competitive environment it is advantageous for survival and growth (Aktas, Cicekb & Kiyakc, 2011). Organisational culture is prevalent and it requires that management understand the impact it has on employee behaviour (commitment, satisfaction, cohesion and strategy implementation) (Ahmadi, Salamzadeh, Daraei & Akbari, 2012). These scholars further testify that culture is a uniting gem that should be considered in the strategic implementation process. Dodek, Cahill & Heyland (2010) describe culture as a human personality – a clandestine trait that provides meaning and direction, thus successful organisations have strong cultures (Ahmadi et al, 2012).

3. RESEARCH METHODOLOGY

This study investigates the impact of employee understanding and employee participation of differentiation strategies, as well as their knowledge of market orientation and the role organisational culture plays in implementing differentiation strategies. This study employed a mono-method qualitative study and used an inductive research approach. Data was collected using semi-structured interviews and thereafter conclusions were drawn based on insights from the data. The study is descriptive in nature, based on the interpretivist research paradigm.

Data was collected from employees at the Bank of SA (not the actual name due to anonymity). This source was limited to employees who are responsible for developing customer products and solutions as the differentiation strategy is needed for Bank of SA to provide market-leading products and services that satisfy its customers. It was therefore deemed appropriate to only interview employees directly responsible for this function. The data collection technique used in the study was face-to-face, semi-structured interviews. All interviews were audio-recorded using a cell phone. To ensure safety, recordings were stored in the cloud after every interview. The audio-recordings were then transcribed to analyse and make sense of the text.

The sampling technique employed in this study was purposive sampling, whereby the selection of participants was based on the researcher's judgement (Saunders, Lewis & Thornhill, 2016). The study population were managers employed as product owners (referred to as Product Managers) at the Bank of SA. The product owners were middle managers who report directly to senior line management. They are integral to any new product development, they interact with client-facing employees and serve as an escalation point for all client differentiation relating to the bank's products

The respondents were all based at the Bank of SA Head Office in Johannesburg but were spread out in different teams across the main product business units namely: Rewards, Personal Loans, Credit Cards, Payments, Transact Accounts, Transact Credit, Private Bank Lending, Home Loans and Savings and Investments. A sample size of 12 employee owners were identified.

For this study, qualitative content analysis was used as it was the most appropriate method of analysis. During the analysis of this study, all data obtained from the face-to-face semi-structured interviews was analysed, drawing units from the data and assigning codes to each unit.

To ensure that this study was conducted ethically, permission was requested from the Bank of SA to conduct research. Permission was granted, provided the anonymity of the bank remained confidential. Hence, the name 'Bank of SA' has been used instead of the actual name of the bank. For this study the following guiding principles were adhered to informed consent, confidentiality and privacy, avoidance of harm, secure data storage and permission to use a recording device.

4. FINDINGS

Each participant and each session were facilitated using an interview guide which contains five sections. Section A focused on collecting biographical data from the participants and consisted of four questions. Section B centred on collecting data on employee understanding of the differentiation strategy and consisted of five open-ended questions. Section C concentrated on collecting data on employee involvement in the formulation of the differentiation strategy and comprised of four open-ended questions. Section D aimed at the role played by market orientation

in the effective execution of differentiation and consisted of four open-ended questions. Lastly, section E focused on the role played by organisational culture in the effective execution of differentiation strategy based on open-ended questions.

Table 1: Biographical Data

| Participant no. | Current position | Bio-Graphical Data | | |
|-----------------|---|--------------------|------------------------|--------------|
| | | Tenure in position | Tenure at organisation | Subordinates |
| 1 | Product mgr. – Personal loans | 5 months | 3 years | Yes |
| 2 | Product mgr. – Investments | 2 years, 8 months | 4 years | yes |
| 3 | Product Mgr. – Transact credit | 1 years, 7 months | 7 years | yes |
| 4 | Product Mgr. – Life insurance | 4 years | 6 years | Yes |
| 5 | Product Mgr. - Loans | 2 years | 5 years | Yes |
| 6 | Product Mgr. – Cheque accounts | 1 year, 4 months | 7 years | Yes |
| 7 | Product Mgr. – Trans credit and Insurance | 2.6 months | 5 years | Yes |
| 8 | Product Mgr. – Cheque accounts | 2 years | 5 years | Yes |
| 9 | Product Mgr. – Home finance | 2 years | 20 years | Yes |
| 10 | Product Mgr. – Payments | 2 years | 18 years | Yes |
| 11 | Product Mgr. – Rewards | 4 years | 10 years | Yes |
| 12 | Product Mgr. – Credit cards | 2 years | 11 years | Yes |

Table 2 below summarises the findings from the 8 questions in the interview guide and outlines the themes and categories that follow:

Table 2: Questions, Themes and Categories

| Question 1 – How important is the understanding of differentiation strategies in your business? | |
|---|---|
| Theme 1 | Category 1 |
| The differentiation strategies aim to address pain points customers may feel when engaging with the bank and its products | Customer-centricity should be the objective of differentiation strategies as it aims to reduce negative emotions clients may feel when engaging with the bank and its products |
| | Category 2 Differentiation strategies help to provide the bank with a competitive advantage relative to its competitors in a dynamic market environment |
| All 12 participants agreed with both category 1 and 2 | |
| Question 2 – What can be done to improve employee level of understanding of differentiation strategies? | |
| Theme 1 | Category 1 |
| Continuous communication of differentiation strategies by leaders helps improve employee level of understanding | Employees believe differentiation strategy discussions happen at a level above them and do not always filter down |
| | Category 2 Employees feel differentiation strategies need to be communicated frequently to improve their level of understanding of the objectives the organisation wishes to achieve |
| 7 of the 12 participants agreed with category 1. 6 of the 12 participants agreed with category 2 | |
| Question 2 | |
| Theme 1 | Category 1 |
| Employees believe being inquisitive helps them to improve their level of understanding the differentiation strategies | Employees believe being inquisitive helps them to improve their level of understanding the differentiation strategies |
| 8 of the 12 participants agreed with category 1 | |

| | |
|---|--|
| Question 3 – Are employees at all levels included in the formulation of differentiation strategies? | |
| Theme 1 | Category 1 |
| Employees are generally not included in the formulation of differentiation strategies, as this happens at senior management level Most of the participants agreed but 9 of the 12 participants felt very strongly about category 1 | Employees feel that the formulation of differentiation strategies is done at senior level and they are only informed during implementation |
| Question 4 – Do you think employees at all levels should be included in the strategy formulation process? | |
| Theme 1 | Category 1 |
| Employees feel that if they are included during the formulation process then implementation would be easier 11 of the 12 participants agreed with category 1 | Employees believe that there would be more buy-in and better implementation if they are included in the formulation of differentiation strategies |
| Question 5 – Is differentiation used as a performance indicator that is included in employee performance contracts? | |
| Theme 1 | Category 1 |
| Differentiation strategies is not an explicit performance that is included in employee performance contracts but is rather implicit 10 of the 12 participants agreed with category 1 | Differentiation strategies is not an explicit performance that is included in employee performance contracts but is rather implicit |
| Question 6 – Do you feel that employee involvement in differentiation strategies could enhance their level of customer orientation? | |
| Theme 1 | Category 1 |
| Using customer feedback to identify customer needs contributes to employee level of understanding customer orientation 9 of the 12 participants agreed with category 1 | Employees use data analytics to get information from customers |
| Question 6 | |
| Theme 1 | Category 1 |
| Customer orientation is about addressing customer needs relative to competitors to improve the banks products and services 8 of the 12 participants agreed with category 1 | Employees believe that customer orientation involves a detailed competitor analysis to address customer needs in order to retain loyal customers |
| Question 7 – Do you believe leaders play a crucial role in creating a culture that supports the effective implementation of differentiation strategies? | |
| Theme 1 | Category 1 |
| Organisational culture influences the effective execution of differentiation strategies | A culture that supports differentiation strategies is directly influenced through its leadership Category 2 Employees believe the organisation has created a culture of strong execution |
| 10 of the 12 participants agreed with category 1. 8 of the 12 participants agreed with category 2 | |
| Question 8 – In your opinion, is there employee fit within organisational culture and how does it affect execution of differentiation strategies? | |
| Theme 1 | Category 1 |
| There is a positive correlation between employee fit within organisational culture and their ability to effectively execute differentiation strategies All 12 of the participants agreed with category 1 | Employees feel there is a culture that supports differentiation strategies and is directly influenced by leadership that is driven from the top |

5. DISCUSSION OF FINDINGS

Section A of the interview guide provided pertinent information into the background of the 12 participants' characteristics and aids in the interpretation of their responses as well as fostering future researchers who may wish to apply the findings of this study (Ndwandwa, 2016). All of the participants were employed as product managers, essential to this study as each of them contributed to the strategic differentiation in their ability as custodians to utilise the products and services in a way that distinguishes the bank from its competitors. It was observed that these

managers understood the differentiation strategies and their importance for the bank to gain and maintain a competitive advantage.

The aim of the findings above is to answer the secondary questions employed in this research. An important finding of this study reflects that employee understanding of differentiation strategy is the driving force in effective execution which positively impacts factors such as market orientation and culture. An important finding of this study was that all employees understood the importance and most employees understood the value of differentiation strategies. This finding contradicts the views of Dawkins & Reichheld (1990) who indicated that only 5% of employees understood the strategy.

The finding is consistent with the views of Kandie & Koech (2015) who are confident that understanding strategy is not about reciting objectives but rather about how it is communicated to employees who are able to comprehend. However, this finding opposes the views of Kandie & Koech (2015) who suggest only 20% of employees are able to do so. A key finding of this study was that strategic differentiation strives to address customer pain points when engaging with banks which in turn increases customer satisfaction. This finding is part and parcel of the previous finding which shows that employees understood the value of having a differentiation strategy. This understanding is the reason why the Bank of SA formulated differentiation strategies. This gap was identified in the reviewed literature.

Another key finding was that employees felt strategy helped build trust, which promotes customer retention and loyal customers are essential to any organisation (Moghadam, 2013). An important discovery in this study revealed that differentiation strategies are critical for creating a competitive advantage as this is the main purpose of formulating strategies. This view is consistent with Magotra et al (2018) who state that the strategy of customer satisfaction is imperative in the banking sector. However, a gap in the reviewed literature was featured as how a differentiation strategy itself, creates a competitor advantage.

A significant outcome of the study was that continuous communication of differentiation strategy by leaders improves employee level of understanding. This finding is consistent with Sola et al (2015) and Thanyawatpornkul et al (2016), all of whom support that in order for employees to understand strategy, effective and continuous communication needs to take place at all levels within the organisation. Another key discovery was that employees also played a role in their understanding of strategy and that being inquisitive helped them recognise its importance. This is consistent with views of Teixeira & Carvalho (2018), who state that the problem does not lie in lack of understanding, but rather in the lack of interest and time.

A finding that emerged from the study indicated that employees were not generally involved in the formulation of differentiation strategies that happened at senior management level. This is coherent with views of Dandira (2011) where employees felt they could add more during implementation if they were involved in the strategy formulation process as this would enhance more buy-in from them.

An important finding that emerged from this study was that the organisation valued employee views and opinions. There was a gap in the reviewed literature as Holt & Diggins (2010) deem that in order for employees to understand and buy into a strategy, they need to interact with the strategy to see how applicable it is to them to offer their opinion on how it should be implemented.

If employees are not involved in the formulation process, performance contracts between management and employees, effective implementation of strategy is unattainable (Dandira, 2011). Nonetheless, employees were not included in the formulation of strategy and therefore, were not able to fully understand the strategy.

A key finding of the study in relation to market orientation identified addressing customer needs in relation to competitors. This finding is consistent with Jogaratnam (2017) who stated that understanding and addressing customer needs should be at the centre of market orientation. Addressing those needs in relation to competitors represented a gap in the reviewed literature. Kaur et al (2009) suggest that satisfying customer needs does lead to increased loyalty which in turn leads to a competitive advantage. This key finding supports this statement.

Organisational culture played an important role in the execution of differentiation strategies for the Bank of SA. Findings showed that organisational culture affected the effective execution of differentiation strategy. This is consistent with Ahmadi et al (2012) who affirm that organisational culture impacts organisational performance on team members. Another key finding was the positive correlation between employee fit within an organisational culture and its ability to execute differentiation strategies.

6. CONCLUSION

The differentiation strategy was created to deal effectively with pain points customers feel when dealing with the bank. This strategy was planned by top management and then later permeated down to employees. It is evident in the study that employees did understand and execute the differentiation strategy effectively. However, the literature exposed that strategy execution remains a challenge for many organisations due to various drivers such as market orientation and org. This study deduces that a thorough understanding of the strategy, market-orientation and organisational culture all play a significant role in the effective execution of differentiation strategies. Therefore, the abovementioned drivers influence the effective execution of differentiation strategies in the banking sector.

7. LIMITATIONS

The scope of the study was limited as the sample of 12 respondents only included employees in product development who were based in Johannesburg, at the Bank of SA Head Office. Therefore, the findings of the study cannot be generalised to other banks. However, as the purpose of qualitative research is not specifically to produce findings that can be generalised, this limitation did not impact the quality of the study.

8. DIRECTION FOR FUTURE RESEARCH

The participants in this study were product managers responsible for developing the products used by customers. The study did not consider the views of customer-facing employees who deal with customers on a daily basis. It is therefore recommended that a future study be undertaken to analyse the execution of differentiation from their perspective. It is also recommended that a quantitative study be carried out from a customer perspective that includes their perception of strategy execution, market-orientation and organisational culture. Lastly, another study could be done using

secondary data to examine market share trends over time and to analyse the impact of differentiation on the banking industry.

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REASONS FOR FAILURE AMONG EMERGING FARMERS

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ABSTRACT

The agricultural sector in South Africa does not only provide food for a growing population; it also contributes to the Gross Domestic Product (GDP) and is a significant source of employment for low-skilled labourers. Despite the government investing in emerging farmers, farmers still have to face several problems. This includes drought, crime, and lack of access to finance and markets. To help alleviate some of these problems, the South African Department of Agriculture allocates substantial funds to develop agricultural entrepreneurs. The Comprehensive Agricultural Support Programme (CASAP) was launched in 2004 to provide capital and post-settlement support to the targeted emerging farmers. Most of the CASAP funds spent within the North West province have been declared a fruitless and wasteful expenditure and did not contribute to the success of the emerging farmers. To determine the main causes of these failures, quantitative data were gathered on the problems faced by emerging farmers. Questionnaires were used to collect quantitative data, and responses from 202 new emerging farmers were obtained. The quantitative data revealed that most emerging farmers who applied for funds, obtained grants. Emerging farmers blamed extension officers and government for their lack of success due to inadequate to non-existent guidance in farming activities and marketing assistance. Moreover, interviews were conducted with government representatives, commercial farmers, and agricultural corporations. The interviews revealed the belief that the wrong recipients were often selected for CASAP funding. Furthermore, respondents from the interviews felt that government did not possess the skills to identify, train, support, and advise recipients. Consequently, the government should improve their selection process and the support emerging farmers receive. Financial support and a needs analysis should be conducted to determine which support emerging farmers need most in addition to training and education.

Keywords: Farmer, farming, entrepreneurs, agriculture, skills development.

1. INTRODUCTION

Productive and successful emerging farmers are important for poverty alleviation, economic growth and food security but despite the government funding many emerging farmers are still failing. The aim of this study is to identify the key reasons for failure among emerging farmers in the North West province, South Africa.

Government has been spending large amounts in supporting and subsidising emerging farmers. National Treasury (2019) budgeted R176m for farming support during the 2018/2019 financial year for the North West Province, compared to the total budget of R1 750m for South Africa. This

represents 10% of the total budget. As a result, emerging farmers benefit from government financial assistance to start and run agricultural production, which should be successful if the grants are dealt with effectively. (Francis, 2019).

Realising the importance of supporting emerging farmers the Department of Rural, Agriculture, Environmental and Development (READ) introduced a development fund, the Comprehensive Agricultural Support Programme (CASP), to assist agricultural entrepreneurs in the North West province. This was initiated by the National Department of Agriculture which spends a substantial amount of development funds through the functions of the provinces in an effort to create entrepreneurs in the agricultural sector. The development fund, CASP, was launched in 2004 for distribution among emerging farmers (Hall & Aliber, 2010). The aim of the CASP fund is to provide capital and post-settlement support to the emerging farmers to enable them to become successful small, medium and micro entrepreneurs (SMMEs) within the agribusiness sector.

This lack of success among emerging farmers has long been a cause for concern and according to research done by Khapayi and Cilliers (2016) the lack in the success of emerging farmers can be attributed to various factors including inadequate planning, general lack of capital and skills shortages among the emerging entrepreneurs. Furthermore, collateral requirements and complicated loan applications makes it difficult for emerging farmers to access finance (Alberts *et al.*, 2019).

2. LITERATURE REVIEW

Emerging farmers are defined as previously disadvantaged beneficiaries of the land reform programme who aspire to become successful entrepreneurs in the agriculture sector with the aim of becoming commercial farmers (Ducastel & Anseeuw, 2017). The Directorate Entrepreneurial Development (DED), a parastatal to the READ, was established to provide capital and post-settlement support. Despite the financial investments the initiatives of growing SMMEs in the emerging farming sector of the North West province are failing. At the end of the first financial year the programme was lodged in the North West province. Ninety-one (91) percent of the agricultural projects (emerging farmers) financed by these development grants failed (DED, 2009).

Agriculture plays a role in the government's attempts to eradicate poverty. In South Africa, between 38% and 48% of the population is classed as poor, with 23% classified as ultra-poor. In rural areas 65% of people are poverty-stricken (Chant, 2016). Even more, although South Africa is self-sufficient regarding food production, approximately 40% of households are suffering from food poverty (OECD, 2019). Increased productivity of agriculture raises farm incomes, increases food supply, reduces food prices, guarantees food security and provides better employment opportunities in rural areas. It also brings the previously disadvantaged farmers into the mainstream agricultural economy. Furthermore agricultural development stimulates economic growth outside the agricultural sector. This leads to higher job creation and economic growth (Soas, 2019; Mmbengwa, 2010).

As a result of the government's support for emerging farmers, there has been some development in the agricultural sector, with land being provided to the landless and agricultural policies being supported to better the livelihood of rural farmers. These are new farmers and beneficiaries of land reform programs who have recognized the potential of agriculture as a business.

Anafo (2015) points out that emerging farmers are those who are eligible for government payments such as the Comprehensive Agricultural Support Program (CASP) and Land Redistribution for Agricultural Development (LRAD). Farmers that are financially dependent on semi-state and state organizations are referred to as emerging farmers (Pilcher, 2017). Emerging farmers, according to a definitive definition, are those who engage in the marketing of agricultural products with the primary goal of generating an income with government assistance.

Marketing is the promotion of agricultural products, which includes distribution and selling of agricultural products to enable customers to obtain such products at a fair and affordable price. The ability for market players is to improve market accessibility by providing cash to farmers after selling agricultural products, whether on a small or large scale, is demonstrated by the sale of farm produce, be it on a small or large scale. Sachs (2018) explains that the government provides land and other agricultural inputs to smallholder farmers without clear marketing outlets for their agricultural output.

McAllister (2018) reports that around 50% of new farmers in South Africa are utterly unaware of the support services and projects available to them. South Africa's government provides essential support services to boost agricultural productivity and, as a result, farmers' lives and the economy's growth. (Tibesgwa & Visser, 2016). The support services offered by the South African government is the CASP program that was established to assist formerly disadvantaged emerging farmers in becoming successful commercial farmers, thereby contributing to food security, job development, and eventually, economic growth. As previously mentioned in the annual report of DED (2009) and the audit report of the auditor general this CASP programme is by no means sufficient.

Emerging farmers play an important role in increasing agricultural income. Hunger and poverty are reduced through a combination of activities, but the South African government should fully endorse developing farmers in their attempts to offer food as a means of doing business. Agricultural development encourages economic development, also outside the agricultural sector (Soas.ac.uk, 2019). As a result, more jobs and growth should be created.

Emerging farmers are crucial in reducing the vulnerability of urban and rural food-insecure households as a means of improving livelihoods and managing rising food price inflation. As the world's population grows, so does the demand for food from a vast number of people. Food security - it is critical to develop successful emerging farmers so as to ensure future food security (Van Doorn et al., 2017).

3. METHODOLOGY

The mixed research method was adopted for this study, which included qualitative and quantitative research approaches. Within this mixed research method, the explanatory design was used by means of which the quantitative data are collected first, and depending on the results, qualitative data are gathered to explain the quantitative findings)

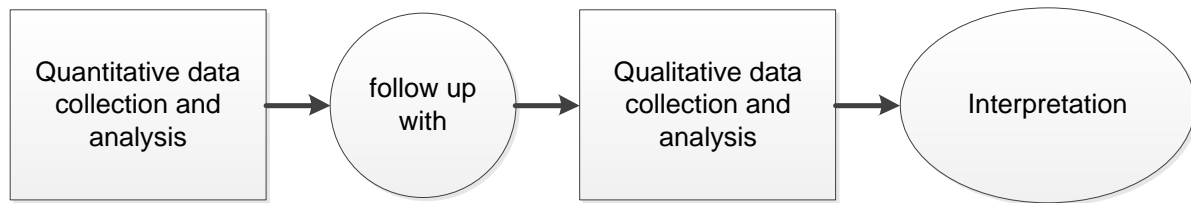


Figure 1: The explanatory sequential design

Self-administered questionnaires (quantitative) and semi-structured interviews (qualitative) were used to gather data from the sample groups. The questionnaire distributed to the emerging farmers aimed to determine the factors that had led to failures among emerging farmers. The emerging farmers who participated in this study all received financial assistance from the CASP programme. A list of these emerging farmers (projects) was obtained from DED. All these emerging farmers were registered with the Provincial Treasury as beneficiaries to the CASP programme. The data secured from the survey were analysed using descriptive statistics. To analyse the data the latest Statistical Package for Social Sciences (SPSS) software was used. The Statistical Consultation Services of North West University (Potchefstroom campus) assisted with the analysis.

Semi-structured interviews (qualitative) were conducted with purposively selected individuals from the Department of Agriculture, agricultural corporations and black commercial farmers within the North West province. In this study, the case study approach was used for the reason that a specific case, namely an in-depth study, was performed on the reasons for the failure of emerging farmers in the North West province. A case study is a form of qualitative inquiry, which deals with in-depth analysis of a phenomenon. All interviews were recorded and transcribed and the analysis was done using NVivo 12 Pro. NVivo 12 Pro for Windows, an instrument for collecting all the data needed. It contains the import, management and analysis of text functions, as well as audio, video, emails, images, spreadsheets, online surveys, web content and social media. With NVivo advanced data management, query and visualisation tools can be explored. NVivo is a qualitative data analysis (QDA) computer software package produced by QSR International. It has been designed for qualitative researchers working with very rich text-based and/or multimedia information, where deep levels of analysis on small or large volumes of data are required.

3.1. Sampling strategies

The first target population (emerging farmers) comprised 410 emerging farmers where a quantitative research approach was implemented. These emerging farmers (projects) were all beneficiaries to these development CASP funds. The researcher of this study was employed as consultant to assist with the total administration of this public entity (parastatal), DED, and was responsible for setting the financial statements at the end of the financial year for auditing purposes. DED was responsible for the total administration to the development of emerging farmers. In 2009, this function was taken over by READ and the parastatal DED has been closed. The researcher was contracted to DED as a consultant for eight years; was thus very familiar with the administration of the enterprise.

The North West province is divided into four regions, namely Ngaka Modiri Molema District, Bojanala District, Dr Ruth Segomati Mompoti District and Dr Kenneth Kaunda District. Within READ, a regional manager is appointed for each of the four regions. Extension officers are also

appointed for each of these four regions who are responsible for e managing and developing the emerging farmers. With the help of these extension officers within READ, well-known to the researcher due to his employment as consultant, the questionnaires were distributed to the emerging farmers. The extension officers know where each project or emerging farmer is situated in the North West province. The extension officers also assisted in the collection of the questionnaires.

For the second target population, a qualitative research approach was implemented. Interviews were held with the representatives of the institutions mentioned earlier in the study. The non-probability sampling method was employed to draw a sample from these institutions and the specific technique regarded as appropriate is purposive sampling. Judgement sampling was employed in this study by the researcher for selecting sample members to confirm to the criterion. Four participants were chosen on an arbitrary basis due to their unique knowledge (critical case sampling). The four participants were one participant from the department of agriculture in the North West province which was a Member of the Executive Council, two black commercial farmers and one participant at an agricultural corporation responsible for rural development. Key questions addressed to the participants were the following:

- Was the CASP money used wisely to assist the new farmers?
- Was the proper selection made when choosing the developing farmers who would benefit from the program?
- Was the department able to provide knowledge to the novice farmer?
- Can private institutions support the growth of successful emerging farmers in any manner?

The mixed research method was selected. With this method, both qualitative and quantitative data were collected. Triangulation occurred when the strength of the one method offset the weaknesses of the other.

4. RESULTS AND DISCUSSION

From the 410 questionnaires (quantitative method) that were distributed, 202 questionnaires were collected, giving a response rate of 49%. Of those that responded 69% were male and 31% female.

Table 1: Highest qualification distribution

| Qualification | Emerging farmers | |
|---------------|------------------|------------|
| | Frequency | Percentage |
| Grade 8-10 | 7 | 3 |
| Grade 12 | 190 | 94 |
| Diploma | 1 | 0 |
| Degree | 2 | 1 |
| No response | 2 | 1 |
| Total | 202 | |

The vast majority of participants had completed school and attained grade 12. Only three of the participants indicated that they had attained further qualifications.

Table 2: Agricultural training

| | Emerging farmers | |
|-------------|------------------|------------|
| | Frequency | Percentage |
| Yes | 12 | 6 |
| No | 180 | 89 |
| No response | 10 | 5 |
| Total | 202 | 100 |

Almost 90% of the participants indicated that they had not received any training in agriculture.

Table 3: Number of years in farming

| | Emerging farmers | |
|-------------|------------------|------------|
| | Frequency | Percentage |
| 0-5 years | 189 | 94 |
| 6-10 years | 12 | 6 |
| 11+ years | 0 | 0 |
| No response | 1 | 0 |
| Total | 202 | 100 |

None of the participants had been farming for more than 10 years and 94% had been farming less than 5 years.

Table 4: Past work experience of the emerging farmers

| | Emerging farmers | |
|----------------|------------------|------------|
| | Frequency | Percentage |
| Unemployed | 9 | 4 |
| Owned business | 11 | 5 |
| Farm worker | 177 | 88 |
| Supervisor | 3 | 1 |
| Top management | 0 | 0 |
| No response | 2 | 1 |
| Total | 202 | 100 |

When the participants' employment histories are examined, it shows that 88% had previously worked on a farm. This may indicate that although they did not have formal training in farming and have little experience in managing a farm, most of the participants had some experience in working on a farm.

Table 5: Funding to start farming activities

| | Emerging farmers | | |
|--|------------------|-----|-------------|
| | Yes | No | No response |
| Did you submit a business plan to apply for a grant? | 198 | 4 | 0 |
| Did professional people assist you in preparing the grant? | 198 | 4 | 0 |
| Have you been interviewed by an approving panel for the grant? | 185 | 16 | 1 |
| If assisted with grant, were you assisted by extension services? | 8 | 196 | 0 |

Almost all of the emerging participating farmers had to submit a business plan before receiving the grant. They were assisted in writing the business plan and subsequent interviews.

Table 6: Pre- and post-settlement support

| | Emerging farmers | | | | | |
|--|------------------|----------|---------|--------------|------------|-------------|
| | Not at all | Somewhat | Average | Large extent | Absolutely | No response |
| Did you receive support prior to the planning of your business? | 200 | 0 | 0 | 0 | 0 | 0 |
| Did you receive any training before and after the implementation of business idea? | 198 | 1 | 2 | 0 | 0 | 1 |
| Do private sectors/co-operatives supply you with any support? | 181 | 15 | 1 | 1 | 0 | 4 |

Almost none of the participants received any support before the planning phase and also did receive no formal training.

Table 7: Size of government grant

| | Emerging farmers | |
|-------------------|------------------|------------|
| | Frequency | Percentage |
| R0 | 0 | 0 |
| R1-R100 000 | 176 | 87 |
| R100 001-R200 000 | 17 | 8 |
| R200 001-R300 000 | 8 | 4 |
| R300 001+ | 0 | 0 |
| No response | 1 | 1 |
| Total | 202 | 100 |

Most of the emerging farmers (87%) had received a grant of less than R100 000 and 8% received a grant between R100 000 and R200 000. Considering the inset cost and capital required to run a farm, these amounts are extremely limited in what it enables emerging farmers to achieve.

Table 8: Farm ownership

| | Emerging farmers | |
|---------------------------|------------------|------------|
| | Frequency | Percentage |
| Own land | 4 | 2 |
| Communal land/ State land | 199 | 98 |
| Renting | 185 | 92 |

Only two percent of participants indicated that they owned the land. On the other hand 98% were farming on state or communal land and 92% had to pay rent for the land they were farming. This also means that most of the emerging farmers could not use the land they were farming on as collateral for a loan.

Table 9: Ability to service the debt

| | Emerging farmers | | | | | |
|--|------------------|----------|---------|--------------|------------|-------------|
| | Not at all | Somewhat | Average | Large extent | Absolutely | No response |
| Do you think you are a successful farmer? | 198 | 0 | 2 | 1 | 0 | 1 |
| Does your business have the ability to pay debts? | 197 | 1 | 1 | 2 | 0 | 1 |
| Does your business have the ability to secure loans? | 197 | 1 | 1 | 2 | 0 | 1 |

This is a clear indication that the CASP funding to assist emerging farmers is failing as 99% of emerging farmers indicated to believe that they were not successful in farming. Of equal concern is that 98% did not have the ability to pay their debts or access more finance.

Table 10: Business operation structures

| | Emerging farmers | | | | | |
|--------------------------------------|------------------|----------|---------|--------------|------------|-------------|
| | Not at all | Somewhat | Average | Large extent | Absolutely | No response |
| Do you have a record keeping system? | 195 | 0 | 0 | 3 | 0 | 4 |
| Do you have a management structure? | 195 | 0 | 2 | 1 | 0 | 4 |

Almost none of the emerging farmers had a record-keeping or a management system.

Table 11: Sustainable markets

| | Emerging farmers | | | | | |
|---|------------------|----------|---------|--------------|------------|-------------|
| | Not at all | Somewhat | Average | Large extent | Absolutely | No response |
| Are you linked to market agencies? | 201 | 0 | 0 | 1 | 0 | 0 |
| Does your business have access to the market information? | 198 | 0 | 0 | 0 | 3 | 0 |

Only one emerging farmer was linked to a marketing agency. This means that emerging farmers have no access to market information; thus struggle to sell their produce.

Table 12: Solutions for improving farming operations of emerging farmers

| | Emerging farmers | | | | | |
|--|------------------|-------|----------------------------|----------|-------------------|-------------|
| | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree | No response |
| Skills training (financial-, farming and technical skills) | 200 | 2 | 0 | 0 | 0 | 0 |
| More finance and capital | 197 | 5 | 0 | 0 | 0 | 0 |
| More land | 5 | 194 | 2 | 0 | 0 | 1 |
| Access to markets | 196 | 4 | 2 | 0 | 0 | 0 |
| More extension services | 197 | 4 | 1 | 0 | 0 | 0 |

Participants were asked to rate the importance of various factors in improving the success rate of emerging farmers on a scale of 1 to 5. With 1 being strongly agree and 5 strongly disagree. Skills development, access to finance and capital, access to markets and extensions to existing grants were all seen as very important. Access to more land was not as important to most participants.

With the interviews held (based on the questions mentioned above) with the four participants the following information emerged:

- The Comprehensive Agricultural Support Programme (CASP) **was ineffective** due to various problems inherent to the program.
- **Poor selection of recipients:** During the interviews it emerged that the participants felt that one of the major reasons for failure is choosing the wrong people and awarding farms to people with no passion or interest in farming. The recipients do not possess the knowledge or the skill, nor the passion to upskill and learn to become commercial farmers. Emerging farmers often assume that farming is a lucrative business and are not prepared for possible hardships. Thus, when things go wrong they often sell their breeding stock, or seeds that should have been planted, or the tractors intended for farming.
- **Inadequate government and department knowledge** and assistance: Government lacks the knowledge and the skills to identify suitable candidates and advise them once selected.

Furthermore, government fails to provide the necessary training, support or any other appropriate intervention to see the projects to success.

- The key finding and the core of the result to this study is to empower and give skill to those emerging farmers who need to become self-sustainable and independent commercial farmers.
- **The private institution** (corporations and other agricultural organisations) **should join hands with government** in training emerging farmers to generate more successful entrepreneurs in agriculture.

5. CONCLUSION

From the information gathered it is clear why the failure rate is high among emerging farmers. Derived from the findings of this study, developing farmer SMMEs require farming skills, financing, extension services, and infrastructure to ensure the success of their farming companies. Furthermore, the importance of business planning, access to formal markets, and training for emerging farmer SMMEs was re-emphasised. Based on these findings, it can be stated that developing farmer SMMEs lack the capacity to conduct their operations due to a lack of human capital, market, infrastructure, farming expertise, and money.

With the information gathered from the quantitative and qualitative researches done, it is clear that the private organisations should and want to join hands with government in the development of successful emerging farmers. With this in mind, the external role-players in agriculture, in collaboration with the government, should focus on the following issues to build a framework for the growth of rising farmers:

- Partnerships between the government and private agribusiness are critical (e.g. Senwes Cooperation, North West Cooperation, Development Financial Institutions, Processing Companies, Marketing Institutions, Commercial farmers etc.)
- Marketing channels must be investigated to ensure that emerging farmers' produce is properly marketed through these partnerships.
- The importance of research and collaboration with universities in transmitting and deciphering technical information to emerging farmers cannot be overstated.
- A mentorship and training programme needs to be put in place, and partnerships with commercial farmers in a well-structured way.

It is the researcher's aim to get a framework in place where both government and private agribusinesses could be involved in the development of successful emerging farmers. It is proposed that the government, in particular the Department of Agriculture in the North West province, establish a provincial public entity, Schedule 3 Part C. The provincial government and the private sector can engage through this entity to develop successful emerging farmers. In terms of the Public Financial Management Act (PFMA) (1 of 1999 as amended by Act 29 of 1999) a provincial public entity means a provincial government business enterprise, or board, commission, company, corporation, fund or other entity (other than a provincial government business enterprise) which is:

- Established in terms of legislation and provincial constitution
- Fully or substantially funded either from provincial funds or by tax, levy or other money imposed in terms of legislation
- Accountable to a provincial legislature.

- According to the PFMA, the public entities have been further divided into three schedules, namely:
 - Schedule 1: Constitutional Institutions
 - Schedule 2: Major Public Entities
 - Schedule 3: Other Public Entities
 - Part A: National Public Entities
 - Part B: National Government Business Enterprises
 - Part C: Provincial Public Entities

In this study, it would be the proposition to establish a public entity that should be treated as a Schedule 3 Part C public entity.

The aim of this public entity, whereby the private sector (which will also contribute expertise, money, training etc.) should form part of the board on this institution, that should be responsible for determining and managing policies to be implemented on the selection, training and monitoring process of the emerging farmers. It is suggested that this on-job-training programme can commence for a period of three years, and that this institution be South African Qualification Authority (SAQA) accredited. This is not to replace an agricultural college, but on-the-job training is very important. This means that an emerging farmer will graduate after a period of three years. These emerging farmers will be monitored by the extension officers and other external officials; they will report on a quarterly basis on their performance, according to SAQA specifications. If an emerging farmer does not perform, the person will be expelled from the three-year training programme.

After successful completion of the three-year period, the emerging farmer will graduate. During this period, the emerging farmer would have accumulated equity and would have been introduced to the land redistributing programme.

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INVESTIGATING MANAGEMENT PRACTICES AT A SENIOR LIFESTYLE CENTRE: A QUALITATIVE CASE STUDY

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ABSTRACT

The elderly population in South Africa is a vast growing population. With the improved health care opportunities available in a post-apartheid South Africa, the quality of life of the elderly population has increased. Consequently, this has resulted in the maturing of the elderly population. Due to the current socio-economic situation in the country, the challenge is for quality housing and care, as the majority of the elderly are struggling to survive on their own. Virtuous governance and the management of the elderly's residential and care facilities are therefore a crucial element in the wellbeing and quality of life of the elderly. Even though governance and management practices are widely explored fields of research, there is a paucity of research pertaining to elderly care in South Africa. Therefore, the aim of this study was to explore management practices at an elderly residential care facility in South Africa. Purposive, non-probability sampling was deployed in this qualitative study. The employees of the residential care facility were interviewed by using adapted questions from the Older Adult Financial Exploitation Measure (OAFEM) in a semi-structured interview schedule. After the completion of the interviews, the data was transcribed, analysed and themes allocated. This study drew attention to the various types of mistreatments which included financial, physical, emotional and psychological mistreatment and neglect. The mismanagement of funds and facility assets was the most significant finding since it had an impact on the financial mistreatment and neglect of the older persons residing in the care facility. The aim of this study was twofold. Firstly, to explore the management practices at an elderly care facility and secondly, to investigate the association of management practices with the exploitation of the elderly residing in an elderly care facility.

Keywords: Quality housing and care, management, exploitation, elderly care facilities, South Africa

1. INTRODUCTION

With the improved health care opportunities available in a post-apartheid South Africa (Burger & Christian, 2014), the quality of life of the elderly population has increased (Tomaz et al., 2020). This led to an improvement of the life expectancy to an average of 64 years in 2020 for elderly persons (Pefile et al., 2022). The same tendency is found on a global level with a prediction that the global population sixty years and older will increase to two billion by the year 2050. It is also predicted that the sub-Saharan Africa elderly population will increase to an estimated 141 million people in 2050 (Gerber et al., 2016; WHO, 2017). On the contrary, StatsSA(a) (2020) reported an increase in the aging population from 1,1% between 2002-2003 to 3% in 2019-2020. Likewise, the 2011 StatsSA report indicated that the elderly population will increase to 7 million by 2030 (StatsSA(b), 2014). Consequently, this has resulted in the maturing of the elderly population which placed a demand on the overall care for the elderly population (Van Biljon et al., 2015).

Despite of the economic growth in a post-apartheid society, South Africa is still categorised as a developing country where the discrepancy between low- and middle-income groups is still concerning, especially with reference to the elderly (Lloyd-Sherlock et al., 2018). The WHO (2017) furthermore indicates that in South Africa, people 75 years and older need assistance to execute activities associated with daily living in comparison with elderly people from developed countries. Likewise, due to the current socio-economic situation in the country as well as the poor health status, the challenge is for quality housing and care, as the majority of the elderly are struggling to survive on their own (Roos & Malan, 2012). Virtuous governance and the management of the elderly's residential and care facilities are therefore a crucial element in the wellbeing and quality of life of the elderly. Therefore, the aim of this study is firstly to explore the management practices at an elderly care facility and secondly, to investigate the association of management practices with the exploitation of the elderly residing in elderly care facilities.

2. LITERATURE REVIEW

2.1 Theoretical framework

Countless older people are accommodated in residential care facilities. This is due to the inability of older persons to live independently in their private homes because of the increase of frailty and disability associated with aging (Sun et al., 2021). Likewise, many young adults relocate with their families and are no longer able to look after their aging parents (Van Biljon, 2013). Similarly, the poor socio-economic environment in South Africa also contributes to the increase in demand for residential care facilities for older persons (Business Wire, 2021). Hence, safe and secure housing facilities are a noteworthy aspect in the lives of older persons and is meaningfully associated with the Quality of Life (QoL) of older persons. Agreeing Fox et al. (2017) indicated that older persons attribute their wellbeing to the specific environment which they reside in. More so, these residential environments also contribute significantly to the older persons physical and psychological health and wellbeing (Baqutayan et al., 2015). Considering the contribution of a safe and secure residential environment to the QoL of older persons, the South African Policy for older persons (2005) and the Older Persons Act no 13 of 2006 mention that safe and secure accommodation for older people is a fundamental right. This type of housing (accommodation) may include private residences, active and/or assisted living and residential care facilities, nursing homes or frail care residential facilities. Due to the focus point of this study on residential care facilities, the description which are provided in the South African Policy for older persons (2005) will be used: *'by assisted living or sheltered accommodation is meant the provision of affordable, adaptable and secure accommodation, providing older persons with an environment that enables access to support services, food supplies, primary health care, a pension pay-point or bank, transport, recreational, educational and leisure activities.'* From this viewpoint it is clear that housing provides more than just a place to stay or a 'roof over your head', it also is a place of attachment, and provide a sense of security and positive development for older people (Baqutayan et al., 2015; Akinjokun et al., 2018).

From the South African outlook older persons are defined as a person who is 60 years of age or older (Older Persons Amendment Bill 2022). This population group is characterised by the typical biological processes of aging associated with the decrease in physiological and cognitive functioning (Antczak & Zaidi, 2016; Yagi et al., 2020). The decline in the functional abilities

(physiological, cognitive and psychological) of older persons is describing the concept of being frail (Jin et al., 2021). Frailty, a vigorous process which forms part of the aging process, can be defined as an overall loss in one or more aspects of human functioning such as physiological, cognitive and psychological functioning. Frailty, according to Jin et al. (2021) can for that reason be associated with vulnerability which elaborate on the notion of being exposed to adversative health event concerns including a decrease in resilience and resistance to stressors. Older persons can therefore be classified as a vulnerable group due to being part of a high risk population group associated with health concerns and a decrease in functional and cognitive abilities (Barbosa et al., 2019). Functional abilities in this sense include ability, independence and the capability to accomplish daily tasks related to personal care and security (Barbosa et al., 2019); where cognitive abilities encompassed, according to Jin et al. (2021) memory, attention and the processing of information. Due to the aging process older persons experience a lack of independence, cognitive disabilities and health concerns. Besides, Barbosa et al. (2019) highlighted that functional disability and the impairment of quality of life can be associated as the forerunners of vulnerability of older persons.

Globally, elderly abuse has received some attention in the research of gerontology. Even with voluminous research on this topic, it is still a very novel field of research in gerontology (DePrince et al., 2020). This phenomenon of older persons' ill-treatment has disturbing consequences and is essentially one of the most important aspects to be researched as it has a distinctive association with wellbeing and the Quality of Life of older persons, which relate to an important public health problem (Yen, 2019; WHO, 2021). The World Health Organisation (2021) define elderly abuse as 'a single or a repeated act or lack of appropriate action'. The abuse can occur within any type of relationship where there is an anticipation of trust, which causes harm or distress to an older person (Jackson, 2018). In addition, elderly abuse is seen as an act of violence which creates human rights violations (Sanchez Alarcon et al., 2019). Alike, this includes physical, sexual, psychological and emotional abuse, financial and material abuse, abandonment, neglect and serious loss of dignity and respect (Jackson, 2018). Research (Abolfathi Momtaz et al., 2013; Johannesen & Logiudice, 2013; Mukherjee, 2013; Phelan et al., 2014; DeLiema, 2018; Jackson, 2018; Lloyd-Sherlock et al., 2018; DePrince et al., 2020) indicated that older persons are at greater risk to unprincipled trade practices such as financial and residence-related exploitation, which is distinctive to this population group. Literature suggests financial exploitation can range from where a trust relationship between caregivers or family members and the older persons are broken, fraud, entitlement of money or possessions and intimidation (DeLiema, 2018; Jackson, 2018; Lloyd-Sherlock et al., 2018). DePrince et al. (2020) additionally explains that the entitlement or larceny of money or belongings may also relate to residence-related exploitation. Keeping the above characteristics of financial and residence-related exploitation in mind, financial exploitation can be defined as the illicit or the misuse of older persons' possessions or money for personal benefit (Phelan et al., 2014; DePrince et al., 2020). Financial exploitation can for example included the opportunity for custodians or caregivers to use the money of the older person or to sell the possessions of the older person for personal benefit (Sanchez Alarcon et al., 2019). Residence-related exploitation can equally be defined as the maltreatment of older persons' residence for the benefit of another individual such as custodians or care givers (DePrince et al., 2020). This type of maltreatment reinforces the power relations (control over older persons) when they belief they might be evicted from the place where they reside (Phelan et al., 2014; DePrince et al., 2020).

Because most older persons are fearful of losing their housing and security, due to the effect of the socio-economic environment, frailty and the aging process' health consequences (Lloyd-Sherlock et al., 2018), it is important for owners of residential care facilities to govern these facilities with accountability. Besides Lloyd-Sherlock et al. (2018) state the wellbeing and Quality of Life of the elderly are reliant on the accountable governance of residential care facilities. In addition, Johansson and Liljegren (2019) alludes to the fact that accountability can be seen as a precondition for democratic governance, which is especially important when a vulnerable population such as older persons are concerned. For Naidu (2019), accountability along with independence, are necessary for employees to experience job satisfaction, which coincides with the wellbeing of the residents and the employees (Jeon et al., 2015; Dawes & Topp, 2022). Owners of the residential care facilities, which also forms senior management and subsequently leaders of the workforce, have to create job satisfaction for employees in order to expect good, quality care for residents (Jeon et al., 2015; Naidu, 2019; Dawes & Topp, 2022). In turn to create job satisfaction, facility owners have to establish a positive organisational culture by providing a physical environment which promotes the wellbeing of the employee, and therefore become custodians for the older person in the residential care facility (Dawes & Topp, 2022). Additionally, Jeon et al. (2015) and Naidu (2019) associate good leadership styles and skills with employee commitment and job satisfaction at residential care facilities for older persons. What is more, good leadership skills include efficient and open communication, perceived employee autonomy, accountability, transparency, financial skills, emotional intelligence, diplomatic decision making, mutual trust and respect, and skills which promote team cohesiveness (Jeon et al., 2015; Naidu, 2019; Dawes & Topp, 2022). This will, as a result lead to an organisational culture which is supportive and trusting of the employees to take care of older persons in residential care facilities (Jeon et al., 2015; Naidu, 2019).

It is also an important obligation for communities to care for the older persons as it aligns with the basic human rights of older persons (Tshesebe & Strydom, 2016; Sanches Alarcon et al., 2019). Accountable governance is not only the custodians' responsibility, but the responsibility of the community itself (DeLiema, 2018). When it is suspected that older persons are exposed to mistreatment and exploitation be it in a residential care facility or their private housing, members of the community have to address this issue (Lloyd-Sherlock et al., 2018). The governance of residential care facilities must include sound management practices which have to be upheld to ensure accountable governance.

Generally, the research in elderly abuse focus on physical, psychological and financial exploitation in private housing facilities, where caregivers or family members are the custodians (DeLiema, 2018; Jackson, 2018). Similarly, research in the physical and psychological elderly abuse were predominantly conducted where family members and caregivers are providing care for older persons in a private setup (Mukherjee, 2013; DePrince et al., 2020). Evidently there seem to be little research about the financial exploitation of older persons residing in a residential care facility (Jackson, 2018), where the custodians form the central focus of the maltreatment of the elderly (DeLiema, 2018). Even if there was no intention of maltreatment by the facility custodians, false promises can lead to the misuse of the money or possessions of the older persons to the benefit of the exploiter (DeLiema, 2018). This in turn can diminish the trust relationship between the residents (older persons) and the custodians of the residential care facility (Sanches Alarcon et al.,

2019). Consequently, the aim of this article is to elaborate on the literature of elderly abuse by including the exploitation of older persons in a residential care facility by the facility custodian. By exposing this maltreatment of the older persons and the mismanagement practices of the residential care facility as a case study, the researcher hope to sensitise the community regarding elderly abuse by custodians of residential care facilities (Sanches Alarcon et al., 2019). The purpose of this article is also to inform local policy makers such as the Department of Social Development to provide educational programmes for the elderly about the different forms of abuse (Tshesebe & Strydom, 2016). Similarly, Tshesebe and Strydom (2016) and Phelan et al. (2017) allude that more well-trained human resources have to be allocated by the Department of Social Development to assist in combating and preventing elderly abuse. In addition, Lloyd-Sherlock et al. (2018) confers that there must correspondingly be a political will by the law enforcement agencies and the justice system to prosecute abusers. Likewise, for example, a portal (national and local) must also be established where neglect and exploitation of older persons can be reported (Tshesebe & Strydom, 2016). Moreover, the reporting of elderly abuse by community members must be made obligatory (Sanches Alarcon et al., 2019).

3. METHODOLOGY

3.1 Research design

A case study research design will be used to apprehend the interpersonal meaning which staff members, who currently are employed at a residential care facility for the elderly, associate with issues surrounding poor governance. Because this is a single occurrence and only the experiences of staff members of one care facility for the aged are scrutinised, the case study methodology will be followed. This type of qualitative research design provides the participants the opportunity to provide in-depth information. According to Roos and Malan (2012), the qualitative research design is the most appropriate methodology to select when conducting research within gerontology. This type of research method coincides with the literature in gerontology.

3.2 Sampling method

A non-probability, purposive sampling method were used for this study: firstly, since a specific care centre for the aged was selected to participate as case study; and secondly the staff members were not randomly selected as participants. Because only fifteen staff members were employed at this particular residential care facility, it supported qualitative method of data gathering. This similarly provided the opportunity for staff members to quantify their experiences regarding the governance of this particular facility (Roos & Malan, 2012).

3.3 Research protocol

A semi-structured interview schedule was employed to collect information regarding the phenomenon under investigation, in accordance with the inductive-deductive process as stipulated by Cresswell (2014). The interview schedule consisted out of eleven questions including the follow-up questions. The interview questions were guided by the The Older Adult Financial Exploitation Measure (OAFEM) (Phelan et al., 2014; 2017). The reason for using the adapted questions as guideline, is that the questions have been authenticated to evaluate unambiguously financial abuse issues pertaining to elderly people. Since the researcher were only interested in the

staff members’ experiences and their stories, most of the questions were adapted to assist with the describing of the experiences of the staff members. The interviews were conducted in English and Afrikaans, as the interviewees were conversed in both the English and Afrikaans language.

3.4 Data collection

The data was collected using semi-structured interviews until data saturation occurred. Fifteen staff members of the residential care facility for the aged were contacted and a convenient time, date and venue were scheduled. The participants’ provided verbal permission to record the interviews; and Covid protocols were adhered to. After transcribing the interviews, the transcriptions were shared with the participants to ensure member checking. In the collection of data, international ethical standards, which are underlined by voluntary participation, anonymity and confidentiality, were adhered to.

3.5 Data analysis

The researcher analysed the data by transcribing the recorded interviews verbatim. The process, as informed by Creswell (2013) and Bengtsson (2016) was followed: the data was decontextualized into meaningful units (i.e. codes) to make sense of the data. Thereafter these units were categorised and placed within relevant themes. Themes, as indicated in Table 1, are discussed in the findings section.

Table 1: Themes reflected in the findings

| | |
|---------|--|
| Theme 1 | Deceit and monetary mistreatment |
| Theme 2 | Custodian Neglect |
| Theme 3 | Physical mistreatment |
| Theme 4 | Emotional and psychological mistreatment |
| Theme 5 | Financial mismanagement and management practices |

4. DISCUSSION OF THE FINDINGS

The denoted custodians as indicated in the interviews, referred to the individuals who were placed in charge of the residential care facility for the aged. The primary function of the custodians was to take over the management responsibilities of the residential care facility. In addition, the findings were steered by information gathered from the experiences of the interviewees. After the analysis of the data, the data were placed in categories and subsequently themes were identified. The following themes (Table 1) were highlighted during the analysis of the data and will successively be discussed:

Theme 1: Deceit and monetary mistreatment

Theme 2: Custodian Neglect

Theme 3: Physical mistreatment

Theme 4: Emotional and psychological mistreatment

Theme 5: Financial mismanagement and management practices

These themes correspond with the research by Dong et al. (2014) where the typology of elderly abuse included psychological, physical, sexual mistreatment, financial exploitation and neglect.

Theme 1: Deceit and monetary mistreatment

Deceit and monetary mistreatment can be associated with financial mistreatment. With reference to this, Phelan (2020) stated that it occurs when an individual obtains possession of assets or property of older persons, under false pretences. In support of Phelan, Johannsen and LoGiudice (2013) mentioned that when custodian take possession of the assets or property of the older person, they make themselves guilty of deceit and monetary exploitation of older persons. Furthermore, DePrince et al. (2020) indicated that custodians can also feel entitled to the assets or property of the older persons. These thoughts were reflected by comments which emerged from the interviews: On various occasions the custodian took possession of assets of new residents to cover the costs of their accommodation.

‘Once, when I went to the office, I saw a list of possessions with a certain amount allocated to it. This was of one of the new residents. The possessions were ‘bought’ by the owner and the new resident could start paying after that amount was depleted.’ [P1]

The owner also allowed some staff members to utilise the motor vehicles of residents.

‘On a number of occasions, you would see the green car all over town, the owner used that car.’ ‘There was also another lady’s red car, [the owners’ children] would use to drive it all over town, picking up groceries and taking older people to the clinic using that car.’ [P2]

Following on this, Moore (2018) indicates that staff members are most of the times reluctant to report abuse in fear of intimidation, victimisation, or loss of employment. This supports the statement *‘but what could I do?’ [P1]* by one of the participants. On countless occasions this statement was raised. This reinforced the reasons why the role of whistle-blower is so difficult to fulfil.

‘I have raised this multiple times.’ ‘I said, the older people come to stay here with their stuff, and then their cars are utilised.’ ‘It does not work like that, but what could I do.’ [P3]

Additionally, the following statement supports the notion why staff members were reluctant to take on the role as whistle-blower, even though there were a desire to report the abuse but due to fear of intimidation, it was not reported (Moore, 2018):

‘Once I raised the issue about irregular things such as physical abuse happening at the facility, to one of the owners. The owner replied: ‘What can you do?’ [P5]

‘I thought I will make a mistake by talking to the previous facility manager, on what is going on in this place.’ [P3]

A very significant statement which DePrince et al. (2020) highlighted is that the power which the exploiter has over the older person increases due to the feeling of dependence. This comes from a place where the older person is coerced to trust the custodian for sufficient care, because ‘there is nowhere else to go’. DePrince et al. (2020) stated that coercion, along with dependence on the abuser, is apparent when it comes to the financial exploitation of older persons. The trust relationship between the older person and the custodian is also affected by acts of dishonesty (Phelan, 2020). During the interviews this were highlighted.

'The monthly fees were not equal. Some of the older people paid the full amount, while others who only received SASSA and who were actually not allowed to stay here, paid less. This was not right.' [P6]

'These individuals placed a burden on the facility, their monthly fees did not contribute to the functioning of the facility.' *'The contributions of the fully paying residents carried those who could not pay the full amount.'* [P1]

Another form of deceit was highlighted by one of the interviewees:

'The children, if they hear their mothers eat weird food which we call meat, we can also get into trouble.' [P2]

This statement confirmed that the older people paid their monthly fee, and expected healthy and nutritional food and appropriate care, which were not the case.

'A lot of things happened here. it is their secret.' *'there were many secrets here'* [P8]

Secretiveness, as indicated by the participants occurred frequently and according to Phelan (2020), this can also be seen as a form of deceit.

Theme 2: Custodian Neglect

Neglect occurs when there is limited care in terms of the basic needs such as providing nutritional sustenance, water, safe and secure housing and emotional care and commonly occurs unintentionally (Taylor et al., 2014). In most of the literature regarding elderly abuse, reference was made to carer neglect (Dong et al., 2014). Conversely, the data provided by the interviewees indicated that the neglect were institutional, in the sense where the custodian of the residential care facility neglected to provide nutritional sustenance to the residents.

'The food, it was not enough every month it was not good.' [P2]

'In those days we did not cook for the older people. At least these days [under new management] we cook again, they get a variety of food and beef meat to eat' [P8]

'... the food of the older people was always macaroni, macaron, macaroni.... Or spaghetti, spaghetti, spaghetti.' [P1]

'There is something else, I do not like the new meat. The day it was introduced, they said it is very healthy for the older people, but it is not.' [P9]

'New meat were given to the older people to eat. The older people's digestive system could not take this new meat, and many had diarrhoea.' [P2]

'The older people did not like this new meat. They knew it was not meat.' [P10]

'This is not new meat; I know this 'new meat' it is what the mine workers were given in the olden days. It is not good; it wastes a lot of food to make this new meat. You must grate potatoes and rinse it. You take away all the vitamins. You must also include onions and oats to prepare this new meat. You waste a lot; you do not stay in the budget.' [P1]

Also, the emotional care and safe and secure housing were neglected by the custodian. This created uncertainty under the residents as well as staff members.

On this matter, the interviewees reported that ‘anybody who were looking for a job, were taken and housed by the owner, even during the onset of the pandemic when the country were immersed in hard lockdown.’ [P10]

‘Those people who were staying here for free was actual more than the old people. It is actually those people who made this place bankrupt.’[P1]

The above statements indicated that by the intake of destitute people, the future of the facility was at risk. Even though the older people were not directly involved and did not know about the financial situation of the facility, the future of the facility placed an emotional burden on the older people. On an occasion after an incident at the facility with one of the associates of the custodians, one of the residents made the following statement to an interviewee: ‘*He does not care about us.*’[P2]

Theme 3: Physical mistreatment

For Frazao et al. (2015) physical mistreatment is when older persons are being slapped, hit, struck, grabbed or injured in any physical way by persons providing care. Likewise, these researchers included physical coercion and sexual exploitation as part of the typology of elderly abuse (Frazao et al., 2015). Sexual exploitation is a type of abuse which are not mentioned by older persons, and will only be exposed when prompted about it. However, Taylor et al. (2014) stated that when older persons are engaged in conversation about this type of maltreatment, the occurrence thereof was acknowledged. Likewise, sexual abuse came to the forefront as a theme in this research. The following were mentioned during the interviews:

‘The owner, when he is drunk, walks around everywhere; he kisses them [elderly women].’[P2] *‘I hear them [elderly women] gossiping, then I hear the owner kissed, hugged, what and what someone. It is him, he is going to the older people.’[P4]*

‘She said to me: I am not allowed to be inside with the older people. They say I am sleeping with them, but it is them [elderly women] who are calling me. Now I am keeping to one place, away from the older persons.’[P1]

Staff members can also be victims of exploitation, as Moore (2018) indicated.

‘I am afraid of him. I never went to see the owner alone in his office or where he stayed, especially when he was drunk.’[P10]

Theme 4: Emotional and psychological mistreatment

Emotional and psychological maltreatment are identified as one of the worst types of abuse, as confirmed by Chao (2020). These forms of maltreatment are characterised by the establishing fear, distress and anxiety onto another person. Taylor et al. (2014) and Chao et al. (2020) pointed out that emotional or psychological maltreatment may lead to significant increases in anxiety, distress, fear and depression which in turn affected the health and psychological wellbeing of the elderly. The interviews highlighted the following aspects pertaining to this theme:

‘You see; the older people were always afraid. The older people were always stressed. The older people were thinking, always they will ask me, how are we going to live here? I would ask them why do they say so, and then they would say, ‘man, this weekend they fought again.’

I asked the older people who fought, and they would say ‘the owner and his wife’. Look, the owner’s wife was not afraid of the old people. She would hit him in front of the old people. She would use foul language in front of the old people. Even in front of us. She would break the doors; they would break the plates. You see, when they fight, they would use those things.’[P3]

‘They were always fighting over weekends; when we came to work, the older people would tell us they were fighting again.’ ‘Usually they would get drunk over weekends and then they will fight.’[P4]

Equally, the residents also experienced emotional distressed times when one of the associates of the owners committed suicide in the facility. No counselling services were provided to the residents and staff members to assist with this emotional event.

‘The old people told me that the boy committed suicide. This is not a good thing; this is the place for the old people. Also that boy who jumped from the top, they heard it, some saw him. Then later he wanted to commit suicide in his room. The older people knew about it, they told me he went to the hospital. The older people said, this place is not good for our hearts.’[P5]

Theme 5: Financial mismanagement and management practices

Financial mismanagement in this case refers to the mismanagement practices which was highlighted during the interviews. The following statements were accentuating this theme of financial mismanagement:

‘They took everything. We had two pianos’, one in the eating hall and the other in C-block; they took the one in C-block. Both are the facility’s pianos.’[P1]

‘They sold the door, the chairs. We saw some of the chairs at the pawnshop which they pawned for cigarette and alcohol money. We had five sizes of ladders here, it is gone. They have sold it.’[P3]

‘The cups are gone. The plates are gone. We had stacks of chairs, cutlery, table cloths, glasses and serving dishes; enough to serve 250 people when previously we hosted functions. The previous owner received many things. Now there is nothing left. They took everything, and either broke it or sold it.’ [P10]

‘If we want to give the older people food, we have to eat in groups so that the first groups cutlery can be washed in order to serve food for the next group.’[P2]

‘There are many things which are gone, which we will not get back. Like the red combi, they used it to go all over town; over the weekends into the informal settlements to the shebeens. They used it so much, it is gone now. He did not look after his things.’[P2]

The custodian and associates felt entitled to the assets and possessions of the residential care facility. These were misused by the custodian and associates, for their personal advantage, but it negatively impacted the service delivery for the older people. One of the interviewees provided this statement to indicate the measures senior staff members had to take to protect the assets of the

residential care facility: *'Many times I had to stop those people from taking things which belong to the facility.'* [P10]

Proficient management practices include the engagement of senior staff members. During the interviews it was indicated that the input of staff members was not valued.

'I see many things which is not right, it makes me sad. If you tell them they must not do it like this, then they tell me, no he told them to do it like that. But you see it is the wrong thing, what can you do? Nothing!' [P1]

It was also apparent throughout the interview that corrective dismissal practices were used to intimidate and bully the staff members. The subsequent comment indicates the extent of this:

'She requested our qualifications instead of the qualifications of the people working in frail care. Here the staff at the kitchen is fine, we have the qualifications. The people working at frail care, some of them do not have any qualifications, but she wants to get us out here. And it is only two people who she wants out, myself and the other lady manager.' [P10]

Referring to the appointment of staff members without considering the budget, the following were said:

'They just hire and hire people for frail care while the work is not so much. The staff members there are too much.' [P2]

'The people staying here for free are too many. They use the electricity of the older persons, they eat the older persons' food, they use the older persons' water, and they do not pay anything. Instead, these people are getting paid R400 per week, and they do nothing. The work they must be doing; I cannot see it. It is those people who bankrupts this place. So many people who does not do work, and still they receive R400 each week. He is wasting money which could be used differently.' [P3]

'But after appointing so many people, they were crying because they could not pay our salaries. They could not buy food for the old people. The other lady had to borrow money from family members to pay the staff's salaries.' [P7]

'I had to call churches for assistance to buy food. Fortunately, family members and churches and people from the public assisted with donations of money and food for the older people.' [P10]

'I also requested assistance of the custodians, but they just told me there was not money. I know this was a lie, because the residents paid their monthly fees, so there should be money.' [P10]

'That is where all the problems started. You do not hire people, you look at the budget first, that is where you start. He did not do it.' [P4]

Open communication channels and support from leaders / owners / custodians indicate healthy management practice (Jeon et al., 2015). In this case, the interviews indicated the contrary.

'He did not communicate with us; he was always drunk.' [P8]

'She left myself and the other lady in charge when she retired. She came and took over the facility as the new custodian, then Corona hit us hard. It was just me and the other lady who

took care of the facility. He was drunk the whole time. He did not care about anything. That was really a very difficult time for us, very difficult. '[P10]

Collegiality and teamwork came out as an important aspect during the interviews.

'Previously before he took over, we were happy, we worked together as one team. We had our fights, but we sorted it out quickly. No one stayed cross with each other. ... We are getting there again. I am starting to enjoy working here again. We are one team, again.' [P1]

PRACTICAL IMPLICATIONS

This study examined the management practices at a residential care facility for the Aged. To enrich this investigation, an in-depth look at types of mistreatments was included in this study. Furthermore, the role of management and in this case the custodian, also brought a new perspective to mistreatment of older persons in residential care facilities. From the findings it was unmistakable that the custodian played a centre role in the mistreatment of the older persons.

Most of the research on elderly abuse include older persons at risk of being mistreated by family members nevertheless, Moore (2018) and Myhre et al. (2020) is of the opinion that the mistreatment at residential care facilities must enjoy more research coverage, and more so, the custodian's role in the mistreatment of older persons. The reasons for this is due to the rising numbers of older and frail older people, which subsequently increases the need for residential care facilities for older and frail older people to reside in (Myhre et al., 2020). The vulnerability of this population group opens the avenue for mistreatment by custodians who are responsible for providing efficient care for older persons (Moore, 2018). Since the older persons are putting their trust in the custodian for proficient care, this trust relationship is easily abused (Nguyen et al., 2021). Nguyen et al. (2021) furthermore indicated that when older persons trust a stranger, it is because that stranger is trustworthy and is associated with a trustworthy organisation. The findings highlighted that the custodian was seen as trustworthy by the older persons and staff members due to its association with a trustworthy organisation. This supported the notion that older persons are more trusting, and can therefore be easily exploited, especially when there is a case of 'trust by association'. Significantly, DePrince et al. (2020) emphasised that the power which the exploiter has over the older person increases due to the feeling of dependence. This feeling of dependence comes from a place where the older person is coerced to trust the custodian for proficient care, because of their trustworthiness, and the belief by the older person 'there is nowhere else to go'. DePrince et al. (2020) stated that coercion, along with dependence on the abuser is apparent when it comes to the financial mistreatment of older persons. Evidently, the findings supported the ideas of Yip and Schweitzer (2015) which specified that trust is a precursor of unprincipled conduct, whereby trust is being illogical placed in someone which will open the avenue for susceptibility and probable abuse.

Moreover, the study drew attention to the various types of mistreatments which included financial, physical, emotional and psychological mistreatment and neglect. The mismanagement of funds and facility assets was the most significant finding since it had an impact on the financial mistreatment and neglect of the older persons residing in the care facility. As mentioned in the findings, Phelan (2020) indicated that deceit is associated with monetary mistreatment. Undoubtedly the findings pointed out that the older persons' monthly financial contributions were

not used for what it was intended, it was conversely utilised personally and for personal gain by the custodian. These actions or as indicated by Taylor et al. (2014) '*the lack of appropriate action*' contributed to the neglect of the residents in the facility with regards to dietary requirements and the basic needs of the older persons. One of the statements from the interviews '*he does not care about us*' expressed the despair of the older persons in the facility. As stated beforehand, this belief of neglect and mistreatment were positively associated with a decrease in the mental health of older persons (Chao et al., 2020). Likewise, the findings indicated the despair which was also experienced by the staff members.

A startling type of mistreatment which were notable in the findings, is the physical mistreatment of both the residents as well as the staff members. As noted previously, physical mistreatment includes sexual harassment (Frazao et al., 2015). In this study it was apparent that sexual harassment was one of the important issues which encapsulated mistreatment against female staff members as well as female residents. This is also a strong indication of the power relations which was present in the form of coercion between the custodian and residents and custodian and staff members at that specific residential care facility (Meyiwa et al., 2017). With the high occurrence of gender-based violence in South Africa (Meyiwa et al., 2017), this is an important type of mistreatment which needs to be investigated in the South African literature, and in the context of older persons. Perhaps the reasons why it is not more prominently featuring in South African research is because financial and emotional / psychological mistreatment takes precedence over sexual mistreatment; it might also be that the older population perceives this topic as taboo. This same belief was supported by Dong et al. (2014) in their study.

This study also captured the occurrence of emotional and psychological abuse by the custodian which could have been prevented if there were proficient management practices at this residential care facility. This would include the management of the residential care facility as a safe residential area, only for older persons which should not include a residence space for the custodian or destitute people. As indicated by the findings, this could especially lead to the increase of emotional and psychological mistreatment because there is a lack of appropriate work-life balance. Preferably staff members including custodians should be able to maintain a work-life balance as this was positively associated with job and life satisfaction by Sudibjo and Suwarli (2020) in their research.

5. CONCLUSION

The centre role which the custodian played in the mistreatment of the older persons residing in a residential care facility was evident in this study. Agreeable not all custodians or managers of residential care facilities are conducting transgressions against or mistreatment of older persons, it is more the exception than the rule. However, the irreparable consequences can influence the health and wellbeing of not only the older persons but also be detrimental to the prolonged health of staff members at such a residential care facility. Accordingly, an analytical conclusion can be made from this study that proficient management practices at residential care facilities for the aged can be associated with the protection of the older persons against mistreatment.

The recommendations stemming from this study can be summarised as follow. Research regarding custodian's behaviour and their management practices towards older persons in privately owned residential care facilities are challenging, nonetheless research on this topic have to be advanced

by including a broader spectrum of the target population. A comparative study with other privately owned care facilities for the aged can further advance knowledge in the field of gerontology. The role of the community and government must also be emphasised, even in privately owned residential care facilities for the aged. The Department of Social Development should play a more pertinent role in providing information to communities about older person mistreatment. A suitable avenue to report any type of mistreatment towards the older population should also be established and communicated to the community. Lastly, the older population, carers and staff members at residential care facilities should similarly be engaged in regular workshops regarding all types of mistreatments. This would also provide a possible avenue which whistle-blowers can utilise to report the mistreatment of older persons.

Only one facility with limited staff members were included in this case study. Therefore, it can be seen as a limitation, as the findings cannot be generalised to the broader population. To advance this field of knowledge in gerontology, the sample population should comprise of several residential care facilities, with a more representative target population.

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SOUTH AFRICA'S URBAN INFORMAL SPATIAL DEVELOPMENTS AND COVID-19 RESPONSES: REFLECTIONS FROM INFORMAL SETTLEMENTS

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ABSTRACT

More than 5 million people faced a heightened risk from COVID-19 due to overcrowded and substandard living conditions in South Africa's informal settlements. Such conditions entailed insufficient sanitation and waste management, both of which make the prevention of virus transmission impractical. Social distancing and quarantine when sick also become difficult to observe due to overcrowding. Linked to the problem is a longstanding need to upgrade planning, infrastructure and services in informal settlements to improve cities' equitability, resilience and sustainability. This includes improving living conditions and overall public health. Thus, upgrading informal settlements stimulates local economies and provides jobs in construction, waste management and other spheres. With their land tenure and title recognised, as well as access to affordable mass transit, residents may have more formal services, including better access to health, water, sanitation, economic stability, and work opportunities. Systematic development also helps to put settlements and cities on the path to sustainable development and reduces risk from pandemics and climate hazards. While upgrading informal settlements is a long-term, incremental process, COVID-19 has created added urgency towards the provision of more targeted and expansive improvements. This article outlines barriers to COVID-19 response mechanisms in informal settlements using secondary qualitative and quantitative data, and suggests practical considerations for a systematic spatial development of informal settlements to reduce risks from COVID-19 and deliver long-term and significant benefits for the urban poor.

Keywords: Spatial Developments, Covid-19 Responses, Urban Informal Settlements, South Africa

1. INTRODUCTION

On 30 January 2020, the World Health Organization (WHO, 2020) proclaimed the outbreak of the deadly coronavirus illness 2019 (SARS-CoV-2), a public health emergency that was further confirmed as a global pandemic on 11 March 2020. This virus, which originated in Wuhan City in China, has impacted both the developed and developing worlds' socioeconomic conditions (Ngcamu & Mantzaris, 2021). The virus, which spread rapidly throughout affluent countries before reaching the African continent and South Africa specifically, has been known to pose a variety of dangers, the majority of which are socioeconomic. Globally, the COVID-19 pandemic has grown at an exponential rate in both rural and urban areas, wreaking havoc, especially on vulnerable people (Corburn, Vlahov, Mberu, Riley, Caiaffa, & Rashid, 2020; Ngcamu & Mantzaris, 2021). COVID-19 has revealed perpetual inequalities in the world, further affirming the notion that epidemics tend to be reflections of society. It has shed light on the disparities and structural weaknesses, which are frequently the product of lengthy histories of marginalisation

(Matamanda, Dunn, & Nel, 2022). Even though the virus spread firstly in most developed countries, things quickly overturned. More wealthy nations were better able to comply with control measures because they could work from home and did not expose themselves to the virus; and, they were also less vulnerable to other severe diseases and mortality due to socio-economic variations in underlying health conditions (Corburn et al., 2020).

The challenge of tracing the transmission of coronavirus, especially in big African urban informal settlements, is highlighted by a recent surge in COVID-19-related deaths in Kano, Nigeria's second-largest growing urban area (Onyishi, et al., 2021). As a result, the COVID-19 pandemic poses a serious threat to large cities across Africa. Developing countries, including South Africa, are most vulnerable to the COVID-19 pandemic, because of the high-density population, which results in concentrated social mixing, increasing urbanisation, and the majority of the population living in congested informal settlements with inadequate basic services and infrastructure (Corburn et al. 2020; Favas et al., 2020; Ngcamu & Mantzaris, 2021, Matamanda et al., 2022). Those living in urban informal settlements which are characterised by over-crowding were usually severely hit due to increased exposure to the transmission of COVID-19 among community members as proven in both first and third world countries (Onyishi, Ejike-Alieji, Ajaero, Mbaegbu, Ezeibe, Onyebueke, Mbah, & Nzeadibe, 2021; Matamanda et al., 2022). Several issues around spatial development adversely affect COVID-19 response strategies such as social distancing, among others, in over-crowded areas. In essence, these informal settlements present themselves as major reservoirs and sources of ongoing transmissions. Urban informal settlements are the most densely populated areas characterised by inadequate housing, infrastructure, and services, and poverty (UN-Habitat 2007; Ngcamu & Mantzaris, 2021; Onyishi et al., 2021; Matamanda et al., 2022). People living in these settlements are vulnerable to COVID-19 infections due to a lack of basic services and infrastructure such as proper housing, water, electricity; sanitation and overcrowding. Corburn et al. (2020); Ngcamu and Mantzaris (2021) noted that urban informal settlements are the least prepared for pandemics due to a lack of adequate water to maintain better hygiene, sanitary functioning toilets, sewers, and adequate drainage, waste collection services for improved sanitation.

Therefore, this paper theoretically evaluates the effects of South Africa's informal spatial developments characterised by over-crowding on the transmission and spread of COVID-19 with a focus on informal "urban" settlements. The paper adopts a desktop analysis of both qualitative and quantitative data to achieve its aim. There is a strong relationship between spatial development and the success of COVID-19 response strategies. The current COVID-19 response strategies suggest a need for a more formal spatial development approach characterised by sustainable development of and investments in more organised spaces and sufficiently accessible basic services and community infrastructure. The paper then concludes that both formal and informal spatial developments determine a successful response or lack thereof, toward curbing COVID-19. The paper recommends that the current experiences can be used to effectively plan resilient human settlements toward responding to present and future pandemics.

2. METHODOLOGY

Given that this is a theoretical paper, a mixed methods approach was adopted to conduct a rapid review of existing literature. The analysis relied largely on existing systematic and comprehensive

reviews, and independent searches for academic literature from the library and desktop sources. The search strategy was reliant on published sources on responses to COVID-19, specifically in informal settlements. Critical interpretive synthesis was applied to evaluate how South Africa's informal spatial developments in overcrowded informal and "urban" settlements had a bearing on the transmission and spread of COVID-19.

3. SOUTH AFRICA'S RESPONSE TO COVID-19: A SUCCESS OR FAILURE?

In December 2019, the COVID-19 pandemic broke out in Wuhan, China after which the virus spread at an alarming rate around the world. WHO then declared the COVID-19, a global pandemic on 11 March 2020, because of its high mortality and morbidity rates (Nyashanu, Simbanegavi, & Gibson, 2020; Pelz, 2020; Ngcamu & Mantzaris, 2021; Matamanda et al., 2022). Most governments worldwide responded by imposing lockdowns, confining people to their homes to limit contact among people, to reduce the virus' spread although some have questioned whether such actions were appropriate (Pelz, 2020; Ngcamu & Mantzaris, 2021; Matamanda et al., 2022). On 05 March 2020, South Africa's National Institute for Communicable Diseases (NICD, 2020) identified the first Coronavirus Disease 2019 (COVID-19) patient; then ten days later, the government proclaimed a national state of disaster under Section 27(2) of the Disaster Management Act, 57 (Act 75 of 2002). On 23 March 2020, the president's announcement of a 21-day national lockdown followed, which began on 26 March 2020. Following the initially reported cases, which largely resulted from overseas travel, coupled with signs of community transmissions during the first three weeks since the first case was reported (with about 274 positive cases and no reported fatalities), the government's declared nationwide lockdown commenced from 26 March to 30 April 2020, which was later extended. To cope with mitigation and reaction to COVID-19, the National Coronavirus Command Council further established a 5-level risk-adjusted plan, from levels 5 to 1 (NICD 2020).

The initial approach, as advised by the WHO, was social and behavioural response mechanisms intended to curb and manage the transmission of the COVID-19 virus. Citizens across various nations worldwide were urged to adopt social distancing and enhance their hygiene practices, including handwashing for at least 20 seconds at a given time, the use of hand sanitizers, and the sensible use of face masks/face covers to combat the spread of the pandemic (WHO, 2020; Onyishi et al., 2021). It became evident that public health systems in developed nations rely on a thorough grasp of demographic profiles and a robust scientific system to track changes during pandemics. They are concerned more about their efforts on ensuring increased and improved critical care and hospital capacity to accept critically sick patients (Corburn et al. 2020; Nyashanu et al., 2020). Additionally, many developed countries provided economic support mechanisms for vulnerable and poor groups with the hope of alleviating economic challenges when implementing control measures that limited social and economic activities (Nyashanu et al., 2020). In developing nations, and particularly in urban informal settlements, however, such programmes proved impossible to implement. Hence, it became critical for the present researcher to explore the viability of establishing locally relevant measures to protect populations in developing countries from the pandemic's severe effects, which are currently untreatable. To manage the growing statistics of the COVID-19 cases, South Africa implemented a variety of measures, which included 'non-pharmaceutical interventions' such as testing of people who demonstrate potential COVID-19 symptoms, contact tracing of those who were in contact with those who tested positive, isolation

and treatment of positive cases as well as ‘containment measures’ which involved strict enforcement of hygiene practices such as social distancing, washing of hands and travel restrictions (Matamanda et al., 2022; Nyashanu et al., 2020). The government also enacted other measures, some of which have implications for urban control such as partial and full lockdowns, which include the prohibition of public gatherings, the closure of open markets, and small, micro and medium-sized businesses (which primarily engage in informal economic activities), and the limitation of inter-state movement (Kihato & Landau, 2020).

However, notable challenges are faced in urban informal settlements in attempts to control COVID-19 (Nyashanu et al., 2020; Onyishi et al., 2021). The lockdown and other combative mechanisms such as social distancing, isolation, quarantine, contact tracing; safe personal hygiene; and working from home among others, to contain COVID-19 have a coordinated effect on people residing in these settlements. The circumstances are aggravated by spatial destitute circumstances in these settlements. The general public health advice to wash hands, use hand sanitizers, and self and socially isolate assumes fundamental conditions such as running water, sufficient dwelling space and other necessities (Corburn et al. 2020). A variety of issues affect informal settlements, inclusive of high population density to lack of access to water and sanitation. For many rural populations, advice on social separation and handwashing is impossible. The paucity of established public health statistics about informal settlements preceding and during pandemics like COVID-19 is a major challenge. The epidemiological data on the accurate number of people living in informal settlements is challenging and difficult to collect for public health planning and implementation purposes due to their unlawful or informal status (Corburn et al. 2020). Local governments are frequently obsessed with removing these urban informal settlements, while there is no clearly established policy regarding the population’s health and socio-economic well-being. This makes it impossible for many developing countries’ governments to design, manufacture, and appropriate emergency survival assistance.

4. HUMAN SPATIAL DEVELOPMENTS: REFLECTING ON URBAN INFORMAL SETTLEMENTS

The widening urban gaps that perpetuate multidimensional inequities are principally to blame for most African countries’ mounting public health crises (Matamanda et al., 2022). The urban penalty affects the poor the most, and COVID-19 has had a particularly negative impact on poor urban populations. In most African cities, the urban poor lives in squatter and informal settlements where in Sub-Saharan Africa, about 4.5 million additional residents are added to informal settlements each year, with the majority living in abject poverty (Matamanda, 2020; Ngcamu & Mantzaris, 2021; Matamanda et al., 2022). Due to social, economic and spatial inequities associated with high population concentrations, lack of essential services and infrastructure, and unemployment, poor residents in informal settlements are mainly vulnerable and exposed to health risks (Matamanda, 2020; Onyishi et al., 2021; Matamanda et al., 2022). In some places, an average of five to ten members are accommodated in each household. The residents are exposed to airborne viruses and respiratory ailments such as tuberculosis due to the filthy and deplorable environment in which they live (Ngcamu & Mantzaris, 2021). Their health is jeopardised by the low quality of life in these settlements, exacerbated by inadequate hygiene, a lack of health services and facilities, and the inability to afford health treatments (Ngcamu & Mantzaris, 2021; Matamanda et al., 2022).

Education, race, economic status, level of interconnectedness, access to basic services, and
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geographic location are some of the factors that might affect the health and well-being of residents in a given settlement (Matamanda et al., 2022).

In South Africa, there are significant variations in disadvantaged urban neighbourhoods, notably in terms of socioeconomic difficulties that are visible in informal settlements (Ngcamu & Mantzaris, 2021). Consequently, the distribution of primary health care infrastructure and services may be biased to the detriment of certain populations where generally, it is the urban poor who do not have access to particular services (Onyishi et al., 2021; Matamanda et al., 2022). South Africa's government has prioritised the improvement and upgrading of informal settlements across the country since 2004 (Nyashanu et al., 2020). The government pledged to 'eradicate' all informal settlements by 2014 as part of this plan. However, due to severe fiscal constraints in post-apartheid South Africa, the effort moved at a glacial pace and failed to meet the deadline, resulting in poor health outcomes for the residents (Nyashanu et al., 2020). South Africa's informal settlements account for a significant fraction of the population, particularly in urban regions. "Over 4 million individuals, or 1.25 million households, reside in urban informal settlements" (Housing Development Agency as cited in Royston & Ebrahim, 2019). High population density, absence of or restricted access to basic infrastructure and services such as water and sanitation, inadequate healthcare facilities as well as absence and or lack thereof of educational amenities characterise these settlements. In truth, South Africa's terrible history of mass land confiscation and socioeconomic inequality has resulted in informal settlements, which are a conspicuous indicator of South Africa's unequal access to land. Up to now, it is still difficult to find strategically positioned land for urban land reform (Ngcamu & Mantzaris, 2021). This leaves the country with "many South Africans who still need land to create homes and earn incomes" (State of the Nation Address, 2019). Informal settlements have been denied recognition by government institutions. They are frequently reduced to unlawful encampments and overlooked as a realistic option for anyone seeking to establish a home and a livelihood in the city. In terms of economic prospects, transportation, and social services, informal communities are often advantageously positioned (Royston & Ebrahim, 2019). For their residents, they offer low-cost rental housing or land for self-construction and also serve as an entry point into the urban environment for poor families that are relocating to the city.

5. THE EFFECTS OF SOUTH AFRICA'S INFORMAL SPATIAL DEVELOPMENTS ON COVID-19 RESPONSES: LESSONS FOR THE FUTURE

In South Africa's urban informal settlements, households are without direct access to services such as water and sanitation and mostly rely on common facilities which might become hotspots for possible COVID-19 infections while community containment and enforcing lockdowns are nearly impossible (Ngcamu & Mantzaris, 2021; Matamanda et al., 2022). Waterborne infections are common in informal settlements due to poor sanitation. As a result, the following are the effects of South Africa's informal spatial developments on COVID-19 responses:

Loss of livelihoods

It is worth noting that a large percentage of South African employees are engaged in the informal sector of various urban areas, whose livelihood is dependent on daily generated wages from outside their homes, with unavoidable elements necessitating continual and regular movement and

interactions (STATS SA, 2020). The imposed lockdown and order to ‘work from home’ risked the livelihoods of residents of informal settlements, particularly those in the informal economic sector whose majority later lost their jobs, a flagrant disregard for the living conditions and realities of South Africa’s urban poor (Mlambo & Khuzwayo, 2021; Matamanda et al., 2022). Businesses have been forced to close due to a lack of supplemental plans, putting the vast informal labour force, which includes petty traders, street vendors, craftsmen, cart operators, waste pickers, and roadside motor technicians, among others, at risk. Many people lost their little daily earnings and their capacity to buy food; in fact, the lockdown posed a significant dilemma for workers in the informal economy, who had to choose between their lives and their livelihoods (Pelz, 2020; Mlambo & Khuzwayo, 2021; Matamanda et al., 2022). People working in the informal economic sector, primarily in towns and cities, have turned to the development and maintenance of social systems and ties, as well as the collective organisation of communities, to maintain their livelihoods and settlements and to overcome some of the vulnerabilities.

Starvation and Hunger

Residents endured famine and starvation in addition to battling COVID-19. They were unable to stockpile food, particularly perishables, and many could not afford to purchase sufficient food to last even a week (Mlambo & Khuzwayo, 2021). Due to the breakdown of basic goods and delivery lines during the lockdowns, classified informal settlements as food deserts (Patel & Shah, 2020 in Matamanda et al., 2022). Even though social help was later supplied by various parties, such as government grants and food boxes from well-wishers, most informal settlements were unable to receive it due to a lack of social protection, nationality concerns, and corruption (Mlambo & Khuzwayo, 2021; Matamanda et al., 2022). Furthermore, the mishandling and mismanagement of food packages exacerbated food insecurity that already existed in South Africa’s informal settlements (Mlambo & Khuzwayo, 2021).

Non-Exercising of Good Personal Hygiene

Because COVID-19 is extremely contagious, people were advised to exercise good ‘personal hygiene’, precisely by washing of hands and the use of hand sanitizers as a disinfection method in case they come into contact with the virus. However, most communities in informal settlements, were unable to adhere to these hygiene requirements due to a shortage of clean water (Matamanda, 2020; Matamanda et al., 2022), and the high cost of sanitizers. As Hara et al. (2020), cited in Matamanda et al. (2022) observed, in the informal settlements and townships of Cape Town, South Africa, where residents struggled to acquire water, COVID-safe hygiene was an unaffordable and impossible luxury. The government used water tanks to augment the absence of water in some of these informal communities during the early stages of COVID-19’s development in South Africa. However, water tanks were infrequently and unsustainably supplied, forcing the poor urban residents to travel considerable distances to obtain water from neighbouring muddy rivers as well as community taps (Matamanda et al., 2022). That is, COVID-19 has revealed the high disease problem in South Africa’s informal urban settlements, mostly as a result of the urban poor’s limited access to basic services.

Lack of Basic Health Services and Infrastructure

Although South Africa is in a better social and economic situation than most of the other countries in Southern Africa, several realities confirm the existence and rising levels of poverty, characterised by high unemployment rates, hunger and malnutrition, poor health, and a lack of infrastructure and services such as adequate homes, water, health and education services and sanitation for the majority of the country's poor population, particularly the millions living in informal urban settlements (Plagerson & Mthembu, 2019; Ngcamu & Mantzaris, 2021). The urban rich, on the other hand, frequently have access to basic services and infrastructure while a large percentage of the urban poor that relies on the informal sector for a living does not. The lack of health infrastructure in these informal settlements exacerbated COVID-19's effects on the urban poor (Ngcamu & Mantzaris, 2021). Because of the lack of health services and infrastructure within or near these communities, lives that could be spared were lost in medical emergencies due to the unavailability of quick medical attention and intense care. As a result, death rates in disadvantaged areas are twice as high as in metropolitan areas (Plagerson & Mthembu, 2019; Matamanda et al., 2022).

Infeasible Self-isolation and Quarantine

When a person tests positive for COVID-19, they must be isolated to prevent the disease from spreading further. For identification of all those who came into contact with the COVID-19 patients, contact tracing exercises must be carried out. However, due to congestion, investigation of the patients through contact tracing becomes challenging in heavily congested informal communities (Gibson & Rush, 2020; Raju & Ayeb-Karlsson, 2020; Ngcamu & Mantzaris, 2021; Matamanda et al., 2022). Quarantine and self-isolation are not feasible at the same time (Raju & Ayeb-Karlsson, 2020; Matamanda et al., 2022). COVID-19's spread has exacerbated the settlements' intrinsic health hazards, further degrading the well-being of the vulnerable urban poor. Controlling the spread of the virus in informal urban settlements was made more difficult by these vulnerabilities. Given that COVID-19 is transferred through close contact with infected people through chatting and breathing (Matamanda et al., 2022), the pandemic becomes difficult to combat in crowded informal settlements and poorly planned spatial patterns, as these factors enhance the spread of COVID-19 (Gibson & Rush, 2020; Matamanda et al., 2022).

Impractical Social Distancing, Self-quarantine, Isolation, and Contact Tracing

Self-quarantine is impractical in informal settlements due to space limits, conflict, and congestion (Ngcamu & Mantzaris, 2021; Onyishi et al., 2021). In fact, a large portion of South Africa's urban population lives in informal settlements where it is not practical to maintain a safe distance between themselves as family members and neighbours.

Anxiety and Depression

From the preceding, it is obvious that people in informal settlements face not just COVID-19, but also unemployment and food insecurity issues, in addition to the usual obstacles faced towards accessing clean water, adequate sanitation, and medical care (Ngcamu & Mantzaris, 2021). The COVID-19 pandemic has adversely affected lives, economic activity and livelihoods, particularly in urban informal settlements, where social ties and networks are the key drivers of the urban

informal economy (Onyishi et al., 2021). Therefore, the residents were also exposed to anxiety and depression as a result of the pandemic as well as the impossible implementation of the measures adopted and implemented by South Africa to curb the spread of COVID-19. Living in informal settlements exposes one to hardships, endangers one's well-being; heightens struggles and is characterised by socio-political contestations for rights and survival, which leaves most of the residents anxious or depressed.

6. CONCLUSIONS AND RECOMMENDATIONS

This paper theoretically evaluated the effects of South Africa's urban informal spatial developments characterised by overcrowding on the transmission and spread of COVID-19 with a focus on informal "urban" settlements. The effects include loss of livelihoods; starvation and hunger; poor personal hygiene; lack of basic health services and infrastructure; infeasible self-isolation and quarantine; impractical social distancing, self-quarantine, isolation, and contact tracing; anxiety and depression. Even though talks have remained unabated, the reality of hunger among the poor has significantly worsened. This is primarily due to considerable rises in food prices over time, notably since the value-added tax (VAT) was raised to 15% in the first quarter of 2018. South Africa is currently mimicking stringent control measures adopted and implemented in other countries, which have shown to be unsustainable and have wreaked havoc on the socio-economic situations of the urban poor and vulnerable. Given the population distribution in informal settlements with more youthful and highly mobile people mostly due to their economic engagements, the success of some COVID-19 response mechanisms remains a struggle. Therefore, there is a strong relationship between spatial development and the success of COVID-19 response mechanisms. The current COVID-19 response strategies suggest a need for a more formal spatial development approach characterised by the sustainable development of and investments in more organised spaces and sufficiently accessible basic services and community infrastructure. The paper then concludes that both formal and informal spatial developments determine the successful response or lack thereof, of strategies toward curbing COVID-19. Controlling an epidemic is a difficult task that requires a positive local organisation of the affected areas. It also necessitates the creation of effective public health measures to address social injustice and socioeconomic inequity. In this corollary, it is recommended that:

- Local authorities must deploy mobile health services for onsite testing and emergency treatment, and locate effectively where residents of informal settlements as well as homeless people and other at-risk groups with limited access to healthcare, usually gather and can be easily accessible, e.g., water points, tuck shops (also called spaza shops).
- The national government should invest in more targeted and expansive improvements of informal settlements; and, at another level, mobilising trusted community organisations, local leaders and influential figures through traditional and alternative channels, to spread messages about the pandemic, develop community-led solutions and monitor the crisis situation.
- Public spaces and widening streets should be done as well as enhancing other aspects of the built environment to provide more space for physical distancing and prevent the spread of the disease, while improving the long-term quality of the public realm.
- The use of technology and targeting technologies and platforms that are accessible and widely used locally, e.g., mobile phone apps and WhatsApp chat groups that individuals can self-

assess their COVID-19 risk, check their symptoms and ask common health questions should be maximised.

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BETWEEN INDIGENOUS LANGUAGES AND ENGLISH: DECOLONISING THE LEARNERS' MIND SETS

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ABSTRACT

The decolonisation of university curricula was at the centre of the 2015 South African Fallist protest', which left a trail of destruction and generated interest in the argument over recalibrating Higher Education. Despite the fact that the debate on decolonisation in South Africa has been long overdue, the majority of university and basic education curricula remain overwhelmingly Eurocentric. The ongoing use of English as a medium of instruction has long-term devastating consequences for the South African education system, specifically where indigenous languages are not used for teaching, learning and assessment. This poses a threat to the quality of education for students who speak African languages both as mother tongues and home languages. This study explored the perspectives of Grade 12 learners from one urban secondary school on their interests in using indigenous languages for future academic learning (in Higher Education). This qualitative inquiry study was framed within the decoloniality theory. Data were generated through open-ended questionnaires from a purposively selected sample comprising of Grade 12 learners whose mother tongues are Sepedi, Tshivenda and Xitsonga. Learners prefer to be taught in English and their own mother tongue in Higher Education institutions of learning. The study established that the participants regard English as a powerful language in HE. This study extends the debate on what decolonisation might mean to the Grade 12 learners. It concludes that the inability to use home languages in the schooling system is attributed to the coloniality of the mind, which demands a major paradigm shift in language teaching approaches by privileging indigenous languages as the primary medium of teaching and learning.

Keywords: Decoloniality, decolonisation, Department of Basic Education, Higher Education, Language of Teaching and Learning.

INTRODUCTION

Decolonisation debates in Africa are not new phenomena; rather, they emerged during the movements that sought to end European colonial rule. The anticolonial debates have ranged from initial calls for the abolition of colonial systems established to dominate African territories to the ideal of liberating institutions from hegemonic Western ideologies and epistemic philosophies that marginalized African heritages and experiences in both schools and higher institutions of learning.

The colonial languages of learning and teaching pose a threat to the quality of education to most learners who speak African languages, and South Africa (SA) is no exception. This can be traced back to the introduction of Afrikaans as and the use of indigenous languages as tools for division among the African people. The British and Dutch institutionalised segregation in SA during the colonial period and entrenched this under apartheid (Clark and Worger, 2016) to make English and Afrikaans powerful languages of epistemic access. This legislation and its enforcement imposed foreign foreign cultures and languages on the Black majority. In other words, while the

Afrikaner government aimed at achieving cultural dominance through the promotion of Afrikaans in a variety of fields, the indigenous languages (isiXhosa, isiZulu, isiNdebele, Sesotho sa Leboa, Setswana, siSwati, Xitsonga, Tshivenda) received little attention, if any. Inequalities were therefore created and entrenched in the use of language policies and the very same language policies are still critical in perpetuating these inequalities (Vaccaro, 2021). A decolonial engagement is therefore designed to correct the systemic inequalities.

The dominance of the English language and its use in most African education systems is indicative of its colonial oppressive nature that continues to haunt most African education systems and has resulted in African languages lurking in the background and becoming underdeveloped (Mohr & Ochieng, 2017). The English language carries Eurocentric culture and worldviews since it is localized in different parts of the world (Saraceni, 2017), even in an African context. As such, African learners are denied the privilege of using and upholding their cultural ways of knowing and their knowledge systems. They are denied the legitimate right of using their mother tongue languages to navigate learning in favour of Eurocentric modernity.

This study advocates for a decolonised curriculum in basic education [Grade R to grade 12] in South Africa. Many studies have focused on decolonisation in HE and not much has dealt with basic education. Although universities are spaces of knowledge generation and therefore centres for the development of skills and expertise, it should be acknowledged that the clients for HE, the students, are from diverse backgrounds of the basic school education system. This paper argues that decolonisation, as a concept in HE, goes beyond HE phase. By taking the context of SA for instance, it bestows schools with the freedom to choose Language of learning and teaching, (LoLT), previously called medium of instruction in basic education. In South African Higher Education, it is called medium of instruction (MoI). This study established the perceptions of the South African grade twelve learners regarding their future if they were allowed to adopt MoI in their HE academic and epistemic engagements.

THEORETICAL FRAMEWORK

Decoloniality

While it is important to remember that discussions about decolonisation and decoloniality are neither uniquely African nor a recent phenomenon, discourses about decolonisation of higher education in most African countries stem from an intensely shared experience of an imposed European colonisation (Woldegiorgis, 2020.)

“Decoloniality centres around the notion of remaking the world to emancipate the enslaved, exploited and colonised people to regain their dignity as human beings, land, their knowledge systems and power” (Ndlovu-Gatsheni, 2015). According to Ngũgĩ, (1986), the usage of colonial languages is understood as part of the dissemination of coloniality of knowledge, in which imperialist agendas are transmitted with the goal of advancing Eurocentric modernity on the African continent. Schools should work to emancipate learners who were previously colonised by giving them access to knowledge that allows them to reclaim their dignity, land, and power (Vaccaro, 2021). After all, as Ngũgĩ (1986) says, “English was the official vehicle and magic formula to colonial elitedom.” In the spirit of this contention, indigenous languages should be used in teaching and learning for the return the dignity of African people and recognising their identities,

knowledge systems, and cultures (Ndlovu-Gatsheni, 2013). Still, the forms of coloniality persist to impose their hegemonic standards” (Adams & Estrda-Villalta, 2017). According to Ndlovu-Gatsheni (2013), African education systems should acknowledge education that affirms African identity and indigenous knowledge systems. The continuous use of English as LoLT in teaching African learners is both a reflection and reproduction of racial domination and inequality (Adams & Estrda-Villalta, 2017). Knowledge is always embedded in a culture and is transmitted through a language (R’Boul, 2020). So, the perpetuated use of the coloniser’s language by the African language speaker complicates the assertion and actualisation of the African identity and the expansion of their ‘inferiority and insignificance’ (Munyai & Phooko, 2021).

South African learners enter formal schooling and bring into classrooms repertoire suffused with their mother tongue language and home language to navigate learning. Instead of developing these resources through integrated strategies, they are confronted with a schooling system that enforces English as LoLT from Grade 4. Using English to teach African learners does not affirm African identities and does not ensure the regaining of African dignity that was destroyed by the colonial powers. The use of English as LoLT to teach the African learners alienates African learners from their own reality and therefore creates a barrier to access knowledge (Sibanda, 2014). Language is not neutral; it is a carrier of beliefs, cultural values, and worldviews. In the process of using English as LoLT, western cultures and ideological orientations are perpetuated amongst African learners. This disrupts their social contexts and cultural milieus. Socially, the African learner in this situation is unable to interact meaningfully with capable others, characterized by meaning-making, during the learning process.

Mother tongue instruction

Language in education has been a controversial issue in SA in spite of the constitutional right that all children should receive education in a language of their choice and that all eleven official languages should enjoy equal status. The Language in Education Policy (LiEP) aimed at ensuring the continued use of mother tongue as LoLT and enabling learners to gain access to additional languages through additive bi/multilingualism. Of the nine indigenous languages, English and Afrikaans, which were previously authorised and legitimated for classroom interactions, continue to flourish as official languages for education and teaching in SA. This in spite of the reality that the South African School Act (SASA) of 1996 and the LiEP mandate that three official languages be used in schools, allowing teaching and learning in the language preferred by the schools.

In the context of formal education, the term MT is normally used to refer to the language a child learnt first and usually speaks best (Walter, 2010). It is spoken from early childhood.

Some scholars argue that MTI does not guarantee educational chances in African schools. Jansen (2013) for example, asserts, “*simply learning in your mother tongue is absolutely no guarantee of improved learning gains in school... the problem is [...] the quality of teaching, the knowledge of the curriculum and the stability of the school that determines educational chances in a black school.*”

Using and indigenous African language to African learners is not about academic excellence, it is about regaining the lost identity, and confidence and sustaining what is cultural, humane and right. It revolutionalises the thinking. Learners should be taught to be revolutionary thinkers.

Revolutionary thinkers change the world structure. African learners seem to be oppressed in self-recognition and language recognition (Fanon, 1967).

Languages levels in South African context: Further Education and Training (FET) Phase

Further Education and Training (FET) Phase refers to grade 10 -12 levels. Language learning in Grades 10-12 includes all the official languages in South Africa, namely, Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, Siswati, Tshivenda, Xitsonga offered at different language levels. Home Language (HL) is the language first acquired by learners while First Additional language (FAL) is the language learnt in addition to one's Home Language (DBE, 2011). HL, according to Department of basic education (2011) is a level that provides for language proficiency that reflects the mastery of interpersonal communication skills required in social situations and the cognitive academic skills essential for learning across the curriculum. HL and FAL levels refer to the proficiency levels at which the language is offered, and not the native (Home) or acquired (as in the Additional) languages.

This study questioned learners if they prefer to be taught in an indigenous African language in when they reach HE, irrespective of its status.

Mother-tongue instruction in Higher Education

Decolonising the curriculum

Decolonisation implies the existence of a territory, entity, structure, or system that has previously been colonised by exogenous forces and thus requires liberation. Most African countries' discourses on higher education decolonisation stem from a shared experience of imposed European colonialism, which perpetuated epistemic violence against African indigenous knowledge systems.

Five phases in the process of decolonisation are rediscovery and recovery, mourning, dreaming, commitment and action (Chilisa, 2012). There should be pathways to help learners understand themselves, their consciousness, and contextual value systems that are, in essence, African.

The rationale of this paper was to hear it from the horses' mouth: the learners themselves.

This paper argues that learners should be made aware of the dangers of colonisation, and of policies that govern their linguistic agency and those of their school communities on the choice of LoLT. It supports Munyai and Phooko (2021) that these policies do not buttress the inferior groups that are already socially, politically or economically marginalised (Munyai & Phooko, 2021) even though they have been afforded the official space to function as academic and scientific language. There are numerous South Africans who are unable to access HE institutions because of language related barriers. The underdevelopment and undervaluing of indigenous languages in HE institutions starves the development of diverse linguistic needs of their student population (Munyai & Phooko, 2021.)

RESEARCH DESIGN, SAMPLING AND SAMPLE

As a case study, the one school that was qualitatively examined. The school offers Sepedi, Xitsonga, Tshivenda for as home languages, English as a first additional language and uses English again as LoLT. The study is qualitative and followed a case study design. In anticipation of

decolonising the HE curriculum, this study investigated the views of learners (who would be HE students in 2023) should they pass the National Senior Certificate in 2022. The study purposefully selected a sample of Grade 12 learners in multilingual school in Polokwane South Africa. The criteria for selection were that the respondents were Grade 12 learners who anticipate being enrolled in HE institutions in the following year (2023).

Research instrument/ Data Collection

Data were collected by means of a self-administered questionnaire. The questionnaire consisted of open- and close-ended questions. It was purposefully used to elicit knowledge about the respondents' opinions (Creswell, 2012) on the use of African languages for teaching in HE. The open-ended questions provided a means of gaining students' opinions about the use of mother tongue as preferred languages of learning and teaching at a university. Permission was sought from the school principal. The learners who were all above 16 were assured of confidentiality and anonymity. The researcher assigned in compiling the ultimate report in the spirit of ensuring trustworthiness. Out of all 248 grade twelve learners, 213 completed the questionnaire. Thematic analysed data enabled the researcher to organise and analyse responses and interpret them to determine common perspectives among participants (Creswell, 2012). The name of the school is not provided for the sake of anonymity; instead, it is referred to as the School.

RESULTS AND DISCUSSION

Results

The aim of this study was to explore the perspectives of Grade 12 learners on the use of English as a medium of instruction in HE. The study targeted Grade 12 learners who would be enrolled in universities in 2023 should they pass Grade 12 in 2022. Several opinions were established with regards the utilisation of home languages in place of Afrikaans or English in the pursuit of their HE careers.

Biographic information

The school was selected based on its multilingual policy. The school is largely dominated by learners from Pedi speaking community, followed by Xitsonga and Tshivenda speaking backgrounds. The school uses English as a language of learning and teaching, and offers Sepedi, Tshivenda and Xitsonga as Home languages (HL) and English as first additional language. The table below provides an overview of the home languages of the Grade 12 respondents.

Table 1: Respondents' home languages

| Language | Number of learners |
|-----------------|---------------------------|
| Sepedi | 190 |
| Tshivenda | 11 |
| Xitsonga | 11 |
| English | 01 |

Table 2: Respondents’ mother tongue

| Mother tongue | Number of learners |
|---------------|--------------------|
| Sepedi | 188 |
| Tshivenda | 11 |
| Xitsonga | 11 |
| IsiNdebele | 01 |
| IsiZulu | 01 |
| Afrikaans | 01 |

Table 3: Respondents who have more than one Home Language

| Language | Number of learners |
|------------|--------------------|
| IsiNdebele | 01 |
| IsiZulu | 01 |
| Afrikaans | 01 |

Themes resulting from the learners’ questionnaires are amplified in the following segment.

Codeswitching during lessons

According to the participants, teachers do switch from English to an African language to explain the threshold concepts in many of the school subjects, which are not taught in the mother tongue. All Sepedi speaking learners mentioned that their teachers do use another language to explain complex points. Seven Tshivenda speaking learners indicated that the teachers do not explain in their mother tongue, and five Xitsonga speaking shared the same view, together with one isiZulu speaking learner. The following are excerpts from the learners’ questionnaire:

A Tshivenda speaking respondent said:

“No, they do not. They only explain in Sepedi. They do not know my home language.”

Understanding content taught in the medium of English

Many students indicated that they understand better if the explanation is done in their own mother tongue than in English. The majority of these learners who are Pedi speaking followed by Tshivenda and Xitsonga stated their views as captured in the following vignettes:

- Heritage

“I need to know where I come from and how to speak and write Sepedi properly as it is very important for one to know their home language.”

- Understanding

“I understand things better when taught in my mother tongue, so I would prefer Sepedi.”

- Complexity of English language

“English is complicated for me to understand. So I would prefer my mother tongue at a university.”

“Some things are difficult to understand when big words are used.”

“I understand faster when my mother tongue is used.”

Understanding content taught in the mother tongue

Other have different views:

“It depends on who is teaching us. I have been doing English from a young age, so it is easy for me to grasp everything.”

“My understanding is the same either way.”

“I prefer being taught in English. Since English is mostly used more than my home language it will be a disadvantage for me to be taught in my home language.”

“Some words are difficult in my own home language. I am used to English.”

Preference of language used as a medium of instruction at a university

The majority of respondents did not appreciate the possibility of being taught in their mother tongue at a university level. This question was answered in ‘Yes’ or ‘No.’

Reasons or language of preference

Respondents provided divergent reasons for their preference of English over their home languages. Snippets of verbatim quotations from the respondents show this.

“I can say English is the best, because the language accommodates everyone in the class and everywhere and is fair for everyone to understand because we have different people and different languages.”

“We are in a generation where everyone communicates in English, so it is best to be taught in English while in high school so that once I am done with school I won’t have a problem with English.”

“It will help me improve my English and will also push me to study it as a killer subject because the lecturers will be using the difficult English, so I’ll be forced and pushed to study.”

“Every subject is to be answered in English except home languages. So basically what I am saying is learning in English will help us to understand better.”

Few who preferred to be taught in their mother tongue in HE said.

“I would like to be taught in my mother tongue. English is so difficult you have to find the word meanings from a dictionary.”

Contrary to the above responses, one respondent indicated that there is a need for the usage of the two languages at a HE institution because:

“Being taught in my own mother tongue can disadvantage me in the long run. Having to work and being with the people who speak English and meanwhile I do not know English because I was taught in Sepedi is helpful at times. It is better if I know both.”

“Hard subjects such as Physical Science needs [sic] a bit of easy words to understand better.”

Prominence of English as medium of instruction in Higher Education

Of the 213 Grade 12 learners, most reported that they would prefer to be taught in English than in their Home Language when they are in Higher Education for the following reasons:

- Lexicon

“This is due to the fact that using English is easier because there are always words in my home language which are not there in science.”

- Understanding

“I prefer to be taught in English at a university because for me English is better to understand. There are concepts that are hard to understand in my home language.”

- World view

“Well, because when I am learning in English it puts me on a scale where I’m not only gaining knowledge in a way that will limit my thoughts to the local area. It puts me in the same learning state as everyone else in the world which is a great advantage so that we can understand each other.”

DISCUSSIONS

Not surprisingly, learners indicated their potential choice of English in their future. MoI in HE for a number of reasons.

A majority of the learners’ responses believe that using English is invaluable. They see their home languages, in this case Xitsonga, Tshivenda and Sepedi as inadequate in learning at university level. The imperative to decolonise the university in South Africa is problematised here if the learners themselves still show immense veneration for the colonial languages. If students at the end of the school system in South Africa harbour such sentiments with regards their own home languages, the coloniality of languages persists, apparently. The data generated in this study demonstrates amply that the majority would rather stick to English than adopt home languages for their tertiary education. This confirms, in a way, the root cause of the quandary is in the foundation, not at the rooftop. We should critique the power and oppression of the use of colonial languages at the grassroots level; that is in primary and secondary school phases. If the secondary education learners lose a sense of identity and their culture, which is line with their African ontologies and epistemologies, it is actually helping to feed the coloniality of being, and killing epistemic access to alternative knowledges. The decolonised curriculum is based on an emergent indigenous paradigm which Le Grange (2016) labels relational accountability, respectful representation, reciprocal appropriation, rights and regulation. Most African cultures that learners bring into the classroom are regarded as inadequate because in the FET phase, which Grade 12 is part, learners predominantly learn through English or Afrikaans, giving these two languages significant advantage and leverage over African languages. The use of English, which is embedded in Anglocentric culture, denies epistemological access to knowledge to the majority of learners who speak African languages (Mweli, 2018). Therefore, the foundation that learners bring to schools is not utilised in the curriculum to support quality learning and teaching. Therefore, epistemological access to knowledge to the majority of learners who speak African languages is denied. This has been evident in both the languages chosen by the institution and the goals established for each of them. The findings show that language used by teachers influenced students’ performance in English. Since the prevalence of switching language is high as indicated earlier, then this influences academic performance in secondary schools. Therefore, the findings imply that language used by teachers in the classroom influences the academic performance.

As Ruiz (1984) explains, there are three ways of understanding languages: as resources, as assets and as problems. There is an element in the learners' responses that bilingualism is desirable. Learners who are bilingual showed no challenges in being taught in English. This is supported by Unamuno (2018) who contends that people who receive bilingual education have better intercultural competence. The representation of English as a language of higher value in comparison to others shows that these conceptualisations allow some level of critique, but in this study, respondents showed more interest in the continued use of English. It seems clear that, although the school offers three African languages, all of them are taught as subjects, but the rest of the curriculum content is taught in the English language.

Some of the reasons that the learners mentioned for using English as LoLT are, as Thobejane (2013) argues, that it is seen as advantageous. Learners approve English over their indigenous languages because it offers an opportunity for them to be members of a perceived elite grouping, for example, to access HE, to perform better in class, to perform better when they are in the universities. Some educationists argue that indigenous languages are unscientific and lacking in expression of other kinds of knowledge. The learners share the same view. They mentioned that their own mother tongue can be challenging in that some words are new to them since they started using English as LoLT at the earliest stages of their schooling. However, Mkhize and Balfour (2017) contend that the advantage in choosing English over indigenous languages because of opportunities and mobility is ambiguous since by doing so tramples upon the indigenous linguistic rights of the speakers of local languages. The rationale highlighted by this is exemplified by the common representations of English and indigenous languages that have been constructed over centuries of colonialism and neo-colonialism. Schools and the education system in general, cannot ignore this aspect when establishing the languages that constitute a part of the school curriculum. In addition, framing the language curriculum has a significant effect on the students' language representations, which could be linked to the social groups that speak those languages (Vaccaro, 2021). The study challenges the coloniality of dominant discourses about LoLT in South Africa. Calling on the voices of learners, I argue for the use of African languages to teach African learners as a powerful measure to regain African identity and to decolonise education from Eurocentric knowledge and cultures to the indigenous language forms.

The elements of decolonisation, such as self-determination and social justice, ethics, language, internalisation of indigenous experiences (Smith, 1999) are compromised. Learners, as agents in their learning, might not be aware of the loss of self-determination and the cultural fibre that might be lost through them being enculturated into the English dynamics.

The findings in this study demonstrate that most Grade 12 learners in the identified school prefer the use of an African language to clarify threshold concepts but maintain English as LoLT to teach them as African learners. Most of them did not indicate any struggles with English. In this context, the learners see a mother tongue as a mode that teachers use in the classroom to solve challenging content by codeswitching. Although the majority of learners indicate that they would prefer to be taught in English than in their African languages, there is a dire need to be mindful that the power of colonialism, especially in the case of language use, in this case English, remains contested terrain. Children only succeed in the classroom to the extent that they quickly master the second language (Walter, 2010).

CONCLUSION AND RECOMMENDATIONS

The challenges of the ineffective school systems are actually the cause of the unpreparedness of students who are enrolled in HE due to ignorance on choice of languages to learn. Universities which enrol students who hail from diverse linguistic backgrounds must bear the brunt of academic under preparedness, unfamiliar university cultures and learners' limited recognition of the use of previously unrecognised African languages as media of instruction which can lead to manifestations of protests, which are the mirrors of classed, racialised and contested education backgrounds. The miscarriage of poor educational values are actually the results of what occurs in basic education. We cannot run away from the fact that HE is racially, and class driven, because in the HE sector there can be no contemplation of equity, justice and equality as long as the indigenous languages are unequal and underutilised from the secondary education level. This study therefore calls for the awareness of teachers on decoloniality matters and implementation of the South African Language in Education policy to reinstate African languages as LoLT in secondary schools. Until the teachers and learners understand the importance of their own indigenous languages, the choice and use of African languages as LoLT is bound to remain controversial.

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THE REALISATION OF MUNICIPAL FINANCIAL SUSTAINABILITY: THE CASE OF METROPOLITAN MUNICIPALITIES IN GAUTENG PROVINCE, SOUTH AFRICA

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ABSTRACT

South African municipalities are obliged by the Constitution to strive within their financial capacity to provide basic services in a financially sustainable manner; however, most municipalities lack municipal financial resources. There is a gap between available financial resources and the fulfilment of the constitutional obligation of municipalities to provide basic services, and as a result, most of the municipalities are rendered financially unsustainable. Taking metropolitan municipalities in the Gauteng province as a case study, this paper aimed to investigate the barriers to and the effects thereof on municipal financial sustainability with an emphasis on inadequate revenue collection. This study employed the quantitative paradigm in the quest to satisfy the research objectives. The collated data were analysed using the linear regression analysis techniques. The empirical results of this study revealed that the impact of the non-payment of services due to inflation poverty lines on the financial sustainability of the metropolitan municipalities is statistically significant. The study recommends that municipalities should regard the study variables as priority areas for urgent intervention in order to give effect to their financial sustainability.

Keywords: Basic services, financial sustainability, infrastructure, metropolitan municipality, service delivery, South Africa

1. INTRODUCTION

Local government is the third sphere of South Africa's three-sphere system of governance. It is tasked with providing a large number of services to its respective communities via its municipalities (Nkuna, 2021). Section 152(1)(b) of the Constitution of the Republic of South Africa (South Africa, 1996) states that one of the objectives of municipalities is to ensure the provision of basic municipal services in a sustainable manner. The Municipal Systems Act (No. 32 of 2000) (MSA) (South Africa, 2000) provides the mechanisms and procedures to enable municipalities to execute this constitutional obligation, stating in Section 73(1) that municipalities must give effect to these provisions and ensure that all residents in their local communities have access to at least the minimum level of basic municipal services.

Many studies, such as those conducted by Booysen (2001), Botes and Pelsler (2001), Burger (2001), Enwereji and Potgieter (2018), Enwereji and Uwizeyimana (2019), Kroukamp (2016), Mavhungu (2011), Molobela (2016), Rusca and Schwartz (2018), and Simpson et al. (2019), have analysed the reasons for the continued culture of non-payment of basic municipal services that is evident in South African municipalities. The research findings from the foregoing studies revealed that when municipalities provide basic municipal services, their financial sustainability is scathed

by, inter alia, the unwillingness of customers to pay for basic municipal services, an increase in aged debts, a limited resource base in terms of the infrastructure, poverty, unemployment, and the inability to spend budgeted amounts meaningfully due to the ever-increasing number of formal and informal settlements within the metropolitan municipalities in the Gauteng province (Kroukamp, 2014; Van der Waldt, 2002). However, very few of these studies focused on the impact that the phenomenon of non-payment has on the financial sustainability of South African municipalities.

For this reason, the current study attempted to fill the gap by investigating the barriers to and the effects thereof on the financial sustainability of the selected metropolitan municipalities. Mazibuko (2013) asserts that there is a great need for further research aimed at resolving the higher inefficiencies in municipal finances that are experienced by many South African municipalities.

The following section presents the literature review as proposed by past studies. The third section introduces the methodology that was used in the study. The fourth section presents the empirical results and discussions, and the final section offers the conclusions of the study.

2. LITERATURE REVIEW

2.1 The pull-push theory of migration

This theory largely builds on Ravenstein's laws of migration. According to King (2012), the pull-push migration theory argues that migration comes about because of the economic and socio-political factors that are present in both the source and destination migration countries. Factors such as poverty, unemployment, and political repression drive out or 'push' people from their locations. Conversely, there are also factors present in the destination cities (e.g., the cities in the Gauteng province) that pull or attract migrants. These factors include better income and employment prospects, better social welfare services, and political freedom. Van Hear et al. (2018) add that for the 'pull and push' factors to influence migration effectively, several intervening obstacles must be overcome. These obstacles can be physical barriers (e.g., distance), economic barriers (e.g., financial cost of migration), political barriers (e.g., international borders), and cultural barriers (e.g., language problems). Van Hear et al. (2018) further observe that personal factors also play a vital role in migration since people's response to the 'pull and push' stimuli will vary depending on their socio-economic and cultural orientation.

2.2 Push and pull factors of urban migration

Khalo et al. (2014) define urban migration as a "phenomenon whereby people from rural areas move to more densely populated towns and cities in search of a better life that is work opportunities, housing and other services" (p. 10). In support, Polzer (2010) states that urban migration in the form of internal migration is the movement of people between and within provinces and municipalities within the same country, and it may have significant effects on the size, structure, and growth patterns of both the sending population and the receiving population. In addition, urban migration is widely associated with change of permanent place of residence (Thet, 2014). Ngobeni (2014) explains that the decision to migrate to cities such as those in the Gauteng province is closely linked to the place of origin and the destination area. This decision depends on a combination of push and pull factors such as lack of social security and justice, the

economy, political instability, cultural and environmental factors, education, transportation, low level of confidence in the state, and better opportunities for employment (Dinbabo & Nyasulu, 2015; Kurunova, 2013; Maphosa, 2007). A push factor induces people to move out of their present location, whereas a pull factor induces people to move into a new location (city).

According to the available statistics on provincial migration streams from 2011 to 2016, the Gauteng province received the highest number of migrants for all the periods, with the provincial migration levels increasing significantly by 1.2 million per annum since 2010 (Stats SA, 2017). Many of the people who migrate to the Gauteng province are without accommodation and eventually form informal settlements (Adegun, 2017). Those who have accommodation relocate to the formal areas (Adegun, 2017). Ultimately, it becomes the responsibility of the municipalities to provide all these people with basic municipal services as stipulated by the Constitution (South Africa, 1996).

2.3 Municipal financial sustainability

For South African municipalities such as the cities of Ekurhuleni, Johannesburg, and Tshwane to remain financially sustainable, Section 229 of the Constitution (South Africa, 1996) and the Local Government Budget and Expenditure Review (National Treasury, 2011) state that both internally and externally, municipalities should draw on the core administration revenue of the municipality. It is also noted that other spheres of government transfer money to municipalities. According to the National Treasury (2015), transfers to municipalities make up 9% of the total division of revenue over the medium term.

De Wet (2004), Feather (2018), Mbulawa (2019), and Śleszyński et al. (2021) state that for municipalities to remain financially sustainable in delivering effective and efficient basic municipal services to their local communities, they should ensure that they check wasteful and unnecessary expenditure bills, collect all revenue, and ensure that their infrastructure is well maintained and managed. The Constitution of the Republic of South Africa (South Africa, 1996) states that internally and externally, municipalities can draw on the core administration revenue of the municipality so that they may remain financially sustainable. This includes rates on property, surcharges on fees for services, service charges, other taxes, levies or duties, administrative fees, fines, municipal loans, and credit control and debt collection.

Municipalities should ensure that for every basic municipal service delivered to the communities that can afford them, the communities are billed and the money is collected for the services rendered. By doing this, municipalities would ensure that they remain financially sustainable without depending on assistance from other spheres of government.

2.4 Financial challenges impeding municipal financial sustainability

2.4.1 Ensuring financial sustainability in municipalities

Kroukamp (2014) states that South African municipalities remain in a financial predicament and identifies the problems regarding the financial sustainability of municipalities as follows:

[T]he increases in aged debts (outstanding debts of more than 90 days), high levels of indigent households (people who cannot pay for services and benefit from Free Basic Services schemes), an on-going culture of not paying for basic services on the part of certain

local communities, and losses (in terms of both water and electricity) because of illegal connections and poor maintenance of mainly water reticulation systems. (Kroukamp, 2014, p. 107)

At a press briefing held on 1 June 2020, the former Auditor-General of South Africa, the late Kimi Maketu, emphasised this argument when he released the municipal audit outcome report for the financial year-end 2018/2019. The report highlighted that the financial health of most municipalities appeared to be at risk. The spending of municipalities was in excess of their available financial resources, which gave rise to financial deficits (Makwetu, 2020). The current liabilities of many municipalities exceeded their current assets, thereby, making liquidity a problem.

2.4.2 Aging and backlog in municipal infrastructure

Moatshe and Mbecke (2013) state that many South African municipalities have inherited a backlog in the municipal infrastructure that provides basic municipal services. The reality is that many South African municipalities have poor self revenue-generating abilities, which further hampers depletion of the backlog in the municipal infrastructure that provides basic municipal services. Furthermore, the local communities consist of a large number of residents from informal areas who cannot pay for the basic municipal services and a large number of residents from formal areas who can afford to pay but decide not to pay. Akinboade et al. (2014) assert that local communities from both formal and informal areas are aware of their constitutional right of access to basic municipal services, and this increases their service-level expectations of the municipalities. Thus, communities expect to be provided with no less than the minimum level of basic municipal services at little or no charge (Makoti & Odeku, 2018).

2.4.3 Population increase

Another financial challenge associated with municipal financial sustainability involves the population increase in cities such as Ekurhuleni, Johannesburg and Tshwane where people form informal settlements and demand to be provided with basic municipal services by municipalities. This places further strain on the existing municipal infrastructure that is used to provide basic municipal services and affects the budgeted amounts for maintenance and repairs of municipal infrastructure (Daviaud et al., 2019; Louw, 2010; Van der Walddt, 2002).

In addition, a study conducted by Asoka et al. (2013) on the effects of population growth on urban infrastructure and services reveals that a rapid increase in the population rate places insurmountable strain on the municipal infrastructure used to deliver basic municipal services. In order for municipalities to address the needs of the increasing population, this trend requires an expanded or enhanced municipal infrastructure so that municipalities are able to provide sustainable basic municipal services such as electricity, water supply and sanitation, and waste removal services for their local communities.

Furthermore, a report presented by the South African Local Government Association in 2009 identified a number of challenges pertaining to the effects of population growth on South African municipalities. The report states that due to the ever-expanding population that results from the establishment of informal areas, cities are under immense pressure to deliver basic municipal services. The municipalities in these cities have limited financial resources to deal with the

growing demand for basic municipal services and thus, most of the residents in these informal areas access basic municipal services through illegal connections. Again, this affects the anticipated municipal revenue and jeopardises the financial sustainability of the municipality.

2.4.4 Unwillingness to pay for basic municipal services

A further fundamental challenge that South African municipalities are experiencing within the local communities is the unwillingness of customers to pay for basic municipal services. Fjeldstad (2004) and Kolandaisami (2020) argue that non-payment is not only exercised by unemployed residents, poor households and/or those residing in informal areas but also by high-income households in urban and formal areas. This may be a result of the dissatisfaction with the services delivered by the municipalities.

A survey conducted by Burger (2001) found that in many South African urban municipalities, households and residents can in fact afford basic municipal services but are not willing to pay. The United States Agency for International Development (USAID, 2010) states that many South African municipalities have been confronted with uncollectible consumer debts, and these have increased significantly over the past decade. Residents opt to benefit from free services under the assumption that this is acceptable and is general behaviour. In reality, some residents opt not to pay for their basic municipal services simply because they feel they can escape retribution and because they know of many other residents who are not paying for the municipal services and have thus far not suffered any negative consequences (Chetty, 2015). The negative effect of municipal outstanding debt is becoming increasingly evident, and this affects the financial sustainability of municipalities.

3. RESEARCH METHODOLOGY

This study employed the quantitative paradigm to examine the effects of the identified barriers on municipal financial sustainability with an emphasis on inadequate revenue collection. Quantitative methods were used in the analysis to give empirical findings.

3.1 Data collection

The secondary data used in this study were obtained from the World Development Indicators database published by the World Bank and Statistics South Africa and the audited annual financial statements of the selected metropolitan municipalities.

Regarding secondary data for basic municipal services and infrastructure variables, it should be noted that according to Part B of Schedule 4 and Part B of Schedule 5 of the South African 1996 Constitution (South Africa, 1996), municipalities provide a large number of public services. This study focused on the basic municipal services that directly affect quality of life, namely electricity and energy, environmental and waste management, and water and sanitation, in addition to the infrastructure to deliver these services.

3.2 Model specification

The study used the statistical model of linear regression in the form of the stepwise method to examine the relationships between the study variables and to prune a list of plausible explanatory

independent variables (identified in the literature review) down to a parsimonious collection of best-fitting independent variables.

The model used in this study to test the relationship between the dependent variable and the independent variables took the following form:

$$FS = f(\text{BMS, TPIG, IPL, UPTR, INFE})$$

With a linear relationship such as:

$$FS = \beta_0 + \beta_1 \text{BMS} + \beta_2 \text{TPIG} + \beta_3 \text{IPL} + \beta_4 \text{UPTR} + \beta_5 \text{INFE} + \varepsilon \dots\dots\dots (1)$$

where, FS is financial sustainability, BMS is the basic municipal services, TPIG is the total population in the Gauteng province, IPL is the inflation poverty lines, UPTR is the unemployment rate, and INFE is the infrastructure.

4. EMPIRICAL RESULTS AND DISCUSSION

This section presents the descriptive statistics of the study variables used in the linear regression analysis, the correlation coefficients, and the derived results.

4.1 Descriptive statistics and correlations

Before obtaining the main results of the study, descriptive statistics were gathered. The findings in Table 1 show the descriptive statistics of the study variables throughout 2008–2019 for which complete data were available. Means (M) and standard deviations (SD) were calculated for the relevant variables, and the relationships between them were determined.

Correlation analysis is a prerequisite for regression analysis. This paper used Spearman’s rho to determine correlations. Spearman’s rho is usually reserved for non-normally distributed data but can also be used for smaller samples; this study focused on the three metropolitan municipalities in Gauteng over a period of 12 years.

Significant correlations were found for most of the variables, with the relationship between Gauteng’s total population and the inflation poverty line reaching a perfect correlation of 1.00†**. See Table 1. Most of the relationships were highly significant ($p < 0.01$), with large effect sizes ($r > 0.50$). While financial sustainability had less significant relationships with basic municipal services, total population in Gauteng, inflation poverty line, and unemployment rate, it still had large effect sizes. No relationship could be established between infrastructure and any of the other variables.

With the use of z -values, it was determined that the data were normally distributed. Any z -value below -1.96 or above +1.96 would indicate either skewness, kurtosis, or both. In the sample of this study, none of the z -values fell outside this range.

Table 1: Descriptive statistics and correlations

| Variable | M | SD | 1 | 2 | 3 | 4 | 5 |
|----------|-------------------|-------------------|----------------------|----------------------|----------------------|---------------------|------|
| 1 BMS | R1 730 145.29 | R164 583.67 | - | | | | |
| 2 TPIG | R13 093 750.00 | R1 222 269.95 | 0.85 [†] ** | - | | | |
| 3 IPL | R770.38 | R162.22 | 0.85 [†] ** | 1.00 [†] ** | - | | |
| 4 UPTR | 25.30% | 1.67% | 0.84 [†] ** | 0.94 [†] ** | 0.94 [†] ** | - | |
| 5 INFE | R1 642 156 666.67 | R2 153 025 923.82 | 0.21 | 0.47 | 0.47 | 0.38 | - |
| 6. FS | R734 260 708.28 | R578 795 463.00 | 0.65 [†] * | 0.69 [†] * | 0.69 [†] * | 0.61 [†] * | 0.53 |

* p < 0.05 ** p < 0.01 † r > 0.30 ‡ r > 0.50

Note: BMS = Basic municipal services; TPIG = Total population in Gauteng province; IPL = Inflation poverty lines; UPTR = Unemployment rate; INFE = Infrastructure; FS = Financial sustainability

Source: Developed by the researcher

4.2 Linear regression analysis

Linear regression analysis was applied to the data in order to examine the relationships between FS as the dependent variable and the other five variables as independent variables preceding FS.

Different methods are available for linear regression. The enter method forces all the independent variables to be estimated at the same time, thus providing a picture of their combined influence at one time. For this study, it was more important to differentiate between each variable's possible influence on FS; therefore, the stepwise method was considered applicable. With the stepwise method, the *F*-ratio is used to establish the order in which the addition of the independent variables would most improve model fit. These variables are then added to the model in that order, from most to least influential (or not at all). The findings of the study are presented in tables 2 and 3.

Table 2: Linear regression: Stepwise method the model summary

| Model | <i>R</i> | <i>R</i> ² | Adjusted <i>R</i> ² | ΔR^2 | ΔF | <i>p</i> |
|-----------------------------------|----------|-----------------------|--------------------------------|--------------|------------|----------|
| Predictor: Inflation Poverty Line | 0.668 | 0.446 | 0.390 | 0.446 | 8.047 | 0.018 |

*p < 0.05

Source: Developed by the researcher

Table 3: Linear regression: Stepwise method coefficients

| Model | Unstandardised β | S.E. | Standardised <i>b</i> | <i>t</i> | <i>p</i> |
|-----------------------------------|------------------------|------------|-----------------------|----------|----------|
| Predictor: Inflation Poverty Line | 2382524.540 | 839910.053 | 0.668 | 2.837 | 0.018 |

*p < 0.05

Source: Developed by the researcher

Table 2 provides a summary of the proposed model. Only the inflation poverty line influenced the fit of the model. It explained a large amount of variance in financial sustainability: 44.6% (*R*² = 0.446). With further investigation, it may be possible to generalise it to the population from which the sample came since the Adjusted *R*² of .390 is not very far from the *R*² of 44.6%. The change in the *F*-statistic (8.047* See Table 2) was significant (*p* = 0.018); thus, prediction of model fit did improve somewhat with the addition of the independent variable inflation poverty line using the stepwise method. From Table 3, it can be seen that a one standard deviation change in the inflation poverty line leads to a 0.668 standard deviation change in financial sustainability, or for every R162.22 increase to the inflation poverty line, financial sustainability increases by R386 635 369.28.

Table 4 shows that none of the other independent variables had an influence on financial sustainability.

Table 4: Linear regression: Excluded variables

| Model | <i>t</i> | <i>p</i> |
|---------------------------|----------|----------|
| Basic Municipal Services | 0.120 | 0.907 |
| Total Population: Gauteng | -0.013 | 0.990 |
| Unemployment Rate | -1.201 | 0.260 |
| Infrastructure | 1.522 | 0.162 |

Source: Developed by the researcher

5. CONCLUSIONS

This study focused on the revenue collection barriers in the Gauteng metropolitan municipalities in order to expand existing knowledge on this public finance phenomenon. The major findings from the reviewed literature and the empirical study revealed that the metropolitan municipalities in Gauteng (cities of Ekurhuleni, Johannesburg, and Tshwane) are challenged by the inflation poverty lines and the increase in their population growth rates. This is generally due to factors such as job opportunities, migratory patterns, quality education, security, and access to economic activities. Upon arrival in the Gauteng region, these migrants reside in either formal or informal areas. The people who reside in the informal areas are not included in the municipalities' Integrated Development Plan (IDP). However, in honouring their constitutional rights, municipalities continue to provide the minimum level of basic municipal services without generating the necessary revenue needed to be financially sustainable.

It is evident that non-payment of basic municipal services reduces the revenue capacity of municipalities. This means that their forecasted municipal revenue will be less than their actual revenue. Receiving less revenue means that the ability of municipalities to continue providing basic municipal services to the local communities that are reasonable and acceptable will also be affected. Furthermore, non-payment of basic municipal services in the metropolitan municipalities of Gauteng reduces their financial capacity to finance the upgrading and maintenance of infrastructure since most of these municipalities are self-funded and are not entirely dependent on the grants they receive from other spheres of government. This prompts the need for greater cross-subsidisation from richer households to prevent overburdening the existing base.

Based on the findings, this study recommends that the municipal officials and elected representatives who are responsible for the management of public finances use these results and regard the study's independent variables as priority areas for strategic intervention to enhance their financial sustainability.

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PORTRAYAL OF THE VIDEO ASSISTANT REFEREE'S DECISION-MAKING PROCESS: FANS AND SPECTATORS' RELUCTANCE TO ACCEPT TECHNOLOGY

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ABSTRACT

The technological advancement of video assistant referee (VAR) usage in football changed on-field officials' decision-making process. In this regard, spectators and fans' experiences of the VAR decision-making process potentially influence their perceived enjoyment and future intention to attend a soccer match. It is, therefore, necessary to investigate the decision-making process of on-field referees using VAR and how it impacts spectators' future intention of in-stadium attendance. Data was collected using semi-structured interviews with South African soccer fans who watched at least one EPL match per week. Voice recorded data was transcribed, and inductive coding was performed during the content analysis using ATLAS.ti™ computer-assisted qualitative data analysis software program. Codes were clustered into categories of decision-making, challenges, and spectator continuation. The codes and categories were conceptually concatenated into a decision-making process flow diagram, which depicts spectators and fans' experience of the officials' decision-making process as well as the challenges and future intentions of in-stadium attendance. In addition, the novel process flow diagram provides sports administrators with specific aspects to address regarding spectators and fans' VAR on-field referee decision-making process. The implementation of VAR needs standardisation with clear guidelines on usage to ensure spectators' understanding of the decisions made and the process followed for increased acceptance of the new technology. Focused and intentional spectators' engagement during the VAR decision-making process will ensure future stadium attendance.

Keywords: Video assistant referee, decision-making process, soccer, fans, spectators, perceptions, challenges

1. INTRODUCTION

Football referee decisions cause great debate among players, managers, coaches, spectators and fans (Colwell, 2000). In addition, referee decisions impact the outcome of matches and leagues, with financial implications and influences on spectator and fan experience (Han *et al.*, 2020). In this regard, Federation Internationale de Football Association (FIFA) resolved to address incorrect on-field referee decision-making through the implementation of innovative technology use such as goal-line technology (Winand & Fergusson, 2018) and the video assistant referee (VAR) (e Pina *et al.*, 2018). VAR was introduced during the 2017/2018 European football season. FIFA has spent tremendous time, energy and resources to develop and implement innovative technology for an enhanced on-field referee decision-making process (FIFA, 2020). In this regard, the VAR is

deemed an additional referee who can assist the on-field referee in significant game-changing situations such as goals, penalties, red cards, and foul play (IFAB, 2021).

To assist the on-field referee's decision-making process, the VAR uses several technical means to assess critical situations, including slow-motion replay and different camera perspectives (Lago-Peñas *et al.*, 2019). However, the on-field referee makes the final decision, considering, following or rejecting the VAR's advice and after opting to review the situation on a screen next to the field (Lago-Peñas *et al.*, 2019). Despite studies indicating enhanced results of on-field referees' decision-making (Spitz *et al.*, 2021), VAR has not been accepted by spectators and fans who deem the cumbersome decision-making process to reduce excitement and enjoyment (Kolbinger & Knopp, 2020). Spectators are considered in the strictest form as those who merely watch and observe sports matches, whereas fans are the enthusiastic devotees of a given individual, team or league (Trial, Robinsin, Dick & Gillentine, 2003). However, spectators are an essential resource to sports event success through their involvement as fans (Duan *et al.*, 2019). Numerous studies have indicated that fans and spectators have not accepted the new VAR technology implementation within various leagues and tournaments (Märtins, Westmattelmann & Schewe, 2022; (McInnes, 2021; Van den Berg & Surujlal, 2020). In this regard, it is necessary to explore why spectators and fans have not accepted VAR technology as part of the on-field referees' decision-making process from a theoretical point.

2. THEORETICAL FRAMEWORK

Information systems and sports technology research have a rich history of examining consumers/fans/spectators' acceptance and adoption of emerging technologies (Moore & Benbasat, 1991; Venkatesh *et al.*, 2003). Consumers stay connected to the world around them using innovative technologies and therefore are inclined to adopt them (Desjardins, 2018). In addition, consumers accept technology when the product provides the expected benefits (Rubas, 2004). Simon (2001) describes acceptance as a positive choice that consumers make to use a specific technology, given the usefulness and overall satisfaction of their requirements and needs (Adell *et al.*, 2014). Within the sports consumer context, sports and league administrators are curious to determine why consumers accept emerging technologies or decline their use (Dylan & Morris, 1996). Therefore, understanding why consumers accept technological advancements is necessary within the digitally transformed sports domain. Administrators aim to continuously provide spectators and fans with satisfying experiences incorporating new technology. In addition, the analyses and prediction of consumers' responses to technology acceptance will guide sports stadium managers, league administrators, and marketing practitioners to enhance marketing campaigns, address spectator and fan expectations, and ensure sports consumerism for enhanced revenue (Dylan & Morris, 1996).

Numerous theories and models exist to assist stadium managers and league administrators in analysing consumers' reactions to and acceptance of new technology (Rogers, 1983; Fishbein & Ajzen, 1975; Ajzen, 1991; Taylor & Todd, 1995; Venkatesh *et al.*, 2012). For the purpose of this study, Rogers' (1983) innovation of diffusion (IDT) theory will be used to explore the acceptance or dissatisfaction with the use of the VAR system among EPL fans and spectators.

2.1 Innovation of diffusion theory

The innovation of diffusion theory explains how consumers decide to implement a new concept, method or technology (Rogers, 1962). The theory implies that consumers' choices are primarily based on a collection of innovation characteristics that contribute to a subjective interest in the innovation (Agarwal, 2000). The IDT theory emphasises the importance of innovation and personal innovativeness (Zhao & de Pablos, 2011), where innovation is described as a new technological device that comprises hardware and software components, while an individual's personal innovativeness refers to their willingness to experiment with new technologies (Agarwal & Prasad, 1998).

Innovation is linked to individuals who are constantly seeking new methods and technology to address existing problems; however, consumers do not accept technology unconditionally (Lu *et al.*, 2005). The consumers' risks associated with accepting innovative technology must be decreased and addressed when consumers are familiar with the technology, know about the innovation, or have similar past experiences (Rogers, 1995). The IDT proposes that several perceived attributes, such as relative advantage, complexity, observability, compatibility and trialability, determine consumers' intention to adopt an innovation (Rogers, 1995). In this regard, the relative advantage is defined as "the degree to which an innovation is considered as being better than the idea it replaced" (Lee *et al.*, (2011:251). The relative advantage is classified as one of the strongest predictors of consumers' adoption of an innovative product (Lee *et al.*, 2011). Therefore, PSL and other soccer league administrators need to determine the relative advantage spectators and fans experience in using VAR during soccer matches.

In addition to determining the spectators and fans' relative advantage of the technology used, the aspect of complexity also needs careful consideration (Rogers, 1995). Complexity refers to the degree to which an innovative product can be perceived as difficult to understand or use and could potentially negatively influence consumers' usage intentions (Cheung *et al.*, 2000). Likewise, the IDT characteristic of observability plays a vital role, where it is defined as the extent to which the outcome of the innovation is visible to potential consumers (Kaminski, 2011). The compatibility characteristic within the IDT refers to the degree to which innovation is perceived to be compatible with consumers' current principles, expertise and desires (Wang *et al.*, 2018). Compatibility evaluates the degree of continuity between innovative technology and the individual's current technological and social setting. The last IDT characteristic of trialability is described as the opportunity for consumers to use the innovation before an immediate implementation of the innovation (Nor *et al.*, 2010:71).

Based on the theory of the diffusion process, Rogers (1962) categorised consumer behaviour based on their adoption of innovation stages (Figure 1). The first category, better known as innovators, is recognised as a small group of consumers who accept the challenge of new innovation and the perceived risks. Innovators search for the latest products on the market, despite the challenges or risks involved (Moore, 1991). The second group, labelled as early adopters, tends to familiarise themselves with the new innovation before accepting it. However, early adopters accept the technology before most other consumers do (Rogers, 1962, Rogers, 1995).

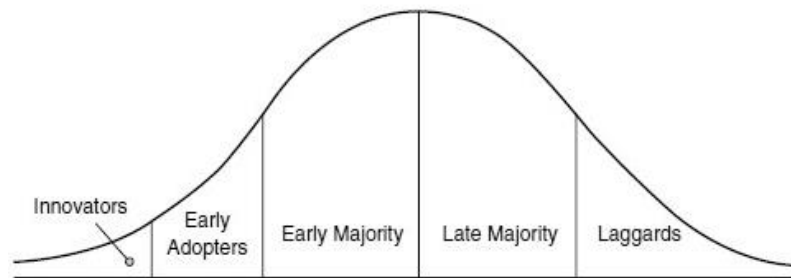


Figure 1: Innovation of diffusion curve (Rogers, 1962; 1995)

The third category, known as the early majority, is more likely to accept the innovation after observing several other consumers have used it. In contrast, the late majority have high scepticism and adopt an innovation after the average consumer (Rogers, 1962). Laggards are the last group of consumers to embrace innovative products and will only adopt a product after innovators, the majority of early adopters and the late majority have accepted a specific product (Rogers, 1962). The IDT provides a broad overview of technology adoption and explains fans' and spectators' adoption or rejection of new technology in sports.

3. PROBLEM STATEMENT

FIFA indicated a commitment to resolving existing problems in the football world by testing and implementing new technologies and innovations (FIFA, 2022). FIFA intended to harness technology and implement it to improve the game through research, development and innovation. Likewise, a primary goal of the technology implementation was to enhance the football experience on and off the pitch (IFAB, 2018; FIFA, 2020). The VAR system was successfully incorporated into the Laws of the Game in March 2028, whereafter FIFA continuously invested time and money in the VAR technology to improve the game and spectator experience (IFAB, 2018; FIFA, 2020). FIFA followed consultative VAR technology workshops and processes with over 20 competition organisers, the Refereeing subdivision, and the IFAB to advance critical principles for VAR technology development and implementation (IFAB, 2018; FIFA, 2020). Fundamental principles of VAR technology development included providing accurate information to assist the decision-making process and make the review process as efficient as possible. Considering the continuous testing of the VAR technology since 2019 and the considerable changes and enhancements made to the decision-making process, it is alarming that a mere 26% of EPL fans support using VAR (McInnes, 2021). Despite the efforts by FIFA and the EPL administrators, an overwhelming 95% of fans agree that VAR made the experience of watching a match less enjoyable, and 44% indicated that they would be less likely to attend a game in the future (Pathak, 2021). The negative experience of VAR usage has been attributed to the impact on fans' ability to celebrate a goal and the time it takes to resolve decisions (McInnes, 2021). Therefore, the constant media reports on the negative influence of VAR on fans and spectators' experiences of the technology-enhanced decision-making process have to be explored for possible solutions to this specific phenomenon.

2.1 Purpose of the study

This study explored South African soccer spectators and fans' perceptions of the referees' decision-making process using the VAR in EPL soccer matches. The results culminated in developing a process flow diagram indicating positive and negative experiences regarding the VAR decision-making process. The flow diagram explains the primary concerns held by soccer fans and the influence the process has on future in-stadium attendance.

3. METHODOLOGY

3.1 Research design

The functional paradigm approach utilised in this study provides clarifications and possible solutions within a particular social setting (Burrell & Morgan, 1979). A qualitative exploratory research approach using semi-structured interviews was deployed for the study since the exact wording of open-ended questions does not have to be followed in sequence (Cohen, Manion & Morrison, 2011). As VAR is a relatively new and under-researched technology used in the EPL, this approach is deemed highly appropriate due to its propensity to generate new ideas, insights and practical solutions (Crabtree & Miller, 1992). Within the VAR soccer context, the methodology allows in-depth exploration, with possible interesting recommendations on a relatively new phenomenon in soccer.

3.2 Sampling method

The sample for the study comprised South African soccer spectators and fans of the EPL. A combination of purposive and snowball sampling was used to identify the participants for the study. The selection criteria for participant inclusion were as follows: a) spectators and fans were required to have watched at least one EPL match per week over the past four months (as participants would have recent memories of situations where VAR was used), and b) spectators and fans had to have a good knowledge of how and why VAR was used in soccer. The primary researcher first identified two participants who fit the selection criteria and requested them to identify others who would be suitable within the set criteria. In this manner, snowball sampling was applied. The identified participants were first contacted via WhatsApp by the primary researcher to request an interview pertaining to VAR in EPL and stating the purpose of the study. Participants who responded positively to the message were then requested to indicate an appropriate time for a telephone interview, after which the primary researcher scheduled an appointment at a convenient time for the participant. Participants who did not respond to the WhatsApp message or indicated they did not want to be interviewed were not contacted again.

3.3 Data collection

A semi-structured interview schedule focusing on the participants' perceptions and experiences of VAR in the EPL was developed. The interview schedule was assessed by two experienced qualitative researchers who ascertained the content validity of the interview schedule. Feedback received from them was incorporated into the final schedule. The interview schedule was pilot tested with two sports management students to determine "the most logical and smooth-flowing order of questions, identified issues that needed clarification, and determined the approximate

duration of the interview” (Surujlal & Jordaan, 2013). Since the research was conducted during the Coronavirus (COVID-19) lockdown phases experienced globally, telephonic interviews were deemed the most appropriate method to collect data, as they ensured both social distancing and avoidance of face-to-face contact with participants. In addition, it increased access to geographically disparate subjects, permitted greater anonymity, increased interviewer safety, and allowed the researcher to take notes and listen to participants without disturbance (Novick, 2008). Carr and Worth (2001) describe telephonic interviews as a versatile data collection method to collect rich and high-quality data. The loudspeaker function was used to record the interview with another device, and the interviewer could listen and take notes simultaneously. All interviews were conducted by the primary researcher so that the questioning and probing would be consistent, i.e. the same standard of questioning and accuracy could be maintained throughout. At the outset, each participant was again informed of the purpose of the study and that they would remain anonymous at all times (pseudonyms were used). In addition, the topic, intent and type of interview questions were communicated to the participants, and they gave verbal consent to proceed with the interview and recording thereof. Participants were aware that their responses would be confidential, and they could terminate their interview at any stage without repercussions.

3.4 Data analysis

The voice-recorded data was inserted into ATLAS.ti[™], a computer-assisted qualitative data analysis software program, and analysed by the primary researcher. Inductive coding was performed during the content analysis, where codes are seen as labels for assessing units of meaning to the descriptive information during a study (DeCuir-Gunby, 2011). The analysis followed the constant comparative method (CCM) as proposed by Boeije (2002), where the simultaneous comparing and contrasting of data and information during the analysis creates codes and categories within the context of the data. Inductive code creation, applied during the analysis, refers to identifying meaning units moving from particular and specific occurrences and observations to discovering patterns (Babbie, 2001). To ascertain the validity and reliability of the coding and CCM process, the researcher provided the created codes with a short description and an example to a research peer who agreed on the application thereof (De Vos, Strydom, Fouche & Delpont, 2005). The coding process continued until no new codes were created, indicating data saturation (Guest, Bunce & Johnson, 2006), which was reached after ten participants. Interviews with a homogeneous group of participants may render data saturation at as few as six participants (Fusch & Ness, 2015). Codes were clustered into categories, which described the perceptions and experience of EPL spectators on the VAR decision-making process followed by on-field referees. Ethics clearance was obtained as part of a more extensive study on technology use in sports decision-making. Ethical issues such as respect, honesty, confidentiality and anonymity were adhered to during the study.

4. RESULTS AND DISCUSSION

Nine telephonic interviews were conducted, at which point data saturation was achieved. However, to ensure complete data saturation, the researcher performed an additional interview and confirmed the data saturation with no new codes being created during the tenth interview analysis. The average age of participants was 20.8 years (± 2.49). They followed the EPL for an average of 8.4 years (± 5.7). Of the total participants, nine were male and one female.

The participants' narratives are depicted in Tables 1 to 3 and linked to the created codes. The inductive codes were clustered into categories that were labelled according to the overarching meaning of the codes. The different categories that were created from the interview data include the following: *decision-making*, *challenges* and *spectator continuation*. The codes of the three categories were conceptually concatenated into a VAR decision-making flow diagram that indicates the spectators and fans' descriptions of the VAR decision-making process (Figure 1). The narrative and codes of the *decision-making* category are depicted in Table 1.

Table 1: Narratives and codes for the *decision-making* category

| Narrative | Code |
|---|--|
| Some decisions do not need a VAR (P2) | No need for VAR |
| When the on-field referee decides to use VAR or not, is not clear (7) | Inconsistent use of VAR |
| The VAR decision-making is more positive since it is more in-depth looking at situations (P4) | In-depth evaluation |
| I think decision-making between matches is consistent (P4) | Consistency between matches |
| In one match the decision by VAR is made for a penalty, but in another match, it does not get the same decision – so it is unfair (P3) | Inconsistency of decisions between matches |
| The decisions are explicit (for all to see in detail), so they are correct and fair (P5) | Explicit |
| The referee has a chance to re-look at the incident to re-check the decision (P5) | Re-visit decision |
| If the on-field referee does not what to consult with VAR, he does not have to (P5) | On-field referees decide the use of VAR |
| I have seen poor decisions, no consistency in decision-making (P10) | Inconsistent |
| Most officials in the Premier League do not look at the monitor for the replay, which influences 90% of the decision. I believe it's better if they make use of the monitor and make a decision based on what they see rather than advice from the VAR official only (P8) | Referee decision Decisions made based on sight Advice from VAR |
| The decision is never the same; sometimes it depends on the referee, it is never the VAR who makes a final decision (P6) | Final decision |
| The VAR could be right, and the on-field referee could be wrong, but he makes the decision, and it is up to his decision (P6) | Use of VAR suggestions |
| They should let the VAR make the final decision (P6) | VAR makes the final decision |
| Referees cannot see everything, but the VAR helps them | The referee on the sports decisions |

(Participant indicated as P followed by the allocated number)

The participants' narratives in Table 1 indicate two sides of the same aspect under investigation; one positive feature apparent in using VAR is countered with the opposite and negative elements. The participant narratives provide several opposing elements referring to the *need for VAR* versus *no need*, *consistent use of VAR* versus *inconsistent use*, and *consistency* versus *inconsistency in decision-making*. The role of the VAR during the process is debated, where the on-field referee should consider the advice from the VAR in making the final decision.

Table 2: Narratives and codes for the *challenges* category

| Narratives | Code |
|--|-------------------------------|
| It wastes time (P2) | Time wasted |
| VAR is only applied in some situations, and in others, it is not used (P1) | The application of VAR varies |
| There are contradictions in using VAR (P3) | Contradictions |
| In one match the decision by VAR is made for a penalty, but in another match, it does not get the same decision – so it is unfair (P3) | Inconsistency of decisions |

| Narratives | Code |
|--|------------------------------------|
| You can only sometimes hear what the on-field referee and VAR are communicating, not in all instances (P4) | Exclusive communication |
| It is a complex system because you need many cameramen and good quality videos (P4) | Complexity and need for technology |
| The challenge lies in the way the referees make the decisions; he may make a mistake and does not review it (P5) | The referee on the spot decisions |
| Slows down the efficiency of a productive game (P10) | Slows the game down |
| People are going to lose jobs; referees and assistant referees may lose their job, which is a challenge for the sport (P7) | Jobs loss |

(Participant indicated as P followed by the allocated number)

Participants perceive the use of a VAR system in football matches as a complex process that needs sophisticated and expensive technology with experts operating the process (Table 2). The participants also experience wasted time while the on-field referee uses VAR, negatively influencing the match flow. In addition, the exclusion of in-stadium spectators from the VAR communication and a lack of explanation of the decision made are significant challenges that challenge the match experience. The on-the-spot decisions made by on-field referees seem inconsistent and incorrect, to the extent that spectators suggest referees could lose their jobs due to low refereeing performance.

Table 3: Narratives and codes for the *spectator continuation* category

| Narrative | Code |
|--|--|
| Spectators will continue watching soccer; they understand VAR better now (P3) | Continuation with a better understanding |
| VAR may influence spectators because the matches are getting longer, the matches are not flowing as they used to (P4) | Negative influence |
| If there are so many stoppages to consult with VAR, it kills the atmosphere of sudden things happening and the feelings you get when they happen, it may be that a small percentage of people watch from home and do not go to the stadiums (P5) | Stoppages influence experience |
| VAR implementation will lose old-school fans (P10) | Old school fans |
| Most people in a few years will not have the drive to go to matches because everything is slowly changing. Most people like to watch soccer with the drama, but now the element is lost, and people will stop going to the stadiums (P6) | Stadium attendances drop |
| There might be fewer people watching at stadiums because when you are at the stadium, you see everything live, but now you do not always see the VAR or hear what is said, so then you will have to catch the highlights (P7) | Exclusion communication / can't view VAR |

(Participant indicated as P followed by the allocated number)

Table 3 indicates the spectator continuation perceptions, considering VAR's influence on the overall experience. Participants' opinions on the continuation of in-stadium spectatorship vary, where participants communicated the need for a better understanding of the rules and usage of VAR. Spectators and fans are used to viewing football matches in a specific manner, where the match has a certain ebb and flow. However, the interference of VAR has a negative influence and 'old-school' fans and may discontinue their spectatorship. The primary concerns that may affect stadium spectatorship to drop in the future are the stoppages, exclusion of VAR communication, and inability to view the technology-enhanced decisions, especially within the stadium.

Considering these influences of VAR on spectator continuation and discontinuation perceptions, an adaption for future implications of the system must be deliberated.

The flow diagram (Fig 1) indicates an integrated perception of spectators on the VAR decision-making process followed, where the process is seen as complex. The inconsistency when the on-field referee has to refer to the VAR and, when not, is a challenge for spectators at the onset of the process. According to the IDT, complexity is one of the perceived attributes influencing spectators' intention to adopt the new technology (Cheung *et al.*, 2000; Rogers, 1995). Therefore, the findings of this study corroborate this attribute, where spectators are less likely to adopt the use of VAR due to their view of it being too complex within the specific on-field application. In this regard, spectators find it difficult to understand the intended use and therefore view the use of VAR for decision-making as inconsistent. Likewise, inconsistent decision-making occurs while using the VAR.

In contrast, spectators also reiterated that the VAR adds to better and more consistent decision-making by the on-field referee. Inconsistent decision-making is attributed to on-field referees not consulting the VAR or making decisions independently from the input from the VAR. The independent decisions made by on-field referees lead to contradictions in the decision-making process as a significant challenge expressed by spectators. This finding can be linked to the observability attribute of the IDT (Kaminski, 2011), where spectators observe particular behaviour or the lack thereof by the on-field referee, which influences their adoption of VAR. In addition, instances where the use of the VAR where on-field referees make decisions that are inexplicable to the spectator can also be ascribed to the compatibility characteristic of the IDT (Wang *et al.*, 2018). The spectators view the use of VAR in these particular instances as incompatible with their current principles and needs (Wang *et al.*, 2018), where they want to be involved and informed of the referee's decision-making process and its influence on the match.

The incompatibility of the new technology use with the spectators' current expertise and principles adds frustration since the VAR review process wastes time, slows the match flow and stems the atmosphere. Compatibility also ensures the continuation of use between innovation and the social settings of individuals (Rogers, 1995), which is necessary if FIFA intends to continue using VAR and influence its adoption by spectators. These distinct challenges negatively affect spectators' intention to adopt the new technology and their willingness to attend live matches. The last IDT characteristic of trialability also needs consideration within this study since consumers' engagement and experience of the new technology during the trial period of VAR have been primarily dominated by negative experiences, incompatible needs and inconsistent behaviour observations. According to the IDT, trialability proposes an opportunity for consumers to see the benefits of the technology implementation, which should influence the adoption positively (Nor *et al.*, 2010:71). The findings of this study indicate that the trialability of VAR may not have had the intended outcomes for spectators to see and experience the benefits of VAR clearly, but rather experience numerous challenges and frustrations associated with its induction into the game. Therefore, the trialability aspect of the IDT was not effectively utilised to achieve the intended technology adoption of VAR by spectators as yet.

In contrast to the negative experience of the VAR on the decision-making process of the on-field referee, spectators believe that if the consistent use of the VAR is implemented with certain conditions adhered to, it could be beneficial to the sport. The requirements include that the VAR provides advice to the on-field referee and a discussion between the two match officials. In addition to the VAR reviews being available to the on-field referee next to the pitch, spectators also want to explicitly view the video replays, hear what is communicated by the officials within the stadium and be informed of how the on-field referee made use of the VAR's advice and the on-field monitor for an enhanced and transparent decision. Instances where no video replay is available to spectators in the stadium and no information on the communication between the officials lead to spectators experiencing exclusion from the match happenings, negatively influencing spectators' future intentions to stadium attendance. However, spectators deem the inclusion of the VAR video and audio communication between the match officials as an essential part of understanding the VAR decision-making process.

5. CONCLUSION

This study aimed to explore South African soccer spectators and fans' perceptions and experiences of the influence of VAR on EPL soccer matches. Spectators and fans perceived the VAR decision-making process as positive when the communication and videos from the VAR were audible and visible in the stadium, while the conditions that the on-field referee had to adhere to were also stipulated and adhered to. Spectators need to feel included in the decision-making process, and stadium administrators must consider how to overcome the exclusion experience of fans for enhanced stadium match attendance. According to the IDT, FIFA and other national governing bodies need to consider the specific characteristics involved in adopting new technology. In this regard, the complexity of the latest technology implementation, compatibility with spectators' current sports experience principles and observability of clear advantages in using the VAR have to be addressed for spectators to adopt this innovation, and influential to future stadium attendance intentions.

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SCULPTING ENTERPRISE RESOURCES' INDUCEMENTS ON THE ADOPTION OF ENTERPRISE APPLICATION ARCHITECTURE FOR SUPPLY CHAIN MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES: A CASE OF CAPRICORN DISTRICT MUNICIPALITY

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ABSTRACT

This article examines the enterprise resources inducements (ERIs) for the adoption of enterprise application architecture (EAA) for supply chain management (SCM) in small and medium-sized enterprises (SMEs) within the Capricorn municipality of South Africa. An integrative **literature review** is chronicled with the inclusion of architecture vision, business architecture, information systems architecture, technology architecture, opportunities and solutions, and governance implementation. This study contributes to existing knowledge on the adoption of EAA by providing ERIs generally seen as a factor strongly applicable to SCM. A quantitative survey presented both diagnostic tests and data analysis as that of the methodological modus-operandi. Descriptive data analysis was generated through Pearson's correlation and coefficient, along with analysis of variance (ANOVA) and linear regression. The all-encompassing results ascertain the alternative hypothesis that the ERIs affect the adoption of EAA for SCM when developing an interest in the subject phenomena.

Keywords: Enterprise application architecture; enterprise resources inducements; Network Perspective Theory; Open Group Architectural Framework; Small & medium enterprises; supply chain management and Zachman Framework.

INTRODUCTION

ERIs plays an indispensable role as a formative element in the adoption of EAA for SCM in SMEs. ERIs ascertains expansion for further development and success in technologically acquiescent enterprises. EAA is demarcated as systematic protocols enterprises follow in establishing general and functional activities under one umbrella with multiple domains. This designation is adjacent to those of Hasa (2019), Burton (2022), and White (2022) who describe EAA as well-defined practice for conducting enterprise analysis, design, planning, and implementation, using a holistic approach at all times, for the successful development and execution of strategy. So far, three pillars have been identified as being potentially important that includes; digital transformation, information technology (IT) growth, and modernisation for functional departments. Moreover, EAA deals with complex relationships between an enterprise, human-capital formation, algorithms, and systems that automate processes. Key benefits of adopting the EAA are that it presents enterprises with modern organised certainty, as well as managing complexity and supporting the creation of actionable signature-ready, increasing agility and accelerating time-to-value (Tharpe, 2019a). In the wake of the EAA overview, Ajer & Olsen (2018) argue that this perceived benefit cannot be sustained unless practiced in accordance with accurate measures for effectiveness and efficiency. McComb, (2004) emphasised that choosing the EAA remains a

critical aspect in achieving a successful information technology (IT) infrastructure that covers the enterprise's needs. This indicates a need to comprehend the various perceptions of ERIs that exist between the Network Perspective theory (NPT), and the EAA framework, accompanied by a Summary table. The architecture development methods are discussed with eight elements: (a) Architecture vision identifies two aspects of risks associated with the enterprise development; initial level of risk, which is categorised prior to determining and implementing mitigating actions, and residual level of risk; that categorise risk after implementation of mitigating actions Mahesh (2021). (b) Business Architecture assigned to help integrate this strategy into clear actionable objectives by defining the enterprise in terms of governance, business processes, and business information (Burton, 2022). (c) Information Systems (IS) Architecture indicates consensus in the literature that there are two different sets of decisions, computer and communications/network operations and infrastructure planning activities; and systems development, including application planning, software acquisition, and maintenance (Liu, 2013).

(d) Technology Architecture, epitomised by the case study of “*nine use cases solved with enterprise architecture: Part one*” by Moné (2018) reports that the KPMG 2017 CIO survey results indicated that enterprise architecture has become the fastest growing, in-demand skill set in technology up 26% from previous years. (e) Opportunities and solutions, contest the apprehension that monolithic architecture is the best solution in smaller applications that suit SMEs, rather than in micro-service architecture that requires multiple experienced teams that use multiple languages and deployment schedules (Saraswathi, 2020). (f) Migration planning emphasises that recent developments in cloud migration have intensified the need for analysing requirements and available options coupled with careful planning, careful architectural considerations, and continual testing (Tanner, 2022). (g) Governance implementation, as stipulated by Hackney (2022), a sound governance framework to support the implementation and management of the enterprise architecture is necessary to ensure that the enterprise achieves its EA objectives. (h) Architecture change management, signify the changes experienced by SMEs over the past decade remain unprecedented. Tharpe (2020b) emphasises that smart change management also can help SMEs future-proof their operations, anticipating issues such as systems becoming redundant or outdated earlier than expected. Returning to the hypothesis impersonated at the commencement of this study, it is now possible to state that the EAA framework remains the center of attraction in aligning ERIs for SCM.

LITERATURE REVIEW

Theoretical Framework: Network Perspective Theory (NPT)

The theoretical model for the study focused on NPT. Ahead of time employing the NPT to examine ERIs, it is necessary to take into account two constituents of attitudes and norms through individual and enterprise expectations (Sternad & Bobek, 2013). Davletshin (2020), and Guercini, Perna, Runfola & Tunisini (2022) incarnate seven ways NWT is reshaping SCM: (a) Identify the critical players by disseminating information and insights. A relationship exists between stakeholders' working memory and their ability to lead to cross-border buyer-supplier relationships and the evolution of international trade. (b) Identify and understand both the structures and the interpersonal relationships that either aid or hinder the flow of information. The ERIs that we have identified therefore assists in our understanding of the effects of the context on the networks of

supply and distribution relationships. (c) Provide an overwhelming number of interactions and interdependencies among different enterprises. The study has gone some way towards enhancing the understanding of cross-border buyer-supplier relationships, and the evolution of international developments. (d) Assist in developing accurate forecasts and eliminating risky suppliers. The ERIs that we have identified therefore assists in our understanding of the role of de-globalisation, geopolitical issues, and the instant messaging and presence approach. (e) Develop competitive advantage in structural whole network. There is a degree of uncertainty around ERIs components for insourcing with an impact on enterprise networks. (f) Provision of innovative solutions. Ultimately, there is an ambiguous level of uncertainty among multiple participants. However, much uncertainty still exists about the relationship between sustainability issues and the reconfiguration of international supply networks. (g) Linking indirect stakeholders with limited access and knowledge in EAA. The literature on ERIs, supports the relative importance of the adoption of EAA has been subject to considerable debate in the presence of increasing conditions of volatility, uncertainty, complexity, and ambiguity in international trade.

Integrative literature review

In this paper, the integrative literature review is considered to review experimental and non-experimental research simultaneously to; define the following; concepts, theories, evidence/point out gaps in the literature, and analyse of methodological issues (Necesario, 2022). Moreover, the hypothesis is synthesised by dissecting existing collected works strengthened through the summary table, and theoretical frameworks about sculpting ERIs on the adoption of EAA. McComb (2004) indicates places of interest that the choice of architecture influences a range of issues including the cost of maintenance, cost of development, security, and the availability of timely information. Consequently, this study discusses nine domains to be considered in building the EAA. (Ulrich, 2011a) maintains that business architecture relies on application and data architecture, which in turn relies on technical architecture. Figure 1 presents the architecture development method in a systematic assortment.

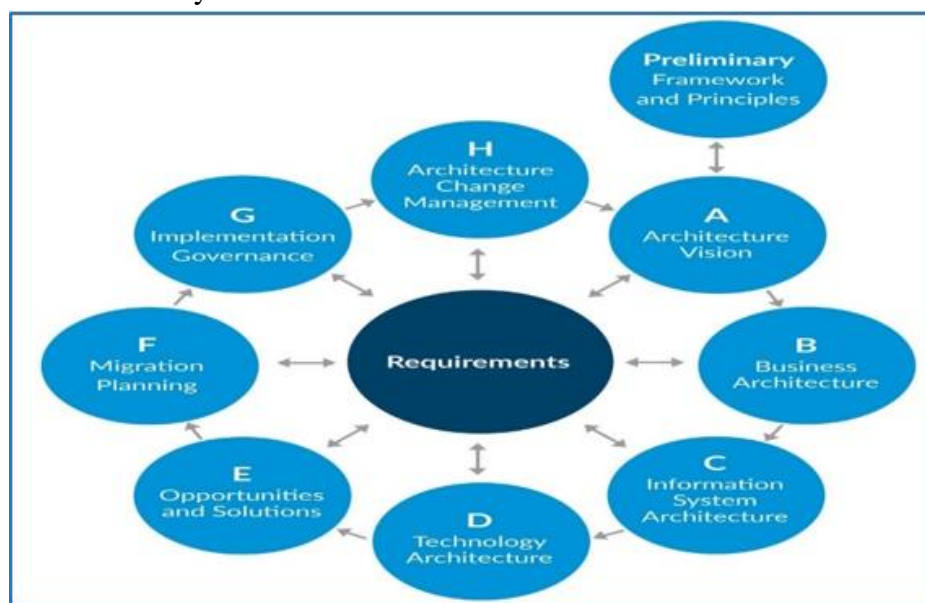


Figure 1: Architecture Development Method (Hasa, 2019)

Architecture Vision (AV) - As was pointed out in the introduction to this paper, and reiterate that the expansion of EAA relies on further enterprise development and modernisation of technology. The AV provides an overview and guide and describes how the enterprise will be transformed at all levels by the proposed architecture. More recently, further emphasis is been placed on providing intended assessments that define business and strategic goals to be achieved, taking into account the interests of stakeholders. Hasa (2019) and Mahesh (2021) argue that the VA stage should at least follow critical steps that involve stakeholders' integration with the following steps: (a) Configuring the project architecture - A notable support is for internal and external users who specifically identify the benefits of the component. (b) Identify the needs, concerns, and business needs of stakeholders - More information on AV would help to institute a greater degree of accuracy by integrating their SMEs into the business ISs and technology perspective of the practice of architecture. (c) Define business objectives, business drivers, and constraints – Resonances that the proposed business structure will achieve an ambitious high-level vision of business capabilities and values; obtaining the approval of an architectural statement that describes a work plan for the development and implementation of the structure described in the AV. (d) Capacity assessment by visualising models and frameworks - This focuses on the conceptual structure, including concepts, principles, building blocks, norms, and standards. (e) Assessment of readiness for business transformation – This entails how identifying the most effective digital business strategies for designing and delivering digital products and repair services to business customers. (f) Scope definition - The scope definition of the architecture practice will be a high-level project plan that describes what needs to be addressed architecturally in the next stage. (g) Validation and development of architectural principles, including operating principles - Define general core standards and guidelines for the use and implementation of all company IT resources and assets. (h) Develop an architectural vision and roadmap for process transformation through IT application modernisation of the infrastructure and the operational area. (i) Definition of structural value propositions and target key performance indicators. (j) Definition of business transformation risks and mitigation activities, development of structured business statements; and security clearance. In this comprehensive discussion, is delineated that AV designates how the new EAA capabilities will encounter the business goals and strategic objectives and address the stakeholder concerns when applied.

Business Architecture (BA) – As explained in the introduction, it is clear that BA's transformational modification and reshapes the SME's processes, culture, capabilities, and the choice of technology substructure by aligning with a new strategic direction. BA is a discipline focused on creating actionable deliverables that guide investment decisions (people, process, information, and technology) based on the key business aspects needed to achieve the future state. BA is a general description of a system (Luisi, 2014), that was initiated in the mid-1990s by the Supply Chain Council (SCC) an association of organisations aimed to develop standards for supply chain development (Harmon, 2019). BA helps to create and sustain the “reusable asset” of the 21st Century, information, and manage it appropriately. Ulrich, (2011b) exemplifies BA's foundational view on; business capabilities, information access, organisational view, and value streams. The supply chain vendors are incorporated into enterprise architecture for dynamic mapping under software applications (Bianchi, 2021). Each platform represents a dimension of the system signifying a unique mode of behaviour by following the general rules of interactive design (Gharajedaghi, 2011). Morin (2016) explicated some of the harder benefits of

valid process-based BA that are grounded on; a better-aligned performance investment plan with traceability, realigned with performance metrics, increased performance of your IT investment portfolio, faster decision-making, better investment project scoping, reduced IT investment waste and reduced execution risks for core or strategic programs. In this impressive analysis of BA, it is notable that EAA represents holistic, multidimensional business views of capabilities, end-to-end value delivery, information, and organisational structure; and the relationships among these business views and strategies, products, policies, initiatives, and stakeholders.

Information Systems Architecture (ISA) – The lack of ISA has existed as an SME problem for many years. Nevertheless, the past decade has seen the rapid development of EAA in many enterprises. Kehrl, (2021) highlights that for forty years *information systems* have been built in corporations with very few innovations and changes in standards that covered; operational information systems and decision support information systems. Application software systems (ASSs) are regarded as intangible computer components, which are designed to be incorporated into computer hardware to perform certain tasks. In this study, the terms information systems architecture and application software systems are used interchangeably to mean “*development of data and applications architectures*” and “*computer program that performs a specific personal, educational, and business function*” (Ayer, 2010; Zandbergen, 2018). Liu (2013) points out objectives for integration architecture management in three folds; (a) Enabling integration across applications from all functional departments. (b) Facilitating ease of information dissemination with external partners. (c) Management of enterprise data through cloud computing and enterprise resource planning.

In the same breath, Kumar (2022) provides five steps when building cloud architecture. (a) Choosing the architectural style grounded on the application and system context, current requirements, business expectations and industry domain, and current organizational context. (b) Making technological choices on a range of activities like; computer services, storage solutions, messaging results, Kubernetes options, and choosing analytics, internet of things (IoT), analytics, and artificial intelligence (AI). (c) Choosing messaging solution by structuring a decision tree that includes; suppliers manufacturers, distributors, retailers, and end customers. (d) Choosing the Kubernetes option that would be managing containerized workloads and services that facilitate both declarative configuration and automation. (e) Choosing analytics, IoT, analytics, and AI, which project benefits such as; on-demand behavioral and content segmenting, automatic anomalies ASSs and attribution, real-time asset geo-positioning, compromised asset detection, connectivity service level agreement monitoring, detailed breakdown of consumer usage behaviours and interests alarm noise reduction and prioritisation. Despite its exploratory nature, this ISA offers some insight into business processes and rules, systems structure, technical framework, and product technologies for a business or organizational information system.

Technology Architecture (TA) – Returning to the issue of fundamental IT concepts to the TA, considered the architectural science of shaping and building the enterprise environment, in order to support sustainable quality of daily routines, and for its inhabitants. TA is a branch of IT, perceived as a detailed description of the various information-processing assets, needed to meet business objectives, the rules that govern them, and the information associated with them. TA secures safe algorithms for enterprises by developing the right applications on the right platforms to maintain a competitive edge (Tupper, 2011). Gillis (2022) presents five aspects of the enterprise

architecture framework that focuses on the key themes as drivers for application modernisation, matching market shifts with lightweight enterprise architecture, a security think tank with seven steps to edge security, and enterprise architecture tools adding pandemic-related updates. Joseph (2022) discusses the challenges and technologies for SCM. *First*: challenges are highlighted as; competent or limited-labour skills, exorbitant rising costs in freight, port congestion, and demand forecasting challenges. *Second*: Technologies such as robotic process automation, cloud computing, AI, IoT, blockchain, and transportation management systems have shown noteworthy realisation. This is evident in the case of post-merger harmonisation on business capabilities and user groups; and application rationalisation on license optimisation, project rationalisation, operational support, and vendor consolidation (Moné, 2018). A combination of hardware and software gives enterprises a competitive advantage, evident in capabilities accessible just in time (Gloag, 2022). On the other hand, in spite of much new acquaintance about the adoption of EAA, TA ensures the delivered application components work together, confirming that the required business integration is supported (Desfray & Raymond, 2014). This ground, breaking study on TA analysis for the adoption of EAA determines interesting and creative work that focuses on engaging with internal business stakeholders to understand future demands, provision inspiration, and collaborate across IT capabilities.

Opportunities and Solutions - As was mentioned in the introduction, opportunities and solutions bring a charge for leading the practice and introducing the overall technical vision for a particular clarification. Gradually, enterprises switch to technological encroachments through digital transformation to satisfy needs and expectations. Ultimately, the digital strategy became an integral part of the overall business strategy (Saraswathi, 2020). In the same breath, web application architecture best practices and principles cover the following: Clarity, scalability, security and reliability, error traceability, and effective fixing and automation. In 2021, Tom Fisher pointed out important steps for a successful cloud migration... (a) Defining business goals, for migration, mapping business goals with IT capabilities and constraints, such as compliance, and involving all stakeholders in the process. (b) Discovering, cataloging, and selecting applications, by identifying all applications in use, qualifying applications for cloud readiness, baseline app performance, networks, and map dependencies. (c) Specifying migration type that includes retaining, re-hosting, re-platforming, and refactoring. (d) Migrating, testing, and refining that includes; migration for application workload, comparing on-premise and cloud application behaviour, testing cloud implementation, observing and resolving problems, fine-tuning, and repeating as needed. (e) Observation through a feedback mechanism that covers drive performance optimisation, keeping mean time to resolution (MTTR) under control, and managing cloud performance and costs. EAA is an important component in information systems and plays a key role in advancing SCM activities. SMEs enhance solution architecture practices by applying self-introspection, whilst focusing on solution architecture cross-cutting and multi-dimensional and at the minimum includes; product portfolio strategy, application architecture, data architecture, information architecture, and operational architecture (Kum-Seun, 2019). The resulting opportunities and solutions were gently influxes with; senior specialists providing advisory services to executives, integrating knowledge of the enterprise functions, integrating information to enterprise functions, engaging stakeholders to be action-oriented, and providing leadership guidance, making recommendations and collaborations for solving enterprise challenges.

Migration planning – As described in the introduction, migration planning deliver strong proof of concepts on; planning the migration of an enterprise application or service to the cloud, mastering the performance baselines and goals, comprehending risk tolerance and security requirements, and evaluating direct and indirect costs versus future cloud associated costs. In the new global economy, migration planning has become a central issue for many enterprises. Due to changes and/or, developments in research and technology migration become an integral part of 4thIR, which compels institutions, corporates, and enterprises to be at par with technological modifications. According to Tanner (2022), migration planning could be defined as follows: (a) Private cloud is regarded as an organisation-exclusive cloud service get exclusive access to the cloud, and purchase physical infrastructure to use software to create its own private cloud environment. (b) Public cloud is a cloud service provided by a cloud provider such as SaaS, PaaS, and IaaS to several consumers. The services provided by public clouds include SaaS, PaaS, and IaaS. (c) Hybrid cloud combines two or more environments, such as public clouds, private clouds, and traditional on-premises data centres, and integration must be tight across all deployed clouds and data centres. (d) Multi-cloud deployment integrates at least two public clouds, sophisticated with a high level of redundancy or backup, reliability, cost saving, and using capabilities from multiple cloud providers. Moreover, migration requires patience, cross-functional collaboration, and timely communication to be performed through planning and executing the whole migration process step-by-step (Hryb, 2021). In contrast, Mohanakrishnan (2022) defines a cloud migration strategy as an execution plan that an organisation formulates to move all the resources in its infrastructures, such as data, services, and applications, to the cloud. Moreover, more migration planning has six cloud migration strategies such as (a) Re-hosting strategy – This is more commonly known as the ‘lift and shift strategy. It involves transporting a direct copy of the existing infrastructure onto the cloud. (b) Re-platforming - It involves making bare minimum changes to prepare for the transition to the cloud, including provisions for making scalability easier. The core application architecture remains untouched. It is a small variation of the rehosting strategy. (c) Repurchasing Sometimes, portions of legacy architecture may become difficult and expensive to maintain and prove impossible to scale up; for example, an in-house customer relationship management (CRM) system. In such cases, it makes sense to completely shift this capability to an existing cloud solution, such as Salesforce’s cloud-based CRM solution. (d) Refactoring The refactoring strategy is essentially rebuilding the entire existing infrastructure from scratch. It is the route taken by organisations that are looking to leverage every single thing that the cloud has to offer, such as serverless computing and auto-scaling. Both these features are difficult to achieve with an on premise setup. (e) Retiring Large enterprises often discover components of the infrastructure that have become obsolete or will become inconsequential once moved to the cloud. These modules are not just unnecessary expenditures; they may actually be a security vulnerability. (f) Retaining Sometimes, one or many modules of the existing infrastructure may not be compatible with the cloud platforms in the market. This typically manifests in the form of data that cannot be moved for compliance reasons or architecture that only recently took extra capital to build. In such cases, it makes financial and operational sense to keep these modules on premise.

Governance Implementation – Having defined what is meant by governance implementation, will now move on to discuss governance implementation by conducting a migration simulation designed to run over an isolated environment. Architecture governance can be defined as a practice

by which enterprise architecture and other architectures are controlled and managed at an enterprise-wide level (Hryb, 2021). It encompasses arrangement activities such as; controls over the design and monitoring of all architectural components and activities, ensuring compliance with internal and external standards and regulatory obligations, applying best practices that ensure accountability, and establishing processes that support effective management of the above processes within agreed parameters. Enterprises that achieve EAA objectives rely on a sound governance framework that supports implementation and management encrypted on the following characteristics (Hackney, 2022); (a) Discipline necessary to ensure that the enterprise achieves its EA objectives through stakeholders' involvement, and adherence to procedures from statutory authorities. (b) Transparency entails planning the application and interface landscape by exercising discipline that involves all partners, and adhering to procedures, processes, and authority structures. (c) Independence entails a sense of flexible control system in all processes, decision-making, and mechanisms used to marginalise potential conflicts of interest. (d) Accountability ensures taking responsibility for their actions without any justification. (e) Responsibility denotes a sense of accountability by all stakeholders towards, the user interface, presentation, and on the domain model. (f) Fairness entails that all participants should act fairly and responsibly without colluding. Difficulties arise, however, when an attempt is made to implement the governance in implementation for the EAA inception.

Architecture change management (ACM) – Before proceeding to examine ERIs, it will be necessary to master important factors when building strategy such as; selecting, preparing, migrating, testing, operational and optimisation, and improving automation, and scale. ACM is delineated by Tharpe (2020b) as a system that delivers the enterprise circumstances that justify the incorporation of ideas into operations. Reddy (2011) highlighted crucial challenges in modernisation of EAA that includes; poor alignment between the IT strategy and the business strategy, high application maintenance costs, inflexibility, aging and poorly integrated IT systems, and the lack of collaboration among different development teams. So far, seven-factor ingredients have been identified as being potentially important: having strong executive sponsorship, building a collaborative business case, ensuring clear governance, remembering that transformation is personal, developing Key Performance Indicators (KPIs), and training earlier (Allison, 2018). Singh (2017) describes architecture assessment group gives further nourishment to governance to; update enterprise architecture framework regularly; (a) Conduct reviews of new projects to ensure architectural alignment and compliance. (b) Build standards, patterns, templates, and reference architectures. (c) Assist in adopting best practices and process improvements in business areas, and make recommendations regarding products. (d) Methodologies, and industry standards, based on the enterprise mission and strategy. (e) Develop and evaluate technology options. It is almost certain that the more extreme architecture change management, due to government regulatory systems, the greater the change in architecture management.

SCM IN THE MIDST OF EAA

With successive increases in the intensity of the SCM activities, the EAA moved further to manage unprecedented delays, keep up with the fast-changing market, steps to be followed in managing risks, and how proposition solutions to improve customer service quality. However, Pereira (2021) points out some crucial and innovative SCM project ideas and themes for beginners as demand planning and forecasting, developing productive supplier relationships in a competitive market, WMS

systems consolidation, rethinking the workflow in manufacturing, big data, and (internet of things (IoT) in the supply chain, computerised inventory control, and AI and machine learning in the supply chain. On the other hand, in spite of much new knowledge about the role of EAA, which captivated in-depth interest in advanced analytics and automation, SC talent, resilience, agility, and digitisation, the rise of e-commerce, cybersecurity, and customer-centricity (James, 2021). Despite its safety and efficacy, SCM suffers from several major drawbacks: (a) Automation in machinery and equipment, storage and retrieval, trucking, and delivery (James, 2022). (b) Roy (2022) examined that 54% of surveyed companies are substantially increasing their cloud computing investment to make supply chains more resilient. (c) The benefits of cloud SC software include; ensuring compliance, tackling disruptions, accurate order management, optimising warehousing, streamlining infrastructure management, expediting manufacturing cycles, and real-time traceability. As this case very clearly establishes, it is important that the SMEs dwell on trends in SCM that includes; SC digitalisation, improving demand forecasting and demand planning, supplier diversification, e-commerce continuity, focus on sustainability and the circular economy, bringing robotics and automation into the warehouse (Montgomery, 2022). Regardless of enterprise maturity in IT, EAA provides increased visibility that enhances forecasting capabilities, and balanced inventory investments, with reduced supplier disruptions that lead to aligned procurement and production.

EAA FRAMEWORK

Gillis (2022) define an enterprise architecture framework as the collection of processes, templates, and tools that are used to create an enterprise architecture. A sound governance framework to support the implementation and management of the enterprise architecture is necessary to ensure that the enterprise achieves its EA objectives (Hackney, 2022). Zachman (2016b), Kotusev (2021) and White (2018) explicate four of the leading Enterprise Architect Planning (EAP) methodologies:

The Open Group Architectural Framework (TOGAF) on EAA: TOGAF provides principles for designing, planning, implementing, and governing enterprise IT architecture. The TOGAF framework helps businesses create a standardized approach to EA with a common vocabulary, recommended standards, compliance methods, suggested tools and software, and a method to define best practices. More recently, opinions against TOGAF have been summarised by Evernden (2019): (a) Difficult to understand as skipping points or steps making it brain surgery. (b) Misleads the naïve, passing with distinctions and becoming TOGAF-certified over a short training course may also suggest that becoming an enterprise architect is easy. In 2019 and 2021, Scott, and, Raza and Watts demonstrated that TOGAF prompted in enterprise architecture encompasses additional benefits for business process management and data analytics. To list a few... (a) Assist enterprises to build a clear picture of the IT infrastructure and architecture. (b) Provides a transparent methodology that covers all the elements of an organisation, including the Information Technology Infrastructure Library (ITIL), Control Objectives for Information and Related Technologies (COBIT), and others. (c) Due to the changes in both market and macro environments, quick adjustments require the architect expect to keep it at par with the intensity of demand, through EAA updates. (d) A certified TOGAF professional is an authority in enterprise architect development and provides the enterprise with strategies that effectively make a positive and agile response. The overall structure of the study takes in many practices that cover; introduction, architecture development methods, foundation architecture, and resources needed.

The Zachman Framework on EAA: Well, the Zachman framework is named after one of the original founders of enterprise architecture, the EAA methodology. The intersection between two historical classifications that have been in use for literally thousands of years. Pereira & Sousa (2004) and Zachman (2008a) demonstrated how, in the past, research into primitive interrogatives was mainly concerned with the fundamentals of communication. (a) What? (Data) – Deals with data magnitude from all functional departments. (b) How? (Function) – Describe the process of translating the mission of the enterprise into more detailed descriptions of its operations. (c) When? (Specific duration) - Describe the duration to be spent on a specific task. (d) Who? (Stakeholders) – Specify the user according to specialisation. (e) Where? (Geographic locations) – Point out network distribution per location. (f) Why? (Domain) – Is concerned with the translation of business goals and strategies into specific ends and means. On the other hand, in spite of much new acquaintance about the role of primitive interrogatives, ages ago ‘*economics*’ illuminated the same economic questions in answering scarcity the same as answering scarcity problems (Mohr & Fourie, 2008). The integration of answers to these questions enables the comprehensive, composite description of complex ideas. Table1 illustrates the Zachman Framework.

Table 1: Structure of Zachman Framework

| | WHAT | HOW | WHERE | WHO | WHEN | WHY | |
|----------------------|--|--|--|---|--|---|-----------------------------|
| SCOPE CONTEXTS | Inventory Identification  Inventory Types | Process Identification  Process Types | Network Identification  Network Types | Organization Identification  Organization Types | Timing Identification  Timing Types | Motivation Identification  Motivation Types | STRATEGISTS AS THEORISTS |
| BUSINESS CONCEPTS | Inventory Definition  Business Entity Business Relationship | Process Definition  Business Transform Business Input | Network Definition  Business Location Business Connection | Organization Definition  Business Role Business Work | Timing Definition  Business Cycle Business Moment | Motivation Definition  Business End Business Means | EXECUTIVE LEADERS AS OWNERS |
| SYSTEM LOGIC | Inventory Representation  System Entity System Relationship | Process Representation  System Transform System Input | Network Representation  System Location System Connection | Organization Representation  System Role System Work | Timing Representation  System Cycle System Moment | Motivation Representation  System End System Means | ARCHITECTS AS DESIGNERS |
| TECHNOLOGY PHYSICS | Inventory Specification  Technology Entity Technology Relationship | Process Specification  Technology Transform Technology Input | Network Specification  Technology Location Technology Connection | Organization Specification  Technology Role Technology Work | Timing Specification  Technology Cycle Technology Moment | Motivation Specification  Technology End Technology Means | ENGINEERS AS BUILDERS |
| COMPONENT ASSEMBLIES | Inventory Configuration  Component Entity Component Relationship | Process Configuration  Component Transform Component Input | Network Configuration  Component Location Component Connection | Organization Configuration  Component Role Component Work | Timing Configuration  Component Cycle Component Moment | Motivation Configuration  Component End Component Means | TECHNICIANS AS IMPLEMENTERS |
| OPERATIONS CLASSES | Inventory Instantiation  Operations Entity Operations Relationship | Process Instantiation  Operations Transform Operations Input | Network Instantiation  Operations Location Operations Connection | Organization Instantiation  Operations Role Operations Work | Timing Instantiation  Operations Cycle Operations Moment | Motivation Instantiation  Operations End Operations Means | WORKERS AS PARTICIPANTS |
| | INVENTORY SETS | PROCESS TRANSFORMATIONS | NETWORK NODES | ORGANIZATION GROUPS | TIMING PERIODS | MOTIVATION REASONS | |

Source: Zachman (2022c)

The matrix structure epitomises the Zachman Framework in four groups of variables from, the left, top, bottom, and left sides (Zachman, 2022c). *First Far Left:* Demonstrates six variables as; scope contents, business concepts, system logic, technology physics, component assemblies, and operations classes. *Second Top:* Elucidates the five primitive interrogatives - *Third Far Right.* That explicates six variables: strategies as theorists, executive leaders as owners, and architects as designers. *Technicians as implementers,* and *workers as participants.* *Forth bottom:* presents five variables as Inventory sets, process transformation, network nodes,

organisation groups, time periods, and motivation reasons. Most importantly, the last variables are indicated in the middle, shaded in white, and cut across all variables as they indicate information dissemination across all functions of the enterprise.

Summary table

Table 1 presents a summary table for the study. Drawing on a wide variety of sources, the author set out the different ways in which the following subject; author, article title, research topic, Aim/Objective(s)\Research Question(s), Recommendation(s)\Conclusion(s)\Summary contributions and publishers. Overall, there seems to be some evidence to indicate that the integrative literature review shared more light on the establishment of core EAA variables. (a) Architecture vision entails a strong, successful, and lasting enterprise depending on a well-based capabilities, processes, organisation, and information partnership with both stakeholders.

(b) Business architecture serves to properly align the enterprise from all functional departments and reveals how all SCM activities are structured with regard to (c) Information systems architecture covers the enterprise algorithms and policies, system structure, technical structure, and product technologies required for information systems. (d) Technology architecture is a component of architecture and building engineering that considers the design of buildings for networking. (e) Opportunities and solutions provide the ground for software development projects by altering IT solutions to specific enterprise needs and defining their functional requirements. (f) Governance implementation includes identifying, managing, auditing, and disseminating information related to architecture management, contracts, and implementation. These governance processes identify several processes that will be used to ensure that all architecture artefacts and contracts, principles, and operational level agreements are monitored on an ongoing basis with clear audibility of all decisions made.

| Author(s) | Article Sub-Title | Research Topic | Aim\Research\Objective(s)\ Research Question(s) | Summary points | Contributions | Publishers |
|-------------------|---|---|---|--|--|------------------------------------|
| Hasa (2019) | <i>Architecture Vision</i> | What i learned studying enterprise architecture? | To provide a business change to an organisation, including IT. | Viewing the desired change from the perspective of the entire enterprise considers a new set of problems and solutions that involve business, IT, people and processes. | This broadens our vision on how to manage a change beyond its implementation. | The Startup |
| Burton (2022) | <i>Business Architecture</i> | What is business architecture? | Should business architecture be part of your enterprise architecture effort or separate? | 70-80% of organisations do not support a clear and actionable business strategy. | Providing clients with actionable, pragmatic advice to help them define and deliver an effective business architecture program. | Aragon Research |
| Kehrli (2021) | <i>Information Systems Architecture</i> | Modern information system architectures. | To optimize storage space by ensuring an entity is stored only once (3 rd normal form / normalisation). | Nowadays, cloud computing and SaaS - Software as a service on the cloud form somehow a different needs. | Initial Big Data technologies were oriented towards Data Analytics use cases and the Analytical Information System space. | Nice Ideas |
| Moné (2018) | <i>Technology Architecture</i> | 9 Use case solved with enterprise application architecture: Part one. | What value proposition does enterprise architecture provide? | Enterprise architects can use the application matrix and application rationalisation surveys from LeanIX software to quickly assess the usefulness of applications and make data-driven recommendations. | To stay abreast of current innovative trends, provide first-class customer service, reduce cost, and scale globally, enterprises benefit from having a thoroughly rationalized application landscape. | LearnIX |
| Saraswathi (2020) | <i>Opportunities and Solutions</i> | Four architecture choices for application development in the digital age. | Which application architecture model is best for you in the cloud era? | Increasing complexity in infrastructure, application, and data size requires new architecture approaches. | Most of enterprises are adopting a multi-cloud approach by using one or more cloud providers. Enterprises are consuming cloud services by either using private, public, or hybrid with SaaS, PaaS, or IaaS models. | IBM |
| Hryb (2021) | Migration Planning | Application migration: a step-by-step guide. | What is your approach to application migration? | Improvements into the migration plan and setting up a bulletproof change management process. | Assist in choosing the best possible solution according to business analysis and complete the IT skills. | Divinity |
| Hackney (2022) | <i>Governance Implementation</i> | Enterprise architecture governance – why IT is important (part 2)? | The enterprise architecture organisation helps to develop and enable the adoption of design, review, execution and governance capabilities around EA. | A well-designed enterprise architecture governance structure can be an essential tool in reducing IT cost and risk. | EA Governance ensures that the EA program is properly managed, and it produces artefacts according to their specifications. | Architecture & Governance Magazine |
| Tharpe (2020b) | <i>Architecture change management</i> | Why is change management so important? | Using enterprise architecture to manage ideation through Implementation. | Everyone can understand how the new ideas fit into the corporate strategy and have a voice in systematically managing the changes. | Change management would benefit the enterprise from an architecture tool. | Ervin |

Table 2: Summary table - : Sculpting Enterprise Resources
Source: Author Conceptualisation

METHODOLOGY

Research design

The quantitative research design used in this study is based on the descriptive nature of the research hypothesis. ERIs affecting the adoption of EAA in SMEs in the Capricorn District Municipality, Limpopo Province, South Africa used to test the H_{a1} . A self-administered questionnaire was used to conduct an empirical survey of SME owners and managers. The research was conducted in two segments: First, a pilot study was conducted, and some questions were re-examined and amended. Second, eliminate possible practical problems with the study process. For example, deficiencies such as improper record keeping that included determining the required information, defining the target participants, etc. Stratified random sampling was embraced and the sample was divided into strata.

Population for the study

Figure 2 presents the $n @ 330$. Sampling method - Blouberg (Bochum) Municipality, Molemole (Dendron) Municipality, Polokwane Municipality, and Lepelle-Nkumbi (Lebowakgomo)

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{1900}{1 + 1900(0.05)^2}$$

$$n = \frac{1900}{1 + 1900(0.0025)}$$

$$n = \frac{1900}{1 + 4.75}$$

$$n = \frac{1900}{5.75}$$

$$n = 330$$

Figure 2: Sample
Source: Leedy & Ormrod, 2014

Municipality are all part of the Capricorn District Municipality in the Limpopo Province of South Africa (Administrative Divisions of South Africa, 2018). Due to unforeseen circumstances arising in the collection of data, the following reasons are the common denominators in the marginalisation of n from 340 to 310: (a) It needs too much effort, and level of concentration. (b) Encountered difficulties in explaining and understanding the jargon. (c) They might have felt purpose does not seems legitimate. (d) The information required might felt sensitive to other respondents, although sensitive questions were not asked.

Table 3: n-Calculation Variables

| | | |
|--------|----------------|------|
| Where; | N = Population | 1900 |
| | E = Precision | 0.05 |
| | n = Number | 310 |

Source: Author Conceptualisation

Since they had similar qualities and a similar understanding of the phenomena involved, the population was divided into strata. A total of 310 were successfully processed for data analysis.

Research instrument

A questionnaire is a tool for collecting information. It has been popularised due to its common characteristics such as scalability, cost-effectiveness, anonymity of responders, practical nature, and comparability. The information was used to develop diagnostic tests for reliability and validity using Cronbach's Alpha and Kolmogorov-Smirnov tests. Pearson correlations, ANOVA analysis, Pearson coefficients, and linear regression analysis were all performed on the real data.

Data Collection

The data collection method used in this study is the questionnaire given in Appendix 1. The questions were structured in the form of a Likert scale. The questionnaire was assigned to both owners and managers of SMEs in order to avoid ambiguity and generalisations in the answers. In addition, stratified random sampling was performed, where; a specific target of individuals was examined to match the data and better coverage of the population was maintained. However, the classification of the target group with regard to the classification of the population density was a challenge.

Data analysis

Stability diagnostic tests: Normal distribution on ERIs

As illustrated in Figure 3, the sample distribution for ERIs produced a distribution curve with a μ of 23.39, and σ of 4.174, from a sample of 310. ERIs produced a negative skewness at $-.396$ and Kurtosis at $.116$. As illustrated in Figure 3, the sample distribution for ERIs produced a distribution curve with a μ of 23.39, and σ of 4.174, from a sample of 310. ERIs produced a negative skewness at $-.396$ and Kurtosis at $.116$. The standard normal distribution has a Kurtosis of zero, a positive Kurtosis indicates a "peaked" distribution, and negative Kurtosis indicates a "flat" distribution.

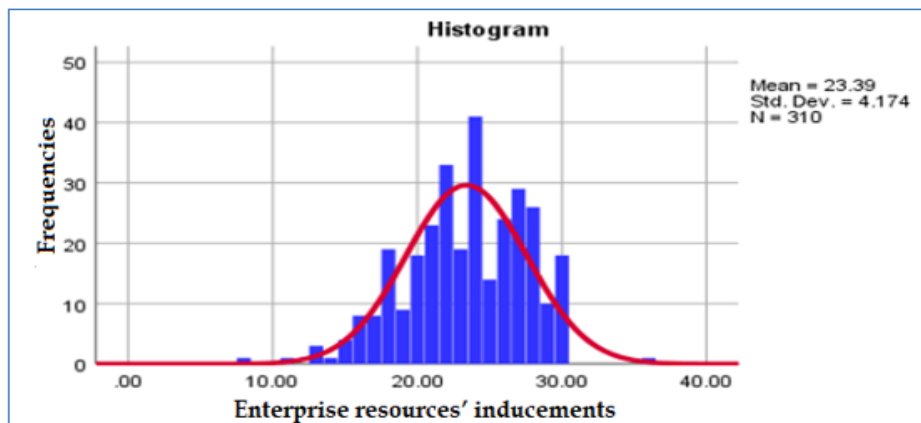


Figure 3: Normal distribution

Normal distribution indicates an asymmetric distribution with acquiescent tails. The mean, median and mode are all equivalent @ 23.39. $\sigma = 4.174$ $N = 310$.

Source: Author Conceptualisation, MCom Dissertation 2021

The Kurtosis figure should be near 0. and the figure of $.116$ indicates that it is a normal distribution that is slightly peaking and is slightly skewed to the left @ $-.396$, and Kurtosis @ $.116$. The distribution is asymmetric as the μ is 0.233 and the median is 0.24.

Pearson Correlations on ERIs and Actual Adoption (AA) of EAA

Table 4 shows the results of Pearson correlations between ERI and AA of EAA. The p-value is near zero at “<.001” with the required value set @ 0.05. The statistical technique “ANOVA” is used to test the hypotheses between the “Y” as AA of EAA, and the X as ERIs.

Table 4: Pearson correlations

| | | Actual Adoption of EAA | Enterprise Resources |
|-----------------------------------|---------------------|------------------------|----------------------|
| Actual Adoption of EAA | Pearson Correlation | 1 | .317** |
| | Sig. (2-tailed) | | .000 |
| | N | 310 | 310 |
| Enterprise Resources' Inducements | Pearson Correlation | .317** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 310 | 310 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author Conceptualisation, MCom Dissertation 2021.

Pearson correlations, on positive associations between variables @ .317**.

Sig. (2-tailed) @ .000.

Values are given as means (n=310).

*, p< 0.005: **, p<0.000.

Pearson Correlation is denoted as .317, thus indicating that there is a positive relationship between ERIs and the AA of EAA. The findings on association suggest that in general there is a positive relationship between ERIs and the AA of EAA bearing the change of the sign in mind.

ANOVA on ERIs & AA of EAA

Table 5 indicates the ANOVA outcomes attained for scores on ERIs and AA of EAA. ERIs = X, while the AA of the EAA is considered the “Y”. The overall F statistic is significant (F = 34.466, p 0.001), which means that the model as a whole is responsible for a significant proportion of the variability in the introduction of EAA for SCM in SMEs. Because the exact level of significance is 0.001 at 0.05, the results are statistically significant. The H_a “ERIs have an impact on the AA of EAA for SCM in SMEs”. Whilst H₀ “ERIs have no impact on the AA for SCM in SMEs is rejected”.

Table 5: ANOVA

| | Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|--------------|-----------------|------------|-------------|--------|-------------------|
| 1 | Regression | 360.524 | 1 | 360.524 | 34.466 | .000 ^b |
| | Residual | 3221.747 | 308 | 10.460 | | |
| | Total | 3582.271 | 309 | | | |

a. Dependent variable: Actual adoption of EAA

b. Predictors: (Constant), Enterprise resources inducements

Source: Author Conceptualisation, MCom Dissertation 2021.

ANOVA, processed on dual variables, Sum of Squares on; regression @ 360.524;

residuals @ 3221.747; total @ 3582.271. df @ 1; Mean square @ 360.524, residual @

10.460. F @ 34.466 and Sig. @ .000^b.

The results show that there is a strong positive relationship between ownership characteristics and perceived attitudes towards adopting EAA in SCM for SMEs, above the +1 threshold. The actual correlation coefficient is 0.215, suggesting that there is strength in the variables between ownership characteristics and perceived attitudes towards adopting EAA for SCM in SMEs. The

correlation results suggest that there is generally a positive association between ownership characteristics and perceived attitudes towards adopting EAA for SCM in SMEs.

Coefficients on ERIs & AA of EAA

Table 6 presents the coefficients results for ERIs and AA of EAA.

Table 6: Pearson Coefficients

| Model | Unstandardised Coefficients | | Standardised Coefficients | t | Sig. | Collinearity Statistics | | |
|-------|----------------------------------|------------|---------------------------|------|-------|-------------------------|-------|-------|
| | B | Std. Error | Beta | | | Tolerance | B | |
| 1 | (Constant) | 17.83 | 1.047 | | 17.03 | .000 | | |
| | Enterprise Resources' Inducement | .259 | .044 | .317 | 0.588 | .000 | 1.000 | 1.000 |

a. Dependent variable: Actual Adoption of EAA

Source: Author Conceptualisation, MCom Dissertation 2021.

Pearson Correlations on dual variables: y = actual adoption of EAA & enterprise resources' inducements.

Unstandardized coefficients (constant); B @ 17.83 & Std. Error @ 1.047.

Unstandardized coefficients; enterprise resources' inducements @ .259 & Std. Error = .044.

Beta; Std coefficients: enterprise resources' inducements = .317.

t; actual adoption of EAA = 17.03 & enterprise resources' inducements = 0.588.

Sig. = 0.00

The t-test is considered for testing as both samples have similar values in the mean. In situations where prediction consists of perceived attitudes towards accepting EAA and ERIs with a score = $17.838 + 0.044x$, the t-test shows that constant a = 0.259 and constant b = 17.838 are significantly non-zero. The independent t-test could be used to determine the confidence interval of the coefficient if the 95% confidence interval for the t-test is [17,03, 0588].

Linear regression on ERIs and AA of EAA

Figure 4 summarizes the different signs of the results for = AA of EAA, where a = y-axis intercept, b = + slope, and x-axis intercept as company resources. The R^2 value is 0.101 of the variance accounted for by X. The positive linear regression satisfies five assumptions of best-fit models; linear relationship, multivariate normality, little multicollinearity, no autocorrelation, and homoscedasticity. The linear regression where: $Y = 17.84 + 0.26x$. The gradient of 0.26 will bring the same increase in Y. The $R^2 = 0.101$ indicates that the level of variation in the prognostic variable could be described by variation in the X. Moreover, the R^2 is converted to r as thus; $\sqrt{0.101} = 0.317$, which is confirmed in Tables 4 and 6, for Pearson Correlations and coefficients. This endorses that the model is adequate with a positive slope and is of a positive fitting.

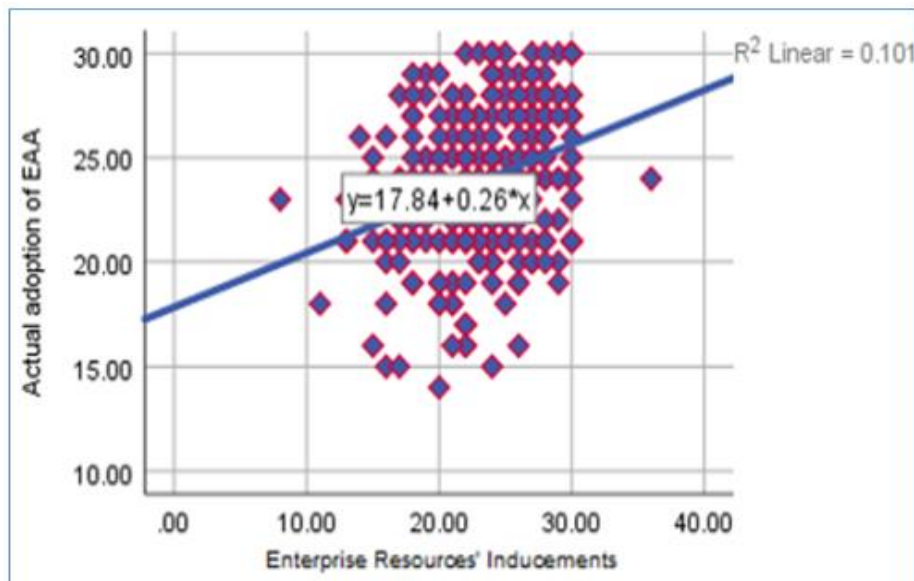


Figure 4: Linear Regression Model

Model on ERIs and actual adoption of EAA indicates Slope (+0.26) of good results, gives the average change in the y - variable (in this situation: actual adoption of EAA) for a change in the x-variable (enterprise resource inducements) on one unit. Where: $R^2 = 0.101$.

Source: Author Conceptualisation, MCom Dissertation 2021

RESULTS AND DISCUSSION

As guided by NPT and integrative literature review, the continuum hypothesis was proposed; H_{a1} : ‘‘There is a link between the advancement of enterprise resources in collaboration with AA of EAA for SCM in SMEs’’. Critical enterprise resources were clustered as a set of components identified, leading to a technological reluctance to adopt EAA in SCM within SMEs. Again, these have been thoroughly discussed below; financial resources, competent personnel, mainframes, and personal computers, application software systems, hardware systems, and architect expectations. Each of these elements is interrelated EAA serves as the basis for hypothesising a set of elements that SMEs could use to challenge the factors contributing to technology aversion.

RECOMMENDATIONS

It would be interesting to evaluate the effects of ERIs as per SMEs’ requirements on SCM alignment based on routine activities such as; quality customer service, qualified personnel, unforeseen delays, fast-changing markets, data management, accountability, and compliance. It is recommended that further research be undertaken in the following best practices to build a scalable application architecture; drive consensus among all players, support planning, facilitate change, manage complexity, reduce risks, and minimise technical debt. Most recent of all, one of the most noticeable features of EAA framework writing is that it is very precise and detailed. This relates to the meticulous and systematic setting out of algorithms, as well as to the language used in the programming.

CONCLUSION

In the competitive world of 4IR, both internal and external stakeholders are faced with ERIs affecting the AA of EAA. Therefore, this manuscript scrutinised ERIs on; architecture vision, business architecture, information systems architecture, technology architecture, opportunities and

solutions, migration planning, governance implementation, and architecture change management. The results of the study are especially relevant for SMEs, as the findings provided guidance on designing ERIs for the adoption of EAA for SCM. In general terms, SMEs worldwide face greater difficulties when it comes to acquiring or retaining financial resources, competent human resources, computers, software, and specialist staff. The findings of this study have a number of important implications for future practice that call into question: the Department of Trade and Industry (DTI), National Empowerment Fund (NEF), Industrial Development Corporation (IDC), Small Enterprise Finance Agency (SEFA) and Isivande Women's Fund to facilitate SMEs and provide maximum support that could facilitate the launch of EAA for SCM.

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THE ROLE OF OPEN CONTRACTING IN MAKING PUBLIC PROCUREMENT MORE OPEN AND MORE TRANSPARENT: A SOUTH AFRICAN PERSPECTIVE

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ABSTRACT

The actions taken by governments affect every citizen in their countries. How governments operate and spend public funds directly affects everyday lives and the future of communities. For instance, it is estimated that governments spend 9.5 trillion US dollars worldwide through procurement contracts. Citizens need to access information about the entire government procurement process cycle. In addition, the procurement process should be transparent. Open Contracting (OC) is vital in improving the efficiency and transparency of public procurement systems. It helps to detect fraud and corruption, promote a competitive business environment and ensure improved goods and services delivery to citizens. The research adopted a quantitative approach and examined existing national and international literature on the legislation and current open contracting practices in public sector procurement. The objective of this paper is to obtain a better understanding of international Open Contracting implementation strategies and approaches based on reports conducted in 15 countries. The literature review looked at public contracting holistically, covering components of Open Contracting: policies, legislations, institutions, disclosure practices and engagement mechanisms. The study findings revealed that, despite the willingness of public institutions to disclose details of their procurement contracts, there are very few success stories or sustained practices with any genuine impact. Although there are clear positive opportunities, there are also challenges to implementing Open Contracting in public procurement processes. The study confirmed the importance of adopting a more transparent public procurement system. All the best practices identified in the literature proved important in current international Open Contracting practices.

Keywords: Open contracting; public procurement; government contracting; transparency; citizen participation; supply chain management; legislation

1. INTRODUCTION

The actions taken by governments affect every citizen in their countries. Therefore, how governments operate and spend public funds directly impacts everyday lives and the future of communities. For instance, it is estimated that governments spend 9.5 trillion US dollars worldwide through procurement contracts (Estefan, 2014). Citizens have a role to play in ensuring that public money is not lost, stolen or misused. Therefore, they rightfully need answers to burning questions such as: How much money was spent to build the new public school? How did the government decide which company would get the contract? Did the company deliver according to the contract?

To answer these awkward questions, citizens need to access information about the entire government procurement process cycle from planning through the procurement, contracting and implementation processes and the final monitoring of the results. In other words, the procurement process should be transparent.

Data opening is a global phenomenon driven by the need to boost innovation, create transparency and improve accountability (Janssen, Matheus, Longo & Weerakkody, 2017). According to Marias, Quayle and Burns (2017), the implementation of transparency and public participation initiatives depends on the accessibility of government (procurement) information. In agreement, Janssen et al. (2017) summarised transparency as "... the ability to see what is happening in the government by the public". The essential services provided by the public sector include educational materials, medical supplies, water, sanitation, refuse removal and electricity, which are fundamental inputs for social wellbeing. These services' availability, price, sustainability, and reliability can significantly affect most South African households' quality of life. Therefore, the level of service delivery to the citizens and the degree to which socio-economic objectives are promoted directly depend on how procurement systems are implemented in the public sector.

Open Contracting (OC) is a promising approach that is essential for enhancing the efficiency and openness of public procurement systems. It aids in the detection of fraud and corruption, fosters a competitive business environment and improves the delivery of goods and services to citizens (OCP, 2015). In addition, Open Contracting will help communities understand how government contracts are awarded and expose any irregularities in the critical assessment and awarding of government contracts. To achieve transparency in the public procurement process, Open Contracting principles should be incorporated at all stages of the procurement process. However, the South African public sector is still struggling to implement a transparent procurement system.

South Africa's National Development Plan (National Planning Commission, 2011) strongly favours a society free from corruption and an ethical government that will be accountable to the citizens. In light of this, explicit consideration is given to the enhancement and oversight of public procurement. Nonetheless, because corruption remains a barrier to South Africa's progressive development, it is necessary to implement anti-corruption, such as the principles of openness and transparency (Open Contracting). The concept of public sector procurement has its origins in the South African Constitution. In accordance with Article 217 of the Constitution (1996), "When an organ of state in the national, provincial or local sphere of government or any other institution identified in national legislation, contracts for goods and services, it must do so by following a system that is fair, equitable, transparent, competitive and cost-effective".

2. LITERATURE REVIEW

A preliminary review of studies on Open Contracting in public sector procurement arguably revealed a scarcity of literature in this field. The purpose of this paper is to extrapolate and critically discuss global Open Contracting implementation practices to gain a deeper understanding of international Open Contracting implementation strategies and approaches. The study examined public contracting in its entirety, covering components of Open Contracting, namely policies, legislation, institutions, disclosure practices and engagement mechanisms (OCP, 2016). This was deemed essential to achieve the research objective and provide insight into the role of Open Contracting towards a transparent public procurement system in South Africa.

The following section begins with a recap of the concept of Open Contracting, then an extensive review of literature on current Open Contracting implementation practices in selected governments around the world, including Africa and South Africa.

2.1 Open Contracting defined

Open Contracting is a growing global concept that aims to increase public participation and transparency at each stage of the public procurement cycle. It asserts that more transparent contracting will help ensure that public resources are managed efficiently and that the most disadvantaged communities receive basic service delivery. In addition, Open Contracting will aid communities in understanding how government contracts are awarded and expose any transgressions in the evaluation and awarding of such contracts. Gatjen (2014) defines Open Contracting as "... the proactive publication of government contracts".

Open Contracting practices can be implemented at all levels of government and can be applied to all public contracting, including contracts funded by combinations of public, private and donor sources. It is increasingly recognised that 'procurement integrity' is required for governments to be held accountable for the use of public resources (OECD, 2007). Disclosure and participation are important for optimising the administration of public resources. Open Contracting refers to practices of the proactive release of data in the expenditure of public funds. It includes the formation, award, execution, performance and finalisation of government contracts. In addition, it encompasses various contracting methods, from basic procurement to joint ventures, licenses and production-sharing agreements.

The business process for public procurement starts with the identification and definition (planning) of the requirement, followed by the development of the tender specification (goods) or terms of reference (service). Additionally, the approved RFP is disseminated on several channels (i.e., online, print media, noticeboards). Then, interested bidders are encouraged to submit their offers by the date and time given. To decide and choose the winning bidder, all proposals are assessed and adjudicated. Finally, the contract is executed and fulfilled, and auditable and verifiable documents are made accessible. Therefore, Open Contracting may be used to enhance and optimise procurement operations, from the moment a requirement is discovered until the contract's execution (Gatjen, 2014).

2.2 Open Contracting Implementation: Global Experiences

Open Contracting has gained much momentum, and over 20 countries and cities are working towards publishing their Open Contracting data and business and civic engagements (OCP, 2016). Pledges are a good start, but results are on the ground count. Government procurement information must be put to good use to drive social change. To this effect, the Open Contracting Partnership (OCP) conducted scoping studies in 15 countries to discover and determine the level of readiness for governments to implement Open Contracting. Figure 1 depicts the approach adopted by the scoping studies. The research looked at public contracting holistically, covering policies, legislation, instructions, disclosure practices and engagement mechanisms (OCP, 2016).

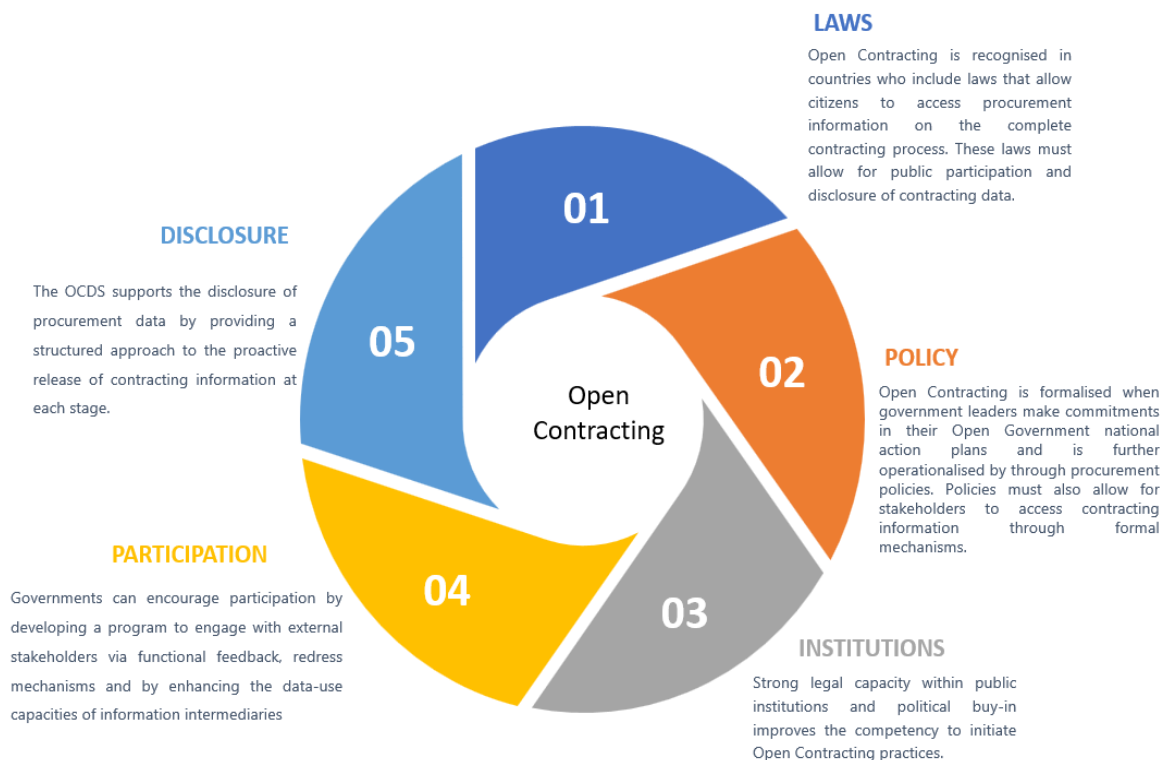


Figure 1: Principles of Open Contracting

Source: OCP (2016)

The following is a summary of some of the key lessons identified. Lesson one is a testimony that there is evidence to disclose Open Contracting information. Even where data were difficult to collect, it was easy to locate those organisations keen to utilise contractual information to monitor procurement activities and enhance public governance. Furthermore, only a few parties could exploit purchase data in nearly every nation (OCP, 2016).

The second lesson showcase that actions speak louder than words regarding political commitments. All fifteen nations made commitments to greater transparency in public governance through national strategic planning documents, participation in international initiatives, or inclusion of the commitment in a political party's platform, frequently supplementing these declarations in front of the media and high-level leaders. Ghana, Kenya, Nigeria, and Peru have expressly committed to Open Contracting in an Open Government Partnership (OGP) national action plan or by making promises at the 2016 United Kingdom (UK) Anti-Corruption Summit (OCP, 2016).

The third lesson is that procurement legislation may enhance government contract participation and oversight. In some countries, the legal framework provided a fundamental basis for openness but lacked dedicated legislation and implementation. For example, where the publishing of fundamental documents such as tender notices is required by law, none of the countries has proper policies for citizen interaction throughout the whole public procurement process, from planning to implementation (OCP, 2016).

The fourth lesson is that an e-procurement system that functions properly makes data more accessible and timelier. In nations with functional e-procurement systems, data were substantially

more accessible and usable, despite usually poor disclosure procedures. Several e-procurement systems allow citizens in Indonesia, for instance, to obtain information about governmental procurement (OCP, 2016).

The fifth lesson is that a lack of standardisation results in an inconsistent data release and a lack of connected data along the contracting supply chain. The absence of a common data "model" when collecting, maintaining, and releasing contractual data seemed to be a significant obstacle for each country in the study. All nations released some contracting information (mostly tender announcements and procurement strategies), but the Open Contracting Data Standard (OCDS) was largely undocumented. Except for a limited quantity of data published in Honduras, Indonesia and the Philippines, data were neither given in a structured, machine-readable format nor on time (OCP, 2016).

The sixth lesson is that disclosure does not necessarily result in data utilisation. Despite publishing improved information, some nations observed minimal reuse of procurement data. In Uganda, for instance, vital information on central and local government procurement is promptly published in an accessible format on the government webpage. However, still in Uganda, the analysis found no systematic monitoring and little participation. Similar problems were discovered in both Ghana and Peru (OCP, 2016).

The seventh lesson is that information and communication technology and Open Contracting capacities must be strengthened among public authorities. In most countries, their government personnel were unaware of open data and open contracts in public procurement and contracting. Three countries have been identified as using the term "Open Contracting" and citing its benefits publicly. However, only Nigeria implemented Open Contracting with some coordination and civil society engagement (OCP, 2016).

The eighth lesson is that the limited capacity of information intermediaries is a problem everywhere. All nations appeared to have a weak infomediary basis, with limited knowledge of monitoring public expenditures and Open Contracting, and also the limited capacity to oversee public procurement. For instance, in Guatemala, Malawi, Myanmar and Peru, there appeared to be no systematic reuse of procurement data beyond a few fragmented individual efforts to cover public interest topics (OCP, 2016).

The last lesson is that government, business, and civic society must collaborate more effectively. In public contracting, there were collaborations between government and civil society, although coordination between different stakeholder groups in all countries required improvement. However, businesses, particularly smaller businesses, were frequently absent. The Local Governance Community Development Program (LGCDP) in Nepal, for instance, focuses on decreasing corruption and theft of resources through public engagement (OCP, 2016).

Despite a strong need for government procurement information, there are a few examples of sustained disclosure practices that have had a real impact. Although there are clear, positive opportunities, there are also challenges to implementing Open Contracting in public procurement processes. Nevertheless, innovations are emerging, and creativity is being unlocked across the African continent to implement Open Contracting and achieve its core objective of making public contracting transparent. The following section provides examples of African countries where the implementation of Open Contracting is progressing.

2.3 Open Contracting developments in Africa

The following are examples of countries where the implementation of Open Contracting is progressing and the first one is about South Africa. The Office of the Chief Procurement Officer in the National Treasury has introduced the central supplier database (CSD) available at www.csd.gov.za. This reduces the administrative burden on both the supplier and the administrator. The OCPO has also led the compulsory implementation of the e-Tenders portal via the website www.etender.gov.za, which is expected to save the government 400m ZAR (almost US\$3m) a year in advertising costs for procurement notices (National Treasury, 2016).

Next is Zambia, for according to Marchessault (2013), the government of Zambia is championing Open Contracting. The World Bank and the OCP support the development of a new e-procurement system that allows the publication of open procurement data according to the OCDS.

Not to be outdone is Nigeria because in Nigeria, civil society is taking the lead in developing powerful analysis tools for public contracts. The Budeshi platform aims to make the processes through which public services delivered are available for public scrutiny. Also, Budeshi connects procurement data to the government budget and public services (Nyager, 2016).

Equally important in this regard is Uganda since a Memorandum of Understanding has been signed between the Public Procurement Authority and the Uganda Contracts Monitoring Coalition to ensure transparency and accountability in public contracts (Lamech, 2015). Also included in this matter is Ghana, which in her second National Action Plan 2015-2017, she has committed to Open Contracting, focusing specifically on the sector of extractive industries (Pienaar, 2017).

Regionally, the Africa Freedom of Information Centre (AFIC) has long been using access to information requests to monitor public contracts and investigate the misappropriation of public funds. Besides, it is working on Open Contracting as a proactive form of disclosure, establishing a working group to promote Open Contracting in Africa (AFIC, 2015).

2.4 Application of Open Contracting in public procurement in South Africa

Reforming South Africa's public finance system must prioritise the accessibility of procurement data to both suppliers and buyers. This will improve planning, accountability and monitoring. Open contracting is an effective technique for combating corruption and ensuring good governance, value for money and high-quality service delivery (National Treasury, 2015). A public procurement bill, disclosure of procurement information, public participation, and anti-corruption measures within the procurement environment are crucial components of any public sector procurement system that will support Open Contracting practices.

2.4.1 South African legislation supporting Open Contracting in public procurement

The legal framework for public procurement in South Africa is extremely complicated. Over 80 distinct legal instruments govern procurement practices in the public sector (National Treasury, 2015). These laws and regulations are executed by a multitude of separate statutory instruments and institutions, some of which apply to specific procurement activities and others to specific sectors of the economy. Article 217 of the Constitution of South Africa (South Africa, 1996) governs procurement in the government sector. Section 217 (1), entitled "Procurement", stipulates:

“When an organ of state in the national, provincial or local sphere of government, or any other institution identified in national legislation, contracts for goods or services, it must do so in accordance with a system which is fair, equitable, transparent, competitive and cost-effective”.

However, organs of the state develop their internal procurement policy in compliance with the National Treasury's guidelines. Unfortunately, the compliance requirements became ever more complicated (National Treasury, 2015). Moreover, South African laws control some areas of transparency and public engagement. The next section discusses the specifics of these guiding concepts.

2.4.1.1 Disclosure

Information relating to government contracting must be published in a timely, accurate and proactive manner in accordance with open contracting principles (Gatjen, 2014). The South African legal framework expressly states the public's right of access to government information, including contract information. Everyone has the right of access to (a) any information kept by the state and (b) any information held by any other person that is required for the protection of any human rights (South Africa, 1996; South Africa, 2003).

The law does not prohibit the disclosure of contract information, and in many instances, particularly at the municipal level, the publishing of contract information is highly regulated.

Relevant requirements of the Constitution, the Promotion of Access to Information Act (PAIA) (South Africa, 2000b), and the Promotion of Administration Justice Act (PAJA) endorse openness with specific disclosure (publication) and participation mandates. For instance, the treasury procurement guidelines state that “open and effective competition requires (a) a transparent framework of procurement laws, policies, practices, and procedures; and (b) openness in the procurement process; and that accountability involves ensuring that individuals and organisations are answerable for their plans, actions and outcomes”. Therefore, openness and transparency in administration are essential components of accountability when subjected to external examination via public reporting (Horn & Raga, 2012; Livhuwani, 2012; Viljoen, 2011).

Public participation and the release of government decisions are overseen by a thorough municipal regulatory framework. Nationally and provincially, the legislation is far less rigorous than the posting of the call to bid and the procedures for granting contracts. In addition, some of the guidance publications, such as the Supply Chain Management: A Guide for Accounting Officers (National Treasury, 2004), intended for national and provincial agencies, look equivocal in relation to the rules and guidelines, indicating that tender information should be considered a secret.

According to the 2013 Management Performance Assessment Tool Report, 73% of departments did not comply with the PAIA criteria (Department of Performance Monitoring and Evaluation in the Presidency, 2013). This shows that organs of state either lacked the required competencies or simply disregarded the legislative obligations to openness and public accountability. Specifically, it is unclear how the PAIA applies to contractual information, such as whether unit costs qualify as commercially private data that may be kept a secret.

2.4.1.2 Public participation

Open Contracting principles call on governments to enable the public to participate during all stages of the contracting process (Gatjen, 2014). In South Africa, the Constitution enables citizen participation in public contracting. It explicitly states that national, provincial and local legislators may establish rules regarding participatory democracy. It also requires the encouragement of people in policy development: Participatory democracy – in terms of Article 116 (1) (b) of the Constitution (South Africa, 1996), a provincial legislator “may make rules and orders concerning its business, with due regard to representative and participatory democracy, accountability, transparency and public involvement”. Secondly, it addresses basic values and principles – in terms of Article 195 (1) (e) and (g) of the Constitution (South Africa, 1996), people must be encouraged in policy development and the administration must be accountable and transparent, and the public must be given information that is timely, accessible and accurate.

Even though there are opportunities for citizens to partake in municipal public procurement, procurement rules, and National Treasury norms are silent on the role of non-state actors in the public tendering processes. Moreover, the SCM Guide for Accounting Officers (National Treasury, 2004) restricts citizen involvement.

As for the national and provincial sphere, the PFMA Act 1 of 1999 (South Africa, 1999) mandates National Treasury to issue regulations and further instructions to determine a procurement framework. Such a framework must be “fair, equitable, transparent, competitive and cost-effective” (South Africa, 1999). The National Treasury’s norms (National Treasury, 2003) determine that the accounting officer of a procuring entity must develop and implement an effective and efficient procurement system consistent with the PFMA, the PPPFA and the Broad-Based Black Economic Empowerment Act (BBBEEA). The supply chain framework should provide at least demand, acquisition, logistics, disposal and risk management and the regular assessment of supply chain performance. The Treasury Regulations do not provide any further details or limit public participation in the various phases of the government tendering process.

However, relevant circulars and the SCM Guide for Accounting Officers (which is a guide and not a legally binding document) are more restrictive at a glance, as three typical stages of the procurement process demonstrate: Participation in public bid openings because Section 112 of the Local Government, MFMA requires an accounting officer to develop an SCM policy that covers procedures for opening, registering and recording bids in the presence of bidders (South Africa, 2003). This means that citizens who are uninvolved in the procurement process are not allowed to participate in public bid openings. The second one is bid evaluation. The SCM Guide for Accounting Officers states that after the public opening of bids, information relating to the examination, clarification and evaluation of bids and recommendations concerning awards should not be disclosed to bidders or other persons not officially concerned with the process until the successful bidder is notified of the award. This indicates that the involvement of independent observers is not permitted (National Treasury, 2004).

The last one concerns participation in the bid adjudication committee. The accounting officer appoints bid adjudication committee members to take contract award decisions. A Bid Adjudication Committee must consist of at least four senior officials. Where necessary, additional officers or advisors may be co-opted based on their specialised knowledge (Bolton, 2007).

However, it remains unclear if an independent observer would qualify as such an advisor, and the SCM Guide is silent on this issue.

In the local sphere, opportunities to engage citizens in public procurement planning and oversight are spelt out clearly in the legal framework. For example, the Municipal Systems Act ensures citizen participation in integrated development planning (South Africa, 2000a). Also, the MFMA explicitly references the participation in the procurement system of persons who are not officials of the municipality or municipal entity (South Africa, 2003).

Contracts imposing financial obligations beyond three years must be made public in a draft version summarising the municipality's obligations. The local community and other interested persons have to be invited to submit comments which have to be considered. Categories of goods contracts may be excluded, and a threshold may be prescribed. The MFMA stipulates that a contract may be amended only after the local community has been given reasonable notice of the intention to amend the contract and invited to submit representations to the municipal entity. It can be assumed that this provision is also subject to specific threshold values (South Africa, 2003).

There is a separate SCM Guide for accounting officers in municipalities and municipal entities. The guidance provided for citizen participation in the bidding process is practically the same as at the national and provincial levels: citizens are not allowed to participate in public bid openings. However, municipalities may use consultants or advisors to support them in certain procurement functions. The guide remains silent regarding the participation of citizens as observers in bid evaluation and adjudication committees (National Treasury, 2005).

2.4.2 Trends in disclosure and public participation initiatives in South Africa's procurement system

The South African public procurement system has undergone a major transformation since the mid-1990s. The Constitution of South Africa and other supporting laws necessitate a system of public procurement that is "fair, equitable, transparent, competitive and cost-effective" (South Africa, 1996). According to Treasury regulations, the head official of the organ of state has the exclusive right to authorise purchases. According to the National Treasury (2015), present procurement practices are not implemented in compliance with the law consistently.

The cases mentioned include the fact although procurement is advertised in the public domain, tender documents are unavailable electronically. Besides, the minutes of the Bid Evaluation Committee (BEC) are inaccessible to the public. Also, awarded bids are unavailable for public examination. Moreover, according to best practices for procurement, the names of winning companies and their tendered prices must be disclosed. However, under the current practices, some bids are not publicly open and the register of bids received is not made public. Additionally, the assessment of tender proposals is inaccessible to the public. Lastly, project status reports for awarded contracts are not publicly accessible.

The Government of South Africa will intensify disclosure and public participation by a plethora of means that include developing and establishing a framework to enhance disclosure and regulate the transparency of the procurement process, and demanding that all bid-related information be made public, increasing the accessibility of data. Other measures include improving the quality of information and encouraging its strategic use, encouraging the engagement of stakeholders across

the many stages of the procurement process, and increasing the ability of civil society, the private sector and other key stakeholders to improve the openness of public sector procurement (National Treasury, 2015).

It is evident from these commitments that Open Contracting concepts and the South African public procurement procedures are compatible. Naidoo (2016) outlined the conceptual model for the principal components of Open Contracting in the context of the South African public procurement system, and the first one under the legislation includes the need for disclosure and public participation in public procurement has always been established and mandated by the Constitution, relevant financial legislation and instructions (i.e., Public Finance and MFMA) make the implementation of disclosure and public participation in all procurement activities operational via the respective sections of the Acts, accounting officers and authorities must implement an equitable, transparent, competitive and cost-effective procurement system, taxpayers are empowered with access to all government information, and government actors are obligated to also include the citizens in policymaking.

Naidoo's (2016) second principal component of Open Contracting is disclosure, which demands that bid solicitations should be published for at least thirty days, bid advertisements should be published in newspapers, on the online platforms of the National Treasury and purchasing institutions and in the Government and Provincial Tender Bulletins, tender numbers must be published in RFP notices, the procurement notice must include the closing dates and times, details concerning mandatory supplier information sessions must be included in the bid notice, at public bid openings, potential buyers, as well as other representatives, may be present, a list of all bids received is accessible to the public, and publication of the winning company's details, including contract numbers and description, successful bidders' names and declared preferences, contract price(s), and, if feasible, brand names and contract completion dates.

Naidoo's (2016) third principal component of Open Contracting is public participation, and it states that Constitution allows citizen participation in public contracting, the Constitution mandates government actors to establish rules regarding participatory democracy, Constitution requires the encouragement of people in policy development, bidders may be present in public bid openings, and bid information should be disclosed to bidders. The tenets include the need for independent observers to be allowed at Bid Adjudication Committee meetings, citizen participation in the integrated development plan (IDP), contracts imposing financial obligations beyond three years must be made public, and the local community and other interested persons must be invited to submit comments on draft financial obligations.

As a safeguard against wasteful, inept, and dishonest utilisation of taxpayer money, the Open Contracting principles advance that it is possible to equip the citizens to fully understand and monitor public contracting. To assist with this proactive disclosure, governments are obliged to establish systems to collect, organise, simplify and disclose pertinent public contract data and documentation. Such mechanisms should be easy to search and user-friendly to facilitate meaningful tracking, achievement, and consequences for a lack of accountability.

OCP (2016) charted some components of a framework for the development of Open Contracting in the government tendering system. The first one falls under legislation and policies, implying Open Contracting is supported when laws recognise the citizens' right to access all procurement,

policies must allow citizens to participate in all phases of public contracting through consultation, observation and oversight, and support from politicians to implement Open Contracting is evident when the commitment is found in a country's national OGP action plan.

The second one falls under participation, meaning governments can encourage participation by implementing a simple programme to communicate with external stakeholders, establishing feedback redress mechanisms, and developing the capacity of intermediaries to use Open Contracting data.

The third component is disclosure for it (disclosure) promotes reuse when Open Contracting adheres to a consistent data schema, such as the OCDS, which provides a framework for publishing information about the design, award and execution of government contracts.

The last component falls under institutions. Institutionalisation is important if responsibility is allocated to delegated officials, for example, legal experts and political oversight during the implementation of Open Contracting initiatives.

3. DISCUSSIONS AND RECOMMENDATIONS

A critical literature review was conducted to discuss the theory of Open Contracting, focusing on the conceptual foundation, definitions, theories and global Open Contracting practices. It was concluded that more research is needed to increase the understanding of the concept of Open Contracting. Open Contracting is a rapidly expanding concept whose primary aim is to increase disclosure and public participation across all the phases of government procurement. It claims that Open Contracting will assist in making sure that public resources are optimally managed and that communities will start receiving the goods and services they deserve (OCP, 2015). In this study, Open Contracting was approached by scholars, such as Sebola (2017), who concluded that “The purpose of public participation is to ensure that stakeholders affected by public authority’s decision have a right to be consulted and contribute to such decisions”. In addition, Gatjen (2014) summarised Open Contracting as “... the proactive publication of government contracts”.

3.1 Re-evaluating the study's central research question

What role does Open Contracting play in making public procurement in South Africa transparent?

3.2 Discussion of the findings

The purpose of the literature review was to compile an index of the most important lessons learnt, based on the findings of extensive post-implementation reports from those countries that have already infused the principles of Open Contracting into their procurement systems. In addition, the study took a holistic approach to public contracting by examining elements such as legislation, policy, institutions, participation and disclosure.

Regarding legislation, it was discovered that regulations support Open Contracting when they acknowledge the citizen's right to access information pertinent to the design, procurement and execution of all sorts of contracts. Citizens should have the right to participate in all phases of public contracting via consultation, observation and monitoring. This finding correlates with Article 32 (1) of the South African Constitution, captioned Access to Information, “Everyone has

the right of access to (a) any information held by the state; and (b) any information held by any other person that is required for the exercise or protection of any rights”.

Concerning policy, the literature reveals that rules do support Open Contracting only when national strategic documents, such as OGP national action plans, reaffirm specific commitments relating to openness and transparency. In addition, government leaders demonstrate visible support for Open Contracting, and access mechanisms for infomediaries are established. This finding confirms an ongoing effort by the South African government, which joined the OGP at its inception in 2011. The OGP is crucial for gaining meaningful citizen engagement strategies that bring citizens closer to government and include them in important government decision-making platforms, from local to national level. The people’s government must be open, transparent, and inclusive for it to be truly a government by the people for the people (Dlodlo, 2018).

Based on institutions, inter-agency data management mechanisms must also be in place. Chapter 9 of the Constitution of South Africa provides for establishing institutions to safeguard and enforce the constitutional principles of openness, transparency, accountability, responsiveness and ethical governance (South Africa, 1996). It was also found that institutions that are directly involved in such implementation include the Public Protector, South African Human Rights Commission (SAHRC), The Commission for Gender Equality (CGE), The AGSA and the Independent Communications Authority of South Africa (ICASA).

Pertaining to participation, it was found that it can be encouraged through a straightforward programme implemented by governments to engage with external stakeholders. This can be done through functioning feedback redress mechanisms and by building capacities of infomediaries to use procurement data.

On disclosure, it promotes the reuse of data when it adheres to a consistent schema, such as OSDs, which provides a framework for publishing information regarding the planning, procurement and implementation of public contracts. However, members of the public, competitors and the media are primarily interested in obtaining a contract copy. As a result, many institutions are willing to disclose the contract, but they cannot do so because they have not managed bidders’ confidentiality and other expectations. In addition, contractors frequently appeal institutions’ decisions to disclose, relying on the third-party information exemption, delaying disclosure and consuming unnecessary time and resources.

3.3 Summary of discussion for literature review

A critical literature review was conducted to discuss the theory of Open Contracting, focusing on the conceptual foundation, definitions, theories and global Open Contracting practices. It was concluded that more research is needed to increase the understanding of the concept of Open Contracting.

Open Contracting is a rapidly expanding phenomenon that seeks to increase public participation and disclosure at all steps of public procurement. It acknowledges that open procurement will ensure that public resources are optimally managed and that community members begin receiving the goods or services they deserve (OCP, 2015). In this study, Open Contracting was approached by scholars, such as Sebola (2017), who concluded that: “The purpose of public participation is to ensure that stakeholders affected by public authority’s decision have a right to be consulted and

contribute to such decisions”. In addition, Gatjen (2014) summarised Open Contracting as “... the proactive publication of government contracts”.

3.4 Research contribution

In support of its primary purpose, this paper made some theoretical contributions to the new body of knowledge for public sector procurement. The breakthrough in science from this paper was an improved theoretical understanding of the Open Contracting concept by both researchers and government stakeholders. In addition, public procurement practitioners, government entities, stakeholders and research institutions active in government contracting can potentially utilise the study’s insights and findings to improve their openness and transparency practices concerning public procurement performance.

3.5 Limitations of the study

Only 15 countries’ Open Contracting experiences were considered in this literature review.

3.6 Recommendations for future research

Future studies could focus on educating all stakeholders and key role players in public sector procurement on the environment and the transformation towards a transparent public procurement system (Open Contracting). In addition, a larger sample could deliver more statistically significant results and determine the results’ reliability for future research.

4. CONCLUSION

The current research study confirmed the importance of adopting a transparent public procurement system. Based on the literature findings, all the best practices identified in the literature proved important in current international practices. Government institutions could use the Open Contracting framework to determine which Open Contracting practices are possible for implementation.

A significant academic research gap existed regarding Open Contracting in public procurement processes. This paper aims to contribute to the academic research field in public sector procurement and introduce state organs to a framework for implementing Open Contracting.

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WEALTH DISTRIBUTION IN THE POST APARTHEID SOUTH AFRICA: A CASE STUDY OF THE DOCUMENTARY “I BLEW IT” ON INCOME INEQUALITY AND WEALTH DISTRIBUTION: IS THIS A REALITY OR MISNOMER?

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ABSTRACT

The dawn of democracy led to the abolition of de jure discriminatory laws and hopes of a more inclusive economy in South Africa. The study proposes the use of the inter-connectedness of the Social Capital Theory (SCT) and the Human Capital Theory (HCT) through a linear causal correlation between a nexus of income, lifestyle, and financial management knowledge. This study utilises a documentary analysis *I blew it* which is a reality show enjoyed by most South African viewers. This is a unique contribution as this is an uncharted territory which has not been traversed previously. A case study was adopted for examining a phenomenon. The principal approach of the research is the documentary research method. The researcher employed the observation method where participants were observed through a video and all the four aspects were followed to ensure a scientific rigor. The meta-theory of constructivism was adopted as one other methodology for this study because it is based on observation and scientific study. The analysis and interpretation of a documentary series “*I blew it*” is executed. The score indicated zero to all the exhibits in terms of assets accumulated. A lot of scores are evidenced on the lifestyle construct which illustrates where most of the finances were spent. It is evident that the exhibits lack financial management skills and knowledge. They all scored zero on financial management knowledge variables. It is apparent that indeed the majority in our society lack financial management knowledge. This study was able to show a relationship between income, lifestyle, and financial management knowledge. It can be scientifically confirmed that most South African blacks lack financial management skills which should be remedied through training courses. The financial management knowledge and skills could have a potential in improving the socio-economic standards, alleviating poverty, and contributing towards an inclusive economy.

Keywords: Lifestyle, Income, Financial management knowledge, Wealth distribution, Income distribution.

1. INTRODUCTION

The colonial-apartheid era was explicitly designed, inter alia, to economically exclude and exploit the majority of the South African population for the benefit of a racially defined minority. The dawn of democracy in 1994 led to the abolition of de jure discriminatory laws and institutions raising hopes of a more inclusive economic dispensation (Harber & Mncube 2011:236). While some progress has been made towards redressing the inequalities of the past, the distribution of wealth remains racially skewed in favour of a minority (STATS SA 2019,4). Social Capital Theory (SCT) and Human Capital Theory (HCT) propose a linear causal correlation between of a nexus of income, lifestyle, and financial management knowledge. This study utilises a documentary

analysis to develop a systematic and up to date understanding of the relationship between a nexus of income, lifestyle, and financial management knowledge to measure the socio-economic variables. It seeks to empirically evaluate the propositions of SCT and HCT within the socioeconomic landscape.

Despite numerous economic policy interventions, including black economic empowerment and affirmative action, South Africa still has high levels of income inequality with 68% of income accruing to the top 20% of the population while the bottom 40% holds only 7% of the national income (IMF 2020). South Africa's income inequality overlaps with race, in view of white supremacy, and black Africans largely on the lower end. (Stats SA 2019). While affirmative action and black economic empowerment, for instance, have provided income earning opportunities for a portion of the historically excluded majority, upward socio-economic mobility remains elusive for the majority of the South African populace. Bhorat and van der Westhuisen (2009) explicate that the remedial insights should be considered in terms of the dynamics of income and wealth distribution. The purpose of this study is to describe the inter-connectedness of the SCT and HCT theories within the precincts of income inequality and wealth distribution. The primary objective of the present study is to empirically evaluate the propositions of the two theories in light of the documentary analysis for a South African Reality Show called "I Blew It" which is showcasing the documentaries for black South Africans who had access to a lump sum in their earnings. The secondary objective is to provide a systematic and up to date understanding of the empirical relationship between the lifestyle change as influenced by individual's income due to lack of financial management knowledge. Subsequently, the other objective is to provide remedial insights on wealth and income distribution on the incongruencies emanating from the documentaries.

The study essentially seeks to answer three research questions. Firstly, what is the empirical relationship and propositions of the SCT and HCT considering the documentary analysis for a South African Reality Show called "I Blew It" on a nexus of income, lifestyle, and financial management knowledge? Secondly, what is the empirical relationship between the lifestyle change as influenced by individual's income due to lack of financial management knowledge? These would provide knowledge on the understanding of the interconnectedness between living standards as influenced by income for an inclusive economy and wealth distribution with the scientific inquiries? Lastly, what remedial insights on wealth and income distribution on the incongruencies emanating from the documentaries can be provided? There is currently no reasonably substantive literature on this particular subject and what is found is rather fragmented. This study seeks to integrate, synthesize, and systematize literature concerned with the relationship between income, lifestyle, and financial management knowledge. Further, it seeks to provide a decision support tool for activists, movements and policymakers preoccupied with moderating income and wealth inequality. It aims at untangling and demystifying the incongruencies to enlighten and educate society on the financial management while also formulating a new theory on the scientific enquiry conducted on the nexus of the three constructs and their variables. The first section discusses relevant ideas from the literature most importantly on demystifying the understanding of the concepts and their inter-relatedness. The second section provides a rhetoric view on the theoretical framework employed by the study. The third section sets out the research design, methodology and analysis. The fourth section presents results and a brief discussion of the

findings. The final section concludes the study and provides recommendations on the remedial actions and highlights the policy implications of the findings.

2. LITERATURE REVIEW

According to Advani, Bangham, and Leslie (2021), wealth includes private pension assets, financial assets, business assets, physical assets, property assets net, formal and informal financial assets. Wealth can be measured for different economic units such as individuals, families, or households. Wealth is measured at the family level – single or couple adults and any dependent children within a household where the locus of this study is. Total wealth includes net financial assets, net property assets, pension assets, and an adjusted measure of physical wealth (including cars, home contents, collectibles, etc.). Hugguet (1996), indicates that the inequality in the earnings distribution can explain a substantial portion of observed wealth inequality within age groups. He further posits that inheritance is also a factor of wealth distribution such as an accidental bequest which allows estates to be passed to the living family members.

Some scholars view social capital as being in the individual level while some associate it as it being in the community level and others have a more dynamic view. According to Bankston and Zhou (2002), social capital is located at the level of the individual, the informal social group, the formal organization, the community, the ethnic group and even the nation. Coleman (1988); Portes (1998); and Putnam (1995) hold divergent views as they posit that social capital is located at the individual level. Kilby (2002) explicated that social capital exists within levels or scales as one feels belonging to family, community, profession, country, etc, simultaneously. Adler and Kwon (2002) supported this analogy indicating that social capital's sources lie in the social structure within which the actor is located. Thus, social capital can be thought of as having an individual and an aggregate component (Buys & Bow 2002); Newton 1997); Tandler and Freedheim 1994). Kilby (2002) suggested that the main determinants of social capital include: history and culture; whether social structures are flat or hierarchical; the family; education; the built environment; residential mobility; economic inequalities and social class; the strength and characteristics of civil society; and patterns of individual consumption and personal values.

Requena (2003) suggested that the importance of social capital is that it brings together several important sociological concepts such as social support, integration, and social cohesion. This view is supported by Rothstein (2003) who stated that the real strength of social capital theory is the combination of macro-sociological historical structures with micro-level causal mechanisms, a rare feature in the social sciences. Optimism, satisfaction with life, perceptions of government institutions and political involvement all stem from the fundamental dimensions of social capital (Narayan & Cassidy 2001). This study concurs with all the definitions of social capital and decides to go along with the definition provided by Bankston and Zhou (2002) who compounded that social capital is located at the level of an individual. The author supports the definition by Bankston and Zhou (2002) who compounded that social capital is located at the individual level. It is important are not regarded as separate entities.

There is a substantial body of literature on post-94 income distribution patterns, the post 94-evolution of the structure of the South African labour market, the impact of policy interventions aimed at redressing income and labour market inequities as well as on the linkages between, labour market outcomes and income distribution. Bhorat and van der Westhuisen (2009) found that wage

inequality is the primary driver of rising levels of income inequality and that this inequality constitutes a formidable obstacle to aggregate economic growth, especially pro-poor growth. The phenomenon is mainly driven by “an ever- increasing skill premium paid to highly skilled workers” (Bhorat & van der Westhuizen 2009). Wealth inequality, income inequality had increased dramatically in the past few decades in many countries. These two types of inequalities are closely related and are positively correlated, as labour income is a major source of wealth. In several developed countries, such as Denmark and Switzerland, income inequality is very low, while the wealth inequality is among the highest in the western world. The differentiation between income and wealth inequality is important, since affecting one might not necessarily affect the other and vice versa. It is also important due to the confusion found at times between them in the media, and even within the scientific community.

Yonatan; Eshel; and Yoash (2016), posit that labour income accounts for the income originated from wages and earnings. Only a fraction of the labour income contributes to the accumulated wealth, due to taxation and spending. Capital income accounts for the income originated from wealth, including profits, royalties, rents, and dividends. Only a fraction of it contributes to the accumulated wealth, due to taxation and spending. Capital and labour income together constitutes the total national income. Capital value change accounts for the value change of capital such as owned land, shares, options, and other assets owned by individuals. Some of the capital income, a part of the national income, is invested back, contributing to an increasing value of assets, accounted therefore as capital value change and not as capital income.

A democracy that is not accompanied by social and economic betterments for the population-at-large is putting its survival at risk. Wealth inequality is escalating at an alarming rate. Social determinants of success like family inheritance, social connections, and structural discrimination. Inequality is one of the main drivers of social tension. Van den berg (2010) also found that the single most significant driver of national income distribution disparities is the labour market, relative to other income sources. Further, labour market outcomes were deeply rooted in the country’s history with respect to disparities in human capital formation among the various racial groups (Van Den Berg, 2010). Therefore, patterns of human capital formation would be a key factor in future growth and income distribution. Further, increasing inequalities within the labour market, fuelled by rising earnings disparities and unemployment, are the main drivers of inequality and black Africans bear the brunt of this inequality (Milligan & Wood 2009).

Labour income (relative to other sources on income) is the main driver of income inequality (Hundenborn, Leibbradnt, & Woolard, 2018). While social grants play a crucial role as a countervailing factor, especially at the bottom end of the income distribution scale, attending to labor market dynamics remains key to addressing income inequality in a sustainable manner (Hundenborn et al., 2018). South Africa is going through a moment of powerful political rupture. This rupture is not so much with the apartheid or colonial past (despite the Fallist movements’ calls for “decolonisation”), as with the immediate democratic past which has failed to deliver on its promises of equality of all and with its own lack of credible rupture with the apartheid past. While this most recent battle has been played out on the university campuses of the country (and continues to be waged by protesters on the streets), it could be argued that the public domain is as serious and important a site of struggle for agenda-setting and new ways of knowing and talking (Dugmore, 2020).

Mgobozi (2004) found that much of the earning inequality in South Africa among the various race groups was a function of racial discrimination in the opportunities for education and labour market participation. Further, much of the income inequality in South Africa between 1994 and 2004 was driven by class while historic factors still played a significant role. Harber and Mncube (2011) investigated whether schooling in the South African post-apartheid era yielded positive economic, social, and political gains both to the individual and society. They found that schooling can yield positive economic, social, and political benefits to the individual and society, but it can also reproduce existing inequalities as well as perpetuate violence and insecurity (for example, through sexual exploitation and violence). Jozef and Stijn (2010) evaluated the impact of training on wages and productivity in a panel study that included 170 000 Belgian firms and found that indeed training had a positive impact on both wages and productivity. These have an impact of cascading to the financial management knowledge which is one of the bases of this study.

2.1 Theoretical Framework

This research is premised on and guided by the Social Capital Theory (SCT) and Human Capital Theory (HCT). Following Tan (2014), human capital is defined as “productive wealth embodied in labour, skills and knowledge and it refers to any stock of knowledge or the innate/acquired characteristics a person has that contributes to his or her economic characteristics”. The same characteristics of social capital that enable beneficial, productive benefits have the potential to cause negative externalities. Potential downsides of social capital include fostering behaviour that worsens rather than improves economic performance; acting as a barrier to social inclusion and social mobility; dividing rather than uniting communities or societies; facilitating rather than reducing crime, education underachievement and health-damaging behaviour.

The same orchestrating mechanisms that reduce transaction costs in market exchange can have negative consequences (Carroll & Stanfield 2003); Fine 1999); Torpe, 2003); Erickson (2002) supports this identifying the following paradox: ‘every feature of social structure can be social capital in the sense that it produces desired outcomes, but also can be a liability in the sense that it produces unwanted results. The kinds of groupings and associations which can generate social capital always also carry the potential to exclude others (Hunter, 2000); Morrow (1999); and (Szreter, 2000).

Social capital can become a constraint to individuals’ actions and choices (Wall, Ferrazzi, & Schryer, 1998). For example, there is a particularly high risk of negative social capital in urban poverty situations (Small, 2002). The importance of the negatives of social capital was first documented by Portes and Landolt (1996) but now is synonymous with our understanding of social capital theory. A stock of social capital is simultaneously productive and perverse. Simplistically speaking, the makeup of these types determines the structure of the overall social capital present.

3. METHODOLOGY

3.1 Research design

This study followed a case study for examining a phenomenon. Yin (1994:142) defines a case study as ‘an empirical inquiry that investigates a contemporary phenomenon within its real-life context’. This is clearly illustrated in this study which involved factors determining the current

situation where background information was collected. Some of the central methodological or epistemological questions are outlined. The principal approach of the research is the documentary research method, which, following Mogalakwe (2006:221), is defined as “the analysis of documents that contain information about the phenomenon we wish to study” however, in this study, the transcripts extracted from the documentary are reviewed and not documents.

Participant observations as part of the documentary process is just as good and scientific (Mogalakwe, 2006:210). Like any other research method, it demands rigorous conformity to research protocol. To ensure scientific reliability, this approach must adhere to four principles, namely, authenticity, credibility, representativeness, and meaning (Mogalakwe 2006:214). Authenticity entails ensuring that the principal approach of the research is the documentary research method, which, is defined as “the analysis of documents that contain information about the phenomenon we wish to study”. This researcher employed the observation method where participants were observed through a video and all the four aspects were followed to ensure a scientific rigor. Video analysis in the social sciences can be considered as a kind of ethnography using video, to be more exact: a videography" (Knoblauch, 2012); "as the method to analyse people acting in social settings by video".

The need for addressing contextual aspects in any documentary hermeneutic procedure (Pollak, 2008), spanning both co-textual (that is directly contextual or intra-filmic) as well as broader interdiscursive facets, was taken on board. Subsequently, the analysis took into consideration the impact of its production towards the viewers.

A summary of the documentary as plotted in a way of a film is provided as an annexure. Furthermore, rhetorical, and persuasive strategies through presentation of facts, dismissing credibility of counterfactual information is addressed. The arguments are then presented logically. The meta-theory of constructivism was adopted as one other methodology for this study because it is based on observation and scientific study. It is depicted within the theory that “people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences” (Adler 1997). To achieve this, people must explore, and assess. The process involved exploring, assessing, scrutinising and sifting socio-economic variables from a wide plethora and high volume of information to use in the construction of a framework. Ngoepe-Ntsoane (2019), and (Nugroho 2008) explicated that constructivist use the usual research methods including discourse analysis, observations, content analysis qualitative and statistical studies This study undertook documentary analysis to underscore the statement above.

The analysis and interpretation of a documentary series “I blew it” will be structured around the three research questions with the ultimate purpose of providing answers.

3.2 Sampling method

Considering that the purpose of the study was to explore the behaviour of the exhibits who received a lump sum amount of money and analysing them within the three constructs of income, lifestyle, and financial management knowledge in the I blew it reality show, the sampling technique adopted for the study was purposive sampling. The researcher purposively selected five exhibits from the episodes of I blew it randomly due to similar practices patterns of expenditure. The population of the I blew It is 52 exhibits which were show-cased in a total of four seasons. The reality show

presented 13 episodes in total. Of these, five were sampled for this study. It is believed that since it is public and open for the audiences throughout South Africa, it therefore would not require publication permissions. The sampling took gender and age into consideration however, it was found that most of the population who blew it were men. A summary of of the documentary shall be annexed as appendix.

The five documentaries of “I Blew It” are sampled on the nexus of income, lifestyle, and financial management knowledge.

The exhibits will be named according to the alphabets. The alphabets are from A to E. This is done to avoid using the exact names to adhere to and to be within the provisions of the Protection of Personal Information Act (POPI Act) promulgated in 2021. Information provided is broadcasted on Mzansi Magic, Channel 161 presented through a reality show and Showmax seasonally where the exhibits involved were selected and documentaries extracted.

3.3 Research instrument

It is illustrated that the documentary method may give some essential answers to some research questions from the analysis which will then be exemplified. A schematic presentation of the constructs and variables are presented on the table 1 below. The practice of interpretation with the documentary method using a transcript is demonstrated. Documentary analysis is a form of qualitative research that uses a systematic procedure to analyse documentary evidence and answer specific research questions. A qualitative analysis in the form of the assessment of five documentary analysis demonstrated in a Reality show are reviewed as unit of analysis to assess an appraisal theme. Documentary analysis is a popular method in the field of arts. In essence, it means taking a systematic approach to understanding and interpreting incidences. This analysis is not to take the surface meaning for granted, but to read into it.

Within the income, the following variables are measured per exhibit: Source of income, total earnings, year and period, assets accumulated from earnings, donations made, impact of cash received, and tangible outputs resulting from the usage of funds received.

The lifestyle will be measured through the entertainment, travel, cars purchased, houses purchased, and clothing purchased. Financial management is measured through financial plan/ budget, business Plan, investments made, contributions/ shares for family/ community, trust, and wealth/ income distribution.

3.4 Data collection

Observation and evaluation were used as a means of data collection. A case study of the selected documentaries is performed in the study where the variables have been categorised per the three constructs of the nexus of income, lifestyle and financial management knowledge as displayed below:

Table 1: Identification of Constructs and Variables

| Income | Lifestyle | Financial management knowledge |
|------------------|------------------|---------------------------------------|
| Source of income | Entertainment | Financial plan/ budget |
| Total earnings | Travel | Business Plan |
| Year and period | Cars purchased | Investments made |

| Income | Lifestyle | Financial management knowledge |
|----------------------------------|--------------------|---|
| Assets accumulated from earnings | House's purchase | Contributions/ shares for family/ community |
| Donations made | Clothing purchased | Trust |
| Impact of cash received | | Wealth/ income distribution |
| Tangible outputs | | |

3.5 Data analysis

The data analysis shares a vision on the constructs and variable which exist to provide the results emanating from the study. The constructs of the study are the income, lifestyle, and financial management knowledge. Within the constructs, there are variables which are there to measure to the performance of the exhibits in "I Blew It" documentary following this formula: -

Construct= a number of variables = Expenditure & Wealth Distribution.

Income = total earnings + year and period + assets accumulated from earnings + donations made + impact of cash received + tangible outputs = Expenditure from the income received.

Lifestyle = entertainment, +travel + cars purchased +houses purchased + clothing purchased = Expenditure on lifestyle from the income received

Financial Management Knowledge = financial plan/ budget + business Plan + investments made + contributions/ shares for family/ community + trust + income distribution = Wealth distribution.

Table 2: Data analysis

| | Exhibit 1 | Exhibit 2 | Exhibit 3 | Exhibit 4 | Exhibit 5 | TOTAL | |
|--------------------|------------------------------|---------------------|------------------------------------|-----------------------------------|---------------------------------|------------------------|--|
| INCOME | Gender | Male | Male | Male | Female | 4 M, 1 F | |
| | Urban/ Rural | Urban | Urban | Urban | Urban | 5 | |
| | Source of income | Boxing and Marathon | Musician | Road Accident fund | Lotto | Inheritance | Variation |
| | Total earnings | 56 M | More than 64 M | 1.4 M | 17 M | 2.5 M | |
| | Year and period | 20 yrs | | 2016 | 2 years | 1 Year | 1-20 |
| | Assets accrued from earnings | 0 | 0 | 0 | 0 | 0 | 0 |
| | Donations made | 0 | 0 | 0 | 0 | 0 | 0 |
| | Impact of cash received | None | None | None | None | None | 0 |
| | Tangible outputs | None | | | None | Furniture | 1 |
| | LIFESTYLE | Entertainment | Braai, clubbing, Parties, Friends, | Braai, clubbing, Parties, Friends | Parties, alcohol and traveling. | Parties, cars, alcohol | Parties, clothing, friends and boyfriend |
| Travel | | Overseas, local | Overseas, | Local | N/A | N/A | 1 |
| Relationships | | 16 women | Women | Womanizer | Womanizer | Boyfriend | 5 |
| Cars purchased | | Plenty | 5/ 43M | 0 | 3 | 1 | 5 |
| House's purchase | | 3 | 0 | 0 | 0 | 0 | 1 |
| Clothing purchased | | Brands | Brands | - | Brands | Brands | 4 |
| FINANCIAL MANA | Financial plan/ budget | None | None | None | None | None | 0 |
| | Business Plan | None | None | 0 | 0 | 0 | 0 |
| | Investments made | None | None | 0 | 0 | R28 000 | 1 |

| | Exhibit 1 | Exhibit 2 | Exhibit 3 | Exhibit 4 | Exhibit 5 | TOTAL |
|---|------------------|------------------|------------------|------------------|------------------|--------------|
| Contributions/ shares for family/ community | None | None | R170 000 | None | 0 | 1 |
| Trust | Non | None | 0 | 0 | | |
| Wealth/ income distribution | None | None | 0 | None | | |

To achieve the goal, the study pursued to identify variables per constructs to be able to arrive at the recommendations and conclusion. These were depicted on the table where similarities and differences are counted to arrive at a total which would prove if the money received by the exhibits was used wisely or not. The scores for each variable per exhibit led to the author determining the recommendations for remedial actions to prevent future mistakes and improve on the financial management for ensuring wealth distribution. The results are specifically ceded to the research objectives and for answering the research questions. The first exhibit was a male who received 56M from his previous job as a Boxer and a Marathon runner. He used his money for entertainment, travel, wedding, and multiple opposite relationships/extra-marital affairs. He enjoyed a lavish life for twenty years until he was left with R20 in his bank account. The second exhibit was a male who received more than 64 million and spent it the same way as the first exhibit. The third exhibit was a male who acquired his money from the Road Accident Fund (RAF). The money received was R1.4 million Rands. He mostly used his money for entertainment with his friends. He was also using his money to please girls. It is stated that he would spend R20 000 in one night. The pattern was the same with the fourth exhibit who was also a male paid 17 million from Lottery. He spoiled himself with expensive branded clothing. The money was exhausted within a period of two years. The last sampled exhibit was a female who received 2.5 m which only lasted her for a year. The money was spent in entertainment mostly.

The analysis from the table specifies that there were four males and one female exhibits. The money came from various sources such as sports earning, RAF, lottery, inheritance, and career. The money received ranges from 1.4 m to 65 m. The period of use varied from 1 year to 20 years, the longest one being due to periodically in flow of money and not once off. The score indicated zero to all the exhibits in terms of assets accumulated from earnings, donations made, impact of cash received, and tangible outputs.

A lot of scores are evidenced on the lifestyle construct which illustrates where most of the finances were spent. The difference is only shown on one who travelled the world and one who did not buy a car from the proceeds of funds. Of the five exhibits, only one bought a house which does not exist anymore. It is evident that the exhibits lack financial management skills when looking at the score. They all scored zero on financial management knowledge variables in terms of financial plan/ budget, business plan, investments made, contributions/ shares for family/ community, trust, and wealth/ income distribution. Only the two who got less money could consider a little investment, in this case being a female, and one male who contributed a little to his family. It is apparent that indeed the majority in our society lack financial management knowledge.



Figure 1: A Framework on the Nexus of Income, Lifestyle and Financial Management Knowledge

Figure presented above confirms that the three constructs are inter-related and aligned to the two theories of Social and Human Capital Theories. The study has managed to corroborate the association with the theory's terms of the fact that the programme "I Blew it" is a configuration of the individual as a human factor and as a social factor surrounded by people who contribute towards the decisions been made. When an individual gets enriched with resources, the people, next generations, the social structure, social class, economic inequality, should be considered instead of regarding them as entirely belonging to him/her. The results have proven that there is a particularly high risk of negative social capital in urban poverty situations as Small (2002) has expounded. It was also explicated by Tan (2014) who has indicated that there are the potential downsides of social capital which include fostering behaviour that worsens rather than improves economic performance; acting as a barrier to social inclusion and social mobility; dividing rather than uniting communities or societies. The results indicate the negative side of social capital as it had caused a barrier to social inclusion and mobility than improving economic performance and making an impact to other people's lives.

4. RESULTS AND DISCUSSION

I Blew it is a reality show hosted by Mzansi Magic, Channel 161 on television and Showmax. The team solicits victims who have had access to lump sum payments of money. Those people who voluntarily share their stories live on television are interviewed and given a platform to showcase their previous lifestyles when they got the money. The family members and friends also narrate their experiences concerns on expenditure patterns. The episodes are also on the Mzansi Magic website, Musa-I Blew It-Mzansi Magic-DStv, <https://www.dstv.com/mzansimagic/en-za/page> and Showmax page <https://www.showmax.com/eng/tvseries/pxe2lo2p-i-blew-it>. The documentaries are disheartening and exacerbated by the poverty situation which the exhibits have endured overtime. The reaction seems to be overtaken by the urge of experiencing good life once in their lives, forgetting about their future and that of their children. Conversely, the racial

disparities also have a major contribution to play in these circumstances as one tends to think that lack of knowledge, exposure, past experiences, and education could have contributed to the undesirable situations.

Documentaries have the power to educate. Documentary films are an in-depth and informative resource which are a perfect platform to create dialogue. They serve as powerful tools that bring important topics to the table in a captivating way that also sparks conversation, and sometimes even social movements. Watching a documentary can feel like a serendipitous journey, on which the real lives of strangers unfold before an audience's eyes. Reality shows have a potential in describing and identifying the real issues that exist in that special sense of discovery and feeling of close connection to the subject. This awakening of empathy within audiences' hearts is part of the intangible magic of documentary film. If documentary films generate empathy in audiences, illuminating new perspectives and activating powerful emotions, then what happens next? Audiences often walk out of documentaries saying, "I want to do something about the way I feel and what I just saw!". That is in a nutshell what encouraged the author to do something about the narratives emanating from the episodes which she watched as a Researcher. Empathy created by great storytelling can be great fuel for action. Coordinated, organized and strategic actions can facilitate major changes in a society's viewpoint, lexicons, values, and practices. Coherent actions can shift this post-viewing inspiration into action, which can drive societal and legislative change, truly altering societal practice. The author of this article although not a financial expert, has decided to formulate coherent actions which could bring major changes to the society by orchestrating a shift from post-viewing to action the repercussions as an inspiration to others who are yet to become instant millionaires in the future. The author who is an advocate for sustainable development, thought this could shed light to others so that there could be a paradigm shift on thinking to try and channel things towards sustainable development to be in line with the National Development Plan of the country which promotes an inclusive economy. The global goals such as the Sustainable Development Goals, the United Nations Global Compact, and the Africa Agenda 2063 aspirations included as well.

It is evident from the analysis conducted that the black African people do not have financial management skills. It is also evident that income influences the lifestyle change given the behavioural changes of all the exhibits who got lumpsum payments from various sources. It has also been proven that there is an empirical relationship between the SCT and HCT. The SCT became clearer as most of the exhibits were pleasing friend with the entertainment when money was there but lost all the friends when money was finished and in turn even becoming a laughingstock and viewed as fools.

Secondly, what is the understanding of the interconnectedness between living standards as influenced by income for an inclusive economy and wealth distribution? The squandering of money has a negative effect towards passing wealth to the next generations which impact on poor wealth redistribution. The scourge on income inequality will never be resolved if people continue living like this as if "there is no tomorrow" and leaving people spending money carelessly without any remedial action. The last research question is answered in the next section of recommendations and conclusion

5. CONCLUSION

This study was able to show a relationship between income, lifestyle, and financial management knowledge. It was also able to fulfil all what it has promised to do in the introduction and in this case managing to integrate, synthesize, and systematize literature concerned. These should be able to provide support for activists, movements and policymakers preoccupied with moderating income and wealth inequality. It has untangled and demystified the incongruencies which would enlighten and educate society on the financial management. The study has also managed to formulate a new theory through the scientific inquiry executed which managed to confirm that there is indeed a nexus between the three constructs of income, lifestyle, and financial management knowledge. It can be scientifically confirmed that most South African blacks lack financial management skills which should be remedied through training courses. The study found that there could be a potentially positive correlation between investment and financial management knowledge which could positively rescue the people from spending income to advance their lifestyles which do not have any value.

The findings revealed that income, and lifestyle conferred disadvantages to the individual, financial management knowledge could boost economic growth to people getting a high income which would also be carried over to the next generations. The study also established that money spending varies according to type and level of financial knowledge and the people associated with. Lastly, given that there are multiple determinants of lifestyle standards, the outcomes as well as the distribution of national income, the study does not say anything on the weight of financial management as a co-determinant factor, along other variables of said outcomes which pose a need for a further study. For instance, interventions aimed at improving income inequality and distribution, would require concurrent complementary interventions aimed at the other necessary variables. The financial management knowledge and skills could have a potential in improving the socio-economic standards, alleviating poverty, and contributing towards an inclusive economy if the exhibits started sustainable with the capacity of employing others for economy boost and injection.

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APPENDIX



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Documentary Summa

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FACTORS AFFECTING THE REPRESENTATION OF WOMEN IN MANAGEMENT POSITIONS IN THE PETROLEUM SECTOR IN GABON

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ABSTRACT

The purpose of this paper is to identify various factors affecting women's representation in management positions in the petroleum sector in Gabon and, in doing so, assist similar petroleum companies in Africa to promote women's career progression in management positions. Triangulation involved adopting a mixed methods approach, with quantitative and qualitative data collected from employees in Gabonese petroleum companies via questionnaires from 71 women respondents, and 15 top managers' in-person interviews consisting of 3 female and 12 male managers. The main findings revealed, firstly, that few training and mentoring opportunities for women exist in Gabonese petroleum companies. Secondly, perceptions of women are based on beliefs and preferences influenced by culture and tradition. Thirdly, hegemonic gender roles contribute to the perpetuation of barriers (like gender stereotyping, male dominance and family conflict), keeping women at the same level in management positions in the Gabonese petroleum sector and, lastly, for women to advance in their careers, they need to be supported by Gabonese government policies and organisational commitment. A framework for women's career progression to management positions in Gabonese petroleum companies is proposed with strategies to eradicate women's marginalisation and increase their representation in top management positions. Owing to limited research regarding women at work, specifically in the broader African context, this paper aims to address this research gap as the findings are intended to contribute to solutions for addressing women's underrepresentation in top management positions in Gabon and similar petroleum sector emerging countries in Africa.

Keywords: Career advancement/progression; gender inequality; marginalisation; petroleum industry/sector; senior management.

1. INTRODUCTION

Gender inequality in the workplace occurs globally, but more in developing countries where women have been marginalised. In African society where gender roles are culturally constructed, this inequality extends into the workplace affecting job opportunities, specifically women's career advancement. Complicating the situation are male-dominated industries that further limit women's career progression and firmly keep the glass ceiling intact. The discriminatory treatment faced by women in top level management positions is a very common barrier. In many companies, men are generally given preference over women in matters of leadership, power, facilities and promotions (Dawar & Singh, 2016). This is particularly true in the petroleum sector where 72% of professionals are male, noting that it is infrequent to locate any petroleum companies with higher than 10% female employment with many being less than 5% (Ideas Lab Staff, 2014). McKee

(2014) supports the latter stating that, customarily, job tasks in energy industries such as coal or uranium mines, refineries, and oil and gas drilling sites have not been viewed as ‘women’s work’. Consequently, a small number of women have been included in the planning, building or operational aspects of those energy industries. As male-dominated industries are particularly gender biased due to an existing lack of diversity, it is tougher for females to break into in order to change the biased norms.

Career progression is one of the major issues that women all over the world struggle within the workplace, especially in engineering and technical sectors such as the petroleum industry. This paper focuses on the research problem stating that women employees within the Gabonese petroleum sector are marginalised in their career progression, resulting in their underrepresentation in management positions. The objectives set out for the study were to firstly, ascertain whether training opportunities are offered to women employees to groom them for management positions; secondly, to understand the Gabonese petroleum sector perceptions of women in management positions; thirdly, to determine whether gender roles influence women’s recognition during application for management positions; and, finally, to propose a transformation strategy for women’s career progression to management positions in the Gabonese petroleum sector.

This paper commences with a literature review, followed by the research methodology that explains how the study was conducted, linking to the results and discussion, resulting in a framework for women’s career progression.

2. LITERATURE REVIEW

An overview of the marginalisation of women in terms of their career progression to management positions within the Gabonese petroleum sector is depicted through their representation in the modern-day workplace, their advancement in the workplace, perceptions about women in top management positions and, finally, gender roles in the workplace.

2.1 Women’s representation in the modern-day workplace

Since the 21st century, women have continued to enter the working environment in large numbers in all emerged and emerging countries (Barreto et al., 2009). Nevertheless, the flow of advancement for women’s careers and occupations continues to be sluggish and imbalanced in diverse nations and across different cultures. Atkins (2018) found that there was a limited number of women Chief Executive Officers (CEOs) in Fortune 500 companies, noting a decline from 32 women CEOs in 2017 to 24 women CEOs in 2018.

Globally, women representation remains low in the energy industry, with only 5% of executive board members and 14% of senior management being women in the top 200 power and utility companies (Catalyst, 2016). Chen (2014) notes that, on average, the composition of company boards in the United States is nearly 90% men while just 10.7% of all board members are women. The International Labour Organisation’s (ILO) study reports that the proportion of working women in top management positions in Africa is still too low and requests new actions to execute significant improvements (ILO, 2015). One of the major concerns in Ghana’s society, and many other African countries, is the necessity for gender balance and equity in all fields towards social and economic activities. Specifically, women face various challenges such as the glass ceiling (metaphor for barriers in promotion), gender stereotypes, obtaining maternity leave and managing

family conflict stemming from the duality of women's roles and functions as mothers and workers (Gyan, 2013). Similarly, Nigerian and Gabonese societies and workplaces are still gendered, favouring male-dominated contexts (Mordi et al., 2010). Churning women underrepresentation are workplace policies that appear to favour men and, consequently, women appointed in male-dominated occupations are inclined to face challenges in balancing work and family duties (Mordi et al., 2011).

2.2 Women's advancement in the workplace

This section focuses on the challenges women experience on their journey towards career progression.

2.2.1 Training and development opportunities

International oil companies operating in Gabon find it difficult to employ local workers as they do not have the required technical skills or training to conduct jobs on production rigs in exploration. Training and development opportunities are provided by institutions such as French Petroleum Institute Training and the School Polytechnique to meet growing labour market needs for skilled labour in Gabonese petroleum companies (Xinhua, 2014). However, skills development is especially limited for women in the petroleum sector owing to its male-dominated field (ILO, 2012). This is exacerbated by women's struggle for admittance into conventional mentoring opportunities – offered and funded by male-dominated industry development schemes – as employers do not want to incur increased employee expenses (Mordi et al., 2011).

2.2.2 Career advancement

Women have generally advanced at low- and middle-level management positions. However, women remain underrepresented in top management positions. According to the World Economic Forum (2016), women's lack of confidence and limited aspirations are seen as career barriers. In addition, executives' assumptions that family obligations conflicting with work were more frequently experienced by female employees influenced their decisions to advance women in the workplace, more so in the petroleum sector (Hoobler et al., 2011; ILO, 2012). Davidson and Burke (2011) posit that stereotypes and gender biases like male dominance, discrimination, and family-work conflict remain the top barriers to women's advancement, particularly in succession planning.

2.2.3 Importance of women in organisational development

Mensi-Klarbach (2014) states that the role of organisations and society as a whole should not be ignored when addressing the lack of gender diversity at top management levels. Specifically, research revealed that females bring distinctive authority characteristics such as optimism, positivity and self-confidence to top management positions. However, whether organisations motivate and allow employees to articulate their uniqueness in the working environment, without regard for gender, is debatable. Furthermore, the participation of more females in the working environment enhances company productivity, facilitating equitable and energetic personnel to improve organisational competitiveness (Eggleton, 2011). In support of the previous statements, Ramadani et al. (2015) comment that businesswomen are increasing in numbers, similar to their significance in society and their role in the economy. For example, the United States Department

of State reported that 29 businesswomen from 26 African countries participated in collaborative activities to extend their companies and produce wealth in their respective African societies.

2.2.4 Creating a supportive organisational culture

Organisational culture refers to a series of beliefs, attitudes, practices, norms and customs that characterise the behaviour of employees and workplaces (Belias & Koustelios, 2014). Organisations are constantly seeking methods to intensify their workers' passion to operate beyond the minimum job requirements. However, they fail to understand that employees' willingness to 'go the extra mile' is emphatically connected with their viewpoints of how they are treated. Male-dominated organisational culture only serves one group of employees; thus, organisations are only half as effective as they could be. Thomson (2014) reports that organisations' value statements may address their goal to be gender diverse, but these are generally only words and, in practice, little is done to guarantee male and female equitable leadership at all hierarchical levels. Organisational transformation should address gender stereotypes and related discriminatory practices towards women for real change in organisational culture. To achieve this, McKinsey and Company (2013) propose that to influence organisational culture and change mind-sets, diversity awareness workshops and gender sensitivity training should occur at all levels of the organisation.

2.3 Perceptions of women in top management positions

Females in the workplace have been disheartened, when aiming to reach top management positions, by a set of myths. These myths, stemming from individuals' thinking and beliefs of human history and cultures that perpetuate women's subservient roles in society, suggest that females are unsuitable for top management, are unsubstantiated by facts (Agatucci, 2010).

Simmering (2014) lists three typical management levels in organisations: low, middle and top levels that structure a progressive system called hierarchy or chain of command. McKinsey and Company (2013) report that the lack of women representation exists not only at top levels but at all management levels as they are progressively overlooked for promotion. However, Allen (2015) notes that, while females are progressing to upper management, they are limited to specific managerial occupations such as human resources, public relations and communications, and finance and administration, thereby limiting their scope in organisational influence. This scenario manifests in Gabon where top jobs, such as chief executive officer, general manager and technician manager, are reserved for men, while women perform support functions such as secretarial, human resources, public relations and sales promotions positions (Mayila Gawandji, 2012). In a study by the Feminist Majority Foundation (2014), this male job reservation was found to be underpinned by myths and assumptions about women's roles in society and their suitability for top management positions, further perpetuating male dominance in top management while limiting women's recognition and progression to the same levels.

2.4 Gender roles in the workplace

Eagly and Sczesny (2009) describe gender roles as mutual opinions of society applicable to individuals based on their socially identified sex or gender and are associated with gender stereotypes and discrimination, often influenced by male dominance.

2.4.1 Gender stereotypes and discrimination

Gender stereotypes are based on assumptions that men and women differ in their general characteristics, furthering stereotypical beliefs that men and women are different types of managers based on their gender (Klaile, 2013). Catalyst (2018) refers to gender discrimination as unfavourable treatment of a person or group of people based solely on their gender. Gender stereotyping often results in gender discrimination, both in society and in the workplace. This is rooted in domesticity where, traditionally, males are the breadwinners and heads of the household, while female roles are obedient caregivers of the household (Hajarelfatihi, 2011). As the latter gender roles are perpetuated in the workplace, women are not recognised as equal to men, further limiting their career progression, specifically to top management (Cunningham-Parmeter, 2015). Another negative outcome of gender roles in the workplace manifests as sexual harassment, which is a form of unfair discrimination more frequent against women based on their subservient role (McGregor, 2015). Considering the domesticity of gender roles exercised in African countries, it is not surprising that Stange et al. (2011) report that violence against women is a major problem in Gabon; moreover, that sexual harassment in the workplace is widespread with no official mechanisms to deal with it.

2.4.2 Male dominance

Male dominance is a method of patriarchy that powerful, superior men implement and use to manage women, youth, other men and resources (Christ, 2013). It is perplexing that when women with technical and engineering skills exceed customarily male domains, such as the petroleum sector, they are considered competent, but viewed as less pleasant than their male colleagues (Ibarra et al., 2013). Although women managers are recognised for their relationship-building abilities in management, capable of taking advantage of female purchase power, and skilful to distil employee duties, they are discouraged from working in male-dominated industries owing to preferences and cultures within those organisations (Bolton, 2015). Patriarchy in Gabon is rooted in domesticity – social relations based on culture and tradition – where men and women have hierarchical relations, strengthened by unity amongst men to further entrench their control over women. Despite this fact, Gabonese women entered the labour market and are now active participants in economic development, but socialisation still requires them to fulfil their duties as wives and caregivers (Mayila Gawandji, 2012; Makama, 2013).

Women's roles in the Gabonese petroleum sector are linked to cultural beliefs and norms, domesticity and gender stereotypes, controlled by male dominance that limits their access to training and development opportunities, stifles their career advancement and ultimately restricts their progression to top management positions.

3. METHODOLOGY

3.1 Research design

This study followed the interpretivist paradigm with emphasis on what the world means to Gabonese women in the petroleum sector. Descriptive research was applied via triangulation mixed method approach.

3.2 Sampling method

Three Gabonese petroleum companies served as the selected populace for this study. Purposive sampling was applied to select female employees as the target research sample as they represented the attributes relevant for the purpose of this study. Seventy-one completed questionnaires were received. In addition, 15 managers were interviewed following snowballing sampling, based on referrals that resulted in 3 female and 12 male manager interviewees.

3.3 Research instrument

Two data collection instruments were utilised, a closed-ended 4-point Likert scale questionnaire ranging from 1 (strongly disagree) to 4 (strongly agree) that produced quantitative data, supported by in-person, open-ended interview questions for qualitative data.

3.4 Data collection

Both data collection instruments were emailed in advance to the selected Gabonese petroleum companies that enabled the research participants to complete the questionnaires and prepare for interviews. Ethical considerations of confidentiality, anonymity and voluntary participation were adhered to as respondents completed informed consent forms before their participation.

3.5 Data analysis

The Statistical Package for the Social Sciences (SPSS) software analysed the quantitative data, while content analysis based on themes, was used for the qualitative data analysis. Applying triangulation mixed methods resulted in both quantitative and qualitative data analysed at the same time to provide a complete picture of women's progression to management positions in the Gabonese petroleum sector, thus increasing the reliability of results (De Vos et al., 2013).

4. RESULTS AND DISCUSSION

Three main factors were gleaned from the quantitative data. A Cronbach alpha coefficient above 0.6 was produced and is, therefore, considered to be reliable as indicated in Table 1 below:

Table 1: Factor analysis

| Factor title | Description |
|--|--|
| Factor 1 Women's constraints at the workplace (Cronbach alpha coefficient 0.75) | This factor describes the different barriers, such as lack of mentorship, discrimination, marginalisation, and the glass ceiling confronted by women who consequently struggled to reach top management positions in the petroleum sector in Gabon. |
| Factor 2 Men vs women in the workplace (Cronbach alpha coefficient 0.67) | This factor designates the main disadvantages, like male dominance, culture and tradition, gender role, family conflict and commitment affecting women in the petroleum sector, compared to men who are privileged. |
| Factor 3 Government and organisations' commitment towards women (Cronbach alpha coefficient 0.75) | This factor demonstrates the role of government in women's empowerment. This relates to women's rights in the workplace and organisations' commitment. It relates to the conditions under which women work, how they are treated in the professional world and the organisation's involvement in striving for women's empowerment. |

The results obtained from the qualitative data were elucidated on the basis of four categories that correlated with the research objectives and literature review, namely (1) women in training and

mentorship, (2) gender roles impacting women, (3) perception towards women in top management positions and (4) career progression for women in the Gabonese petroleum sector.

The discussion of the results was derived from triangulation of the quantitative and qualitative data where the three factors with four themes were combined to articulate with the research objectives.

4.1 Women's constraints at the workplace

This section combined all common items and themes. Firstly, the training of women and mentorship were analysed via the importance of training and development opportunities, together with support and guidance. Secondly, perception towards women in top management was elaborated on in relation to women's importance in organisational development.

4.1.1 Training and development opportunities

Seventy-six percent of respondents confirmed that training and mentorship programmes were offered to women at least one to three times per year but felt this was insufficient. The respondents felt that a lack of equality in training opportunities, compared to opportunities for men, was a barrier to the career progression of women in petroleum companies. There was a significant link, $p < 0.001$, between a lack of equality in training opportunities and women's constraints in the workplace. However, managers indicated that training and mentorship programmes offered by Gabonese petroleum companies support women's empowerment and fairness in the workplace.

4.1.2 Support and guidance

Interestingly, 54% of respondents indicated that the lack of mentorship was not seen as an obstacle, while 46% indicated it was a barrier. Although, it was noted that training and mentorship were equally important, as three-quarters of respondents confirmed that both support and guidance from a mentor were perceived as very important for career advancement. Training and mentoring were complimentary since there was a significant correlation, $p < 0.014$, between lack of mentorship and constraints affecting women's advancement in the workplace.

4.1.3 Women's importance in organisational development

Male managers recognised that women play an important role in the petroleum sector, specifically through capabilities men do not have. This concurs with 84% of women respondents who agreed that their role was significant in the workplace and that they added value to the petroleum companies. It was clear that women's contributions to petroleum companies in Gabon were recognised by both genders. This was congruent with the 60% of women who recently received a promotion, noting that 63% of women disagreed that male colleagues were advantaged during promotions. There is an amelioration of women's importance in Gabonese petroleum companies.

4.2 Men versus women in the workplace

Two themes, namely perception towards women in top management, and gender roles impacting women, were the two contributors to this factor: men versus women in the workplace, focusing on women's family responsibilities, women and sexual harassment, masculinity versus femininity and, finally, male dominance.

4.2.1 Women and family responsibilities

The majority of women (71%) agreed that family responsibilities were one of the biggest challenges preventing them from advancing in their careers within the Gabonese petroleum sector. This was rooted in domesticity where women had more family duties than men, such as household chores, raising children and marriage obligations. In fact, male managers confirmed that women were adversely affected by their family responsibilities, specifically in relation to their need for maternity leave that puts their work position and career advancement at risk.

4.2.2 Women and sexual harassment

The majority (67%) of women respondents revealed that they had experienced sexual harassment, another form of discrimination, which was a major barrier slowing their career progression. This was confirmed by a highly significant relationship, $p < 0$, between sexual harassment as a barrier to women's career advancement and women's constraints in the workplace.

4.2.3 Masculinity versus femininity

Seventy percent of respondents agreed that gender stereotyping and gender discrimination were barriers to women's career progression. Male managers stated that both men and women should be evaluated based on their professionalism and skills, not their gender. As previously mentioned, gender stereotypes are rooted in domesticity, where women's gender roles are predetermined by cultures and traditions. This was confirmed by male managers who revealed that culture and tradition continue to influence some men's views and perceptions of women's roles in petroleum companies. The latter was evident by the highly significant correlation, $p < 0.002$, between preferences of gender, cultures and traditions as a barrier and women's constraints in the workplace. Fifty-nine percent of respondents indicated that their careers were adversely affected not only by domestic duties, but also by certain job characteristics such as irregular working hours, overtime and travelling for work. Surprisingly, male manager respondents stated that managerial competencies stem from job knowledge and skills, not from gender and that women are just as capable as men of being a good manager. In addition, they added that female managers manifested greater self-discipline, organisation skills and communication skills than men.

4.2.4 Male dominance

The majority of male manager interviewees accepted the reality that in the intellectual world women fulfil their professional duties as well as their gender roles – as employee, wife and mother. However, they also commented that some men's low self-esteem, linked to their male ego and traditional cultural perceptions, created more barriers for women's career progression as they encouraged other men to keep women subservient. Responses recorded from interviews revealed a male manager who stated that, "*Women do not have strong personality to lead or supervise*", while another stated that, "*The problem is coming from male egos because of culture and tradition... They do not accept to be supervised or taught by a female*". Men exercise their dominance by controlling women's domestic lives and extend it into the workplace. It is not surprising that male dominance remains a constraint to women's empowerment, as 61% of women respondents indicated that women struggle more than men in advancing their careers in Gabonese petroleum companies. Senior positions, executive levels and board of directors are mostly

occupied by or, rather, are reserved for men. This demotivates women from pursuing top management careers in the male-dominated petroleum sector.

4.3 Government and organisation's commitment towards women

The correlation between this factor and the themes, career progression for women in the Gabonese petroleum sector and perception towards women in top management was unpacked in relation to three characteristics, namely qualifications and competence, importance of organisational commitment towards women and, finally, government policies and women.

4.3.1 Qualifications and competence

The construct, qualifications and competence, gleaned from the research findings, emerged as a new characteristic from the respondents as it plays an important role in determining an employee's career progression. Most managers agreed that holding a top management position depends on intellectual skills, qualifications and competence, irrespective of gender. Respondents believed that qualifications and competence could advance an individual to a better position in any organisation. Thus, women should focus on improving their educational level to be able to progress to top management. A female manager interviewee revealed, *"Having good experience and application are the best way to advance in a career. According to me, employees own their career advancement through competence. Competence is the basic criteria; it is a personal involvement in the employee's activities"*. Therefore, female employees should take ownership of advancing their qualifications, while improving their practical applications.

4.3.2 Importance of organisational commitment towards women

Sixty-one percent of respondents reported that petroleum companies were committed to abiding by Gabonese government legislation. However, 66% of respondents indicated that unequal remuneration practices negatively impacted their perception of organisational commitment towards women in Gabonese petroleum companies. Moreover, the lack of support systems at work, such as outdated computer programmes and other communication tools, was found to have a significant correlation, $p < 0.044$, with organisational commitment. It was noted that Gabonese petroleum companies should apply equal remuneration and create a conducive working environment and conditions to improve their commitment towards women in the workplace, thereby crafting a more inclusive organisational culture.

4.3.3 Government policies and women

The majority of respondents (65%) agreed that the Gabonese government promotes women's empowerment in petroleum companies. However, based on this research results, incidences of sexual harassment still persist with mostly women victims and unequal remuneration practices indicated that the Gabonese government and petroleum companies should eliminate the practices of domesticity in the workplace. In keeping with the latter, most respondents confirmed that gender stereotypes and related discrimination continue to limit their career advancement. It was noted that although the Gabonese government implemented policies and regulations to promote women in organisations, more regulations are required to eliminate all forms of sexual harassment, unequal remuneration practices and gender discrimination, more so, to hold companies accountable when they do not apply it in practice.

4.4 Framework for women’s career progression

This study’s triangulated research results are illustrated in Figure 1 below and aims to contribute to solutions for addressing women’s underrepresentation in top management positions in Gabon and similar petroleum sector emerging countries in Africa.

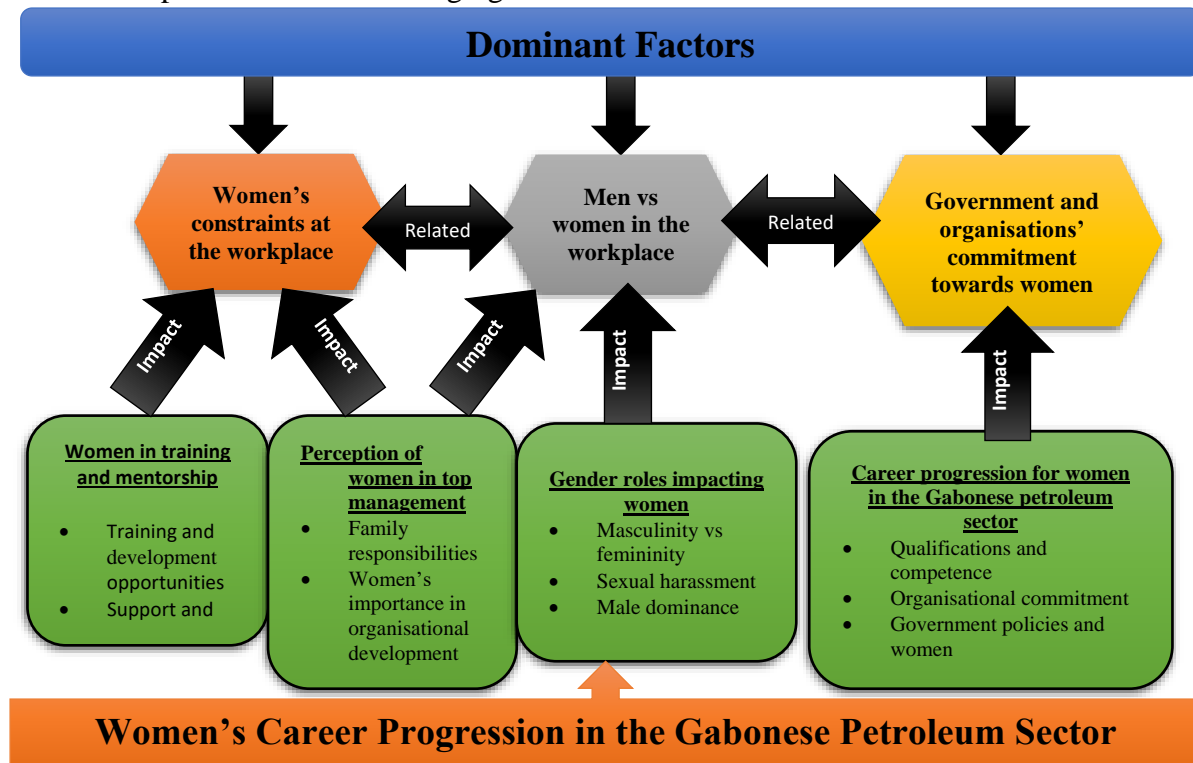


Figure 1: Framework for women’s career progression in Gabonese petroleum companies

The framework for women’s career progression to management positions in Gabonese petroleum companies require strategies to eradicate women’s marginalisation and increase their representation in top management positions. Firstly, petroleum companies should fulfil their responsibilities by offering more targeted training programmes followed by mentorship programmes to better prepare women for their job roles in petroleum companies and to develop their leadership skills. Secondly, an inclusive organisational culture should be fostered to positively promote perceptions of women fulfilling dual roles as working professionals and family caregivers, valuing women’s contributions to the organisation and, importantly, for women to support each other through support groups or associations. Thirdly, domesticity should be eradicated in the workplace where executives and top management do not perpetuate gender discrimination, where action is taken against sexual harassment perpetrators and where women are presented with equal career progression opportunities to management positions. Lastly, the Gabonese government and petroleum companies should promote women career progression based on their qualifications and competence, and the valuable participation and contributions of women in organisational performance should be recognised with equal remuneration practices.

5. CONCLUSION

At the time of this study, there was marginalisation of Gabonese women in the petroleum sector in terms of their career progression, resulting in their underrepresentation in management positions. The main findings revealed firstly, that few training and mentoring opportunities for

women exist in Gabonese petroleum companies; secondly, that perceptions of women are based on beliefs and preferences influenced by culture and tradition; thirdly, that hegemonic gender roles contribute to perpetuate barriers (like gender stereotyping, male dominance and family conflict), keeping women at the same level in management positions in the Gabonese petroleum sector; and that, lastly, for women to advance in their careers, they need to be supported by Gabonese government policies and organisational commitment.

The framework for women's career progression in Gabonese petroleum companies contributes to the gender in management body of knowledge. The findings are intended to contribute to solutions for addressing women's underrepresentation in top management positions in Gabon and similar petroleum sector emerging countries in Africa.

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RISK UNDERSTANDING IN THE SOUTH AFRICAN PAYMENTS INDUSTRY: A COMPARATIVE ANALYSIS

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ABSTRACT

Despite risk understanding being an important element of organisational risk culture, various aspects of risk understanding have yet to be explored. One such aspect is the extent to which organisations and regulators within the same industry share an understanding of the risk inherent in that industry. The purpose of this study was to explore the differences and similarities in risk understanding between the regulator of the South African National Payment System (NPS) and regulated entities within its ambit. Directed by a literature-based codebook, this qualitative study employed document analysis to assess policy documents issued by the regulator between 2016 and 2019 as well as risk documentation issued by regulated entities under the auspices of the industry's management body, for the same period. Findings were then compared. Findings indicate that the nature of the risk, which includes the envisaged outcomes and their severity, the probability of occurrence of the risk, and the ease or difficulty of mitigating it are the main components for assessing an understanding of risk. Evaluation of policy and risk documents using these themes indicates that the regulator and regulated entities differ in their understanding of risks inherent in the NPS. Whereas the regulator is most concerned with negative consequences for the achievement of its policy objectives, resulting from systemic risk, regulated entities are primarily concerned with adverse consequences for their business operations. Severity and probability of risks are not consistently articulated by either actor. Both actors, however, regard regulation to be the most effective control with which to mitigate risks. This study offers a practical perspective to the regulator and regulated entities in the South African NPS on the extent to which they share an understanding of risk. For risk scholars, it provides a novel framework to assess risk understanding.

Keywords: Risk understanding, South African National Payment System, Regulator and regulated entities, Risk culture

1. INTRODUCTION

Whereas the study of risk culture is still a nascent field of research (Sheedy et al., 2017), several studies indicate that a shared understanding of risk among different stakeholders is a core component of organisational risk culture (Agarwal & Kallapur, 2018; Fernández Muñiz et al., 2020). However, various aspects of risk understanding in the context of risk culture remain unexplored. Little is known, for example, about the factors that shape risk understanding, and how the milieu of different actors may influence such factors. This study aims to contribute to current knowledge in the context of these aspects.

To date, the risk culture literature has focused mainly on risk understanding as one of several indicators when assessing risk culture (Agarwal et al., 2019; Fernández Muñiz et al., 2020; Sheedy

et al., 2017) and on identifying ways in which a shared risk understanding may be fostered within an organisation (Agarwal & Kallapur, 2018). In the financial sector, this has been done from an intra-organisational standpoint with apparently limited focus on the perspectives of regulators and other external stakeholders such as standard-setting organisations. Intra-organisational studies further tend to focus on alignment of risk understanding between management and employees (Agarwal & Kallapur, 2018; Fernández Muñiz et al., 2020; Roeschmann, 2014; Sheedy et al., 2017) and do not explore whether management's understanding of risk aligns with that of the regulator. Furthermore, the current literature has focused almost exclusively on developed economies (Ring et al., 2016; Sheedy et al., 2017; Sinha & Arena, 2020). As a result, it is unknown whether financial organisations in the South African payments sector and the South African payment system regulator have a shared understanding of risk. Therefore, this study was aimed at exploring risk understanding between the statutory regulator of the South African National Payment System (NPS) and regulated entities within its ambit. A greater understanding of how these different actors comprehend risk may contribute to enhanced alignment between them, which is ultimately necessary for achieving the desired risk culture within regulated entities in the South African NPS (Agarwal et al., 2019).

These gaps in current knowledge led to the research question: “How does the risk understanding of the South African payment system regulator compare to the risk understanding of regulated entities?” Correspondingly, the research objectives of this study were to compare risk understanding of the South African payment system regulator and risk understanding of regulated entities as reflected in their respective documented views on risk in the NPS.

To achieve the objective of the research, a qualitative study based on a literature review and document analysis was conducted. A thematic codebook based on the literature was used as a basis for the design of the study, and coding of the study results. In respect of the regulator, publicly available policy documentation issued between 2016 and 2019 was analysed, and in respect of regulated entities, permission was obtained to analyse risk documentation issued by the South African Payment System Management Body (PSMB) between 2016 and 2019. The PSMB is a statutory association and membership is compulsory for regulated entities in the NPS. The purpose of the PSMB is, amongst others, to serve as a forum for its members to engage with the regulator. Risk documentation issued by the PSMB accordingly reflects industry-wide views and is compiled by obtaining input from each individual regulated entity.

This study contributes to current theory on the role of risk understanding in shaping organisational risk culture by exploring risk understanding in a particular financial sector context from two different perspectives. To the researchers' knowledge, this study is the first to compare risk understanding between a regulator and regulated entities in the South African financial sector. Inter-organisational exploration of risk understanding would enhance current knowledge which, to date, has mainly focused on risk understanding from an intra-organisational perspective.

The remainder of this paper is devoted to an evaluation of the existing literature in the next section, followed by a description of the method employed in this research. Thereafter, a novel model of assessing risk understanding, together with recommendations for improving alignment in risk understanding between the regulator of the South African NPS and the entities it regulates, are presented and discussed. The paper concludes with recommendations for further study.

2. BACKGROUND

Risk can be defined as “the potential negative effect of uncertainty on achieving objectives”

(Heckmann et al., 2015; International Standards Organisation, 2018). Over the last four decades, risk management has become a prominent focus area in most organisations in general (Power, 2004, 2009), and in financial sector institutions in particular (Carretta et al., 2017). One of the main factors contributing to this trend is the increasing focus among financial sector regulators on organisational risk culture as a tool for preventing organisational failure (Agarwal & Kallapur, 2018; Carretta et al., 2017). However, a generally accepted definition of risk culture has yet to be established (Sinha & Arena, 2020). For this study, risk culture is defined as the “perceived inclusion of risk in decision making”, which ultimately indicates the extent to which an organisation values risk management (Zaaiman et al., 2021).

Building on their definition of risk culture, Zaaiman et al. (2021) point out that a shared understanding of how an organisation value and intends to manage risk is a prerequisite for ensuring that risk forms part of organisational decision making in an effective way.

Although no universal definition of the term ‘risk understanding’ could be found in the risk culture literature, the term appears to be commonly used to indicate an acceptable appreciation of which uncertainties may lead to which negative effects, and how the organisation intends to manage both the uncertainties and their potentially adverse consequences (Weinstein, 1999). Table 2 summarizes the literature that supports the problem statement which led to this study.

Table 2: Summary of the literature on the role of risk understanding in risk culture

| No | Article | Findings | Implications |
|----|-----------------------------|---|--|
| 1 | Bozeman and Kingsley (1998) | <ul style="list-style-type: none"> • In exploring the differences between public and private sector organisations’ risk culture, the authors identify that ‘riskier’ cultures are characterised by organisational leadership trusting that employees have an adequate understanding of risk, and not actively pursuing the establishment of an organisation-wide shared risk understanding. • The closer the ties an organisation has with the regulator, the more risk-averse its culture tends to be. | <ul style="list-style-type: none"> • Suggests a nexus between a risk-averse culture and alignment with the regulatory understanding of risk. It does not, however, take cognisance of the influence of a specific context (e.g., a particular business unit) on the risk understanding of employees/actors in that context. |
| 2 | Roeschman n (2014) | <ul style="list-style-type: none"> • Identifies that risk understanding depends on the specific context within the organisation. • Management’s ability to articulate its risk culture has a direct bearing on how risk management structures are understood and applied in an organisation. | <ul style="list-style-type: none"> • Does not explore possible external influences (such as the position of the regulator) on an organisation’s risk understanding. |
| 3 | Ring et al. (2016) | <ul style="list-style-type: none"> • Measures organisational risk culture in terms of regulatory expectations of organisational behaviour. • Identifies the importance of regulatory guidance in fostering the desired understanding of risk, and consequently the desired risk culture. | <ul style="list-style-type: none"> • Views risk culture and risk understanding entirely from the regulator’s perspective, and does not consider the regulated entity’s understanding of, and perspective on, risk. |

| No | Article | Findings | Implications |
|----|-------------------------------|--|---|
| 4 | Sheedy et al. (2017) | <ul style="list-style-type: none"> Identifies risk understanding as a key component in measuring organisational risk culture. Identifies the role of organisational leadership in promoting risk understanding within the organisation. | <ul style="list-style-type: none"> Findings limited to intra-organisational risk understanding. |
| 5 | Agarwal and Kallapur (2018) | <ul style="list-style-type: none"> Advances the view that a cognitive risk culture, in which a focus is placed on establishing a thorough understanding of risk, is preferable to a compliance-based risk culture. Identifies the role of an organisation's leadership in promoting risk understanding through communication. | <ul style="list-style-type: none"> Focuses solely on the role of organisational leadership in establishing risk understanding and does not contemplate the role of external actors (such as regulators) in this process. |
| 6 | Agarwal et al. (2019) | <ul style="list-style-type: none"> Explores organisational risk culture (of which risk understanding is a key component) from an external perspective, being print news media. Identifies the importance of establishing risk understanding through education and training | <ul style="list-style-type: none"> Does not take into account the risk understanding which underpins the print media analysed. |
| 7 | Fernández Muñiz et al. (2020) | <ul style="list-style-type: none"> Conceptualises risk culture at the hand of factors viewed by international standard-setting bodies and regulators to be indicators of risk. Identifies a shared risk understanding to be core to the establishment of a risk culture. Advances the view that organisational management plays a key role in fostering a shared risk understanding. | <ul style="list-style-type: none"> Views risk culture and risk understanding entirely from the perspective of the regulator and external standard-setting bodies and does not take into account the understanding of the regulated entity. Does not explore the role of entities external to the organisation in fostering a shared risk understanding. |
| 8 | Sinha and Arena (2020) | <ul style="list-style-type: none"> Explores the difference in approach between regulators and those responsible for ensuring organisational adherence to regulation on the one hand, and the approach of those responsible for translating requirements into business practices on the other, when it comes to assessing risk culture. Findings indicate that regulators and implementers prefer specific, tangible measurements of risk culture, whereas normalisers and consultants preferred to focus on education and training of staff with respect to risk understanding to measure the organisation's risk culture. | <ul style="list-style-type: none"> Whereas the research provides a valuable contribution in being the first to explore risk culture and risk understanding from the perspective of different sets of organisational stakeholders, it does not examine the seeming disparity in views among different sets of actors (those responsible for giving effect to regulation, for example, the compliance function vs those responsible for implementing risk culture requirements at business level, such as consultants) internal to the organisation. |

Table 2 indicates that various aspects of risk understanding in the context of risk culture remain unexplored. As a key indicator of risk culture, enhanced knowledge of the extent to which there is a shared risk understanding between regulators and regulated entities could be of particular value. From a theoretical perspective, this study serves to expand on the current literature, which has to date focused almost exclusively on risk understanding from an intra- rather than an inter-organisational perspective. For regulators, such an enhanced understanding could serve as a first step in identifying whether an organisation's risk culture is likely to result in the desired

behavioural outcomes. By the same token, regulated organisations may equally find value in gauging whether the risk understanding which underpins their risk culture is likely to be acceptable to the regulator.

The South African payment services sector provides an opportunity to investigate risk understanding between the regulator and regulated entities. Financial services the world over tend to be subject to regulation (Power, 2004; Ring et al., 2016). Like most financial services sectors, the South African NPS is characterised by the presence of a statutory regulator (the Payments Association of South Africa, 2020a).

However, in addition to setting out the powers and duties of the statutory regulator, the South African National Payment System Act also mandates the existence of a Payment System Management Body (PSMB), which comprises regulated entities (National Payment System Act, 1998). Membership of the PSMB is mandatory for any entity that directly participates in the provision of payment services in South Africa. The purpose of the PSMB is, amongst others, to act as a forum for its members collectively to interact and consult with the statutory regulator.

This collective of regulated entities, coupled with the relative ease of access to the regulator, offers the unusual opportunity to compare risk understanding from the perspective of the regulator as well as of the regulated entities.

To facilitate such a comparison, a literature-based codebook provided in the results section (Table 4) was developed. The three main themes identified in the codebook indicate the factors required to form an understanding of risk. Risk understanding may therefore be assessed and compared in terms of these themes. The methods used for this study are discussed in the next section.

3. METHODOLOGY

This qualitative study was based on a literature review and document analysis.

3.1 Literature-based codebook

Following a systematic approach (Cronin et al., 2008), we performed a comprehensive search of the literature using the key terms ‘risk understanding’ and ‘risk perception’. To narrow the search, these terms were also used in conjunction with the terms ‘measure’ or ‘measurement’ as the dual objectives of the codebook were not only to serve as a starting point for thematic analysis of regulatory policy- and PSMB risk documents, but also to act as a measure with which to compare the themes identified in each set of documents. Databases searched include Google Scholar and the library site of North-West University. To ensure relevance to the study, articles dealing with risk understanding in a medical context were excluded. Articles not published in indexed journals were likewise excluded in the interest of enhancing the integrity of the data included in the codebook.

3.2 Document analysis

Document analysis was selected as the most appropriate research instrument, as it holds several benefits that would be particularly advantageous in the context of this qualitative study. First, the study of documented views and positions (collectively referred to as policy documents) provides a cost-effective and easy method to analyse data in a relatively small-scale study (Cardno, 2018).

Second, Bowen (2009) indicates that document analysis is an effective method to study context. Indeed, Cardno (2018) submits that document analysis is the most appropriate tool for analysing policy documents. Finally, document analysis also enhances ethical practice where documents are in the public domain and is a non-reactive research method (Bowen, 2009).

Policy documents available from the regulator and risk documentation issued by the PSMB were thematically analysed. The objective of the analysis was to identify, and then to compare, themes in the policy documents issued by the regulator and those in the risk documentation created by the PSMB, with the themes in the literature-based codebook.

3.3 Data sources and units of analysis

This study was conducted on two units of analysis. The first was the regulator of the South African National Payment System. Policy documents issued by the regulator on risk in the National Payment System are set out in oversight frameworks, oversight reports, directives, position papers, and notices. The second unit of analysis was regulated entities in the South African National Payment System, as represented through the PSMB. This study focused on PSMB board-level risk reports and minutes of board meetings where verbal status updates, instead of a written report, on risk in the NPS were given to the board (collectively referred to as PSMB risk documentation). Although the PSMB has several committees dedicated to the discussion of various aspects of risk and risk management in the NPS, minutes of these committees were excluded from the scope of this study, for two reasons. First, unlike officially issued risk policies, frameworks, and board-level risk reports, minutes of meetings are intended as a record of the discussion and are not considered the official position of the members of the PSMB concerning risk. Second, official committee risk views and positions are filtered to the PSMB board through board-level risk reports.

3.4 Data collection and study sample

All policy documents issued by the regulator are publicly available on the regulator's website. In the interest of preserving the anonymity on which the ethics clearance for this study is based, the regulator's website address is not disclosed here. This study focused on policy documents issued in the four years from 2016 to 2019. A search of the regulator's website revealed 8 policy documents issued between 2016 and 2019, which formed the sample of policy documents analysed for this study.

PSMB risk documentation reflects industry-wide views and is compiled by obtaining input from each individual regulated entity. Unlike policy documents, PSMB risk documentation is not in the public domain. Express permission was therefore obtained from the PSMB to source its risk documentation from the organisation's internal document repository. Twenty-two PSMB risk documents were issued between 2016 and 2019 and formed the sample of risk documents analysed for this study.

A detailed list of both policy- and PSMB risk documents analysed may be obtained from the authors on request.

3.5 Data analysis

Following the steps suggested by Braun and Clarke (2006), a first read-through of documents was conducted, and initial sections pertaining to the study were highlighted and notes made. Next, documents and risk documentation were read systematically and coded against the literature-based codebook detailed in Table 3. Using Microsoft Excel 2010, codes and sub-codes were recorded along with representative quotes. Themes identified in the two different samples were then compared to identify their differences and similarities, culminating in recommendations to improve alignment between the regulator and regulated entities.

3.6 Ethical considerations

Even though some of the documents analysed are available in the public domain, care was taken to safeguard the interests of all entities to which the documents refer. Where documents were not in the public domain, express permission was obtained to access and analyse such documents. In addition, we do not identify organisations or disclose organisational specifics in this research report.

All documents, whether in the public domain or organisation-specific, were stored in an access-controlled folder on a secure internal server and were destroyed upon completion of this study.

4. RESULTS AND DISCUSSION

4.1 Literature-based codebook

Table 3: Literature-based risk understanding codebook

| Code | Sub-code | Code description | Source |
|---------------------------|----------|--|---|
| Nature of the risk | | To have an understanding of a risk, sufficient knowledge of the potential negative effects that are envisaged to arise from the particular uncertainty is necessary. | Weinstein (1999), Aven (2010), Heckmann et al. (2015), Kaplan and Garrick (1981), Rundmo and Nordfjærn (2017), Wilson et al. (2019) |
| | Outcome | Knowledge of what outcomes can result from the materialisation of a risk is a prerequisite for comprehending the nature of the risk. | Weinstein (1999), Aven (2010), Heckmann et al. (2015), Kaplan and Garrick (1981). |
| | Severity | An understanding of the severity level of envisaged outcomes is necessary for full comprehension of the nature of the risk. | Weinstein (1999), Aven (2010), Heckmann et al. (2015), Kaplan and Garrick (1981), Rundmo and Nordfjærn (2017), Wilson et al. (2019). |
| Probability | | To have an understanding of a risk, sufficient knowledge of the probability of the risk materialising is necessary. | Weinstein (1999), Aven (2010), Heckmann et al. (2015), Kaplan and Garrick (1981), Rundmo and Nordfjærn (2017), Wilson et al. (2019), Aven (2016). |
| Mitigation | | Understanding of a risk necessitates sufficient knowledge of the controllability of the risk. | Weinstein (1999), Kaplan and Garrick (1981), Rundmo and Nordfjærn (2017). |

Table 3 provides the codebook derived from a review of the literature on risk understanding. The nature of the risk, the probability of the occurrence of a risk, and the ease or difficulty of mitigating the risk were identified as the three main criteria for assessing the understanding of a risk. The

outcomes of a risk materialising, together with the severity of its consequences (risk outcomes), were identified as sub-codes that ultimately fed into the nature of the risk.

Document analysis results based on documents from the regulator, and the PSMB, will be discussed next using themes in Table 4. In this regard, it is important to mention that many industry-specific acronyms and terms were used in the documents assessed, and the reader's attention is accordingly directed to the list of terms and acronyms provided in Table 1 at the beginning of this article.

4.2 Nature of the risk

Analysis of policy documents revealed that the regulator's main risk focus appeared to be systemic risk. Chatterjee and Sing (2021) define systemic risk as "joint failures amongst a significant proportion of banks, and enough to have real economy consequences." Risks identified by regulated entities, on the other hand, are numerous and varied. Seven distinct risks emerged from the risk documentation of regulated entities, namely, cyber security risk, project risk, debit order abuse risk, operational risk, fraud risk, third-party risk, and screen scraping. These risks were, however, seldom defined in the risk documentation. Whereas the outcomes envisaged from these risks indicate that general definitions of 'cyber security risk', 'project risk', 'fraud risk' and 'operational risk' apply, matters are less clear concerning 'debit order abuse risk', 'third-party risk' and 'screen scraping.' The concerns, which collectively appeared to give rise to documenting of 'debit order abuse risk', seemed to focus on unauthorised deductions from customer accounts through the various debit order payment systems, which practice was regarded as being exacerbated by participant non-adherence to the payment system rules designed to curb abuse. 'Third-party risk' appeared to denote concerns around the risk posed to the NPS by new, non-traditional, market entrants who are not subject to the same regulation as incumbents, and who are accordingly not members of the PSMB. Finally, the PSMB board risk report of July 2019 defines 'screen scraping' as "scraping of credentials and sensitive account holder information during e-commerce payments" and it appeared to be the possible negative consequences resulting from this practice with which the regulated entities were primarily concerned. These findings indicate that the regulator and regulated entities do not have the same view on the nature of key risks facing the South African NPS. The regulator's main concern is systemic risk, whereas regulated entities are primarily concerned with risks to their businesses resulting from specific operational activities. By articulating the nature of the risk, the regulator and regulated entities may ensure better alignment amongst all actors. A practical example is the expression of the systemic impact of sensitive account holder details being frequently exposed during e-commerce payments as a result of screen scraping.

4.3 Outcome

Findings indicate that the regulator envisaged the outcome of systemic risk as impacting regulatory policy objectives adversely. These objectives, as identified in the regulator's most recent strategy document, entitled *National Payment System Framework and Strategy–Vision 2025*, are the promotion of competition and innovation, financial inclusion, flexibility and adaptability, regional integration, transparency and public accountability, cost-effectiveness, financial stability and security, interoperability and a transparent regulatory and governance framework (South African

Reserve Bank, 2018). In contrast, the negative consequences (or risk outcomes) which most concerned regulated entities were reputational damage, financial loss, fraud and data compromise.

As with the overarching nature of the risks, the regulator and regulated entities differ in their perspectives on risk outcomes. As could be inferred from the nature of the risks identified, regulated entities are concerned with adverse consequences for their business operations, and the regulator with adverse consequences for its objectives for the NPS as a whole. Expression of the relationship between negative consequences for the individual business operations of regulated entities and the achievement of regulatory policy objectives may assist in enhancing alignment between these industry actors concerning risk outcomes.

4.4 Severity

Although the severity of risks appeared to be seldom expressed in the policy documents, the regulator does indicate that systemic risk is regarded as posing a ‘serious’ threat. In contrast, risks identified by regulated entities were, with the exception of screen scraping in respect of which severity is not expressed, accompanied by an indication of the perceived severity. The seriousness of the seven risks is perceived as ranging from ‘medium’ to ‘catastrophic’.

To articulate more easily the relationship between risks identified by regulated entities and systemic risk, a uniform risk-rating scale used by both regulator and regulated entities is recommended. By expressing the severity of a risk using a risk-rating scale with which all parties are familiar and agree on, those risks which may lead to systemic impact may be more easily identified in advance and more expeditiously managed.

4.5 Probability

Probability was the theme least frequently addressed. The perceived likelihood of the anticipated adverse effects materialising was only discernible in two policy documents, the one indicating that the practice of sorting-at-source will adversely impact certain policy objectives and the other indicating that improper management of financial market infrastructures can lead to the realisation of systemic risk. Equally, just two PSMB risk documents articulated the likelihood of identified risks being realised. These two documents also address only six of the seven risks as far as the probability is concerned. In this regard, probability is perceived to range from ‘almost certain’ in the case of project risk to ‘unlikely–moderate’ in the case of third-party risk. The probability of occurrence of the risk related to screen scraping was not addressed in any of the documents reviewed.

As indicated by the literature-based codebook, the identification of the probability of a risk materialising is a core component of fully understanding such a risk. It is therefore recommended that industry actors adopt the practice of assigning a probability rating to all risks identified. As with the severity of risks, the use of a uniform risk-rating scale to articulate probability could be beneficial in ensuring alignment between the regulator and regulated entities.

4.6 Mitigation

Results indicate that the regulator prefers issuing and adopting best-practice principles and guidelines, augmented by the issuing of directives and regulations including minimum

requirements for participation in order to mitigate systemic risk. Equally, the adoption of standards and rules and compliance enforcement were identified by regulated entities as key mitigation measures in addressing risks identified. In addition, regulated entities viewed regulatory intervention or guidance as important for risk control. Only two non-regulatory risk management measures (being monitoring/management and education) were contemplated by the regulated entities as frequently as the adoption of regulation and regulatory intervention.

Although the risks with which the regulator and regulated entities are concerned differ, they identify the same mitigation actions most likely to address these risks. Regulated entities appear to believe that intervention by the regulator (either in the form of the introduction of new regulation or through direct engagement with entities involved in the activities perceived to be generating risk) is the most effective way of mitigating risks they face. In this light, alignment with the regulator on the understanding of risk would be valuable in ensuring that the relevant mitigating actions are implemented.

5. CONCLUSION

This study investigated how the risk understanding of the South African NPS regulator compared with the risk understanding of the regulated entities. The findings reported here indicate that the regulator and the regulated entities differ in their perspectives on risks to the NPS. Whereas the regulator is most concerned with adverse consequences for the achievement of its policy objectives, regulated entities are primarily concerned with adverse consequences for their business operations. Neither the regulator nor regulated entities consistently articulate the severity of risks or the probability of risks materialising. Both the regulator and regulated entities, however, regard regulation (in the form of rules, guidelines, best-practice principles, and regulatory intervention) to be the most effective control with which to mitigate the risks. The differences in perspective on the nature and outcome of risks identified in this study were expected, given the differences in the nature and roles of the entities being compared. Equally, the lack of consistent assessment of severity and probability of risks was not unexpected on the part of the regulator due to the nature of policy documents. The lack of consistent severity and probability assessments on the part of the regulated entities as well as the similarities in preferred mitigation measures were, however, not anticipated. It was expected that the regulated entities, being financial service institutions, would be familiar with risk management and would therefore be cognisant of the need to assess the severity and probability of risks.

The findings of this study are subject to several limitations. First, in the case of the regulator, it is possible that more information regarding the regulator's view on the risks articulated in policy documents analysed here are included in documents internal to the regulator, and therefore not reviewed as part of this study. Second, not all PSMB risk documents reviewed were of the same level of quality, with some documents dating back to 2018 not articulating any specific risk information, but rather focusing on risk governance structures. Third, the PSMB has seen several key appointments toward the latter part of 2019, including that of a full-time Chief Risk Officer (The Payments Association of South Africa, 2021). It is therefore likely that the risk management methodology internal to the PSMB has matured since the period to which this study relates. Finally, whilst every care was taken to ensure the credibility of the coding results, the presence of

a second, independent coder in a qualitative study such as this would serve to further enhance the reliability of the coding results.

The findings of this study provide theoretical and practical insights on risk understanding within an industry. For the regulator and the regulated entities in the South African NPS, this study provides perspectives on their understanding of risks to the South African NPS as well as suggestions on how to improve alignment of risk understanding between the two actors. For risk scholars and risk practitioners, the study provides a framework or model for assessing risk understanding between different entities. In addition, this study supplies an approach for assessing inter-organisational risk understanding that can be replicated for any industry, and so provide a possible foundation for future studies.

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EFFECTS OF COVID-19 ON THE EVENT TOURISM SECTOR: VIEWS OF SOUTH AFRICAN BUSINESS EVENT STAKEHOLDERS

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ABSTRACT

The current study explores both the practical and feasible strategies aimed at alleviating the identified effects of the COVID-19 pandemic on the business events sector in South Africa. Pandemic-induced health and safety, as well as mobility-restricting regulations, meant that the business events sector ground to a halt and was presented with unprecedented challenges. The gradual easing of restrictions and reopening of the business events sector has witnessed a realignment of approaches to hosting such events, thus necessitating the need to understand the new context, devise recovery and resilience strategies, and re-imagining business events in the post-COVID-19 era. The study adopted a qualitative research approach whereby fifteen South African key resource persons from business events organisations, event organisers, and event managers were purposively selected to participate in semi-structured interviews. The data were transcribed and subjected to ATLAS.ti software, where the emerging themes were analysed and compared between participants. Business events stakeholders highlighted business closures, job losses, reliance on relief funding, cancellations and postponements leading to unanticipated costs as initial effects of the induced regulations while others had to restructure how events were planned, managed and consumed by moving to virtual and hybrid options. Technology played a critical role in such circumstances. The study also revealed that collaboration and mutually beneficial synergies amongst business event stakeholders were viable strategies to remain relevant in challenging environments. The study highlighted the importance of multi-stakeholder collaboration while highlighting the need for resilience-building strategies. The ability to adapt quickly to the changing environmental conditions, such as embracing technological innovations in event production, management, and consumption, highlighted the need for long-term strategy responses intended to move the sector from mitigation to resilience-focused options.

Keywords: Business events, COVID-19 pandemic, event stakeholders, event tourism, tourism impact

1. INTRODUCTION

Bama and Nyikana (2021) contend that South Africa's tourism industry is one of the most important contributors to the country's economy. In addition, the country has previously adopted an aggressive positioning in the marketing of its tourism offering as a tool for socio-economic development, job creation, and uplifting of communities' standards of living while engendering environmental protection (Bama, 2021; Rogerson & Rogerson, 2021). Among the various

subsectors within the country's tourism ecosystem is the business events tourism subsector, inclusive of meetings, incentives, conventions and exhibitions (MICE) sectors. Goodrich (2022) asserts that business tourism was estimated to have contributed \$7.9 billion to the South African economy pre-COVID-19, while the MICE industry attracted roughly one million delegates annually at business events locally, supporting more than 250,000 direct and indirect jobs. Identified as a pandemic of international proportions in 2020 by the World Health Organisation (WHO), COVID-19 has subsequently been recognised as one of the most impactful crises in contemporary times (Ho & Sia, 2020; Magangqaza et al., 2022). South Africa joined the global community in implementing regulations aimed at curbing the spread of the virus and flattening the curve of infections through measures such as border closures, travel bans, and lockdowns, which resulted in the suspension of non-essential business activities inclusive of business events' tourism activities (Bartis et al., 2021). This is notable in the context that traditionally, the sector is known to play a catalytic role in promoting a range of support services whilst at the same time bringing together an array of tourists (Bartis et al., 2021). Implemented in March 2020, the State of Disaster endured for over 750 days and caused a considerable impact on the country's economy by imposing harsh restrictions on travel, gatherings, business operations and more, triggering mass job losses and business closures in the process (Goodrich, 2022). As reported by the United Nations World Tourism Organisation (UNWTO), international tourism dropped by 73% and the subsequent collapse of international travel resulted in substantial losses in export revenue (amounting to US\$ 1.1 trillion) in 2020 (UNWTO, 2021). Though recent scholarly enquiry has investigated and examined the impact of COVID-19 on the business events subsector (Ho & Sia, 2020; Rwigema, 2020), few have adequately addressed the extent of the impacts and the resilience strategy requirements of the subsector from a South African perspective. This study therefore explored strategies aimed at alleviating the effects of the COVID-19 pandemic on the business events sector in South Africa. The next section presents an overview of business events tourism and the impacts of COVID-19 on the subsector broadly, in the form of a literature review. This is accompanied by an explanation of the research methodology adopted for the study and the ensuing results and discussion. A concluding section wraps up the presentation with the implications of the study and recommendations, as well as suggestions on future research direction.

2. LITERATURE REVIEW

Bama and Nyikana (2021) state that modern tourism history is filled with a plethora of examples of natural disasters, economic downturns, political turmoil, health scares, terrorist activity and other events that have negatively impacted the volume and direction of tourism flows. Before the onset of the COVID-19 pandemic, South Africa's economy was in a dire state having witnessed two consecutive periods of negative GDP growth and bordering on a technical recession (Asmal & Rooney, 2021). The advent of COVID-19 compounded the already dire circumstances. The United Nations Development Programme (UNDP) asserted that the COVID-19 pandemic was a defining global health crisis of our time, and the greatest challenge since the end of the Second World War (UNDP, 2020). Beyond being a global health crisis, the tourism industry and its affiliated subsectors were one of the most severely affected by the pandemic, consequent to the inability of people to travel at the time of the onset of the pandemic (Ateino, 2020). Such a situation could only lead to a cross-section of negative effects on the sector, a discussion which will be the focus of ensuing discussions. Cheer (2021) asserts that the outset and the evolving nature of the

pandemic have dealt a severe blow to the tourism industry and its various stakeholders whose livelihoods are derived from tourism. The ensuing discussion considers tourism in South Africa, in the context of the business events sector.

In recent years, tourism has been touted as a contributor to socio-economic development in South Africa. For instance, in 2019, the sector was estimated to have contributed 7% towards the GDP, amounting to approximately USD23.7 billion whilst more than 1.4 billion jobs were also linked to tourism (World Travel and Tourism Council [WTTC], 2020). The business events (MICE) subsector also generated revenue in the region of USD720 billion globally (South African Tourism, 2019). Before 2017, the business events subsector contributed USD7.7 billion to South Africa's GDP (SANCB, 2020). Therefore, the business events subsector contributed one-third of the total amount generated by tourism. This demonstrates the importance of the business events subsector to South Africa. In terms of travel behaviour, the South African National Convention Bureau (SANCB) notes that approximately 30% of all delegates attending international business events in South Africa participate in pre- and post-tour activities of an average duration of 3.5 days (SANCB, 2020). The advent of the COVID-19 pandemic meant that the business events subsector became adversely affected in comparison to other purposes of travel (Lekgau & Tichaawa, 2021). The sheer volume of cancellations and postponements or suspensions of business events seriously dented the industry, a negative outlook that persists as countries battle various elements relating to the pandemic.

Sguazzin and Njini (2020) state that with the South African economy forecasted to contract by more than 6.4% in 2020, the business tourism subsector, like other sectors, will shed jobs. While the exact number of job losses as a result of the pandemic is yet to be definitively determined, an approximation of 11% redundancies was noted within the tourism sector. According to Lekgau and Tichaawa (2021), South Africa would have hosted 40 international business events in 2020 that received support through South Africa's Bid Support Programme (BSP) administered by the South African National Convention. These events would have attracted a total of 16,833 delegates to the country. Furthermore, these events included conferences and exhibitions, with an average delegate spend per day of USD427. These secured events would have generated more than USD32 million for South Africa's economy in 2020, which represents a sizeable contribution to the economy of the country. Vaccination programs are currently being rolled out in several countries, including South Africa's tourism source markets, like the United Kingdom, the United States of America and Germany (Hills, 2021). Additionally, South Africa has also been involved in a vaccination rollout since February 2021 (Pheto et al., 2021). It is hoped that with the implementation of vaccination programmes and other non-pharmaceutical interventions, the recent cessation of the State of Disaster, fewer events would be cancelled, and the sector would resume an ascendancy towards achieving pre-pandemic levels.

3. RESEARCH DESIGN AND METHODOLOGY

The current study employed a qualitative research approach where selected business event representatives (owners, organisers, managers and supervisors) were requested to participate in semi-structured interviews. To support and achieve the study's objectives, it was deemed necessary to conduct interviews. Since the study participants were dispersed across the country, and the restrictions on people's movement were in place, the researchers opted to conduct email

interviewing, which was combined with Microsoft Teams, Zoom, WhatsApp and telephonic calls in cases where the participants would elect such methods. Greef (2020) argues that given the pandemic situation, emailing the questions to participants and following up for clarity would be an acceptable method. Santana et al. (2021) weigh in to support the use of online tools to collect qualitative data, especially when conditions are not appropriate for in-person interviews. Some scholars (e.g., Sturges & Hanrahan, 2004) argue that telephone or video conferencing interviews do not yield significantly different results from those obtained from in-person interviews. The participants were identified and selected based on their involvement in the South African events business sector.

The study adopted a non-probability sampling approach and more specifically, a purposive sampling method, to collect data from the study participants. The participants were selected based on specific criteria (Leedy & Ormrod, 2015), including their knowledge of the South African business events sector, and owning or managing business events companies in South Africa. In addition, those who were available, accessible and willing to participate in the study were included (Gray et al., 2020). In total, 14 event business representatives (organisers, owners, managers and supervisors) were selected to participate in the study. The study participants had first-hand experience and a comprehensive understanding of all the issues, especially how the COVID-19 pandemic affected their event businesses. In this study, no person was compelled to participate; participation was fully voluntary. The study complied with all ethical requirements, and more importantly, was approved by the Cape Peninsula University of Technology's Faculty of Business and Management Sciences Ethics Committee (Certificate No: 2021FBMSREC_003) as this formed part of a student's Master's project.

The constant comparative analysis approach was implemented to assist in analysing the gathered data. This technique of analysing qualitative research data is often used when coding and analysing data from already-developed concepts (Taylor et al., 2015). According to Conrad et al. (1993:280), the constant comparative technique usually combines “systematic data collection, coding and analysis with theoretical sampling to generate theory that is integrated...” for testing and articulation. In brief, the approach consists of a data-analytic procedure in which the findings and interpretations supplied are compared with the literature as it emerges from the data analysis process.

A series of questions were developed following the study's objectives and used to conduct the semi-structured interviews with the study participants. In some cases, especially where it was difficult to arrange suitable interview times between the researcher and participant, the questions were sent via email (see Table 1 – P3, P5, P7, P9, P10 and P14) to the participants who had been specifically selected and briefed on the requirements of completing the interview schedule. The study participants were given the flexibility to respond to the questions at their own pace, and after they had finished, they simply submitted their comments to the researchers for consideration. With the email interviews, there was no need to transcribe the information provided by the respondents because the information was already in electronic (print) format. However, in the other segment of the data obtained from the interviews, the researcher transcribed and later compared the emerging themes with those from the emailed data. This was followed by a thematic analysis of the responses from the participants (Braun & Clarke, 2006).

4. RESULTS AND DISCUSSION

The study results derived from the interviews conducted with business events owners, managers and representatives revealed several themes which are discussed under the following headings: COVID-19 effects, event business recovery and the future of business events. Under each of the above aspects of the study, key themes were identified and elaborated on with supporting quotes from the data provided to further support the claims.

To better describe and present the study findings, the researchers found it necessary to describe the individuals who participated in the study to ensure that data were obtained from relevant participants. A thorough understanding of each participant's profile was essential since it provides context that may help interpret the study findings in a more meaningful way (Muresherwa et al., 2022a). As such, the researchers began by identifying the business event stakeholders or participants (P) who possessed the necessary and applicable characteristics to provide the required information that was useful to achieve the study's goal. In the current study, the demographic profiles of the participants are presented (see Table 1), followed by an analysis of the emerging themes derived from the 14 semi-structured interviews.

Table 1: Profile of the business event participants in the study

| Participant no. | Age | Years of service in the business | Nationality | Highest academic qualification | Other occupations besides event |
|-----------------|---------|----------------------------------|--------------------------------|---|---------------------------------|
| P1 | 46 - 55 | 20 | South African | Matric | Yes – Owns book shop |
| P2 | 46 – 55 | 35 | South Africa | Certificates: Marketing, Hotel Management and Business Management | No |
| P3 | 46 – 55 | 15 | Indian (SA Permanent Resident) | Degree: Marketing Management | Yes – Deputy Director |
| P4 | 36 – 45 | 19 | South African | National Diploma: Food Services | No |
| P5 | 36 – 45 | 22 | South African | Diploma: Events | Yes – Safety Officer |
| P6 | 36 – 45 | 7 | South African | Degree: Education | No |
| P7 | 26 – 35 | 4 | South African | Diploma: Marketing | Yes – Marketing Manager |
| P8 | 26 – 35 | 2 | South African | Degree: Bachelors | Yes |
| P9 | 26 – 35 | 5 | South African | Diploma: Events | Yes – Graphic Designer |
| P10 | 36 – 45 | 14 | South African | MBA | No |
| P11 | 26 – 35 | 5 | South African | Diploma: Event | No |
| P12 | 46 – 55 | 22 | South African | Matric | No |
| P13 | 36 – 45 | 16 | US Citizen | Degree: BA | No |
| P14 | 26 – 35 | 10 | South Africa | Certificate: | No |

Source: Authors' construction

Table 1 shows the profile of the study participants. The participants' ages ranged from 26 to 55 years with varying years of experience in the events industry. Mostly in the younger age category, the 26–35 years, participants were actively involved in business for a period spanning from two to ten years. The businesses of all the study participants were in existence pre-COVID-19 and they were able to comment on how the pandemic affected event business operations. Some of the participants had other occupations (six) which were not related to the events they planned or managed. These occupations included owning bookstores (P1), deputy director for a chamber of commerce company (P3), safety officer (P5), marketing manager (P7) and graphic designer (P9).

The other eight study participants were only focused on their events businesses and did not have other occupations. In terms of the educational qualifications of the participants, they possessed from a Matric/high school certificate to an MBA. However, most of the participants held either a degree or diploma in various fields of study.

4.1. The effects of COVID-19 on event businesses

The business events representatives for this study were asked to highlight how their organisations were affected by the COVID-19 pandemic. Several themes emerged from the interviews, and these included event cancellation and postponement, business closure/close down operations, loss of revenue, valuable skills lost, retrenchment of staff, banks' unwillingness to support event businesses, restructuring of work format – online/remote/virtual events and the implementation of the 'no work no pay' principle. These themes are further discussed in detail in the following sections.

The choice to cancel or postpone an event is never simple. Events play a significant role in defining the brand of an organisation (Jago et al., 2003), generating income (Daniels & Tichaawa, 2021), and offering face-to-face networking opportunities for event attendees (O'Brien, 2006). Occasionally, cancellation or postponement of any planned tourism event is the only viable alternative. In such situations, it is essential to understand how to effectively convey these changes to the attendees and how to alter the plan to accommodate the changes (Daniels & Tichaawa, 2021).

As the COVID-19 situation worsened, especially when strict travel restrictions were instituted in the country in March 2020, the events industry was severely affected. With the stringent travel restrictions in place, only essential service providers whose roles were non-tourism related were permitted to travel as they carried out their duties (Stevano et al., 2021). As a result of the 'no movement of people' restriction, several planned business events had to be cancelled. Several consequences linked to event cancellation were realised, for example, 'shut down of operations', 'laying off of staff', and 'retrenchments'. The interviews with the different event representatives revealed event cancellation as one of the distressing ways in which the pandemic affected the event business sector. One event owner and manager (P5) highlighted that within a short period after the announcement of national lockdown and travel restrictions, they had cancelled more than 100 planned and scheduled events. This is evidenced in the following excerpt: "Clients have cancelled over 100 events since the outbreak ..." (P5, Male, with 22 years in the events business). While some events were cancelled, others had to be postponed to a date when it was safe to host these events. However, it was not easy to predict when the situation would improve for event hosting, thereby putting businesses in a difficult position to plan. One event owner, a middle-aged South African with marketing experience, expressed how the COVID-19 pandemic affected her business:

The events industry has been one of the hardest hit industries by Covid, with gatherings either being restricted or limited. It's still being affected with restrictions till today. The pandemic has affected my business in a big way, we have had weddings postponed and cancelled, there was a massive reduction in kiddies' parties, bridal showers etc. And corporate events were almost non-existent. With the reduction in events, it has of course affected the revenue of the business. (P7, event business owner and organiser of weddings for four years)

For most businesses, “everything came to an abrupt stop without warning ...” (P9). No business anticipated that the pandemic would affect businesses to this magnitude, causing several people to lose their jobs since there was no business going on. One participant, a young graphic designer with an events qualification (diploma), expressed how his business was affected and the changes which had to be implemented to help in creating hope for clients and the industry. This is expressed in the following quote, where the business had to actively use social media to maintain communication with stakeholders:

Staff had immediately been moved from working at the office to working from home should there have been any admin/design work, clients requested deposits back that had already gone into the organisation, and no new enquiries came our way for months. Eventually staff had to be reduced to the point where we were just two or three people trying to keep the company alive in some way or another, even if it was simply to post motivational messages on social media to keep the platform alive, as there were no weddings or events to post. As work became less, staff became less, revenue became less and the chance of losing the company became a very big reality. (P9, event business owner and organiser of weddings for four years)

As indicated earlier, the cancellation of events led to the closure of businesses for some time as business was lost. All the study participants agreed that in cases where events could not be cancelled, postponement of the event was an option. However, with the postponements, it was difficult to predict the duration of the postponement, as shown in the following excerpt:

We had to close down operations for quite some time, lost business since all the planned events had to either be cancelled (the worst situation), and postponed (but could not quickly predict until when – no one knew when the lockdown was going to end, especially that there were changes in regulations and control measures for the pandemic. We ran into massive losses and hopefully with many countries easing travel restrictions, we are more likely to get going. (P12, event business owner with 22 years of experience)

4.2. Event business recovery

The events industry was severely hit, such that nearly all in-person/physical exhibitions and events did not take place for almost two years. As seen in the previous sections, several events were cancelled or restructured to be delivered virtually. The year 2022 had a promising start, signs of normality were returning with the successful hosting of major events in Cape Town (e.g., Cape Town Carnival, World Travel Market, and Two Oceans Marathon). Collectively, most of the interventions proposed and implemented for event business recovery contributed towards the preservation of employment, sustaining of industries, and were a basis for stimulating the business economy as it recovers from the pandemic. Several strategies continue to help in the recovery of the events industry, especially noting that the COVID-19 pandemic is still in existence with fears of the emergence of new variants, which could disrupt the industry again.

In March 2020, when hard lockdown restrictions were introduced (Magongo et al., 2020), no one knew how long it would last, making it more challenging to formulate viable solutions, which were mostly on 'trial', especially in the South African context, taking lessons from countries which had experienced global crises. The researchers wanted to understand how the South African business

events sector could recover from the effects of the COVID-19 pandemic and learn from what the study participants thought could help towards recovery. Most participants were hopeful that the situation would improve. However, this was only achievable if different event stakeholders collaborated and worked together. For example, P1, with business experience of two decades, remarked, "... event business owners, organisers and managers can strive to maintain clientele for the future so that once the borders open and events are allowed again, the sector can operate in full swing again." This highlights the importance of communication with the clients so that they would remain to be served in the future. The notion of collaboration as a strategy towards recovery was also evident as shown in the following quote from an event business owner with more than three decades of being actively involved with the events industry:

... the South African events councils should come in and work hand in hand with the tourism business council of south Africa. ministerial task team under department of sports arts and culture ... the Minister has been extremely supportive with helping us get meeting with right departments such as SARS, treasury, COGTA to find ways to mitigate the financial impact (tax breaks, banks). ... regards to events sector recover is trust and confidence from clients. South Africans is on a red list as no travelling is allowed. PR is crucial and events council should inform other countries that we are open for business and is safe. Vaccine will not take the problem away, still going to need to practice safe protocols and rapid testing. PCR tests at event venues – gives people peace of mind that no one has virus. Rapid tests are fast and effective. Events can be run safely with the correct procedures. (P2, incentive travel expert with 35 years of active engagement with events)

The above excerpt highlights several ways of ensuring industry recovery and mirrors the views of some study participants. Some suggested working together by having "brainstorming and engagement" sessions where new ways of operating could be discussed. Moving operations to online formats also came out strongly in the conversations with the study participants. However, for some, it meant added costs to make or adopt technological innovations for event production and consumption. Following the health and safety protocols such as the wearing of face masks, sanitising, maintaining social distancing, encouraging vaccinations and taking the PCR tests were some of the suggested ways to ensure that the industry would be permitted to reopen as the above could guarantee that the events are safe. One participant with five years of working on events stated:

The best way to recover is to stop fighting COVID19 rules and regulations and adapt to the 'new norm' where events are smaller and have a lot more rules to adhere to. We need to keep promoting events ... (P9, event owner with five years of experience).

Governments around the world introduced rules and policies to help fight and prevent the further spread of the virus and protect their citizens (Lyu & Wehby, 2020). However, the effectiveness of some of the policies introduced, especially that of face masks, has been highly debated emanating from a lack of sufficient evidence of masks mitigating the spread of the virus (Jefferson et al., 2020). Despite this, face masks remained critical in limiting the spread and the participants felt that complying with the regulations would help in preventing the spread, thereby enabling the industry to recover more quickly.

4.3. The future of business events

Business event organisers will undoubtedly continue to place a high priority on the necessity of safety, security, and flexibility in the future. Most business event clients in their planning for events would pay much attention to several aspects, including cleanliness, especially within hotels, airlines, ground travel, airports, and event venues. The client would also look for the existence of a crisis management plan in case a new COVID variant emerges. In addition, the study participants think that a good infrastructural base, one with sufficient medical response facilities, would be a consideration for business event clients. Governments are therefore encouraged to upgrade, renovate and expand infrastructure at destinations so that event attendees would consider visiting. Technology will continue to dominate in event production and consumption, which necessitates more training on how to plan for safer business events.

5. CONCLUSION

The COVID-19 pandemic led to several undesirable impacts, especially on the event tourism industry. Because of the devastating impact of the pandemic, several events around the world had to be restructured, redesigned, cancelled or postponed as the industry explored better strategies to survive the impact (Perold et al., 2020; Daniels & Tichaawa, 2021; Muresherwa et al., 2022b). Event organisers had to work with technological innovations to allow survival, including adopting new delivery modes for events (Aldao et al., 2021). One of the modes that worked and continue to be utilised in today's events is going fully digital and combining the virtual format with in-person attendance (Bama et al., 2022, Muresherwa et al., 2022b; Woyo & Nyamandi, 2022). The crisis created by COVID-19 resulted in several changes, especially in the production and consumption of events, which will continue to shape how future events will be produced, managed and consumed.

The paper highlighted the effects of the COVID-19 pandemic on business events in South Africa. It also presented the actions which were taken by event businesses in responding to such effects, together with recovery strategies, which could be applied by event organisers and managers, especially when faced with similar crises. According to the Southern African Association for the Conference Industry (SAACI), the COVID-19 pandemic saw business events losing much revenue. In 2020 alone, the cancelled events resulted in salary losses amounting to more than USD3.5 million (Hill et al, 2022; Magangqaza et al, 2022). From the interviews, it was reported that job losses were a major effect of the pandemic in the business events sector. The government intervened to assist businesses with the provision of Temporary Employee Relief Scheme (TERS) funding and other support. However, this support was not realised by all businesses and the processes of disbursing these funds could be improved so that the burden on businesses is curtailed. The strategies adopted by businesses to deal with the effects of COVID-19 were uniform across the board. These ranged from reducing salary, retrenchments, removal of work-related benefits, placing staff on leave, reduction of expenditure (e.g., rental fee cuts, work remotely – no need for office space), and being innovative (expanding digital platforms for the hybrid format of events).

How the COVID-19 pandemic affected business events across the globe, requires event businesses to be strategic in their approaches, particularly in terms of sustainability. One way of achieving this is being cognisant of responsible tourism practices as suggested by Bartis et al. (2021), such as reducing the carbon footprint of the business. Collaboration remains key for the success of event

businesses as supported by scholars such as Muresherwa et al. (2022b) and this should include all the stakeholders in event production, consumption, and management. Through collaboration and engagement with the different event tourism suppliers, businesses can share experiences, which could help some businesses to learn from others' experiences.

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A SINGLE MARRIAGE STATUTE FOR SOUTH AFRICA –ECONOMIC AND CONSTITUTIONAL IMPLICATIONS

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ABSTRACT

On 11 January 2021, the South African Law Reform Commission announced the availability, for general information and comment, of Discussion Paper 152 dealing with the possible adoption of a single marriage statute. The legislation which currently regulates marriages in South Africa has been developed without an overarching policy that is based on constitutional values and an understanding of modern social dynamics. Despite all the changes that have been made in marriage legislation post-1994, there are still serious gaps in the current legislation. The failure to recognise religious marriages, in a country that boasts a constitution that promotes diversity and equality, is a paradox. The primary aim of this research is to collate, organise and describe legislation and to offer commentary on the emergence and significance of the authoritative legal sources in which such rules are considered, referring to case law, with the aim of identifying underlying issues. Unrecognised marriages have serious financial implications e.g. maintenance, ownership of property and inheritance. The possible development of a comprehensive single marriage statute to allow persons of all religious persuasions and cultural practices in South Africa to conclude legal marriages will accord with the doctrine of constitutional equality. The proposed research will contribute to the development of the law in the South African constitutional state, focusing on the economic and constitutional implications of a single statute to regulate all forms of marriage in South Africa.

Keywords: marriage; equality; diversity; constitutionality

1. INTRODUCTION

Marriage can be regarded as an act by which a marriage relationship is formed. It also defines the relationship that is created by this act. According to Clarke (1998) marriage was traditionally defined as "...a union of one man and one woman who mutually agree to live together as spouses until the marriage is dissolved by the death of one of them or as otherwise provided by the law" (pp 283). Many South African court rulings deviated from this traditional view of marriage, for example, where the consequences of a Muslim marriage were recognised and enforced. Current South African legislation that regulates marriages has developed without any policy that takes modern social paradigms into consideration. It is not based on constitutional values, and it recognises different marriage rituals without any coordination. Unrecognised marriages have serious financial implications and a single marriage statute that allows persons of all religious persuasions and cultural practices in South Africa to conclude legal marriages will be in line with constitutional equality. The diversity of the South African population, however, presents several challenges to create legislation that will govern every cultural and religious marriage practice.

2. LITERATURE REVIEW

2.1 Constitutional implications

In 1994, the world was witness to the abolishment of the apartheid regime in South Africa. Until then, only civil marriages concluded under the Marriage Act were legally recognised in South Africa. Post-1994, the new Constitution has enabled the recognition of different forms of marriages, including traditional and religious marriages. However, these rights have not been interpreted into law for all marriages.

Any legislation that prohibits the right to marry will constitute an infringement of the right to dignity. It will impair the ability of spouses to honour this obligation if legislation prevents them from doing so. The constitutionality of such a limitation will be determined on whether it can be seen as justifiable and reasonable in an open and democratic society.

In the case of *Dawood, Shalabi, Thomas and Another v Minister of Home Affairs* (2000), both the Cape High Court and the Constitutional Court held that the South African Bill of Rights must be interpreted in such a manner as to give protection to the core elements of the institution of marriage and family life, as well as the right and duty of spouses to live together as spouses in community of life. The right to family life is protected in section 10 of the Constitution that affords every person the right to have their dignity respected and protected. (Clarke, 1998).

In 2018, the state's failure to legally recognise Muslim marriages was challenged by The Women's Legal Centre in the Western Cape High Court, where the Court held that by not having legislation that recognises and regulates these marriages, the state violated several constitutional rights, including the rights of Muslim women and children to equality, dignity and freedom of religion. The Court ordered the state to prepare, initiate, and bring into operation legislation to recognise and regulate Muslim marriages by 31 August 2020, but this judgment was appealed by the Constitutional Court and the deadline suspended, pending the outcome of the appeal by the Supreme Court of Appeal.

“Given the diversity of the South Africa population, it is virtually impossible to pass legislation governing every single religious or cultural marriage practice. It is against this background that the Department of Home Affairs (DHA) is embarking in the process of developing a marriage policy that will lay a policy foundation for drafting a new single or omnibus legislation.” (Clark, 2021).

2.2 Current legislative framework

Currently, marriages in SA are regulated through three pieces of legislation, namely the Marriage Act of 1961, which is for monogamous marriages for opposite sex couples of largely Western and Christian backgrounds; the Recognition of Customary Marriages Act of 1998, which caters for traditional, polygamous marriages for opposite sex couples; and the Civil Union Act of 2006, which makes provision for monogamous partnerships for both same and opposite sex couples.

Both Muslim and Hindu marriages are not recognised in South Africa, as they are not overseen by a civil ceremony, either in terms of the Marriage Act or the Civil Union Act. This means that the parties to such marriages are deemed to be unmarried and do thus not enjoy the same legal rights and protection as those having entered civil marriages. The reasoning behind the non-recognition

of Muslim and Hindu marriages stems from the fact that Muslim and Hindu priests are not recognised as designated marriage officers, although their designation is possible in terms of the Marriage Act. Moreover, non-recognition of Muslim and Hindu marriages is due to their potential polygamous nature which is irreconcilable with the Marriage and Civil Union Acts. However, the position regarding Muslim marriages has changed slightly.

Since 2014, it is accepted that a Muslim priest, known as an Iman, who has been registered as a marriage officer in terms of the Marriage Act, may solemnise a Muslim marriage. The consequences of such a Muslim marriage will take the same form as that of a civil marriage. Where an antenuptial contract is not entered into by the spouses, the marriage will be in community of property. A marriage certificate will serve as proof of the existence of the marriage. However, this does not automatically legalise all Muslim marriages. Parties entering into Muslim marriages that are not solemnised by a registered Iman will still be regarded as ‘unmarried’ or ‘married according to Muslim rites’.

Regrettably, Hindu marriages are still not recognised as legal marriages in South Africa and the parties thereto are regarded as ‘unmarried’ or ‘married in terms of Hindu rites’ and in cases where a Muslim or Hindu man dies, his wife will receive a death certificate that states ‘never married’. It is therefore recommended that parties to such marriages conclude an antenuptial contract and have a separate civil ceremony to ensure that the legal consequences of marriages under South African law are applicable to their marriage.

In terms of the common-law definition of marriage, marriage was regarded as a union possible only exclusively between male and female. In *Fourie and Another v Minister of Home Affairs and Others* (2005) the Supreme Court of Appeal has held that all criteria of unfair discrimination have to be renounced in favour of a commitment to equality under the law. The court further stated that the common-law definition deprived same-sex couples of the option of marriage, as well as many rights and protections. It therefore constitutes unfair discrimination. The court further stated that the common-law concept of marriage needed to be developed to embrace same-sex partners, by redefining marriage as the “union of two persons to the exclusion of all others for life”. Both the Marriage Act and the common-law definitions of marriage were challenged in the Constitutional Court, in the case of *Lesbian and Gender Project and Others v Minister of Home Affairs and Others* (2006) The court held that it was in the interests of justice that this case, as well as the *Fourie* case (supra) be heard together, and declared that the common-law definition of marriage was unconstitutional and invalid to the extent that same-sex couples were not allowed to enjoy the same benefits, status and responsibilities as was awarded to heterosexual couples.

The Recognition of Customary Marriages Act 120 of 1998 was enacted in terms of section 15(3) of the Constitution. As the name of the Act indicates, the purpose of the Act is to recognise customary marriages and, by implication, polygamy. The success of the Act, based on whether full recognition is actually given to traditional marriages or whether a new marriage regime was indeed created, is to be debated. The Constitution of the Republic of South Africa recognises customary law, but again only if the rules are not in conflict with the Constitution. (Herbst & Du Plessis, 2008).

In the pre-1994 dispensation, the common law was seen to be superior to the customary law. Since 1994, judges must give content to the Bill of Rights - a new dispensation with a judiciary reflecting

the multiplicity of South Africans. Herbst and Du Plessis (2008) mentions that this time, however, the measuring instrument is more concrete, and the playing field levelled. The Bill of Rights dictates the public policy and judgements.

3. RESULTS AND DISCUSSION

3.1 Proposed Legislation

There are currently two parallel processes for law reform taking place, to consider amendments to the marriage laws of South Africa. One process is managed by the South African Law Reform Commission and the other by the Department of Home Affairs. They both have the intention of drafting all-encompassing legislation that will afford recognition to all forms of marriage. According to Amien(2020) the Law Reform commission indicated that a unified marriage act or an omnibus or umbrella legislation would consist of a combined set of requirements for all marriages, including civil unions, customary marriage, civil or religious marriages, as well as same sex unions. The recognition of all marriages will promote formal equality and will ensure that all marriages are recognised and treated as legally valid.

Some of the key changes that will be introduced by the new policy include the following:

- The new Marriage Act will enable South Africans of different sexual orientation, religious and cultural persuasions to conclude legal marriages;
- The introduction of strict rules with regards to the age of marriage (including the alignment of age of majority in the marriage legislation to the Children's Act);
- It will align the marriage, matrimonial property and divorce legislation to address matrimonial property and intestate succession matters in the event of the marriage dissolution;
- It will allow for equitable treatment and respect for religious and customary beliefs in line with section 15 of the Constitution.
- It will deal with the solemnisation and registration of marriages that involve foreign nationals;
- It will deal with the solemnisation and registration of customary marriages that involve non-citizens, especially cross-border communities or citizens of our neighbouring countries. (Isaacs, 2021)

3.2 Economic implications

Many similar duties and obligations exist between partners in a marriage relationship, as well as in a domestic relationship, although they may not be identical. Unfortunately, this is not the same in terms of the law. Cohabiting partners may, as a result, find themselves in a vulnerable position if the relationship terminates, and this usually consists of serious financial difficulties. The legal consequences flowing from a marriage contract affect estate structuring, tax obligations, duty of support, maintenance obligation, spousal support, debt, as well as the division of assets, should the relationship come to an end through death or divorce.

Partners who are bound by a legally recognised marriage can enjoy several benefits that are not automatically given to you if you are just living with your partner. Some of these benefits are discussed below.

3.2.1 Property

Parties to a marriage relationship may determine how they wish to deal with the property they own or will own in future. The Matrimonial Property Act (Act 88 of 1994) provides for different property regimes to regulate the propriety consequences of their marriage. It provides for a marriage to be either in community of property or out of community of property with or without the application of the accrual principle. In the case of a life partnership, however, there is no joint estate, and as a result, each party acquires his or her own property. A complex situation usually develops on termination of this relationship, especially where the partners jointly bought property or where the one partner contributed to their joint living expenses during the subsistence of the life partnership.

3.2.2 Duty of support

In a marriage relationship, spouses are obliged to support each other, dependent on their respective needs and means. Where a couple, whether from the same or opposite sex, chooses to live together without formalising their relationship under the Civil Union Act, their relationship is not regulated by law and this can have far-reaching legal and financial consequences. South African law confers no legal status on cohabiting couples and, as such, no duty of support exists between couples living together. This means that if the relationship comes to an end, one partner will not be able to claim maintenance from the other partner, even if he or she was financially dependent on the other during the relationship.

3.2.3 Maintenance after death

In terms of the Maintenance of Surviving Spouses Act (Act 27 of 1990), a surviving spouse or a partner to a civil union is entitled to institute a claim against the estate of the deceased spouse. The surviving spouse may claim his or her reasonable maintenance needs from the deceased estate until death or such time as the surviving spouse remarries. This right is not afforded to life partners, even if the surviving life partner was previously supported by his or her deceased life partner. Cohabiting couples will similarly also not be able to claim maintenance on dissolution of their relationship. Whereas, in the case of a divorce, a spouse may institute a claim for reasonable maintenance.

3.2.4 Inheritance

In terms of a marriage in community of property it is important to bear in mind that each spouse can only bequeath 50 per cent of the joint estate in the event of their death, as the other half belongs to the surviving spouse. Where a spouse to an in community of property marriage dies without a will, the surviving spouse will inherit in terms of intestate succession. In the event of divorce, keep in mind that each spouse is entitled to 50 per cent of the joint estate, which can lead to an inequitable distribution of assets where one spouse contributed significantly more to the estate than the other.

When a spouse dies without leaving a valid will, the Intestate Succession Act (Act 81 of 1987) allows for the surviving spouse of a marriage or the partner to a civil union to inherit as an heir. Recent case law has developed to include life partners in a same sex relationship but does not include life partners in a heterosexual relationship.

3.2.5 Termination of the relationship

In the absence of an antenuptial contract, a marriage will be deemed to be in community of property, and this can have important financial consequences for both parties. Under this system, all assets and liabilities belonging to each spouse are merged together into one joint estate. A major disadvantage of this form of marriage contract is that the couple is jointly liable for each other's debts, including those debts which were incurred before the marriage. Further, one spouse can bind the joint estate through their actions; which could lead to the joint estate being declared insolvent.

When it comes to freedom of testation, it is important to bear in mind that each spouse can only bequeath 50 per cent of the joint estate in the event of their death as the other half belongs to the surviving spouse. Where a spouse to an in community of property marriage dies without a will, the surviving spouse will inherit in terms of intestate succession. In the event of divorce, keep in mind that each spouse is entitled to 50 per cent of the joint estate which can lead to an inequitable distribution of assets where one spouse contributed significantly more to the estate than the other

3.3 Religious marriages

As discussed, a marriage entered into in terms of a religion, such as the Hindu and Islamic faith, is generally not recognised in terms of South African Law. (Collier, 2021). In certain circumstances, limited protection is granted in respect of spousal support and inheritance rights.

Members of the Muslim faith have previously either been forced to marry monogamously according to South African Law or marry polygamously according to Muslim customs and be party to a union classified by law as cohabitation (Clarke, n.d). In the case *Daniel v Campbell* (2004), the Constitutional Court held that the word 'spouse' in its ordinary meaning included parties to a Muslim marriage. According to the court, the central issue in this case was whether the protection afforded to widows should be withheld from relationships involving Muslim marriages. The court concluded to say that if the parties intend to adhere to Islamic customs, then they can also contract a civil marriage which can be combined with an Islamic ceremony. They will then be able to exclude community of property by means of an antenuptial contract and make a will that provides for succession according to Islamic law. In the case of *Khan v Khan* (2005), the court held that partners in a Muslim marriage also owe a duty of support to each other but have to claim this in terms of the Maintenance Act 99 of 1998 (Clarke, n.d.). In a recent important decision, the Constitutional Court confirmed the decision in the case of *AS and Commission for Gender Equality v GS and Minister of Justice and Correctional Services* (2018) that sections of the Matrimonial Property Act (MPA) are unconstitutional. This is because these sections maintain and perpetuate discrimination that the marriages of black couples – entered into under the repealed Black Administration Act (BAA) before the MPA was enacted in 1988 – were automatically out of community of property. The court stated that the MPA had failed to address 'lasting discrimination'.

“Instead, it imposed a duty on black couples who wanted their matrimonial regimes to be similar to those of other racial groups to embark on certain laborious, complicated steps to enjoy equality with other races, whose marriages are automatically deemed in community of property.” *Sithole and Another v Sithole and Another* (CCT 23/20) [2021]

4. CONCLUSION

Social change is desirable; law can be a potent tool in aiding that change. But it is a precision tool, and one which, like the carpenter's chisel, is easily blunted in unskilled hands. (Allot, 1998)

Despite all the changes that have been made in the marriage legislation post-1994, there are still serious challenges in the current legislation. Current legislation does not regulate some religious marriages such as Hindu and Muslim marriage, nor does it regulate customary marriages as practised in some African or royal families.

The Constitution of South Africa (Act 108 of 1996) prohibits most forms of discrimination. This includes discrimination based on sex and age. Instead of successfully eliminating inequality as previously experienced by same-sex couples, the introduction of the Civil Union Act, has rather extended such inequality and discrimination. This act only allows civil partnerships for same-sex couples, and the Marriage Act is reserved for heterosexual religious individuals only. According to CALS (1991, 5) the current series of acts governing marriages in South Africa is that heterosexual couples can choose various forms of marriage, but that only one form of marriage is available to same-sex couples. (Herbst & Du Plessis, 2008).

Customary marriages are recognised in terms of the Recognition Act and official recognition is given to polygamous marriages, but only to a limited degree. The marriage regime is amended to be in alignment with the Bill of Rights and the existing common-law marriage system. The requirements of the Recognition Act are a mixture of statutory rules and customary law. *Lobolo* is the only elements of traditional marriages that remained are the reference to the conclusion and negotiation of the marriage (Bennet, 2007), and the role of the traditional leader in mediation of marriage disputes. The matrimonial property regime is similar to that of the Matrimonial Property Law Act and the rules of dissolution are similar to those contained in the Divorce Act 70 of 1979 (Bekker, 1983). A traditional element that is still included, is that the traditional leader may still act as mediator in marital disputes and dissolution as indicated in section 8(5).

Customary marriages can no longer be regarded as traditional customary marriages, but what was developed is a hybrid approach between common law and customary law. As the South African system is now not only a mixture of Roman-Dutch and English law, but a mixed legal jurisdiction of Roman-Dutch, English and African Customary Law within a Constitutional dispensation, it is perhaps now even more complex (Bekker, 1983).

From a western and constitutional perspective, the improvement of women's position is lauded, but traditionalists still argue that the Recognition Act interferes with traditional practices and customs. Traditionalists are of the opinion that individuals should choose whether they would like to submit themselves to customary law or not, and that parliament should not interfere in how a customary marriage should be regulated. Bekker (1983) states in this regard that society will (not) change by legal decree. For a long time still to come, the living law will probably continue to differ from the law on paper. The so-called common law may in fact distort customary law and practice to the extent that the enacted version becomes meaningless in society.

The issue with the above-mentioned acts is eventually their actuality. To have separate acts dealing with the same legal practice (marriage) only reinforces the fact that some individuals and some relationships in South Africa are seen as 'different'. There are no legal consequences that differ in

the instance of same-sex unions to that of married heterosexual individuals. The existence of the Civil Unions Act is an example of the state's pandering to conservative religious groups, who assert that 'marriage' is a wholly religious act, which same-sex individuals cannot qualify for. This is, of course, incorrect, as marriage is a legal act with legal consequences (Bekker, 1983).

In light of this, we argue that only one term be used to describe all forms of marriages or unions, as separate terms only re-entrench discriminatory perceptions around forms of relationships that are not seen as 'traditional', and thus make those perceptions legally permissible.

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A SUBJECTIVE VIEW ON THE CHALLENGES OF INTEGRATING DIGITAL ACUMEN IN THE ACCOUNTANCY CURRICULA WITH REFERENCE TO COVID-19

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ABSTRACT

The Covid-19 pandemic disrupted life as we know it. Education had to adopt alternative teaching methods. This, together with the fast-changing profession and business world echoed the age-old criticism of Accounting education; the slow pace at which accounting academics are adapting their teaching methods and style. The accountancy curricula remain a focal point with the South African Institute of Chartered Accountants further outlining digital acumen as part of pervasive skill sets that must be taught. Digital acumen is highlighted due to its importance in the everyday life of a professional chartered accountant. The average South African student has been struggling on a daily basis with basic needs, such as electricity, food security and technological requirements. The aim of this argument is to identify if the challenges created by Covid-19 could further delay the integration of digital acumen, specifically those user competencies required by employers in line with SAICA, within the accountancy curricula. A qualitative research approach using inductive reasoning was adopted. The focus was placed on the need for digital acumen as required by employers and SAICA, specifically Microsoft Word, Excel and PowerPoint. Further investigation was done on the challenges faced by higher education institutions on the integration thereof into the accountancy curricula while dealing with challenges as a result of Covid-19 on the overall teaching methods, capacity and capabilities. The results indicate that even though digital acumen is a growing demand stemming from employers and SAICA, Covid-19 has revealed many challenges for higher education institutions. Challenges include basic student needs, the digital infrastructure required for online learning, uninterrupted power supply, lack of participation and unethical behaviour. These challenges make the integration of digital acumen in the accountancy curricula a distant reality. The inclusion of digital acumen within the accountancy curricula should be considered in a multi-facet way. It depends on many variables, all working and being applied together. It is recommended that curricula developers consider the lessons learned from Covid-19 when developing future accountancy curricula to successfully integrate digital acumen.

Keywords: Accountancy curricula, challenges, digital acumen, employers, integrate, students, SAICA

1. INTRODUCTION

Initially, the term Covid-19 was unknown and uncertain across the whole world, however, this quickly changed. Since the first reported positive case of Covid-19 in South Africa on 5 March 2019 the lives of all South Africans changed forever (Arashi et al., 2022). Closely monitoring the statistics on the spread of Covid-19 across those countries already affected, the South African government took a drastic step to address and protect their people through the implementation of various measures. The first and perhaps most drastic change, was felt on 15

March 2020 when President Cyril Ramaphosa declared a state of disaster that subsequently resulted in a national lockdown on 23 March 2020. This restricted the free movement of all people to curb the spread of Covid-19 (Turner et al., 2021).

The Covid-19 pandemic further added to the ever-changing requirements of accountancy graduates where their daily face-to-face routines were disrupted and they moved to provide services entirely online (Papadopoulou & Papadopoulou, 2020). With online services, the online or digital experience is required. From the constantly changing accounting environment to what is expected from employers and clients, adaptable and digitally savvy accountancy students need to be developed by higher education institutions (HEIs) (Guthrie & Parker, 2016). This viewpoint is shared by the professional body for chartered accountants, the South African Institute of Chartered accountants, (SAICA) with the inclusion of digital acumen already in 2018. Perhaps the necessary shift pre-empted the daily activities of accountancy professionals that would prove invaluable during the Covid-19 pandemic. SAICA and employers expect their graduates to not just possess basic knowledge of technical content, but also to be able to apply their judgement to a situation (Stumke, 2021). With respect to this, SAICA included the digital acumen competencies (data analytics, big data, cognitive and non-cognitive systems, new development and protocols, distributed processing and cyber security and user competencies) an accountancy professional should possess when graduating (SAICA, 2021).

With the increased Covid-19 infections in South Africa, HEIs suspended all academic coursework from 18 March until 15 April 2020 (Al-Samarrai et al., 2020). This meant that HEIs were faced with the challenge of presenting and facilitating learning to students in different locations (Takalani et al., 2020), directly affecting their daily operations. This resulted in the fast change from face-to-face teaching and assessments to an online platform, not without its own challenges (Mpungose, 2020). Both students and lecturers had to adapt or get left behind. With the shift in teaching methods, HEIs had to consider the change needed to ensure that the academic year could move forward with as normal as possible teaching and learning practices (Motala & Menon, 2020).

Since South Africa is still categorised as one of the countries where inequality among the population is still a reality and perhaps still on the rise, the implementation of online learning at higher education level would be hindered due to several challenges out of the control of the HEIs (Chisadza et al., 2021). The challenge experienced by students that ultimately affected their new means of learning was something as simple as university Wi-Fi (Takalani et al., 2020), access to a device that would allow them to successfully and effectively make use of and interact with the online content (Chisadza et al., 2021). This mitigating plan to bring the classroom to a student's house was feared not possible by some due to the limited or even unavailability of internet facilities and lack of funds to purchase expensive data bundles to access the learning content (Takalani et al., 2020). This was further emphasised on the back of the Covid-19 pandemic and the hard lockdown with the unemployment rate in South Africa increasing (Francis, 2020; Posel et al., 2021). With online learning came the risk that underprivileged students could get left behind due to a lack of access or continuous participation.

On top of the changing accountancy profession, having to develop graduates with digital competencies as required by employers and SAICA, move from face-to-face to online learning, student inequalities, and uncontrollable consequences of Covid-19, the burning question is: Did Covid-19 further add to the slow change in the accountancy curricula with regard to the digital

acumen? With Covid-19 and the challenges faced in the higher education setting to just give all students access to the normal and usual learning content, the aim of this argument is to identify if the challenges created by Covid-19 could further delay the integration of the digital acumen, specifically those user competencies required by employers in line with SAICA, within the accountancy curricula.

2. LITERATURE REVIEW

To fully understand the effect Covid-19 had and will have in the future, on the accountancy curricula when considering the integration of the digital acumen, the necessity of the digital acumen as called for by the accounting profession and the business world, and the need thereof as prescribed by SAICA needs to be highlighted. Furthermore, how Covid-19 disrupted the lives of South Africans, particularly the students, needs to be understood. Lastly, the accountancy curricula and its slow pace in adjusting to the needs of employers are also considered.

2.1 The need for digital acumen

With everything that went digital in a very short time, accountancy professionals were required to adapt without much warning (Papadopoulou & Papadopoulou, 2020). Where accountancy professionals had the option to perform on-site audits and accounting work, everything had to shift online in the wake of Covid-19. This necessitated accountancy professionals to apply their basic user competencies to communicate and document findings. Long et al. (2020) highlight the need for HEIs to develop work-ready graduates through their adaptive or accommodating teaching to the changing accounting profession, particularly during Covid-19. With this shift in the mode of education, several benefits, such as interactive case studies, wider collaboration and locating a more diverse range of students, to name a few, are highlighted (Long et al., 2020). With this in mind, the fact needs to be highlighted that this will be the choice of the student and not a forced means of content delivery, as necessitated by Covid-19.

Several stakeholders highlight the importance of enhanced digital competence among accountancy professions. The marketability and usefulness of accountancy professionals within the working environment could be enhanced through possessing basic digital competencies (Kirkham & O'Loughlin, 2020). Barnes (2017) adds to this by highlighting that if the accountancy curriculum includes digital acumen as outlined by SAICA it could lead to an easier adjustment by accountancy professionals in the changing business world. This rests on the employer's conclusion that accountancy graduates must possess at least the basic level of digital competencies when entering the workplace (SAICA, 2021).

Reviewing international and local literature, the three most important basic digital competencies required by employers and in effect the business world of students who enter the workplace are Microsoft Word, Excel and PowerPoint (Ahmed, 1999; Lee et al., 2018; Medeiros, 2019; Modisane, 2019; Stumke, 2014). The most effective way of ensuring that these digital competencies are mastered by accountancy professionals are if they are integrated into the accountancy curricula leading to a value-added curriculum for both students and employers (Albrecht & Sack, 2000; Stumke, 2017).

Even with HEIs being aware of these facts and them striving towards satisfying both employer and professional body needs, the impact they would face with the implications due to Covid-19

will have a drastic effect on the way learning content is structured and how the accountancy curricula are and will be structured in future.

2.2 Effect of Covid-19 on daily lives

With the world not having felt the effect of a global pandemic in several years, the start of Covid-19 changed many lives forever. HEIs did not just sit back and wait for Covid-19 to pass. They adapted their teaching methods in a very short time to be available online in an attempt to complete the academic year (Motala & Menon, 2020). As a result, educators made use of various online platforms such as Zoom, Microsoft Teams, Google Classroom and their respective learner management systems, to name a few. This required students to have access to data or Wi-Fi, digital devices, such as laptops, PC's, or smartphones, printers and scanners and even something as basic as an uninterrupted power supply (Motala & Menon, 2020). Within the first few weeks of online learning being implemented, students voiced their concerns and frustrations since a lot of them did not have the financial means to either acquire or maintain these technology infrastructures (Motala & Menon, 2020; Tamrat, 2022).

When students enrolled in traditional contact HEIs, they did so with the impression that they would have access on campus to at least Wi-Fi, computers and shelter (Mbhiza, 2021; Motala & Menon, 2020). This eliminated the burden of having to purchase and provide it themselves. With remote online learning being enforced by HEIs due to the Covid-19 regulations, students had to make alternative arrangements to access the learning materials to avoid falling behind in their studies (Motala & Menon, 2020). As the government applied funding to support people's basic needs, such as food and shelter, Covid-19 further contributed to the inequality gap when it comes to providing innovative and technological education (Al-Samarrai et al., 2020).

To overcome the access to technology resources, a challenge faced by many underprivileged students, several HEIs pledged to purchase laptops and provide it to the students on a loan basis. HEIs also provided data to those who requested it on a monthly basis. This was done in an attempt to overcome the ever-growing inequality gap between students and so as to give every student a fair chance to access their required online learning material (Motala & Menon, 2020). With this in place, HEIs still had to overcome the fact that even though they went above and beyond to support students, there was a lack of participation in the online mode. Some academics prepared videos that could be viewed when and where a student wanted to; some academics held online classes that required interaction from those who joined, which ended up being one-sided lectures; some academics even went as far as having discussions on WhatsApp to encourage students to ask questions (Mbhiza, 2021; Motala & Menon, 2020). With the move to online learning, normal content was made available online (Sonn et al., 2021), not introducing any new content. This was mainly due to students experiencing a lack of understanding, a lack of technical facilities and even a lack of willingness to participate in just the basic content offered (Mbhiza, 2021).

An additional challenge, not new to South Africa, burdened the online learning environment, constant load shedding. This is where the South African power supplier company owned by the government, Eskom, turns off the electricity supply when they cannot meet the demand at any time (Matli, 2020). This occurs at irregular intervals, sometimes scheduled and sometimes not, especially during peak times. This has a direct effect on students and academics, particularly those in remote areas and those who do not have access to backup power, as would have been the case

with an on-campus setting (Matli, 2020). This further resulted in students, even those who were willing to participate, not being able to access or participate in online learning and academics, who were willing to go the extra mile, not being able to present or provide online learning material.

As a result of the challenges above faced by students and academics during Covid-19 in delivering and participating in online learning, it led to additional challenges. Perhaps not anticipated to such a degree, several students acted unethically or had the opportunity to act unethically during their online learning university period (Mbhiza, 2021; Verhoef & Coetser, 2021). With online or electronic assessments, students had the opportunity to write their assessments with all their notes and textbooks next to them, some students even did the tests and exams for one another and submitted the same answer sheet. As a direct result, offenders or suspects of misconduct may be subject to disciplinary action (Swart & Shuttleworth, 2021). The consequence, if found guilty, could lead to the student having to repeat a module. The more significant effect of this was that students focussed more on how to cheat and less on mastering the knowledge (Mbhiza, 2021). The outcomes were that students did not gain the basic knowledge of concepts needed in the following years of study, some due to unethical behaviour and some due to inequalities.

Consequently, HEIs had to adapt or restructure their academic years to ensure no student gets left behind. This had resulted in low pass rates when students progress to the next academic year and an additional burden on academics and HEIs to revise their teaching plans again. This time not to move from an online to the face-to-face platform, but rather where to fit in additional lecture time to teach basic principles from previous years not mastered, due to either inequalities or unethical behaviour, so that the students would be able to continue with the academic year they are currently in.

2.3 Accountancy curricula

The seminal call from professional bodies and employers for the change in the accountancy curricula to include more digital competencies is now more of a necessity than ever. This is due to Covid-19 not giving accountancy professionals the option to perform their duties as they would normally do. The resounding concession from SAICA and employers is that currently, accountancy graduates lack basic digital competencies when they enter the workplace. The reason for this could be attributed to the lack of inclusion and integration of digital competencies within the accountancy curricula. Baard et al. (2010) are of the opinion that one of the factors that could influence the successful integration of digital competencies in the accountancy curriculum is how a curriculum is structured. This leads to the call for accountancy curricula to undergo a change to ensure that HEIs develop well-rounded accountancy graduates who are able to apply basic digital competencies in the workplace (Barnes, 2017).

This further outlines the importance of SAICA's aim that HEIs should strive to develop graduates suitable and ready for the working environment (Motala & Menon, 2020) where digital acumen is a requirement. The most important user applications within the digital acumen may be considered as the basic Microsoft Word, Excel and PowerPoint applications. From a higher education perspective, with these applications not requiring advanced programs, it could be regarded as the most obvious digital competencies to be integrated into the accountancy curricula in order to equip graduates for the accounting profession and business world (Stumke, 2021). Therefore, the inclusion of these digital applications would be easier without the impact of Covid-19.

There has been an endless plea for the accountancy curricula to shift to a more online learning environment. Based on all the identified challenges, directly or indirectly as a result of Covid-19, the integration of the digital acumen would place an additional burden on the usual accountancy curricula content and method of teaching. Even with the design of certain integration opportunities, the availability of technology infrastructures could pose a problem. With Covid-19 emphasising the educational inequalities still being experienced in South Africa with a lack of Wi-Fi, data, computers, electricity and unethical behaviour, expecting students to effectively and efficiently attempt digital integration in their modules may still be improbable.

3. METHODOLOGY

This article followed a qualitative research approach using inductive reasoning. The premise of inductive reasoning is a world-view, in detail, that ends in a generality of ideas (Neuman & Kreuger, 2003). This research approach follows the path where prior experience leads to learning based on patterns observed and identified (Dudovskiy, 2016), not applying a specific sampling method. Alexandridis (2006) refers to inductive reasoning as the “bottom-up” approach to knowing. In layman’s terms, this approach starts with a detailed observation of multiple world cases and identifies the common patterns that ultimately lead to the development of a general theory of the event under study.

With inductive reasoning through qualitative studies, attention is placed on understanding certain dynamics and focus is placed on individual behaviour. This entails the study of multiple sources, obtaining data from different individuals or groups, with a single conclusion for a new theory (Dudovskiy, 2016).

This research approach was used since there is little to no existing literature on the integration of digital acumen during Covid-19. Streefkerk (2019) outlines that the inductive research approach takes place in three stages: Observation, observe a pattern and develop a theory. For this article, these three stages took the form as follows:

3.1 Observation

By observing a phenomenon, it is important to note that the observation is done by a person who already has their own views and values (Swanepoel, 2018). This affects the premise for the observation and the content selected to observe making the observer biased. Since Covid-19 affects every person across the world it would be misleading to state that world-views were not altered and changed perspectives. With this in mind, this article stemmed from personal experience regarding the effect of Covid-19 in a higher education institute and day-to-day life. Common challenges identified by employers, SAICA, students and academics in the wake of Covid-19 led to the selection of different sources freely and readily available on EBSCOhost and Google Scholar to observe.

Initially, the focus was placed on a world-view and then narrowed down to the South African context. Here the need for digital acumen, as necessitated by Covid-19, was observed. Firstly, the importance of the digital acumen, as outlined by SAICA, was emphasised by observing the latest competency framework. Secondly, the most important digital competencies required by employers, internationally and locally, in line with SAICA’s competency framework, were identified. Thirdly, focus was placed on the effect of Covid-19, on the daily lives of people

worldwide and of students within the HEIs, as evident from peer-reviewed journals, newspaper articles and online news sources. The shift from face-to-face learning to an online learning environment was highlighted. The indirect effects Covid-19 had on the accountancy degree was also observed. Fourthly, the accountancy curricula were observed from the traditional approach perspective of not adapting fast enough to the changing accountancy profession. The need for the integration of digital competencies into the accountancy curricula to meet employer needs was outlined. Also, how these digital competencies can be integrated was further investigated.

3.2 Observe a pattern

The most common element in the pattern identified in this article was Covid-19. The main observation focussed on the pandemic and the effect, directly or indirectly, it had on the digital acumen of the accountancy profession and that of HEIs.

Through the literature review, the first pattern identified was the shift of the accountancy profession to a solely online work environment during Covid-19. This heightened the need for accountancy professionals to possess and be able to use digital competencies in their daily lives as stipulated by SAICA. With SAICA differentiating between different elements within the digital acumen, only three basic user competencies are considered necessary by employers for new accountancy professionals to acquire, namely Microsoft Word, Excel and PowerPoint.

With Covid-19 affecting people differently, underprivileged students was effected immensely. With online learning requiring various technology tools to succeed, those who did not have the financial freedom as others did, had a slow start. With HEIs providing some relief, not everyone could keep up. There was also evidence of lack of participation from students in online learning platforms, unethical behaviour during tests and exams and not mastering of content, which slowed down the learning pace of the next academic year.

Lastly, the accountancy curricula are still being criticised for its lack of developing digitally savvy graduates, which is not a new pattern identified but yet still one that needs attention.

3.3 Develop a theory

The theory developed for this study is that due to Covid-19 the challenges to integrate the digital acumen into the accountancy curricula increased. Furthermore, the world-view, as influenced by Covid-19 through the literature review on the observations identified and through the patterns that emerged, was considered during the theory development. The world-view for this study was the digital acumen expected by employers, internationally and locally which is in line with SAICA's competency framework. As a result, this study investigated the effect of Covid-19 specifically on that of students within the HEIs and the accountancy curricula not adapting fast enough to the changing accountancy profession. This is to conclude on the aim of the argument to identify if the challenges created by Covid-19 could further delay the integration of the digital acumen, specifically those user competencies required by employers in line with SAICA, within the accountancy curricula.

4. FINDINGS AND DISCUSSION

The inductive reasoning approach allowed viewing a phenomenon, Covid-19, and the effects it had on the integration of digital acumen in the accountancy curricula by HEIs. As outlined in the methodology, specific literature was observed, which resulted in identifying different patterns that emerged. These patterns led to the development of a theory on whether the effects of Covid-19 resulted in hampering the integration of digital acumen in the accountancy curricula. Figure 1 gives a birds-eye view of the methodology applied in this article while discussing the theory development in more detail in the following sections.

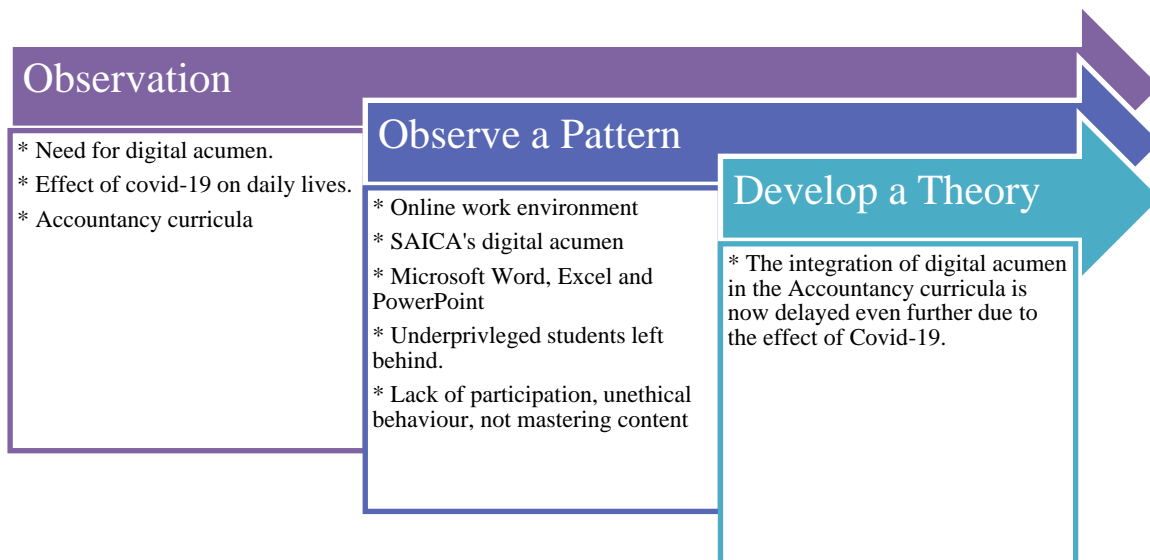


Figure 1: Research methodology applied

Source: Own compilation

4.1 Importance of the digital acumen

Based on the methodology applied for this article, the general perception on the importance of digital acumen within the accountancy profession as necessitated by SAICA and employers was investigated. Covid-19 added to the importance of digital competencies since accountancy professionals had to move from face-to-face daily tasks to a solely online working environment.

Accordingly, the findings confirm that technology has, is, and will always remain an important and integral part of accountancy professionals' daily working lives. Furthermore, the basic digital competencies expected by employers and listed as one of SAICA's digital acumens are Microsoft Word, Excel and PowerPoint.

4.2 Challenges faced by higher education institutions amidst Covid-19

With Covid-19 affecting every and all aspects of the daily lives of humankind, an in-depth analysis was done of the effect it had on the HEIs in South Africa. Not elaborating on the most common effects such as job losses, food shortages and housing issues, HEIs had to ensure that all students, privileged and underprivileged, receive their learning content in an online format, without

excluding anyone. This led to HEIs having to overcome several challenges. Equally so, highlighting the most common challenges faced by South African students in their daily struggles to survive and their means of accessing online learning content.

Firstly, students not having access to basic technological infrastructures, such as Wi-Fi, data, computers and uninterrupted power supply had to be evaluated. HEIs reacted to these challenges by providing such students with monthly data and lending them laptops to ensure their access to relevant learning materials. Academics responded by converting their learning content designed for face-to-face classes to online content. While somewhat overcoming these challenges, new challenges emerged.

There was an increase in unethical student behaviour leading to new challenges. Even with students passing their modules, academics soon realised that the basic concepts from the previous academic year were not mastered. This could be due to student's unethical behaviour during assessments. Consequently, academics had to spend more time on revising content that had to be mastered previously in the current year to ensure that students could successfully continue with the current academic year.

4.3 Accountancy curricula

International and local authors have emphasised that HEIs do not develop accountancy graduates that possess the necessary basic digital competencies required by the work environment (Albrecht & Sack, 2000; Barnes, 2017; Chisadza et al., 2021; Guthrie & Parker, 2016; Kirkham & O'Loughlin, 2020; Long et al., 2020; Stumke, 2017). With face-to-face classes transitioning to online platforms, academics had to rethink their way of teaching the basic content already offered. There is no evidence that new and innovative digital competencies were integrated in the accountancy curricula during the Covid-19 period.

All of the above-mentioned challenges, even though out of the control of HEIs, were affirmed when Covid-19 forced academics to re-assess the higher education system (Mbhiza, 2021). As with the re-evaluation of the higher education system, the integration of the continuously important digital acumen should be re-evaluated. Since it is not as simple as merely adding content to accountancy curricula, taking into consideration the resources and technology infrastructure needed by both students and academics should be considered to ensure the effective and efficient implementation of the digital acumen, which is sustainable after the Covid-19 pandemic.

This leads to the question: Did Covid-19 further add to the slow change in the accountancy curricula with regard to the digital acumen?

By reviewing these findings and identifying the most common patterns, the overall conclusion for this article and the final step in the inductive reasoning approach is that the integration of the vital digital acumen in the accountancy curricula is now delayed even further due to the effect Covid-19 had on the daily lives of all South Africans and accountancy students, specifically.

5. CONCLUSION

Even with the accountancy profession emphasising the importance and multiple benefits of accountancy graduates acquiring digital competencies, the accountancy curricula are still lacking in this regard. While SAICA and the business world encourage and demand more digital skills,

HEIs are struggling to teach their students basic technical concepts without considering the integration of digital acumen. Covid-19 is the exposition behind the lack of focus and emphasis placed on the integration of digital competencies. Throughout the pandemic, emphasis has been again placed on the ever-growing inequalities faced by many in South Africa. Focussing specifically on the HEIs, a lack of Wi-Fi, computers and even electricity, have contributed to limited or no new curricula content being introduced. This was done in an attempt to ensure that no student gets left behind, while the content moved to an online platform. Expecting students, with a lack of digital infrastructure and technical skills, to attempt digital integration effectively and efficiently in their modules may still be a tall order. Especially, while some academic concepts and technical skills were not mastered during the pandemic. The integration of digital acumen should therefore be viewed for the complex task that it is. The successful integration thereof is dependent on many variables, some caused by Covid-19 and some being conversant.

As a result of Covid-19, South African HEIs are faced with the conundrum of deciding to assist underprivileged students with their basic needs by ensuring they can complete the academic year or to adapt to the changing working environment.

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AN ANALYSIS OF PUBLIC EXPENDITURE AND ECONOMIC ACTIVITY IN SOUTH AFRICA

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ABSTRACT

The public sector can be efficient and effective in the decentralisation of spending decisions, which can promote economic activity and growth. Government intervention in the dispersal of economic activity has been less effective in developing countries. Local public projects have out-crowded national priorities in public spending. This paper analysed the relationship between public expenditure and South Africa's economic activity. Gross domestic product (GDP) was used as a measure of economic activity, with taxation used as a control variable. Public expenditure was measured in terms of public expenditure on education, health and infrastructure. Time series data spanning from the periods of 1990 to 2020 were used in the study. Various econometric techniques were conducted to reach the objective of the study. The unit root tests provided different orders of integration, $I(0)$ and $I(1)$. The ARDL results confirmed that there is a long-run relationship between economic activity and public expenditure. The ARDL further showed that the variables will return to equilibrium in the long run. Public expenditure as a determinant of economic growth, can also enhance economic activity in both the short and long run.

Keywords: Economic activity, public expenditure, South Africa

1. INTRODUCTION

In the new global economy, public expenditure has become a central subject for managing a country's economic activity (Bilgic & PırdaL, 2017; Nuru & Gereziher, 2021). Government intervention in the dispersal of economic activity has been less effective in developing countries. Various elements of the economic policy, such as the fiscal policy, can be utilised to influence the economic activity level, and the standard of living. The fiscal policy is the driving force behind the promotion of economic development, growth and activity (Kouassi, 2018). If the process of growth is self-sustained, the growth is endogenous (Kouassi, 2018). Yasin (2011) states that a source of stagnation or economic instability could be a result of a conventionally large public expenditure. Hence, the quality of public financial management institutions enables them to determine how effective public expenditure is, the efficiency with which revenues are raised, and the protection of public resources or the cost-effectiveness of public service delivery (Zouhar, Jellema, Lustig & Trabelsi, 2021).

Local public projects have out-crowded national priorities in public expenditure (Zhang & Zou, 1998). Ahuja and Pandit (2020) stipulate that although public expenditure could result in a higher gross domestic product (GDP), crowding-out effects can hinder the country's economic development. Hence, an increase in public expenditure at the expense of borrowings or an increase in taxes could result in a permanent effect on the consumer's income thereby decreasing public

consumption (Zhang & Zou, 1998). Individuals with low levels of educational attainment experienced major real income shocks during the Covid-19 pandemic, especially those highly dependent on labour income. The Covid-19 pandemic restrictions imposed on the country had a negative shock on the economy, leading to an instant decline in South African economic activity further leading to short and long-term economic effects (Arndt, Davies, Gabriel, Harris, Makrelov, Robinson, Levy, Simbanegavi, van Seventer & Anderson, 2020). Economic activity and growth can be promoted by the public sectors' efficient and effective decisions concerning the decentralisation of spending (Zhang & Zou, 1998).

In developing countries, public expenditure equity and fairness still remain a major concern, especially when the public sector fails to provide services and protect the disadvantaged members of society. Public sectors that are well-functioning and providing quality public services that are consistent with its population preference are a dire need. Promoting market-led growth while fiscal resources are managed prudently, is considered crucial to the mission of poverty alleviation (Shah, 2005). Sustainable and strong economic growth can be promoted through public expenditure, as it is a substantial component of economic policy used as an operative policy tool by governments (Ahmad & Loganathan, 2015). The sustainability of a country's fiscal policy and the implementation of sound fiscal policies can be reinforced by strong budget institutions. Through budgetary expansion, economic growth can be stimulated; moreover, the private sector's expenditure can be boosted (Ahmad & Loganathan, 2015).

The purpose of this study is to analyse the relationship between public expenditure and economic activity in South Africa from the period 1990 to 2020. Since the 1970s, public expenditure on education has increased slowly and erratically, although it varies widely between countries. Hence, education is a valid determinant of economic growth and activity (Muktdair-Al-Mukit, 2012). In developing countries, the health status also improved greatly, with expenditure on health increasing at a slower rate, typically 4% to 6% of the GDP (Roberts, 2003). Public expenditure is further important for infrastructure investment, especially in developing countries. It would be suitable for countries to invest in industry infrastructure where they have a comparative and competitive advantage (Nhlengethwa, Matchaya, Greffiths & Fakudze, 2021).

2. LITERATURE REVIEW

This section presents the Keynesian theory and Wagner's law of government expenditure. Several empirical reviews on the relationship between public expenditure and economic activity are outlined.

2.1 Theoretical literature

According to Rama and Sharma (2016); Nuru and Gereziher (2021), the Keynesian theory was developed and further used to analyse public expenditure and economic activities due to its advantage of managing government size-led development. Keynes views government spending as a ladder to economic growth, which encourages short and long-run economic growth (Ahuja & Pandit, 2020). Furthermore, Keynes singles out government expenditure as an outer source of economic activity where money is spent to produce income and employment.

Public expenditures are directed to human capital development such as education, infrastructure, and institutions (Kimaro, Keong & Sea, 2017; Gurdal, Aydin & Inal 2020). Moreover, domestic

consumption depends on the level of government spending and market forces operation. The Keynesian theory encouraged the government to embark on deficit spending to uplift investment, boost consumer spending and improve aggregate demand. Its focus was based on the expansionary fiscal economy to boost countries during the recession, particularly on infrastructure, unemployment benefits, and education. A disadvantage of the Keynesian procedure is that it may lead to a general increase in prices, given that the government is inactive in the protection of common welfare. Moreover, the economy takes a long time to stabilise. Limitations of the Keynesian theory paved the way for Wagner's Law to further establish a connection between government expenditure and economic growth. Adamu and Inuwa (2016) settled that, for sustained economic growth and quality of life in Nigeria, the Keynesian theory and fiscal policy must be supported by other policies so that the latter must not focus on demand-side instruments only, but should be used to protect common welfare. Furthermore, Maku, Tella and Fagbohun (2020) stated that Nigeria adopted a monetary policy since it was more significant to tackle common welfare challenges than fiscal or Keynesian theory.

Ahuja and Pandit (2020) proffer that in Wagner's Law, economic growth is emphasised as the principal determinant of an increase in public sector expenditure. Government expenditure is a significant determinant of economic growth, in Wagner's view. A growing economy could result in the creation of opportunities where additional tax can be generated, further leading to the creation of fiscal space for more government subsidies and disbursements. Furthermore, according to Wagner's Law, the expansion of the financial economy should be utilised in government activities (Ahuja & Pandit, 2020; Gurdal et al., 2020). In 1958, Wagner's Law developed three fundamental points in relation to the government expenditure theory. Initially, the expansion of social and welfare expenditure depended on the growth of the economy. Secondly, the government executed administrative and defensive functions to expand public activities and expenditures. Lastly, monopolistic establishments were acknowledged through government intervention (Ahuja & Pandit, 2020). Consequently, this study also employs Wagner's view, to analyse the relationship between public expenditure and economic activity in South Africa. Wagner's Law is an important contributing factor to the analysis of the relationship between public expenditure and economic activity.

2.2 Empirical literature

Empirically, public expenditure displays a variety of results. According to Karagianni, Pempetzoglou and Saraidaris (2019); Rasaily and Paudel (2019), and Nuru (2019), there are both short and long-run relationships between economic growth and government expenditure. Suffice it to say, government expenditure and economic growth have displayed comparable activities. Furthermore, Rasaily and Paudel (2019) reveal that capital and current expenditure should be used concurrently to maximise economic activities. Lupu and Asandului (2017) considered the Autoregressive Distributed Lag (ARDL) approach to analyse the relationship between government expenditures and economic growth in Eastern European (EE) states. From 1995 to 2014, there was a lasting joined relationship between government expenditure and economic growth. A total of eight selected EE countries concluded that public spending maximises economic growth. The study also found that country's GDP, has exceeded the ideal measurement. Furthermore, the public expenditure burden should be minimised while fostering open spending programmes.

Oyakhilome (2017) outlines that public expenditure is linked to the appreciation of the real exchange rate in Sub-Saharan African countries. Born, D'Ascanio, Müller and Pfeifer (2019) indicate that the exchange rate reactions are positively and negatively flexible towards public expenditure. Born et al. (2019) emphasise that alterations in expansionary public expenditure appreciated the real exchange rate. Furthermore, the real exchange rate decreases public expenditure.

Nuru (2020) studied the effects of public expenditure improvements in South Africa. The study revealed that a positive relationship existed between public expenditure and economic growth in South Africa between 1994 and 2014. Moreover, various outcomes are realised based on the type of fiscal expenditure improvement. Correspondingly, Nuru (2020) highlights an irrelevant quarterly exchange rate appreciation between 1994 and 2014 in public expenditure. Ajayi and Aluko (2016) also conducted a study in Nigeria between 1985 and 2014. The findings revealed no correlating relationship between government expenditure and economic growth during the period of the study.

Gurdal et al. (2020) study purports that, economic growth and government expenditure, have a bidirectional relationship, followed by a unidirectional causality between tax revenue and government expenditure. From 1980 to 2016, the relationship between public expenditure and economic growth in France, Japan Canada, Germany, Italy, USA, and the UK shows both short and long run connections between economic growth and tax revenue. These results were based on the taxation policies to aid economic growth activities. Ahuja and Pandit (2020) made use of panel data covering 59 countries, where public expenditure and economic growth were re-examined between the years 1990-2019. The results specified that there is a unidirectional relationship between economic growth and government expenditure. The findings supported the Keynesian framework which emphasised the importance of government expenditure in stimulating economic growth.

Zungu, Greyling and Sekome's (2020) study analysed the non-linear effects of government spending on economic growth. Ten Southern African Development Community (SADC) republics were selected between 1994 and 2017. The study applied the BARS theory and Panel Smooth Transition Regression (PSTR) to model government expenditure and economic growth. It was found that there is a nonlinear outcome between government expenditure and economic growth. A higher level of government expenditure reduces the economic growth of the starting point, particularly in the SADC region.

Kimaro et al. (2017) studied the government expenditure, competence, and economic growth of Sub-Saharan Africa low-income countries. The study utilised Generalized Methods of Moments (GMM) from 2002 to 2015. The study discovered that, an increase in expenditure boosts economic growth in Sub-Saharan Africa. This study views government spending as a cover that the private sector utilises to stabilise economic activities and functions. Furthermore, government spending is driven by well-being, infrastructure, and education. All those factors are crucial in improving private investment. Yasin (2011) conducted an empirical investigation based on panel data on Sub-Saharan Africa, looking at public spending and economic growth. The fixed and random effect techniques were employed, and the model was derived from the aggregate production function. The econometric techniques applied showed that government spending, private spending, and trade openness all have significant and positive influence on economic growth.

3. RESEARCH METHODOLOGY

3.1 Introduction

Literature was reviewed in the previous section, based on the Keynesian theory, Wagner's Law and empirical literature. This section elucidates the methodology used in this study.

3.2 Data

To accomplish the objective of the study, various econometric techniques were adopted. Data from 1990 to 2020 were utilised. The data were obtained from the South African Reserve Bank (SARB) and World Bank. Economic activity is the dependent variable in the model measured in terms of the GDP, with public expenditure being the independent variable measured in terms of public expenditure on education, health and infrastructure; and lastly, taxation used as the control variable.

3.3 Model specification

This paper employed the time series analysis to investigate the impact of public expenditure on economic activity in South Africa. The function and logarised form of the model used in the study is presented below:

$$GDP = f(PUBLIC\ EXPENDITURE, TAXATION) \quad (1)$$

$$LGDP_t = \beta_0 + \beta_1 PEXEDUCATION_t + \beta_2 PEXHEALTH_t + \beta_3 PEXINFRASTRUCTURE_t + \beta_4 TAX_t + \varepsilon_t \quad (2)$$

Equation 1 indicates the function form of the model, where economic activity is a function of public expenditure and taxation. In equation 2, β_0 represents the constant term; β_1 to β_4 represents the coefficients estimates; $LGDP$ represents the logarithm of GDP used; $PEXEDUCATION$ represents public expenditure on education; $PEXHEALTH$ represents public expenditure on health, $PEXINFRASTRUCTURE$ represents public expenditure on infrastructure and TAX represents taxation.

3.4 Estimation techniques

Various econometric estimation techniques were conducted to analyse the relationship between public expenditure and economic activity in South Africa. Time series data was used in this study to conduct the econometric estimation techniques. Time series includes a set of observations collected and recorded at a specific time period (Hamilton, 2020). With time series analysis, data points taken over time might have internal structures (such as trends or periodicity) (Li, Hinnov & Kump, 2019). The structure of data can be explained and the future variables can be predicted through the analysis of time series, as it studies the path observations of time series (Siami-Namini & Nami, 2018). Time series data analysis is referred to as a sequence of data collected through time (Rhif, Farah, Martinez & Sang, 2019). It is effective in investigating the variability of the variables.

3.4.1 Stationarity/Unit root test

The unit root test objective is to ensure that the variables used in the study are not integrated into a higher order (Chong, Liew & Suhaimi, 2012). Furthermore, to avoid problems of spurious regression, the unit root tests are included to check the stationarity of the variables (Yücel & Köseoğlu, 2020; Inglesi-Lotz, 2016). When the series is not stationary, the spurious regression problem will occur (Yücel & Köseoğlu, 2020). Hence, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were conducted to attain the objective. The tests were based on the null hypothesis of non-stationarity. According to Phillips and Perron (1988), the ADF test adjusts the Dickey-Fuller (DF) test to take care of possible serial correlation. To take care of the serial correlation in the error terms, the PP test makes use of nonparametric statistical methods without adding lagged difference terms.

The ADF and PP unit root tests are conducted and implemented on the time series data, as the series could be exposed to unit root problems (Kharusi & Ada, 2018). Rhif et al. (2019) state that the time series (y_t) data is stated to be stationary for all t when:

$$E(y_t) = E[(y_{t-1})] = \mu \quad (3)$$

$$Var(y_t) = \gamma_0 < \infty \quad (4)$$

$$Cov(y_t, y_{t-k}) = \gamma_k \quad (5)$$

Where E represents the expected value defined as the ensemble average of the quantity, Var refers to the variance and Cov the covariance, respectively. Rhif et al. (2019) states that stationarity can further be referred to as the covariance stationarity, weak stationarity, or second-order stationarity.

The level of integration helps in determining whether data are stationary or nonstationary and this level of integration is presented by $Y_t \sim I(d)$ (Lutkepohl, 1993), where d represents the order of integration. The decision rule for the ADF and PP stationarity tests are the same. In the ADF and PP unit root tests, if the test statistic is larger than the test critical values at a specific significance level, then the null hypothesis cannot be rejected. Conversely, if the corresponding test statistic is below the test critical values, then the null hypothesis of non-stationarity is rejected.

3.4.2 ARDL Bound Cointegration test

Econometric techniques have been proposed to examine the existence of a long-run cointegrating relationship amongst variables (Sanusi, Hassan & Meyer, 2019; Ndlovu, 2013). Modelling short and long-run dynamics in a system, the concept cointegration provides a sound methodology (Dunis & Ho, 2005). The ARDL model consists of both lagged values of the independent variables (distributed lag) as one of the explanatory variables and lagged values of the dependent variable (autoregressive) (Kharusi & Ada, 2018; Khan, Teng and Khan, 2019). Different lags can be selected for the independent and dependent variables in the ARDL model (Khan et al., 2019). The advantage of using the ARDL test is its application on variables that are stated to be integrated into both order zero $I(0)$ and order one $I(1)$ (Chong et al., 2012; Kharusi & Ada, 2018). The ARDL further allows for different optimal lags to be used (Kharusi & Ada, 2018). The ARDL is based on the AIC (Akaike information criterion), automated lag selection. The no cointegration null hypothesis is examined against the alternative that there is cointegration. The null hypothesis can be rejected in favour of the alternative hypothesis, only if the computed F-statistics exceeds its upper bound critical values (Pesaran, Shin & Smith, 2001). The ARDL cointegration bounds

test is employed to check the presence of a long-run relationship between economic activity and the independent variables used in the model specification.

The short-run relationship can also be determined by the ARDL approach and the error correction term (ECT). Economic models should always have a negative error correction term (ECT) (Brooks, 2008). The ECT indicates whether disequilibrium can be resolved. According to Engle and Granger (1987), disequilibrium from one period is corrected in the next period. Hence, error correction mechanisms have been used widely in economics.

3.4.3 Diagnostic and stability tests

There are various econometric tests that can be conducted to check the problem of heteroscedasticity and to scrutinise the consistency of the model used in the study (Khan et al., 2019). In econometric analysis, it is important to analyse and examine the extent to which regression errors exhibit departures from normality (Pesaran, 2015). For many statistical tests, assessing data normality is a prerequisite (Mishra, Pandey, Singh, Gupta, Sahu & Keshri, 2019). According to Astivia and Zumbo (2019), the serial correlation Breusch-Godfrey test attempts to detect whether or not there is correlation between consecutive rows in the data. The two estimated variances are said to differ as a result of fluctuations in the sample; however, this is when the null hypothesis is stated to be correct (Đalić & Terzić, 2021).

Farrar (2018) states that the testing of heteroskedasticity plays an important role in model adequacy diagnostics in any linear regression application. According to Đalić and Terzić (2021), the appropriate heteroskedasticity test to use depends on the type of data used. Heteroskedasticity models commonly assume that the error variance is related to one or more of the explanatory variables (Farrar, 2018). The heteroskedasticity tests depend on whether the error variance is some function of the regressor (Đalić & Terzić, 2021). Heteroskedasticity in the context of OLS can be induced either through a set of predictors measured or through the way in which the dependent variable is measured (Astivia & Zumbo, 2019). The ARCH (autoregressive conditionally heteroskedastic) model is a non-linear model usually applied to raw data (Gujarati, 2004). The ARCH test can also be used to test for autocorrelation in squared residuals (Brooks, 2008; Gujarati & Porter, 2009). The CUSUM and the CUSUM of squares are conducted to determine the stability of the coefficients (Khan et al., 2019).

4. RESULTS AND DISCUSSION

4.1 Stationarity/Unit root test

The formal stationarity results are provided in table 1. The results for both the ADF and PP test results are indicated.

Table 1. Stationarity/Unit root test results

| Series | Model | LEVEL | | 1 ST DIFFERENCE | |
|--------|---------------------|--------------------|-------------------|----------------------------|-------------------|
| | | ADF t-statistic | PP t-statistic | ADF t-statistic | PP t-statistic |
| Lgdp | Intercept | -2.152286 | -2.027594 | -5.425128*** | -5.420644*** |
| | Trend and intercept | -1.967118 | -1.181394 | -5.890377*** | -7.838064*** |
| | None | -1.637164* | -1.637164* | -5.523109*** | -5.536106*** |

| Series | Model | LEVEL | | 1 ST DIFFERENCE | |
|-------------------|---------------------|--------------------|-------------------|----------------------------|-------------------|
| | | ADF t-statistic | PP t-statistic | ADF t-statistic | PP t-statistic |
| Pexeducation | Intercept | -1.094061 | -2.742725* | -7.588824*** | -7.721820*** |
| | Trend and intercept | -2.584293 | -2.744350 | -7.456962*** | -7.618130*** |
| | None | 0.385807 | 0.573376 | -7.636536*** | -7.785936*** |
| Pexhealth | Intercept | -1.285995 | -1.285995 | -4.866927*** | -4.855501*** |
| | Trend and intercept | -2.079404 | -2.079404 | -4.776122*** | -4.763055*** |
| | None | 1.054546 | 1.068290 | -4.816293*** | -4.816293*** |
| Pexinfrastructure | Intercept | -4.779664*** | -5.843051*** | | |
| | Trend and intercept | -4.655976*** | -5.873608*** | | |
| | None | -4.818452*** | -4.811767*** | | |
| Tax | Intercept | -3.519004** | -2.823616* | -4.390977*** | -7.831929*** |
| | Trend and intercept | -3.499916* | -2.824734 | -4.360117*** | -7.523941*** |
| | None | -0.141697 | -0.211737 | -4.494894*** | -7.894488*** |

Note: *Reject the null hypothesis at 10%; **at 5% and 10%; ***at 1%, 5% and 10%
Authors' own computation.

The unit root test results in table 1, indicate that the variables were differenced to induce stationarity. It is evident that the GDP, public expenditure on education and public expenditure on health variables are of $I(1)$ and significant at 1%, for both the ADF and PP unit root tests. The control variable, namely, taxation, stationarity is also induced at first difference, which shows that the four variables are of $I(1)$ and significant at 1%. However, for public expenditure on infrastructure stationarity is at levels for both the ADF and PP unit root tests, which shows that the variable is of $I(0)$ and significant at 1%.

4.2 ARDL cointegration bounds results

The ARDL cointegration bounds results are indicated in table 2, followed by results from the long and short-run parameters.

Table 2: ARDL cointegration bounds results

| Test statistic | Value | Significance level | Critical value bounds | |
|----------------|----------|--------------------|-----------------------|--------------------|
| | | | Lower bound $I(0)$ | Upper bound $I(1)$ |
| F-statistic | 4.969706 | 10% | 3.03 | 4.06 |
| k | 4 | 5% | 3.47 | 3.47 |
| | | 2.5% | 3.89 | 5.07 |
| | | 1% | 4.4 | 5.72 |

Authors' own computation.

The F-statistic value of 4.969706 is greater than 3.47 at $I(0)$ and 3.47 $I(1)$ critical value bounds. The null hypothesis of no equilibrating relationship is rejected and the alternative hypothesis that there is an equilibrating relationship among the variables at a 5% significance level is accepted.

Table 3: Long-run parameters

| Variable | Coefficient | Std. Error | T-statistic | Probability |
|-------------------|-------------|------------|-------------|-------------|
| Pexeducation | -2.039889 | 0.792018 | -2.575559 | 0.0196** |
| Pexhealth | 1.828163 | 0.774573 | 2.360222 | 0.0305** |
| Pexinfrastructure | 0.028166 | 0.017486 | 1.610808 | 0.1256 |
| Tax | -0.650469 | 0.270313 | -2.406352 | 0.0278** |

**denotes rejection of the hypothesis at the 0.05 level

Authors' own computation

Table 3 long-run results indicate that economic activity is negatively influenced by public expenditure on education and taxation. When the government increases taxes to finance increasing education expenditure, the negative tax effect can offset the positive expenditure on education. Therefore, the positive growth effects from increased public expenditure on education can be altered by taxation (Dastidar, Mohan & Chatterji, 2012). Public expenditure levels on education do not bear a strong relationship to primary enrolment and completion rates (Roberts, 2003). Public expenditure on education is not a sufficient condition for economic growth; however, it is necessary (Dastidar et al., 2012). Public expenditure on health and public expenditure on infrastructure, both have a positive impact on economic activity. These findings are consistent with those of Nuru (2020), Karagianni et al. (2019); Rasaily and Paudel (2019). Expenditure on health leads to the formation of human capital and such can positively contribute to the country's economic activity (Goel & Garg, 2011). A leading role by the government in the economic activity of a country can encourage an increase in private and public investments (Newfarmer, Page & Tarp, 2019). Taxation negatively influences economic activity. In a country, taxes are the cost of living that citizens have to pay, which is important for economic activity, development and planning (Saqib, Ali, Riaz, Anwar & Aslam, 2014). Citizens' income can also be permanently affected by an increase in taxes, thereby resulting in a decrease in public consumption (Zhang & Zou, 1998). Public expenditure on education, public expenditure on health and taxation are found to be statistically significant.

Table 4: Short-run parameters

| Variables | Coefficient | Standard error | T-statistic | Probability |
|----------------------|------------------|-----------------|------------------|-----------------|
| D(PEXEDUCATION) | -1.696159 | 0.409874 | -4.138242 | 0.0007** |
| PEXHEALTH | 1.348540 | 0.388812 | 3.468358 | 0.0029** |
| D(PEXINFRASTRUCTURE) | 2.73E-05 | 0.011078 | 0.002468 | 0.9981 |
| D(TAX) | -0.358188 | 0.121958 | -2.936977 | 0.0092** |
| ECT | -0.737648 | 0.133141 | -5.540329 | 0.0000** |

**denotes rejection of the hypothesis at the 0.05 level

Authors' own computation

The short-run results are presented in table 4, revealing that public expenditure on education and taxation bear negative signs in the long-run. The error correction term (ECT) is important when it comes to short-run analyses, as it helps determine whether the model will be able to return to equilibrium. The estimated speed of adjustment is -0.737648 and is highly significant, which implies that it will take economic activity about 73.76% each year to get back to equilibrium and for disequilibrium to be solved.

4.3 Diagnostic and stability test results

To make earlier inference in the model building process valid, diagnostic tests are conducted. The diagnostic test results are summarised in table 5. Stability tests are illustrated by figure 1 and 2, namely, the CUSUM test and CUSUM test of squares test graph.

Table 5: Diagnostic test results

| Tests procedure | Null hypothesis: H_0 | t-statistic | P-value | Conclusion |
|----------------------------|------------------------------------|-------------|----------|--|
| Normality Jarque-Bera test | Normally distribution of residuals | 1.824354 | 0.401649 | Accept H_0 , provided that the PV (0.401649) > L.O.S (0.05). This confirms the normal distribution of the residuals. |

| Tests procedure | Null hypothesis: H_0 | t-statistic | P-value | Conclusion |
|--|------------------------|-------------|---------|---|
| Breusch-Godfrey Serial Correlation LM Test | No serial correlation | 12.79948 | 0.0771 | Accept H_0 , presented that the PV (0.0771) > L.O.S (0.05). This confirms there is no serial correlation. |
| Heteroskedasticity Test: ARCH | No heteroskedasticity | 0.829778 | 0.3623 | Accept H_0 , presented that the PV (0.3623) > L.O.S (0.05). This confirms there is no heteroskedasticity. |

Authors' own computation

A summary of the diagnostic test results is presented in table 5. The Jarque-Bera normality test results have a t-statistic of 1.824354 and a probability value (p-value) of 0.401649, which is evident that the null hypothesis cannot be rejected, as the p-value is greater than the Least of Squares (L.O.S) of 0.05. Hence, there is a normal distribution of the error terms. The Breusch-Godfrey Serial Correlation LM Test has observed R-squared of 12.79948 and a probability chi-square of 0.0771, which is the p-value. The p-value of 0.0771 is greater than the L.O.S of 0.05, implying that there is no serial correlation. The ARCH heteroskedasticity test was also performed, providing an observed R-squared of 0.829778 and probability chi-square of 0.3623. The p-value of 0.3623 exceeds the L.O.S of 0.005, meaning we accept the null hypothesis of no heteroscedasticity in the model.

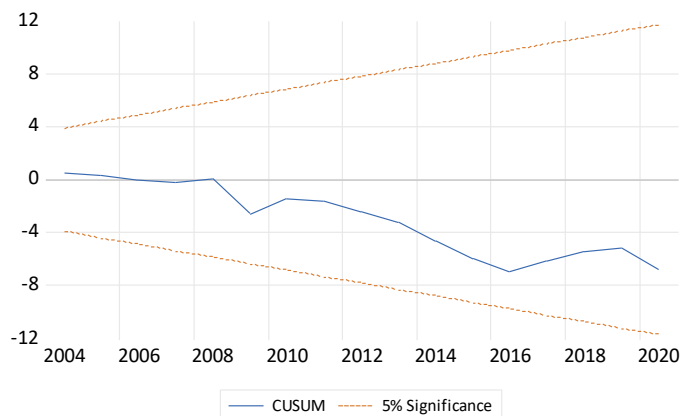


Figure 1: CUSUM test graph

Authors' own computation

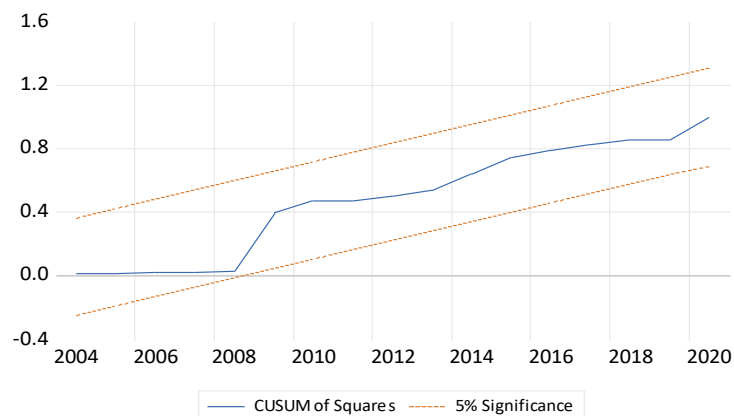


Figure 2: CUSUM of squares test graph

Authors' own computation

Figure 1 shows the CUSUM test graph, which indicates the stability of the model, as the CUSUM line moves within the critical lines of 5% significance level. Figure 2 presents the CUSUM of squares test graph, which also indicates that the model is stable. This is illustrated by the movement of the CUSUM of squares trend, which moves with the critical lines of 5% significance.

5. CONCLUSION AND RECOMMENDATIONS

The study has analysed the relationship between public expenditure and economic activity in South Africa. Time series econometric analyses were used on annual data from the periods of 1990 to 2020. The econometric methodology applied in this study was the ARDL. The ADF and PP unit root tests showed that the variables were integrated into orders 0 and 1. The ARDL cointegration bounds test showed that the variables in long run all move together. The main findings further showed that economic activity is negatively affected by public expenditure on education and taxation, while positively influenced by public expenditure on health and public expenditure on infrastructure. According to Wagner's Law, public expenditure is an important determinant of economic growth. When there is an increase in economic growth and activity, there can be an improvement in the standard of living. It is, therefore, recommended that the government should take a leading role in the economic activity of the country, ensuring proper utilisation of state resources and funds. Proper utilisation and monitoring of states' resources and funds will help in the adequate management of public expenditure, whether expenditure in education, public health services or investment in infrastructure which will further lead to economic activity, development and growth.

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EXPLORING THE ENTREPRENEURIAL INTENTIONS OF UNEMPLOYED B. COM GRADUATES AT A LOCAL MUNICIPALITY LEVEL IN SOUTH AFRICA

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ABSTRACT

This study focusses on the entrepreneurial intentions of unemployed B. Com graduates in Matlosana Local Municipality, North-West Province, South Africa. Studies on entrepreneurial intentions have been gaining attention in recent years due to the growing youth unemployment trend globally. A qualitative research approach and exploratory-descriptive research design were used to conduct the study. The population of the study consisted of all unemployed B. Com graduates within the Matlosana Local Municipality. Purposive sampling was used, and saturation was at 10 plus 2 participants. Data was collected through interviews, recorded, and transcribed. The data analysed using the eight steps of qualitative data analysis as described by Anderson. Thematic data analysis was used and key themes that emerged were entrepreneurship intention associated factors; support system; participants' nature or attributes; attitudes of participants when starting a business; culture associated with entrepreneurial intention; and prioritisation of entrepreneurial programmes. The study revealed that factors, such as personal, family, lack of emotional support and financial challenges are key factors associated with entrepreneurial intentions. In this study, it was concluded that, the intentions of B. Com graduates to become career entrepreneurs depend on the availability of career programmes, prioritisation of entrepreneurial studies in school, motivation of community members and provision of financial support to B. Com graduates after they complete their study.

Keywords: Entrepreneurial intention, unemployment, B. Com graduates, local municipality area, South Africa

1. INTRODUCTION

Studies on entrepreneurial intentions have been gaining attention in recent years (Hou, Su, Lu and Qi, 2019:1) due to the growing youth unemployment trend globally. Israr and Saleem (2018:1) opined that entrepreneur are regarded as the backbones of global economies. Due to their ability to actualise innovative ideas that foster economic growth. Entrepreneurship begins with an entrepreneurial intention. Singh and Onahring (2019:1) define entrepreneurial intention as a decision to start a new business venture while Thompson (2009:669) considers entrepreneurial intention as “self-acknowledged conviction by a person who intends to set up a new business venture and consciously plan to do at some point in the future”. But Paul and Shrivastava (2015:206) maintain that promoting entrepreneurial activities in a country has the potential of contributing to job creation, industrialisation, wealth creation, facilitating innovation and

economic growth. Entrepreneurial activities have the potential of alleviating unemployment of unemployed graduates in a country such as South Africa.

This article focuses on entrepreneurial intentions of unemployed B. Com degree holders and not on graduates in general. In this article, it was assumed that entrepreneurial intentions of B.com graduates are higher when compared to graduates in general because the commercial nature of their qualification. Hence, the article aims to explore constructs in the entrepreneurial intentions of B. Com graduates at a local municipality area. In this article, the Process-Oriented Model of Structured Behaviour, and the Planned Behaviour Theory (Windapo et al., 2018:1276; Meyer and Synodinos, 2019:1; Ezeuduji and Ntshangase, 2017:144) was used as to support the researchers' views. A qualitative research approach was used to explore the existing gaps in entrepreneurial intentions of B. Com graduates. The use of these theoretical perspectives was motivated by their suitability in explaining the intentions of an individual's when undertaking a particular activity (Molale, 2019:57). As such, the models can be used to explain the constructs that were associated with an individual's intention to start a business and how they engage with the business process (Meyer, 2018:2) to realise their intention.

2. LITERATURE REVIEW

Choo and Wong (2009:1) pointed out that, an individual commitment plays a crucial role in the person starting up a business and the commitment develops from an intention. As such, identifying the business intention of an individual could enable a person to explore the dynamics of a business venture creation process. Karimi et al., (2013:204) are of the view that, countries around the world are developing policies that foster entrepreneurship as a solution to unemployment challenges.

But as researchers' interest in the field of entrepreneurship is on the rise, so is that of entrepreneurial intention which is one of the constructs of interest under entrepreneurship (Staniewski and Awruk, 2016:233; Staniewski and Szopinski, 2015:603). Israr and Saleem (2018:3) maintain that the focus on entrepreneurial intention is for people to actualise their entrepreneurial endeavour as an intention is consider a driver for new business creation. Furthermore, Israr and Saleem (2018:3) posit that, there exist a significant difference in entrepreneurial intentions among graduates in different countries attributed to established entrepreneurial culture (Boissin, Branchet, Emin and James, 2009:101).

Thus, entrepreneurial culture influences entrepreneurial intention and graduate from universities maybe be influenced by a country entrepreneurial culture. Meyer and de Jongh (2018:287) in a study found that increasing business activities in a nation has a direct correlation with rising national income and wealth creation of individual households. Furthermore, Urban and Kujinga (2017:234) maintain that "today's economic growth drivers of a nation are not the big companies but small businesses". Therefore if B. Com graduates who successfully actualised their entrepreneurial intentions may reduce unemployment among youths, increase household income and wealth.

Several studies have established the emergence of new businesses with increasing entrepreneurial intentions of graduate and awareness in different countries globally (Ndofirepi, Rambe and Dzansi, 2018:2; Ndofirepi and Rambe, 2017:191; Maziriri, Tafadzwa, and Nzewi, 2019:111). Given the potential benefits in terms of entrepreneurial intentions, Ramasimong (2019:3) and Molale

(2019:57) hypothesises that, graduates with B. Com degrees finds it easier to translate their entrepreneurial intentions into actual business venture compared to graduates in general. Furthermore, Herrington and Kew (2015:16) maintain that in a country such as South Africa, where the rate of unemployment is very high even among university graduates, entrepreneurial intentions of B. Com graduates need to be converted into actual business ventures. Notwithstanding the role of entrepreneur to create jobs, there are many B. Com graduates who have not convert their entrepreneurial intentions to actual business ventures and create real jobs (Moabi, 2019:3).

2.1 Concept of entrepreneurial intention

According to Tau (2012:19), intention informs the future behaviour or action of an individual and B. Com graduates are assumed to have business intentions when they study for a commercial degree. Hence, intention in these articles described a thinking, aim or plan to do something in future while taking the necessary steps in developing one's ability to realise the intention. Therefore, intention is a commitment to perform an action now or in future. Thompson (2019:676) affirms this explanation when describing an entrepreneurial intention as "a self-acknowledged conviction by a person who intends to set up a new business venture and consciously plans to do so at some point in the future". However, Arrighetti et al., (2016:838) define entrepreneurial intention as a state of mind, directing a person's attention and action towards self-employment as opposed to organisational employment.

Scholars, such as Nguyen (2018:1), consider entrepreneurial intention as the belief that one display certain behaviour in future. The commonalities in the definitions are that: entrepreneurial intentions are influenced by the background of an individual, motivations, attitudes, employment history, community support and processes to follow when starting a new business. Liñán, Rodríguez-Cohard and Rueda-Cantuche (2011:197) opined that personal factors, coupled with perceived behavioural control, are the two most relevant factors in explaining entrepreneurial intention. While Bagheri and Pihie (2015:15) state that personal factors play a crucial role in influencing people's entrepreneurial intention.

Altinay, Madanoglu, Daniele and Lashley (2012:489) maintain personal factors are the highest determinant of entrepreneurial intention. However, Remeikiene, Startiene and Dumciuviene (2013:299) stated that, personal factors are among key determinants of entrepreneurial intention. But Franke and Lüthje (2004:269) have previously argued that the personality of a student or graduate is key in their entrepreneurial intention. However, Estay, Durrieu and Akhter (2013:243) purport that, personal factors, such as risk-taking ability, self-confidence, autonomy, internal locus of control and innovativeness remains the most significant determinants of entrepreneurial intentions of B. Com graduates. Self-confidence is regarded a valuable individual asset and a key personal success because it makes people happier, easier to convince others (rightly or wrongly) and improves the individual's motivation to undertake projects as well as persevere in the pursuit of his or her goals.

Although, Gürol and Atsan (2006:25) define risk-taking as a propensity of an individual to reveal risk-taking or risk avoidance when confronted with risk situations, Asamani and Mensah (2013:113) are of the view that students with entrepreneurial intentions have significantly higher scores in risk-taking compared to those without entrepreneurial intentions. Altinay *et al.*

(2012:489) affirm that the needs for achievement are another key factor that influences individual entrepreneurial intentions. Studies have shown that, students with a high need to achieve, demonstrate high entrepreneurial intentions (Varghese and Hassan, 2012:303) and the propensity among B. Com graduates are higher compared to graduates in general. Locus of control is “an individual's perception of ability to influence events in life” (Altinay *et al.*, 2012:490) and Varghese and Hassan (2012:304) further explained that students with high internal locus of control are expected to become entrepreneurs compared to those with external locus of control.

Ghazali, Ibrahim and Zainol (2012:85) define innovativeness as creating new products, new methods, or new business structures. This personal factor is considered crucial in entrepreneurial intention and autonomy is considered one of the fundamental drivers of entrepreneurship. Thus, behavioural theories form the basis for the conceptualisation of this article to investigate the entrepreneurial intentions of B. Com graduates in South Africa.

2.2 Empirical evidence of entrepreneurial intentions

Trivedi (2017:1240) is of the view that there is strong evidence to show that business attitudes, transparent ethics and independent practices have a positive relationship with the entrepreneurial intention B. Com graduates. Similarly, Sun *et al.* (2017:18) suggest that B. Com graduates with higher levels of perceived behavioural control or effort, are more likely to exploit business opportunities than those with low levels of business independence. Galvão, Ferreira and Marques (2018:18) examined a set of business student and the impact on a university business development and found that business education enhances students' entrepreneurial skills, understanding and ethics. Trivedi (2017:1239) argues that B.com students are motivated by factors, such as money, gap in the market, the need for change, livelihood, flexibility in time, job satisfaction as an employee and declining access to quality services.

Usman (2019:1) considers entrepreneurship as one of the economic concepts that has no standard definition due to the many facets and professionals involved. Bazan *et al.*, (2020:4) found that entrepreneurs with an initial business intention, report a positive change in actualising their ambition compared to those without entrepreneurial intentions but opportunistic entrepreneurs. Zhang and Cain (2017:794) describe entrepreneurship as a way of thinking, consulting, and doing things based on opportunities. Studies on career entrepreneurs have shown that lack of finance is considered a major obstacle for start-up ventures (Kelly, 2017:933) and financing a new business can come in the form of gifts, family support, loans from friends or loans from interest-bearing financial institutions. Lucas *et al.* (2018:450) suggest that increasing cash flow and business education fees and reducing corruption among economic actors in the country are key determinants for increasing business activities and growth of entrepreneurship. Cash flow is directly linked to entrepreneurship (Fletcher, 2017:181; Gaikwad, 2017:3431). Durdella (2017:400) is of the view that potential entrepreneurs are required to raise money in some areas as they do not fully pay for the new business on their own.

2.3 Gaps in entrepreneurial intentions

The concept of entrepreneurial intention is closely aligned to the definition of entrepreneurship and models used to explain and measure entrepreneurship are similar with those of entrepreneurial intentions. Several studies have been conducted on entrepreneurship; however, there are gaps in

entrepreneurship studies that focus on entrepreneurial intentions, the structure of the measurement instrument and the dimensionality in various contexts. According to Israr and Saleem (2018:12), improving the image of entrepreneurial activities as a plausible career area could positively influence students' entrepreneurial intentions. Furthermore, improving the image of entrepreneurial activities can also influence the career choice of prospective university students thus, making them to choose entrepreneurship as a career. This could also help in increasing the growth of the economy through innovation and job creation. On the other hand, Gelaidan and Abdullateef (2017:54) revealed that dependence can be affected by the adverse conditions faced by people.

In a study conducted by Asghar *et al.* (2019:58), participants noted that the need for the public and the government to support entrepreneurial intentions was an opportunity for those seeking to enter the business. Similarly, a study conducted by Goyanes (2015:109) in Spain confirmed that structural support had a significant impact on the entrepreneurial intention of students. Such entrepreneurial intentions enable students to engage in entrepreneurial activities upon graduation. According to Turulja *et al.* (2020:2716), beside informal support, literature also recognises formal support for individuals in fostering entrepreneurial intentions. Sperber and Linder (2019:533) maintain that “*formal networks are embedded in a diverse group of actors within an economic area to which formal relations are set up*”. Gelard and Saleh (2011:10707) state that the formal network is related to experienced consultants, agencies related to entrepreneurship activities, customer and supplier networks, and other entrepreneurs. Goyanes (2015:109) maintains various studies that focused on barriers to entrepreneurship revealed legislation as one of the crucial structural barriers. The author further explains that if the general perception of structural barriers is negative, potential entrepreneurs may show a lower tendency to start their business. Despite that, a favourable perception of the political and regulatory conditions governing entrepreneurship can lead to a higher entrepreneurial intention (Goyanes, 2015:109).

The literature review in this study focuses on the concept of entrepreneurship and the link with entrepreneurial intentions. However, the appropriateness and application of these concepts to challenges experienced by B. Com graduates within Matlosana Local Municipality need further examination due to the nature of the Municipality. Thus, there is need to conceptualise theories that can be used to explain entrepreneurial intention in a conceptual framework to guide this study. Such conceptual framework is important because it also considers, key role players, who are unemployed B. Com graduates with entrepreneurial intentions and local government (municipality).

2.4 Conceptual framework

The Process-Oriented Model of Structured Behaviour and the theory of planned behaviour as used in this article focuses on the concepts of behavioural beliefs, attitudes towards behaviours, Normative beliefs, Subjective norms, control beliefs and perceived behavioural control as it relates to an individuals' intentions towards a particular activity in a changing environment. While the theory of Planned Behaviour expresses the intentions and speculate how people wish to act and how hard individuals plan to make effort to get out of a certain character (Ajzen, 1991:179). The theory of planned behaviours as explained by Krueger, Reilly and Carsrud (2000:411) is a purpose-based model that measures the reliability of business ethics. Ajzen (1991:179); Bird (1988:442)

and Covin and Slevin (1989:75) state that the purpose of business is a strong predictor of an organised behaviour. Hence, the concept of organised behaviour provides a coherent basis to predicts and provide a foundation for a better understanding of a business objective (Krueger et al., 2000:411). The concept of organised behaviour finds its root in social consciousness and states that “human behaviour is planned and preceded by objectives aimed at that behaviour”.

Darmanto and Juliari (2018:2) surveyed 701 graduates in South Africa for their motivations and barriers to actualise their entrepreneurial intentions and business goals. The study concludes that weaker business intentions of South African students are compounded by barriers, such as lack of funding, incompetence of graduates, lack of government support, business risks as well as depressed economy and high levels of criminality. As such, the Planned Behaviour Theory (PBT) has been successfully used to predict and explain a wide range of behavioural goals, objectives and the moral success of such behaviours depends on both the purpose and the ability of an individual. Krueger et al., (2000:412) view entrepreneurship as a purposeful and organised behaviour. Therefore, the combination of Process-Oriented Model of Structured Behaviour and Planned Behaviour Theory provides a solid foundation for the exploration of the entrepreneurial intentions of B. Com graduates in a local Municipality area in South Africa. These theories were a suitable model in contributing to the understanding of the concept of entrepreneurial intentions.

As such, a conceptual framework based on constructs from the *Process-Oriented Model of Structured Behaviour and* theory of planned behaviour was used to conceptualise an entrepreneurial intention of B. Com graduates modelled from Ajzen (2012a:438) as shown in Figure 1. Although literature has established a strong support for the use of ethical theory to explore attitudes of unemployed graduates’ behaviours and values, but behaviour control towards entrepreneurial intentions must be explored in a variety of contexts. But Tornikoski and Maalaoui, (2019:536) are of the view that the use of behaviour theories to explore the possibilities of graduate’s intentions to realise an intention especially at a local level is plausible given contextual behavioural variation globally.

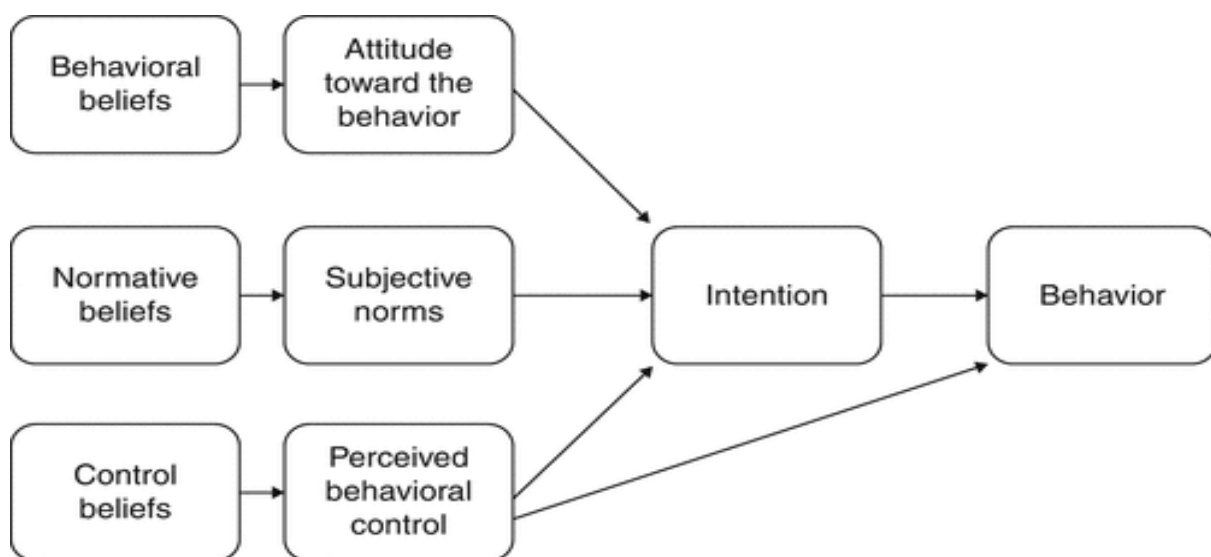


Figure 1: Conceptualisation of entrepreneurial intentions

Source: Adopted from Ajzen (2012a: 438)

Furthermore, Stone, Jawahar and Kisamore (2010:35) used the Planned Behaviour Theory to predict behaviour and deception among B. Com graduates. The study revealed that the Theory of Planned Behaviour was a powerful indicator of attitudes, social norms, and behavioural perceptions. In addition, Engle *et al.* (2010:471) used the concept of structured ethics to capture business objectives among B. Com graduates in 12 countries. The results revealed that the Theory of Planned Behaviour strongly predicted business intentions among graduates in these countries.

Ajzen, Nicholas, Sheikh and Cote (2011:101) explored the relationship between behavioural prediction and information and found three indicators (attitudes, social norms and visible behavioural controls) predicted university's students' intentions towards entrepreneurship. These reviews established a strong support for Process-Oriented Model of Structured Behaviour and theory of planned behaviour to explore attitudes on behaviour, compliant values, and visible behaviour control on B. Com graduates' entrepreneurial intention in a variety of contexts. Thus, the Process-Oriented Model of Structured Behaviour and theory of planned behaviour was considered appropriate in this study and provides strong explanations for B. Com graduates entrepreneurial intentions at a local municipality area.

2. METHODOLOGY

In this study, the research method followed included the research design, population, sampling process, sampling method, research instrument and data collection process, data recording, trustworthiness and data analysis. Three data analysis strategies were pursued which include extensive review of literature, theory-building and thematic analysis. The commencement strategy was an extensive exploration of relevant literature, followed by a thematic analysis process to identify common recurring issues which was used to support the theory-building process.

The constructivist research philosophy was followed and participants' view of the phenomenon under exploration was key to the approach. Constructivist researchers often address the process of interaction among individuals and this paradigm was best suited for this study. The approach used was qualitative which allows for the exploration of a phenomenon for in-depth understanding (Creswell, 2014:18). Qualitative research approach was considered appropriate since the article focussed on exploring entrepreneurial intention concepts (attitudes, behaviours, cultural norms, beliefs, control, and perceptions) associated with the entrepreneurial intentions of B. Com graduates (McCusker and Gunaydin, 2015:537).

3.1 Research design

An exploratory summative research design was adopted in this study as explained by Polit and Beck (2017:40). Qualitative summative research enables a researcher to explore and describe a research problem from a broad understanding viewpoint. Researchers conducting exploratory and summative research can collect data through interviews. Gray, Grove and Sutherland (2016:71) state that exploratory summative research is conducted to propound solution to an issue or phenomenon that requires a solution or in-depth understanding. The population for this study consists of all unemployed graduates living within Matlosana Local Municipality area. This population was then categorised into B. Com graduates and graduates in general (excluding B. Com graduates).

3.2 Sampling method

A pilot interview was conducted with two unemployed B. Com graduates before the final interview to ensure the suitability of the instrument. Once the piloting was completed, there were adjustments made to the interview guide before the actual data collection commence. A non-probability sampling process using a snow-ball sampling process was followed to select participants for this study. The inclusion criteria were to select only B. Com graduates who are resident of Matlosana Local Municipality area and have not found employment after the completion of their B.Com degree.

3.3 Research instrument

An interview guide was used in this study and interviews were conducted with unemployed B. Com graduates of ages 21 to 35 through a chain referral process. Saturation was reached at 10 plus 2 participants. The sample for this study was 12 and from the twelve participants interviewed, ten (10) were females and two (2) were males with ages ranging from 25 to 34 years.

3.4 Data collection

An electronic voice recorder was used to record responses provided by participants and the data was transcribed into written responses by the researcher in preparation for data analysis. Both the primary data (recorded data) and secondary data (transcribed verbal data in form of text) were kept safe by the researcher to maintain confidentiality and anonymity.

3.5 Data analysis

The data was analysed (separately) by the researcher and an independent co-coder. A summative and thematic method of analysis was followed. Open coding qualitative data analysis process was use and the data was captured on Atlas.ti version 12. Hence, data collected from participants were analysed using open coding which involve the transcription of the data, reading, organising, and breaking the data to ascertain participants' original meanings ascribed to the questions asked. Emerging themes and categories were based on issues that regularly emerged from the participants' responses during the interview sessions. Emerging themes and categories were thoroughly checked against participants' responses to ensure they represented the exact views of participants. Participants were represented as follows: BBG1; BBG 2; BBG 3; BBG 4; BBG 5, BBG 6; BBG 7; BBG 8; BBG; 9 and BBG 10, BBG11 and BBG12 to facilitate the coding process. The researcher made use of the eight steps as described by Anderson (2012:3) as shown in Table 1.

Table 1: Themes and categories identified in the study

| No | Themes | Categories |
|----|--|---|
| 1 | Factors associated with entrepreneurship | <ul style="list-style-type: none"> • Personal factors • Family background |
| 2 | Intentions | <ul style="list-style-type: none"> • Environmental factors |
| 3 | Support system | <ul style="list-style-type: none"> • Inadequate educational preparation • Lack of emotional support • Financial challenges |
| 4 | Nature of participants' attributes | <ul style="list-style-type: none"> • Self-efficacy • Behavioural control |

| No | Themes | Categories |
|----|---|--|
| 5 | Different attitudes of participants to starting a business Cultural association with entrepreneurial intention General prioritisation of entrepreneurial programmes | <ul style="list-style-type: none"> • Willingness to own a business • Uninterested in starting a business • Nurturing of entrepreneurial intention • Role models in the Municipality area • Entrepreneurship as a career programme • Entrepreneurial studies in schools • Motivation of community members • Financial support |

Source: Researchers' own data

4. RESULTS AND DISCUSSION

In this study, participants' views were analysed, and findings presented in themes and categories. Findings revealed that, the intention of participants to enrol in any entrepreneurial programme was dependent on a variety of factors, summarised under factors associated with entrepreneurial intentions. Most participants view on entrepreneurial intention were captured under a common theme "propensity towards securing jobs rather than engaging in entrepreneurial activities after obtaining a B. Com degree".

Participant BBG 1 stated that, *"I do not want to engage any entrepreneurial activities because I feel it is a waste of time. I want to get a job and work. I like it when I wake up in the morning and go to work so I do not think I am prepared for any entrepreneurial activities. So, I will keep applying for work till I get work. I have submitted lots of applications and have gone for some interviews. I know that work will come"*. While Participant BBG 3 maintained that *"For me, entrepreneurial activities is not for me. I do not have the strength to start learning any work. You may ask but I like money, yes, let me answer that before you ask. I like money but I am not ready to learn any entrepreneurship or anything. The main reason is because, I do not have the strength. I am not lazy, but I do not have the strength"*. Furthermore, Participant BBG 4 stated that *"Government should provide jobs for us. You want a graduate after spending many years in school, I will still go and spend years learning entrepreneurship. Who will pay for that one? My parents have done their part so I do not think I can go back for that one"*. Participant BBG 5 said *"I will also say, family background is among the factors that makes graduates not to think in that entrepreneurial aspect. For instance, I grew up in a family where parents are working so, I never thought of entrepreneurship. All my mind is to get a job and be"*

The above responses are in line with studies by Liñán, Rodríguez-Cohard and Rueda-Cantuche (2011:197), who confirmed that personal factors, coupled with perceived behavioural control, are the two most relevant factors in explaining entrepreneurial intentions. Bagheri and Pihie (2015:15) found that personal factors play a crucial role in influencing people's entrepreneurial intentions. These finding is also consistent with that of Remeikiene, Startiene and Dumciuviene (2013:299) who found in a study that, personal factors are among the key determinant of entrepreneurial intentions of graduates. While Altinay, Madanoglu, Daniele and Lashley (2012:489) confirm that personal factors constitute the highest determinant of entrepreneurial intentions. Franke and Lüthje (2004:269) maintain that students or graduates' personality matters so much in their entrepreneurial intentions. Estay, Durrieu and Akhter (2013:243) affirms that, personal factors such as risk-taking ability, self-confidence, autonomy, internal locus of control and innovativeness are key determinants of entrepreneurial intentions of B. Com graduates. Self-confidence is

regarded a valuable individual asset and a key personal success because it makes people happier, easier to convince others (rightly or wrongly) and improves the individual's motivation to undertake projects as well as persevere in the pursuit of goals (Turker and Selcuk, 2009:142).

The comment by BBG5 is contrary to Altinay and Altinay (2006:203), who found that family background is associated with students and graduates' entrepreneurial intentions. In this study, it was found that family business tradition facilitates the acquisition of business skills by students or graduates. When it is a family tradition to harness business potential of progenies, this action can stimulate individual entrepreneurial intention and limit their desire to seek employment after obtaining a B. Com degree. Altinay (2008:111) ascertains that family background influences individual intentions to start own business, through equipping the person with the skills and vision to engage in entrepreneurial activities. In addition, Altinay *et al.* (2012:492) maintain the family influence on entrepreneurial intentions has been receiving little attention in entrepreneurship. Nicolaou, Shane, Cherkas and Spector (2008:7) state that beside families passing business-related knowledge to their successors, they also equip graduates with the necessary business skills that will facilitate their success.

Environmental factors: Participants revealed that environmental factors play a crucial role in entrepreneurial intentions as captured in the excerpt. According to BBG 1, *“The environment is a serious challenge to us. When you look around, nothing is happening here. Like no activities, what can one learn? When you do not have anyone in the city to go to, you remain here in and nothing is happening here so, the environment is not favourable to me. You see my friends are not doing anything meaningful”*.

The response above is in line with existing literature, which shows that the environment of where graduates find themselves influences their entrepreneurial intentions (Bagheri and Pihie, 2015:15). Souitaris, Zerbinati and Al-Laham (2007:566) suggest socio-economic assistance as environmental factors that influence entrepreneurial intentions, while Lucky and Ibrahim (2015:87) maintain environmental factors play a crucial role in entrepreneurial intentions of young people. These researchers consider environmental factors as one of the most important factors in entrepreneurial intentions.

Inadequate educational preparation: Some participants indicated that they did not receive adequate preparation in school about entrepreneurship, which negatively affects their intentions after graduation. Participant BBG 3 indicated that: *“Honestly, I feel that I was not adequately prepared for the entrepreneurial journey. Like in schools, there was not much emphasis on that area hence, my mind is to go and look for work.”* Participant BBG 4 also stated that: *“Wished I was well-prepared for entrepreneurship. In school, much attention was not paid to entrepreneurship so, I cannot think straight in that direction. If our school thought us or helped us to think in the direction of being independent then, I would not be finding it difficult at the moment.”* This finding directly talks to the curriculum offered to B. Com graduates; thus a B. Com degree cannot be seen as a proxy for innovations and new ventures in their communities of South Africa. According to Su, Zhu, Chen, Jin, Wang, Lin and Xu (2021: 4519), “adequate educational preparation on entrepreneurship facilitates the willingness of graduates to expand their interpersonal network and strengthen their confidence in getting involved in entrepreneurial activities.

Lack of emotional support: According to participants, lack of emotional support is one of the factors associated with entrepreneurial intentions. Some participants were not motivated to get into entrepreneurial activities as captured in the excerpts below. Participant BBG 5 explained that: *“You see eee, there are lots of graduates in our community, but you find out that there is lack of motivation so, I can tell you that I am not motivated to go for entrepreneurial activities.”*. Participant BBG 6 maintained: *“Like me, before I got admission, I was doing menial jobs, like following construction works to sit and making little money and thinking that going to school will automatically change my life but here I am now, not knowing how to go about things. That motivation is gone but job is not coming as expected so, it is very difficult for me.”*

Studies have shown that emotional support is crucial in reinforcing start-up efforts of young graduates to engage in entrepreneurial activities. This support could be in the form of mentorship (Shen, Osorio and Settles, 2017:24). Furthermore, emotional support could come from families, which is a reaffirmation that family support is key for entrepreneurs in obtaining resources, especially when family or personal savings are a major source of start-up capital. The individual’s parents can facilitate the likelihood of their child becoming an entrepreneur through encouragement, and approval of their children’s business ideas (Baluku, Kikooma, Otto and König, 2020:3462). Furthermore, Elfving, Brännback and Carsrud (2017:211) state that perceived family support provides a motivational force that is crucial for entrepreneurial intention to be realised after graduation.

Financial challenges: Most participants indicated that financial challenges play a crucial role in limiting the ability of B. Com graduates to realise their entrepreneurial intentions. Participants revealed that without financial support, graduates cannot successfully engage in entrepreneurial activities. Responses varied with lack of a framework for public finance policies, corruption, lack of service delivery, security issues, lack of interest, innovation, bribery, money laundering as well as disbelief.

Three participants also noted that as financial institutions became increasingly reluctant to grant loans, many South African entrepreneurs, especially those in rural areas, resorted to friends and family for funding. Even those who are employed are struggling to make ends meet since they are not eligible, as their income is low. One participant pointed out those financial challenges constantly was a major challenge, when considering entering a business as captured in the excerpts below.

Participant BBG 6 maintained: *“Challenges we face when we start a business, the first thing is the amount of money you have to start with and sometimes, it changes by changing maybe you do something like a cleaning service that you do not know how to call it.”* Participant BBG 7 also indicated that: *“Having the money to start a business and I think making successful people like to be able to win customers come into business and a place to find business, is a serious challenge to graduates.”*

Henry and Lewis (2018:264) explain that at the individual or family level, financial stability can mean enough money to meet basic needs. Surveys on socio-economic factors have shown that majority of township-dwellers are poor and unemployed, for example, in some families, it is reported that the monthly income is less than R3000. Hence, for graduates from such families, starting their own business is a serious challenge. Furthermore, Hu's (2018:15) study revealed lack

of financial support as a barrier to starting a business. Most participants stated that they often relied on friends and family when they needed money, and this affected their entrepreneurial intentions and discouraged those who wished to start their own businesses. Kim, Longest and Aldrich (2013:214) state that availability of financial capital is directly associated with entrepreneurial intentions.

Participants maintained financial instability could affect their entrepreneurial intentions as follows: Participant BBG 8 explained: *“I knew it because I grew up in a family where my mother had her own business and it is something I learned as a child, I can do it but now, we are struggling financially. So, you see that going to school is not enough.”* Participant BBG 9 added: *“You see, the problem is with the capital. I do not have enough money to start my own business. I tried to get a loan from the bank, but I could not get any loan because I am unemployed. They want someone who can afford to pay.”* Participant BBG 10 views were that: *“I wish we could get help from the government to start our own business, even a bank cannot help too because I do not have a job to get ready for a loan.”*

These findings are in line with Usher and Jackson (2019:3), who advised that increased financial and fiscal education tariffs and reduced corruption among economic actors in the country, increase business activities, including growth in entrepreneurship. As potential entrepreneurs, B. Com graduates have unique skills that can be useful in South Africa, in stimulating economic growth and job creation.

4. DISCUSSION OF FINDINGS

The purpose of this study was to investigate entrepreneurial intentions of B. Com graduates within a Local Municipality in South Africa. Participants explained various factors associated with entrepreneurial intentions, summarised in the form of categories, for a broad understanding of the study. For instance, some of the categories included personal factors, family background and environmental factors. Some participants maintained they did not want to enrol for any entrepreneurial programme because it was a waste of time. Participant further pointed to the lack of patience in completing entrepreneurial activities as an associated factor to entrepreneurial intentions. Furthermore, one of the participants pointed out family background as one of the factors associated with entrepreneurial intentions. The participants further indicated that he was from a family where parents are working thus, not interested in entrepreneurship, but preferred to work.

Furthermore, it was deduced from participants that inadequate educational preparation was among the factors associated with entrepreneurial intentions. One of the participants categorically stated as follows: *“Honestly, I feel that I was not adequately prepared for the entrepreneurial journey. Like in schools, there was no emphasis on that area hence, my mind is to go and look for work”*. To the researcher, this is serious concern thus, the need for stakeholders to put measures in schools to teach entrepreneurial skills aside studying entrepreneurship as a course. In addition, it was deduced from participants that lack of emotional support and financial challenges are among factors associated with entrepreneurial intentions.

6. CONCLUSION

Since entrepreneurship is a pillar and driver of economic development, it is important for the educational system to be design in such a way that it promotes the realisation of entrepreneurship

intentions among graduates. Such actions may address issues such as unemployment and poverty. There is need for cities in the different provinces to develop ways to support graduates who to actualise their entrepreneurship intentions through mentorship programmes. Furthermore, the current programmes offered by universities do not encourage B. Com graduates to become job creators but job seekers after a B. Com degree. Graduates can only protect themselves from the rising unemployed if they focus on transforming their entrepreneurial intention into tangible business after graduation.

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SSIRC 2022-128**EVALUATING THE POSSIBLE IMPACT OF THE PROPOSED RETIREMENT FUND REFORM ON THE POCKET OF THE SOUTH AFRICAN MIDDLE CLASS****W. Saunders**

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ABSTRACT

The National Treasury released a discussion pertaining to the implementation of the two-pot system to restructure retirement funds. The two-pot system will enable a limited pre-retirement withdrawal to become available for individuals who have been adversely impacted by the COVID-19 pandemic. The aim of the study was to evaluate the impact that the restructuring of the retirement fund system will have on both the South African middle class and the South African government. A case study was performed to evaluate the impact of pre-retirement withdrawal on an individual's retirement savings based on 10-year intervals starting from 30 years old to the retirement age in South Africa of 60 years. The average contribution to retirement funds as obtained from an investment's retirement reality report was applied as a basis to calculate the impact that pre-retirement withdrawal will have on retirement savings.

The restructuring has been subject to unfavourable criticism as withdrawing a third of their retirement funds before retiring will create only short-term benefits for the middle class. However, those who utilise the pre-retirement withdrawal will in the long term have reduced retirement funds available. This, in turn, will increase the amount of grants and subsidies that the South African government would need to account for. The study concluded that withdrawal will detrimentally impact the retirement planning of the middle class and lead to higher poverty concerns for the government. As poverty levels increase, more of the middle class would need to utilise social grants and subsidies to cover basic living cost, which will cost the government more. This study thus illustrated the adverse effect that pre-retirement withdrawal will have on retirement planning and the impact thereof on the South African government.

Keywords: Middle class, retirement funds, retirement fund restructuring, taxation, two-pot system.

1. INTRODUCTION

When only focussing on the South African middle class, it is clear that they are severely unprepared for retirement as only 6% of them are actively contributing to retirement funds which will enable them to retire comfortably (10X Investments, 2020). Retirement funds are described as funds into which individuals invest money to finance their livelihood upon retirement (Ahmed & Wathik, 2022). The Pension Funds Act no. 24 of 1956 (hereafter the Pension Funds Act), read together with the Income Tax Act no. 58 of 1962 (hereafter the Income Tax Act), includes the following retirement fund types: pension funds, pension preservation funds, provident funds,

provident preservation funds, and retirement annuity funds registered within South Africa (Van Heerden & Wiesener, 2021). Pension funds and provident funds (including preservation funds) are defined as employer funds, which indicates that employees belonging to a specific employer can be members of these types of retirement funds (Van Heerden & Wiesener, 2021). Members of pension and provident funds can directly deduct the contributions to the funds from monthly salaries (Van Heerden & Wiesener, 2021). In the case of retirement annuity funds, any individual can become a member and the fund is not employer based (Van Heerden & Wiesener, 2021). Individuals can make direct contributions to the retirement annuity fund on a monthly basis (Van Heerden & Wiesener, 2021).

In an effort to encourage an incremental increase in retirement fund investments, the South African government introduced a progressive restructuring of the retirement funds in the 2012 Budget (National Treasury, 2013). For this purpose, government raised multiple proposals to retrospectively reform retirement funds and enhance the pre-retirement preservation funds (National Treasury, 2012).

10X Investments, a registered Financial Service Provider, outlined that when the COVID-19 pandemic struck in 2020, only considering the South African middle class, a majority of them have been left vulnerable to financial hardships (Chitiga-Mabugu, Hensler, Mabugu & Maisonnave, 2021). Rusconi (2021) has utilised 10X Investments' Retirement Reality Report in studies performed for the Actuarial Society of South Africa, which enhances the credibility and validity of the data utilised in this study. In the wake of the economic distress caused by the pandemic the South African middle class have been exposed to job losses and had to resort to different means of financing their livelihoods (Chitiga-Mabugu et al., 2021). To curb these hardships and avoid economic collapse, government responded by making new proposals which grant individuals access to retirement savings (National Treasury, 2021).

Government released a discussion paper on 14 December 2021 to address outstanding proposals to the retirement fund restructuring (National Treasury, 2021). The discussion paper aimed to enhance the current retirement fund system by means of providing proposals to address current problems with the design of the funds (National Treasury, 2021). Two main problems were outlined, namely inadequate preservation of retirement funds prior to retirement, and the current retirement fund system allowing individuals to withdraw all their retirement fund savings upon resignation (National Treasury, 2021).

One of government's key proposals to mitigate the above-mentioned two main problems is the two-pot system (National Treasury, 2021). A two-pot system for retirement funds will grant individuals access to a third of their retirement savings prior to retiring (National Treasury, 2021). As per the discussion paper (National Treasury, 2021) and as stated by Sanlam (2022), the two-pot system is expected to be implemented in 2023.

Should a majority of the middle class access a third of their retirement savings, it could lead to a reduced amount of retirement savings for the middle class upon retirement (10X Investments, 2020). The middle class will then not be able to retire comfortably and will have to resort to grants and subsidies from government on retirement age (10X Investments, 2020). This, in turn, will place government under financial strain if this situation is not managed effectively. Currently, as

per the 2022 Budget Speech, 4.5% of the annual budget expenditure pertains to social grants for the elderly (National Treasury, 2022).

The South African middle class is defined by Visagie (2013) as households representing the average income of all South African households, outlined by StatsSA (2021) as being the part of South Africans with an average monthly gross income of R24 021 in 2021, being the latest available information. Kahlon (2021) argued that, in order to satisfactorily generate sufficient retirement savings, an individual aged 25, the proposed normal age to start contribution to a retirement fund as stated by multiple financial services providers should contribute at least 17% of their monthly income to a retirement fund. The 17% contribution to the retirement fund will generate the suggested 75% of monthly income for retirement savings for individuals (Kahlon, 2021). Kahlon (2021) further stated that, if an individual initiates contribution to a retirement fund at an age after 25 years, they would need to increase the percentage of their monthly contributions to compensate for time and investment loss. Willows and October (2021) identified that only 5.17% of South Africans retire with sufficient financing to live comfortably. This clearly indicates a majority of South Africans fail to plan for their retirement financing and it becomes more difficult to finance retirement at later stages in live (Willows & October, 2021).

Based on the above criteria for the middle class, based on their average monthly gross income, the average contributions made to a retirement fund can be established. Moreover, by utilising a time value of money calculation, retirement savings lost with the proposed two-pot system can be calculated. According to Correia (2019), time value of money refers to the fact that the value of an amount of money today is worth more than the same amount in future. The discount rate can be used to determine the present value of an amount (Correia, 2019).

Upon reviewing all aspects of the proposed two-pot system, the authors found that there exists uncertainty of the impact the proposed changes will have on both taxpayers and government. Therefore, the primary aim of the study was to evaluate the impact that the restructuring of the retirement fund system will have on the South African middle class and government. Access to retirement funds prematurely will lead to insufficient retirement income and liquidity and investment interruptions (OECD, 2020). Limited previous research based on a South African context could be found specifically relevant to this research topic, this study attempted to demystify the proposed changes to the current retirement fund legislation and to evaluate the effects thereof on individual taxpayers.

2. LITERATURE REVIEW

In the literature review an overview of the retirement funds will be discussed. The current legislation will be investigated and explained in order to compare the characteristic of each fund to the proposed two-pot system. A detailed analysis will be done on the proposed two-pot system, and variables in the case study will be explained.

2.1 Retirement funds governed by the Pension Funds Act

The Pension Funds Act indicates that retirement funds in South Africa can be subdivided into two main categories, namely employer-based funds and funded by independent individuals (Van Heerden & Wiesener, 2021). As employer-based funds, these funds relate to retirement funds of which only the employer and employees can be members. Categorised under this set of attributes

are the pension funds, pension preservation, provident funds and provident preservation. An individual can either fully withdraw from these funds upon resignation or retrenchment, or a lump sum up to one-third of the retirement fund can be withdrawn upon retirement. Funded by independent individuals, retirement annuity funds take on the attributes of a fund established by any individual. The attributes of a retirement annuity fund are that an individual can only become entitled to the funds once they reach the appropriate retirement age, which is 55 years, or when they emigrate from the Republic of South Africa, or upon expiry of a visa.

This study only focused on pension funds, provident funds and retirement annuity funds. Preservation funds, defined benefit plans and public sector pension funds were excluded. In order to understand the existing structures of pension funds, provident funds and retirement annuity funds, a broad overview of each must be considered with the current legislation pertaining to retirement funds.

2.2 Current legislation implemented in South Africa

Members of pension funds, provident funds and retirement annuity funds can contribute up to 27.5% of their taxable income per annum to retirement funds limited to an annual maximum of R350 000 (Burgers, West, & Willows, 2018). In terms of the Income Tax Act members of the retirement funds receive a deduction on the contributions made to the retirement annuity fund subject to the limitations of section 11F.

The taxation on withdrawals and retirements is calculated based on different tables. Withdrawals are taxed in accordance with the withdrawal benefit table, and retirements are taxed in accordance with the retirement benefit table (Van Heerden & Wiesener, 2021). According to the withdrawal benefit table, members of retirement funds will only start paying tax on withdrawals larger than R25 000 regressively on 18% (Van Heerden & Wiesener, 2021). The retirement benefit table only starts taxing members of retirement funds regressively on amounts above R500 000 at a rate of 18% (Van Heerden & Wiesener, 2021). Thus, in terms of the current legislation, retirement funds can be categorised as employer based funds and as funded by independent individuals (Van Heerden & Wiesener, 2021).

2.2.1 Employer based funds

Both employers and employees can actively contribute to pension and provident funds on a monthly basis (Van Heerden & Wiesener, 2021). The Pension Funds Act states that, under current legislation, members can gain access to the full investment and the added growth upon resignation and retrenchment from current employment.

Van Heerden and Wiesener (2021) explain that, upon reaching retirement age, members of the pension or provident funds may only elect to receive a third of the retirement fund as a lump sum payment. According to section 1 of the Income Tax Act, normal retirement age includes, irrespective of age, “the date on which that member becomes permanently incapable of carrying on his or her occupation due to sickness, accident, injury or incapacity through infirmity of mind or body”. The remaining two thirds of the retirement fund is payable to the member, but in the form of compulsory annuities (Van Heerden & Wiesener, 2021).

However, this legislation does not allow members to gain access to the funds without resigning (National Treasury, 2021). This has led many employees who are faced with financial hardship to

resign from their employment to access their retirement funds (National Treasury, 2021). This is one of the main problems government aims to mitigate as this has led to increased unemployment amongst the middle class (National Treasury, 2021).

2.2.2 Funded by independent individuals

Retirement annuity funds are also governed under the Pension Funds Act and refer to independent individual retirement funds of which any individual can become a member (Jordaan, 2022). The structure of a retirement annuity fund is different from a pension or provident fund in the sense that the fund is not employer related and can only be accessed once a member reaches retirement age (Redonda & Axelson, 2021). This means that currently no member will be able to claim their retirement benefit until retirement age is reached.

The conditions for withdrawing from a retirement fund are currently safeguarded by the requirement that a member must attain the minimum retirement age of 55 and cannot gain access to these funds prior to attaining the age (Jordaan, 2022). The Income Tax Act does provide some exceptions to this rule in the instance of a member being subject to ill health or emigration.

2.3 Understanding and analysing the two-pot system

On 14 December 2021 the National Treasury released a list of proposals to address the outstanding proposals of the restructuring of the retirement funds. One of the proposals was the introduction of a two-pot system whereby government aims to address the two main outstanding issues with the current legislation (National Treasury, 2021). South African taxpayers have been adversely impacted by the financial repercussions caused by COVID-19, which simply enhanced government's need to restructure the retirement funds in South African (National Treasury, 2021).

The two-pot system is a proposed change in legislation to alleviate the impact. In this system members of retirement funds are allowed to save one-third of their retirement contributions in a pot, whereby some of the money can be accessed before retirement (Haldane, 2022). Government's main structure proposal regarding the two-pot system is an access pot representing one-third of the retirement funds and a retirement pot representing two-thirds of the retirement savings. The National Treasury (2021) explains that members of retirement funds will have access to one-third of the retirement fund pre-retirement from the date of implementation of the new legislation. Access to one-third of the retirement excludes contributions made prior to the implementation of the new proposed legislation, which is known as the vested pot. The National Treasury (2021) further states that, even though members will be able to gain access to one-third of their retirement funds at any time, a restriction will be imposed, namely that withdrawal from the access pot may occur at most once a year. The remaining two-thirds are considered to be a preservation pot, which preserves the retirement savings up to retirement.

Within the current retirement fund system, access to any pre-retirement is prohibited unless an employee retires, resigns, or is retrenched (National Treasury, 2021). With the newly proposed two-pot system, government seeks to address the long-debated two main problems with the current legislation, namely that members do not have access to retirement funds prior to resignation, and the lack of adequate preservation of retirement funds (National Treasury, 2021).

The two-pot system is proposed to be implemented across a variety of retirement funds which include pension funds, provident funds and retirement annuity funds (National Treasury, 2021). If

the two-pot system is implemented across all retirement funds, harmony between all funds will be created and all retirement funds will be identical (National Treasury, 2021).

Upon resignation or retrenchment, employees have the option to withdraw all funds from the retirement fund, transfer the funds to the new employer's pension or provident fund, or invest the funds in a retirement annuity fund (Reyers, 2018). However, gaining access to retirement savings prior to retirement could adversely affect members' retirement savings as this will reduce the amount of financing available for an individual upon retirement (10X Investments, 2020). A mitigating control suggested by the National Treasury (2021) is to make additional contributions to the retirement funds in the years preceding the withdrawal of funds from the access pot.

2.4 Variables of the case study

To measure the effects the proposed two-pot system will have on members of retirement funds, a case study was performed considering the following variables:

- The salary elected for the study was based on the average gross salary as indicated by StatsSA (2021), namely R24 051. This salary was elected to represent the middle class, who are especially experiencing financial hardship due to the impact of COVID-19;
- An ideal contribution amount to retirement savings was applied, namely 17% of an individual's gross salary from the age of 25 (Kahlon, 2021). The 17% is based on 75% of the pre-retirement salary. This percentage should increase if contributions are initiated after the age of 25 (Kahlon, 2021);
- A conservative growth rate was elected to represent the current economic state of South Africa. The real growth rate as established by 10X Investments (2020) to be used was 5% of growth exclusive of inflation;
- A realistic inflation rate was elected to represent the current economic sphere in South Africa. According to the South African Reserve Bank (2021), the targeted inflation rate is set between 4% and 6%, hence the rate of 4.5% was used in the case study as a basis;
- Age groupings of 30, 40, 50 and 60 were elected as comparatives to establish the impact that withdrawal at each of these ages will have on the total retirement savings of a member.

From the literature review, it became apparent that the proposed two-pot system will change the structure of the current retirement fund legislation. On a positive side, the proposed changes will grant members of retirement funds access to one-third of their retirement savings prior to retirement and resignation. On a negative side, withdrawal from retirement funds prior to retirement will decrease the amount of retirement savings available upon retirement. This will, in turn, negatively affect both the taxpayer and government as this may lead to more taxpayers becoming dependent upon grants when retiring.

3. METHODOLOGY

3.1 Research design

The study followed a mixed research approach, supported by an exploratory sequential design. An exploratory research design was followed with the aim of establishing the effect that the proposed two-pot system will have on individuals and their retirement savings. Elman, Gerring, and Mahoney (2020) define exploratory research as a research approach taken when a knowledge gap

exists in the topic under study and more information needs to be obtained. Because the two-pot system is still in a proposal phase, there exists a gap in the knowledge on the implementation and the overall effect it will have on retirement savings. Due to the recent nature of the proposed two-pot system and the implementation thereof, there are currently not a lot of peer-reviewed articles to substantiate the effect of the implementation of the two-pot system.

As mentioned previously, the study investigated the impact that the two-pot system will have on retirement fund savings and retirement fund legislation. The purpose of the sequential design was to first embark on a qualitative exploration of the proposed changes to legislation pertaining to the implementation of the two-pot system. Creswell and Creswell (2018) explain that exploratory sequential research involves an initial qualitative approach to analyse all existing knowledge on the topic, after which a quantitative approach is followed to collect substantiating information.

Thus, the study consisted of two components, namely a qualitative and a quantitative component. In the qualitative component, the proposed changes to legislation were analysed, as well as the implementation of the two-pot system (literature review). In the quantitative component, a case study was performed to evaluate the effect that one-third withdrawals will have on the retirement fund savings of the individual taxpayer.

3.2 Sampling method

The sampling method applied in this study was selective sampling. This method consists of selecting specific participants to conduct research on (Creswell & Creswell, 2018). In order to provide a case study that is relevant to the South African middle class, an average gross salary was identified. For purposes of the study, the selection was based on the average gross salary of the middle class as published by StatsSA (2021). This salary was utilised since the information was representative of the South African middle class and formed a basis for all calculations of the case study.

3.3 Research instrument

For the qualitative component of the study, a literature review was performed. This entailed a document analysis of the legislation relating to retirement funds and the proposed two-pot system. A case study was performed for the quantitative component of the study. Utilising a net present value calculation, the impact a pre-retirement withdrawal from retirement funds was measured for different age intervals. The data calculated in the case study were compared in order to identify the adverse impact that pre-retirement withdrawals will have on the retirement savings of taxpayers.

3.4 Data collection

A literature review was performed to obtain an understanding of the proposed two-pot system and to analyse the changes that the implementation of this system will have on existing legislation. The literature review included a document analysis of the discussion paper released by National Treasury (2021) and all relevant legislation pertaining to the proposed two-pot system. The discussion paper as released by National Treasury (2021) is the primary source of information and detail pertaining to the two-pot system and the implementation thereof. Findings from the 10X Investment Reality Report was also utilised by Rusconi (2021) which enhances the reliability and

validity of the data analysed. This included the impact that pre-retirement withdrawals will have on a taxpayer's retirement savings.

After analysing the literature and proposed changes to the legislation as discussed by the National Treasury (2021), the qualitative findings were used to develop a quantitative design to measure the effect the two-pot system will have on retirement savings. A case study was formulated by utilising a net present value calculation. Goda, Levy, Manchester, Sojourner, and Tasoff (2019) and Kahlon (2021) performed a study on retirement funds in which age intervals of 10-years were used ranging from 30 – 60 years resulting in 4 age intervals. This study however considered five different scenarios, including the retirement age of 65 years, with a taxpayer withdrawing from her retirement funds prior to retiring. The first scenario was based on the principle that the taxpayer did not perform any withdrawals during employment and only withdrew from the retirement funds upon retirement age of 65 years (Kahlon, 2021), to show the benefits of not withdrawing any contributions before retirement.

3.5 Data analysis

The case study was based on the average gross salary earned by the South African middle class as collected from statistics released by StatsSA (2021). The study utilised a contribution rate of 17% of the gross salary earned to retirement funds as suggested by Kahlon (2021). A real growth rate of 5% was utilised as obtained from the 10X Investment Report (2020). The 10X Retirement Reality report is a report prepared by 10X Investments a financial services provider who specialises in investments and is a licenced retirement fund administrator. To generate representative withdrawal stages, different age intervals were elected. An initial scenario was used to represent the value of the savings of the taxpayer in the absence of pre-retirement withdrawals. The value of the contributions was measured up to the normal retirement age of 65 years. This scenario served as the basis from which comparisons were made from the other remaining four scenarios. The net present value calculation was split amongst four age categories of 30, 40, 50 and 60 to simulate the impact of the withdrawal of one-third of the retirement savings of an individual with the new proposed two-pot system. The data collected from the case study were compared and concluded upon. The amount of retirement savings lost was compared for when a taxpayer decides to withdraw from the retirement funds pre-retirement. The percentage of retirement savings lost is expressed in the data table to represent the amount of savings that would be lost in the event of pre-retirement withdrawals.

4. RESULTS AND DISCUSSION

4.1 Literature review findings

The findings of the literature review were measured in terms of the proposed changes that will affect the legislation on retirement funds. The main findings are summarised, identifying the key differences and similarities found in the analysis of the changes.

4.1.1 Findings pertaining to the vested pot

Currently, in the event of resignation or retrenchment, access to all contributions made prior to the new proposed two-pot system is allowed (National Treasury, 2021). In contrast, as soon as the

proposed two-pot system becomes new legislation, access to all contributions made prior to the two-pot system will be prohibited.

4.1.2 Findings pertaining to the access pot

The access pot will represent one-third of the retirement fund savings under the new proposed two-pot system. A key difference identified was that, under current legislation, withdrawals made from retirement funds are disallowed; only upon resignation or retrenchments are members allowed to access retirement fund savings. The proposed two-pot system, however, will allow members of retirement funds to make withdrawals while still in employment.

4.1.3 Findings pertaining to the preservation pot upon retirement

Under current legislation, a lump sum representing one-third of the retirement savings will be paid out to the retirement fund member upon retirement. With the implementation of the proposed two-pot system, the lump sum paid out upon retirement can significantly decrease since it will represent one-third of the retirement savings less any previous withdrawals made from the retirement fund. Current and new legislation will require members of retirement funds to acquire compulsory annuities upon retirement with the remaining two-thirds of the retirement funds.

4.1.4 Findings pertaining to taxation of withdrawals pre-retirement and upon retirement

In terms of both current and proposed legislation, withdrawals occurring pre-retirement will be taxed on the withdrawal benefit table. Upon retirement, the lump sum received will be taxed on the retirement benefit table.

Pertaining to tax on retirement funds, the literature revealed that the proposed two-pot system will allow members of retirement funds access to one-third of the retirement fund savings at most once a year. The South African Revenue Service (SARS) will need to issue a tax directive with each withdrawal made from the retirement funds. This will increase SARS's administrative duties and necessitate strict management controls to be implemented by financial service providers governing the retirement funds.

4.1.5 Addressing the two problems with the current legislation on retirement funds identified by government

Government aims to address the existing problems with the retirement funds through the implementation of the proposed two-pot system. Inadequate preservation of retirement funds prior to retirement will be addressed by the proposed two-pot system's allowing members to withdraw funds prior to retirement or resignation. The current retirement fund system allows members to withdraw all their retirement fund savings upon resignation. With the proposed two-pot system, members of retirement funds will only be able to withdraw one-third from the retirement fund at most once a year.

Based on the findings from the literature review, a case study was formulated to illustrate the impact that the proposed two-pot system will have on members of retirement funds.

4.2 Case study

An individual taxpayer (Ms A) started working for company X at the age of 25. Ms A started contributing towards company X's pension fund from the age of 25. The new

proposed legislation has already been implemented by this date. Her salary per month is R24 051 (R288 612 annually). Ms A has not received any increase except inflation increases and it is assumed she would work for company X for 40 years. Ms A, together with her employer, company X, contributes 17% of her salary per month towards the pension fund. An average inflation rate of 4.5% was used. The pension fund's growth was 5% above inflation, therefore 9.5%. It is assumed Ms A would retire at the age of 65.

The case study was applied to five different scenarios, namely:

1. Ms A did not withdraw any of her pension funds up to the age of 65.
2. Ms A only once withdrew one-third of her retirement fund at the age of 30.
3. Ms A only once withdrew one-third of her retirement fund at the age of 40.
4. Ms A only once withdrew one-third of her retirement fund at the age of 50.
5. Ms A only once withdrew one-third of her retirement fund at the age of 60.

The percentage of income lost on retirement will be calculated by dividing the difference on retirement when one-third was withdrawn and the adjusted inflation value on retirement. The adjusted inflation value on one third withdrawal and on retirement were also included in the case study as summarised in Table 1 below:

Table 1: Impact of the proposed two-pot system on retirement savings

| Details | Amount in R'000 | | | | |
|--|-----------------|----------|----------|----------|----------|
| | No withdrawal | 30 years | 40 years | 50 years | 60 years |
| Total contributions | 5 251 | 5 251 | 5 251 | 5 251 | 5 251 |
| Less: One-third withdrawal | | (112) | (674) | (2 283) | (6 610) |
| Adjusted inflation value on withdrawal | | (90) | (348) | (760) | (1 416) |
| Total amount on retirement | 32 793 | 30 100 | 26 280 | 23 886 | 22 387 |
| Adjusted inflation value on retirement (A) | 5 638 | 5 175 | 4 518 | 4 107 | 3 849 |
| Difference on retirement when one-third was withdrawn (B) | | 463 | 1 120 | 1 531 | 1 789 |
| % income lost on retirement (B / A) | | 8% | 20% | 27% | 32% |

Source: Authors' own compilation (StatsSA, 2021; Kahlon, 2021; 10X Investments, 2020; South African Reserve Bank, 2021)

From Table 1, it is clear that a withdrawal of retirement funds prior to retirement can have an impact on funds available for retirement. Members of retirement funds will need to take note that the later they withdraw from the retirement funds, the greater the effect will be on the remaining retirement funds available upon retirement.

A key determinant in this case study is that the results are based on whether the member performs only one withdrawal in their lifetime. Members of retirement funds do have the option to withdraw every year up to one-third of their retirement funds. The impact can therefore be much higher on percentage income on retirement. The retirement fund growth rate might also be lower as indicated in the case study. The reason is that retirement funds need to change their investment strategy as one-third of the funds needs to be available at any time.

The findings of the case study also reveal a cause for concern for government pertaining to the funding of grants. It is apparent that retirement savings will be reduced depending on how much a member of a retirement fund withdraw prior to retirement. This will, in turn, create a decrease in finances available on retirement and lead to more retired taxpayers resorting to government grants to finance their livelihood.

5. CONCLUSION

From the results of the case study, it can be concluded that the proposed two-pot system should not be recommended due to the tremendous impact it would have on the amount of savings available to members upon retirement. Having access to one-third of their retirement savings before retirement or without resignation, members could end up with significantly reduced retirement savings. Members also need to consider that the later in life they withdraw funds from their retirement savings, the higher the supplementary contributions will become. This, in turn, would increase the administrative burden for SARS and the financial service providers of retirement funds.

Further research can be conducted on the possible tax loopholes of the proposed two-pot system. Currently, taxpayers can receive a deduction on their contribution to retirement funds in terms of section 11F. A taxpayer can contribute up to R350 000 per year and receive the full deduction, and in the preceding year withdraw from their retirement fund. This will result in tax arbitrage, as the deduction will be more than the current tax paid.

SARS and financial service providers should collaborate in creating a reform of the retirement fund structure that will add value to South African taxpayers and government. National Treasury could also consider the reform structures implemented by other countries. The long-term impact of the proposed two-pot system will need to be considered by the National Treasury, which could be detrimental not only to government, but to individuals and financial service providers as well. If members withdraw from their retirement savings, proper financial planning will need to be implemented to replace the funds that were withdrawn. If not, members will have reduced retirement savings and likely become dependent on grants, leading to significant challenges for government. To conclude, National Treasury will need to amend the current proposal, since the two-pot system may detrimentally impact the already struggling South African economy.

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GOVERNMENT QUALMS AND DEVELOPMENT INERTIA: CHALLENGES AFFECTING THE HOUSING ACCREDITATION PROGRAMME

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ABSTRACT

The implementation of government programmes is probably one of the most common ways of ensuring development in countries. Programmes are borne and institutionalised by policies, legislations, and constitutions to make them national commitments towards development. In typical democratic states, governments account to citizens on how programmes are implemented to bring about development in societies. Issues of consensus, certainty, consistency, courage and commitment, among others, are needed within governments for the successful implementation of programmes. Within this context, government qualms and torpor on programmes appear to be obstructions for development. One typical example in the South African context relates to the poor implementation of the Accreditation Programme in the human settlements sector, which is purposed to build capacity in strategically identified local government units in order to delegate administrative powers for the implementation of housing and human settlements responsibilities in municipalities. However, the implementation of the Accreditation Programme is faced with challenges that make it impossible to achieve its purpose. This article is based on empirical research that was conducted following a qualitative research design. A Weberian developmental state theory was contemplated to anchor the study. This accounts for the theoretical contribution of the study. Interviews were conducted and data was thematically analysed. The findings of the study showcase manifold challenges affecting the Accreditation Programme. Four (4) categories of such challenges were revealed. Withal, some possible panacea to the challenges is noted and highlighted for possible consideration, customisation and implementation.

Key Words: Accreditation Programme, decentralisation, challenges, municipalities, and development

1. INTRODUCTION

In its generic sense, development is a hybrid concept that involves a myriad of strategies that can be adopted for socio-economic and environmental transformation from current to desired states in societies (Abuiyada, 2018). Development is an ambition of every state, and governments are established to ensure that there should be development. For the purposes of this article, development is considered as an outcome of successful implementation of government programmes (Hudson, Hunter & Peckham, 2019). For successful implementation of programmes, the government has to ensure consensus, certainty, consistency, courage and commitment for such programmes. In his thesis on decentralisation and recentralisation, Chilenga-Butao (2020) makes a simple yet crucial demonstration of what is herewith referred to as Government Qualms and

Development Inertia in South Africa. In the same vein, the example of poor implementation of the Accreditation Programme suggests a lack of consensus, certainty and consistency on whether or not government is committed and has courage to decentralise the administration of the housing function to local government. In this context, issues like **Consensus, Certainty, Consistency, Courage and Commitment** are considered as enablers for effective implementation of government programmes, and thus referred to as the Five (5)-Cs enablers for programme implementation and development.

The Housing Accreditation Programme herewith problematised is implemented in the human settlements sector, and is facilitated by the Department of Human Settlements (DHS) to decentralise administrative powers of the housing function to local government (DHS, 2012). The Municipal Accreditation and Assignment Policy Framework (2012) indicates that the programme seeks to achieve two (2) developmental objectives, namely: (i) coordinated development, which is horizontal integration among sector departments and stakeholders; and (ii) accelerated delivery through vertical integration across government spheres and partners (DHS, 2012). The Accreditation Programme is legislated by the Housing Act, Act 107 of 1997 and the Constitution of the Republic of South Africa (RSA). However, its implementation has been challenged. In order to unearth the challenges, empirical research was conducted following a qualitative research design. Guided by an approach adopted from Seawright and Gerring (2008), a typical case study research design was applied. This article serves to present the study and its findings. Structurally, the article will start by outlining the research problem, express the aim and objectives of the study, discuss literature review, highlight the methodology, discuss findings, and make recommendations and draw conclusion.

2. RESEARCH PROBLEM - ACCREDITATION PROGRAMME CHALLENGES

Section 156(4) of the Constitution of the Republic of South Africa provides that functions listed in Part A of Schedule 4 and 5 (such as the housing function) must be assigned to municipalities if: (i) such a function can be more effectively administered locally; and (ii) there is capacity to administer such functions in municipalities (RSA, 1996). The assignment of the housing function to be administered locally appears to be a tantalising mirage in South Africa. This constitutes failure for the Accreditation Programme and its developmental ambitions for horizontal and vertical integration. The failure of the Programme poses questions of consensus among key partners and stakeholders, certainty on whether or not the Programme should be implemented, consistency on the agenda of government, lack of courage to implement the Programme, and inordinate commitment to the development of the country. The Five-Cs enablers are lacking on the Housing Accreditation Programme. This manifests through reluctance to delegate and devolve administrative powers over the housing function to municipalities (Community Law Centre, 2007). When an independent assessor makes recommendations for accreditation on municipalities, Members of Executive Councils (MECs) decline the recommendations and show disinclination to the Programme (Christmas & De Visser, 2009).

Unfortunately, for poor citizens and residents, “the reluctance to decentralise the housing function to municipalities is likely to have a negative effect on the overall delivery of housing and human settlements to the citizens, and as such, compromising their constitutional right for shelter” (Mathonsi, 2021:6). This is mainly because the model of delivery solely by provinces has proven

inadequate to deal with the urgent need for shelter and housing opportunities against the ever-increasing backlog. In view of this, the Breaking New Grounds Policy (2004) envisaged an expanded role for local government in order for municipalities to actively contribute in housing and human settlements delivery and to address their developmental local government constitutional mandate (RSA, 1996; DHS, 2004). The central research question herewith is thus: what are challenges (Qualms and Development Inertia) affecting the Accreditation Programme, and how can they be addressed? The next section locates the research problem in context by discussing the literature review and theoretical framework.

3. AIM AND OBJECTIVES

The aim herewith is to analyse the relationship between development failures and the poor implementation of government programmes. The objective is to: (i) identify challenges affecting the Accreditation Problem, and (ii) possible solutions for consideration

4. LITERATURE REVIEW

This section is divided into two sub-sections. The first one makes high level highlights on literature in relation to the housing decentralisation context, whereas the second subsection features the theoretical basis, as well as the theoretical contribution, of the study.

4.1 Literature Highlights

In a broader scheme of things, the South African developmental agenda faces challenges of crises, which cascade down to failure of government programmes. To place the South African context into perspective ahead of delving into literature on the decentralisation of the housing function, attention is given to the work of Gillian Hart, who exposes the crises that the country is currently facing. Hart (2013) analyses issues of nationalism, populism and hegemony. She reveals South African crises in areas of governance, development, political geography, conflicts, nationalism, racism and populism, among other matters. Key to her analysis is to locate the country's crises at the local government sphere, which is something that is lacking in most analyses focusing in the South African context. Authors in social and management sciences acclaim the analysis by Hart (2013) since it clarifies the historic, current and future crises for the country, and for her reliable methodology in structuring her analysis (Nyawasha, 2015; Lange, 2017). It is for this reason that sections of literature seem to agree with Hart (2013) on the symptoms of the South African crises, which are predominantly visible in local government, representing failures in the state and government (Twala & Kompi, 2012; Booysen, 2015; Mbete, 2015).

The very likely source of the current crises in South Africa is, in part, attributable to the transition process, which clearly did not leave most parts of the societal sectors satisfied since some look at it as a compromised transition (Seo, 2008; Inman & Rubinfeld, 2013). The current government arrangements are an outcome of the negotiated transition from apartheid to the current democratic dispensation and the 1993 constitutional process (Mathonsi, 2021). Specifically, this includes the allocation of functions across different spheres of government, which resulted in the housing function being allocated as the functional area of concurrent national and provincial legislative competence (Christmas & De Visser, 2009; Koelble & Siddle, 2013). It appears that the African National Congress (ANC) was not very comfortable with some of the post-apartheid arrangements.

An example is the federalist nature of the multi-level government. Murray and Simeon (2011) indicate that the ANC had its own misgivings regarding the quasi-federal government/multi-level government since it resembles the erstwhile apartheid arrangement of Bantustans/ethnic polities. As a result, the aspect of federalism in South Africa has not been entirely welcomed by the ANC because of obvious historical reasons (Murray & Simeon, 2011). This is likely the case mainly because the federal government arrangement was utilised as a form of decentralisation towards the advancement of the interests of the central government in local polities in South Africa.

Having considered how the quasi-federal-unitary system of government came into being in South Africa, it is crucial to specifically zoom into the allocation of the housing function, which is viewed as misallocated. Analysts argue that the function could have best been allocated as a local government function towards addressing the developmental local governmental mandate (Community Law Centre, 2007; Christmas & De Visser, 2009). The issue of allocation/assignment of functions across spheres of government appears to be quite cumbersome. Robson (2006) makes an analysis of the assignment, and allocation of functions across spheres of government in countries like Germany, Belgium, Australia, United Kingdom, and Spain, and concludes that none of these countries has a comprehensive model for the allocation of functions. In the South African context, the challenge of poorly allocated government functions messes up the entire constitutional mandate for developmental local government. This is because functions listed in Schedules 4 and 5 do not keep up with the constitutional mandate of the developmental local government that is charged to municipalities because functions that should be allocated to local government are allocated to other government spheres, and include housing and transport (Community Law Centre, 2007; Christmas & De Visser, 2009).

Fortunately, the Constitution is a panacea to the challenge of poorly located/misallocated government functions. Section 156(4) provides for the assignment of functions to be administered in local government (RSA, 1996). This allows the housing function to be delegated and assigned to local government when requirements are met. This takes place within the framework of the housing Accreditation Programme, which is problematised in this study. The municipal accreditation process is a classic case for the delegation and transfer of the administration of the housing function to the local sphere. In order to be accredited, municipalities have to apply to provinces and get assessed whether or not they meet the set criteria and standards as set out in the Municipal Accreditation Policy. Thereafter, they assume the role of developers in their areas of jurisdiction (Christmas & De Visser, 2009; DHS, 2009; DHS, 2012). Accreditation is defined as a recognition by an MEC for human settlements in a province that whilst a municipality has satisfied the set criteria, such a municipality requires focused capacity for administering national housing programmes (DHS, 2012).

The Municipal Accreditation Framework (2012) guides the application process in this way: (i) a municipality packages an application and direct it to a provincial MEC for human settlements. The application should be a compendium of the following documents: accreditation business plan, human settlements sector plan, municipal annual report, Auditor-General South Africa (AGSA) report, and the municipal integrated development plan (IDP), among other key documents; (ii) the National Department of Human Settlements assists to ensure the state of readiness for municipality towards assessment through pre-capacitation and pre-assessment exercises; and (iii) the municipality gets assessed by an independent panel whose process gets audited by an independent

auditor for objectivity. The panel prepares an assessment report for the attention of the MEC; (iv) the MEC considers the report and takes a decision to approve/decline, and provide reasons for the decision; and (vi) in case of approval, the MEC and Mayor conclude the process by signing an agreement referred to as an implementation protocol/executive assignment agreement in terms of Section 35 of the Intergovernmental Relations Framework Act of 2005 (DHS, 2012). The implementation protocol defines, among other things, powers, responsibilities for both partners, financing arrangements, capacity specifications, performance standards and reporting arrangements (Community Law Centre, 2007; DHS, 2012). The theoretical framework in the next subsection delves into details on the importance of local government for development in South Africa.

4.2 Theoretical framing: Local government in perspective

The notion of efficiency and effectiveness of states for development purposes goes to the heart of the *magnum opus* of Max Weber in his 1922/1978 publication titled *Economy and Society*, which lays out the fundamental of the Weberian theory of bureaucracy and rationalisation (ideal types). Ideally, efficiency and effectiveness in governments results in development, which is probably the reason for the Weberian bureaucracy to be theorised as an ideal approach for perfect organisational development (Stojanovski, et al., 2014). Weber (1949:90) defines an ideal type as “a construct used for analytical purposes formed through the accentuation of one or several points of views, as well as through synthesizing concrete individual phenomena” For Weber (1922), an institution can be effective and efficient if it has the following characteristics: (i) hierarchy of authority, (ii) rules observation, (iii) job codification, (iv) impersonality, (v) specialised division of labour, and (vi) promotion based on technical competence. Effective and efficiency in the six (6) characteristics can be achieved through a careful effort towards “precision, speed, clarity, knowledge..., continuity, discretion, unity, strict subordination, reduction of friction and costs with material and personnel – are brought to the optimum level in the strictly bureaucratic administration...” (Weber, 1982:249-250). In Max Weber’s conception of his theory, government organisations can be effective if they are run within his ideal type of bureaucracy. In such a case, for Weber (1949), development is inevitable. Juxtaposing Max Weber’s theory of bureaucracy and rationalisation in the South African context, one can notice features of Weberian bureaucracy in the South African state and its government (public service).

Linked to the Weberian approach to development through the bureaucratisation of government organisations, the works of Peter Evans are located on social and economic development, where he emphasises the importance of state organisations as key instruments for development. For the purposes of this project, Peter Evans’ works (1992, 1995, 2010) on the analysis of developmental states on the basis of Max Weber’s rationalised bureaucratic model for modern state development are considered. Evans’ (1992, 1995, 2010) analysis of developmental states approaches was formulated under this model. The cardinal part of Evans’ work is dedicated to swotting the developmental nature of states where he compares developmental states and predatory states (Evans, 1995). He opines that the then Zaire is a predatory state whereas Japan is an epitome of a developmental state, and exemplifies how the latter state plays the role of a regulator, producer, midwife, husbandry and custodian for socio-economic development (Evans, 1995). Evans (1992, 1995, 2010) emphasises the embeddedness and autonomy of developmental states. Autonomy can be defined as a capacity and tenacity of a bureaucratic state to implement policies and to perform

its responsibilities without interference from both internal and external forces (Evans, 1995; O'Neil, 2010); whereas embeddedness is the capacity of a bureaucratic state to institute relations with relevant social groups in a society that includes industries and labour forces (Evans, 1995; Mabasa, 2014). Comparing this to the South African state, one sign of a developmental state is visible. Authors such as Edigheji (2010), Evans (2010) as well as Mabasa and Mqolomba (2016) share a sentiment that South Africa could be a developmental state.

In order to bring local government (municipalities) into the development debate, Max Weber and Peter Evans' theories are brought together to form the cardinal basis of the Weberian developmental state. This leads to a foundation of a Weberian developmental state with six (6) key elements, which are: (i) bureaucratic developmental state with meritocratic and competitive recruitment strategies because Weber considers office work as a vocational assignment; (ii) bureaucratic developmental state with clear productive lines of authority; (iii) bureaucratic developmental state that is highly autonomous; (iv) bureaucratic developmental state that is embedded in the society, labour and industries; (v) bureaucratic developmental state that intervenes in industrial and economic development as well as social and welfare development of the society; and (vi) bureaucratic developmental state with effervescent system of intergovernmental relation (IGR) and cooperative governance. The six (6) key elements that bring Weberian and Evansian ideas propose principles to be further contemplated in the quest for creating a Weberian developmental state. Without a shade of a doubt, the South African state can exemplify these principles towards building a Weberian developmental state in South Africa. Mabasa (2014) attests to this notion.

The final part that adds to Max Weber and Peter Evans' ideas is the important role of local government, which is enshrined in the Constitution and the White Paper on Local Government of 1998 with regard to the notion of a developmental local government. At the heart of the philosophy of developmental local government is the idea of building capacity in local government as well as the allocation or decentralisation of all developmental functions such as housing, local economic development, and transport to local government (Community Law Centre, 2007; Christmas & De Visser, 2009; Koelble & Siddle, 2013; Mathonsi, 2021). This is where the idea of decentralising the administration of the housing function to local government becomes an integral part of creating a Weberian developmental state. Otherwise, the prevalent government qualms and development inertia with regard to the Accreditation Programme defeat the idea of creating a developmental state in South Africa. This is the case because a strong relationship exists between the ideas of developmental local government and developmental state in South Africa (Van Dijk & Croukamp, 2007; Madumo, 2012). In what follows, the methodology adopted in the study as well as the empirical findings of the study are discussed.

5. METHODOLOGY

This section provides summary of the methodology that was applied and adopted in the study. This will be followed by a discussion on findings.

5.1 Methodology

This subsection provides a summary of the methodology adopted in the study by highlighting the research design, sampling method, research instrument, data collection and data analysis. A

qualitative research approach was adopted in the study, and for the purposes of exploring challenges associated with the Accreditation Programme, an explorative case study research design was applied. An original sample of forty-two (42) participants was purposively selected. Nevertheless, owing to the saturation point being reached at twenty-six (26) participants, data collection stopped, especially because no more new angles were emerging and coming through to the research problem. This is commonly known in research cycles as the principle of saturation (Mason, 2010). The selected sample was drawn from the population groups across the three (3) spheres of government and relevant partners responsible for the implementation of the Accreditation Programme. Table 1 provides a profile of the sampled participants of the study. Aligning to the qualitative research design adopted, interviews were conducted as a suitable method for data collection. Appointments were made for data collection in the places of work of participants. Thematic content analysis of the data gathered was applied in order to make sense of the empirics for interpretation and discussion of findings.

Table 1: Respondents Profile

| Participants (Identified in the discussion of findings as P#N) | No of years in housing decentralisation | No of years in Housing/Human Settlements | Position held/Role played in the Accreditation Programme |
|--|---|--|--|
| 1. Participant #1 | 10 years | 24 years | Senior Manager |
| 2. Participant #2 | 19 years | 19 years | Intergovernmental Relations Manager |
| 3. Participant #3 | 9 years | 10 years | Senior Manager |
| 4. Participant #4 | 11 years | 19 Years | Manager |
| 5. Participant #5 | 12 years | 20 years | Senior Manager |
| 6. Participant #6 | 13 years | 13 years | Accreditation Coordinator |
| 7. Participant #7 | 4 years | 10 years | Senior Manager |
| 8. Participant #8 | 14 years | 21 years | Senior Manager |
| 9. Participant #9 | 30 years | 30 years | Senior Manager |
| 10. Participant #10 | 15 years | 24 years | Manager |
| 11. Participant #11 | 5 years | 8 years | Senior Administrative Officer |
| 12. Participant #12 | 6 years | 7 years | Manager |
| 13. Participant #13 | 14 years | 21 years | Senior Manager equivalent |
| 14. Participant #14 | 4 years | 14 years | Manager |
| 15. Participant #15 | 17 years | 20 years | Senior Manager |
| 16. Participant #16 | 13 years | 16 years | Manager |
| 17. Participant #17 | 7 years | 7 years | Manager |
| 18. Participant #18 | 11 years | 19 years | Senior Manager |
| 19. Participant #19 | 13 years | 24 years | Senior Manager |
| 20. Participant #20 | 7 years | 8 years | Administrative Officer |
| 21. Participant #21 | 1 year | 2 years | Assistant Manager |
| 22. Participant #22 | 10 years | 15 years | Manager |
| 23. Participant #23 | 13 years | 23 years | Acting Senior Manager |
| 24. Participant #24 | 10 years | 10 years | Facilitator/Advisor |
| 25. Participant #25 | 17 years | 17 years | Independent Assessor |
| 26. Participant #26 | 5 years | 25 years | Independent Assessor |

5.2 Discussion of Findings

The central question that this article attempts to grapple with is: what are challenges (Qualms and Development Inertia) affecting the Accreditation Programme, and how can they be addressed? In summary of the findings, the Five-Cs enablers are seemingly not intact with regard to the implementation of the Accreditation Programme in South Africa. The findings depicted a number

of challenges that were organised into themes. Central to the findings, it was discovered that there is no adequate understanding of the Accreditation Programme in South Africa. The findings reveal that the Programme faces challenges that can be classified as emanating from four (4) sources, namely: (i) administrative, (ii) political, (iii) capacity and (iv) institutional challenges. The four (4) sources of challenges are discussed in turn below.

5.2.1 Administrative-Related Challenges

The findings revealed that the Accreditation Programme faces challenges in its administration and implementation. One participant indicated that: *“The programme has not been effective administratively... The Programme is not yielding results due to IGR (intergovernmental relations) complexity”* (P#18). Another one said that: *“accreditation has not been as effective as it should have been due to administrative hurdles... maybe because it has not been given requisite priority in IGR operations”* (P#24).

On the basis of findings, the administrative challenges can be classified as *complex IGR* and *cooperative governance arrangements*. Government functions have to be implemented in the spirit of IGR and cooperative governance according to Sections 40 and 41 of the Constitution and Sections 9 and 10 of the IGR Frameworks Act. The functions have to be managed through intergovernmental structures (RSA, 1996, 2005). With regard to housing and human settlements, the Housing Act of 1997 outlines the responsibility of each sphere of government (RSA, 1997). Regardless of the legislative provisions regarding the cooperative governance in the implementation of housing, findings indicate that complex IGR results in administrative challenges. Senoamadi (2014) indicates that cooperative governance and IGR are supposed to ensure efficient implementation of the housing function in South Africa, among other government functions. However, Tapscott (2000) posits that IGR and cooperative governance in South Africa have their own challenges on the administration of government functions. Consistent to the existing literature, the findings on administrative challenges on government policies and programmes in South Africa are not new since such challenges are common in government (Tebele, 2016).

In interpreting the findings on administrative challenges, reference is made to the Weberian theory of bureaucracy as the anchoring theory of the study. The theory states that effective organisations should be characterised by: (i) rules observation, (ii) job codification and (iii) impersonality (Weber, 1978). These characteristics circumvent against administrative challenges in organisations because when rules are observed accordingly, both the administration and administrators are rationalised, and as such, implementation challenges are less likely to occur (Mathonsi, 2021). Granted the impersonality characteristic, neither bureaucrats nor politicians can advance their own personal interests above what their office parameters dictate because the rules serve as a yardstick for operations. In such a case, no one can cause bottlenecks to the workflow when the impersonality characteristic is adhered to. The job codification characteristic is like performance agreements, which clarify what one should do and how. With these characteristics from the Weberian bureaucracy, it is less likely that administrative challenges can affect the implementation of government programmes. The existence of administrative challenges means that some of the Weberian characteristics are not adhered to in South Africa. Administrative challenges on government policies and programmes are common in South Africa. This is also confirmed by Tebele (2016).

5.2.2 Political-Related Challenges

In terms of findings, political-related challenges appear to be the main challenges affecting the Accreditation Programme. Participants indicated that politics and politicians are the major sources of problems for the Accreditation Programme. One participant said that: “*The MEC politicise the (Accreditation) Programme and think that municipalities will take away the HSDG (Human Settlements Development Grant) and USDG (Urban Settlements Development Grant), so he makes it to be about political power and money*” (P#9). Another one indicated that: “*the problem is the political interference. Why was the powers given to MECs? Look it (the Programme) cannot survive until this arrangement is changed*” (P#19). Literature indicates that the challenge of reluctance to decentralise government functions due to political stratagems are common in most government sectors globally (Sana, 2011; Opare, *et al.*, 2012).

It is important to note that the findings on political challenges on decentralisation are consistent with literature (Sana, 2011; Opare, *et al.*, 2012). The political challenge to the Accreditation Programme can be located within the *compromise* arrangements that came with the transition to the democratic dispensation in South Africa. Literature shows that the ANC prefers a strong unitary state as opposed to a federal state (Thompson, 2001; Bastian & Luckham, 2003; Robson, 2006; Yitirmesi, 2018). With regard to the Accreditation Programme, the applicable legislation vests powers to delegate and devolve the administration of the housing function on politicians at provincial spheres (RSA, 1997, 2000). The Programme has elements of supporting federalism. As such, empowering local government for independence is federalism, which appears to be not preferred by the leading liberation party. Consequently, findings on political challenges on the Programme can be located within the broader transition of government regimes in South Africa, where the majority party appears reluctant to delegate and devolve functions to municipalities (Murray & Simeon, 2011; Yitirmesi, 2018).

5.2.3 Capacity-Related Challenge

The findings revealed that capacity-related challenges negatively affect the Accreditation Programme. They show the existence of capacity challenges affecting the Accreditation Programme in both provinces and municipalities. In relation to challenges existing in local government, one participant said that: “*municipalities do not have adequate capacity to implement the housing function*” (P#5). The Municipal Accreditation Framework (2012) states that it is the responsibility of provinces to build capacity in municipalities in relation to the Accreditation Programme in order for municipalities to implement delegated functions (DHS, 2012). This leads straight to another participant, who said that: “*provinces do not appear to have adequate capacity to build capacity in local government and this is why both these two spheres always struggle with human settlements delivery and implementation of accreditation*” (#25). Obviously, one cannot give what s/he does not have, and it is practically impossible for provinces to build capacity in local government if they do not have capacity. Although the challenge of lack of capacity cannot only be blamed at the provincial sphere, municipalities also have challenges in terms of capacity and the inability to sustain pockets of excellence, knowledge and skills (Managa, 2012; Mmola, 2012).

Another perspective that did not really come out of the findings, yet can be considered an observable fact is that the national government lacks capacity in some areas, thus its reliance on

service providers (Mathonsi, 2021). Luiz (2002) argues that the capacity challenge is right across the South African state bureaucracy at large. Lack of capacity in the state bureaucracy has been a topical issue, especially in the post-apartheid dispensation (Padayachee & Desai, 2011). One theorist who is predominantly cited, especially in recent literature on the subject of capacity is Morgan (2006), whose work on *The Concept of Capacity* is a prototype. He looks at the concept from its foundational components as he defines and clarifies it wherein among other key characteristics, he indicates that capacity is about: (i) empowerment and identity, (ii) collective ability, (iii) systems phenomena, (iv) state of potential, (v) creation of public value, and (vi) knowledge and expertise (Morgan, 2006). He eventually defines capacity as an emergent combination of various attributes and elements that enable human systems to produce developmental value (Morgan, 2006). Viewing capacity as a collective ability should assist the three (3) government spheres to view themselves as one government so that lack of capacity in one sphere becomes a collective matter. The finding on capacity challenge is consistent with most local literature (Nengwekhulu, 2009; Stanton, 2009; Managa, 2012; Mmola, 2012).

5.3.4 Institutional-Related Challenge

The findings of the study revealed some complex issues in respect to the manner in which the government of the Republic of South Africa (the state) is constituted. Contrary to the popular notion of appreciating the three (3) levels of government in South Africa, the findings reveal that the existence of the provincial sphere of government is problematic for the Accreditation Programme. One participant indicated that: *“Functions that were supposed to be allocated to municipalities by default are held by provinces who are refusing to assign them to where they rightfully belong”* (P#22). Another participant had this to say: *“...accreditation will be successful if the provincial sphere is taken out of the link. What happened to the debate of abolishing provinces... The programme could move if provinces are no more”* (P#12). These comments by participants can also be linked to the IGR administrative challenges discussed above, although in this instance, the findings note the existence of the provincial sphere as an institutional challenge causing bottlenecks for the Accreditation Programme.

The findings are linked back to the debate on federalism in South Africa with regard to whether the ANC government is comfortable with it or not. The South African state adopted a unitary state government system, which has elements of federalism in practice, and is governed by legislation (Wittenberg, 2003; Williams, et al., 2017). Each sphere is allocated different functions and is expected to contribute towards implementing government functions. However, the findings appear to be biased towards local government in respect to the Accreditation Programme, especially because provinces may not necessarily be the challenge, but roles not played accordingly could be the challenge.

Withal, the findings of the study pointed to the number of challenges under the four (4) categories of challenges discussed above. Linked to the challenges discussed, empirical solutions are recommended in the next section.

6. RECOMMENDATIONS AND POSSIBLE SOLUTIONS

On the basis of the empirics of the study and the literature that supports them, the following five (5) recommendations are proposed to assist in addressing the challenges encountered:

- 6.1 *Depoliticise the Accreditation Programme* to foster its control by technocrats/bureaucrats. Based on their knowledge, administrative experience, and understanding of government processes, bureaucrats can assist towards addressing implementation challenges. This will empower them in housing decentralisation.
- 6.2 *Improve Cooperative Governance in Spheres and Sectors of Government* using memoranda of understanding (MoU), which bind all players and stakeholders across government and partners, to hold each other accountable on what each partner has to do towards the success of the Accreditation Programme.
- 6.3 *Address the Political Will and Support Aspects* by involving political principals with their role clearly defined as supporting as opposed to the Programme relying on them for implementation. Review the applicable frameworks and empower bureaucrats both as individuals and as an intergovernmental structure to be in charge of the programme.
- 6.4 *Integrate the Programme with other Government Programmes* by identifying municipalities where other government programmes are being implemented. This will assist in ensuring that the Programme is in sync with other government programmes. This is referred to as coordinated development in local government.
- 6.5 *Consider Reviewing/amending the Schedules of Constitution* in order to locate the housing function as an original function in local government. This will assist local government to address their mandate of developmental local government. This effectualises federalism by building capacity and empowering local government.

7. CONCLUSION

Consensus, certainty, consistency, courage and commitment seem to be lacking in the South African government when it comes to some of its developmental programmes. In this context, *Government Qualms and Development Inertia* were linked to the lack of the Five (5)-Cs enablers for development programmes with specific reference to the Accreditation Programme. As implemented by the human settlements sector under the custodianship of the DHS, the Programme is a mechanism for the decentralisation of the administration of the housing function to local government. This article was based on the empirics of a study conducted regarding the decentralisation of the administration of the housing function by municipalities. Within the qualitative research approach, an explorative case study design was adopted. Purposive sampling was applied to select people dealing with the Accreditation Programme nationally, including key stakeholders. Interviews were conducted and thematic data analysis was applied. A Weberian developmental state theory was contemplated to anchor the study on seminal works by Max Weber and Peter Evans. The findings of the study revealed manifold challenges affecting the Accreditation Programme. These challenges were classified into four (4) categories, which are political, administrative, capacity and institutional challenges. Some crucial possible panacea to the challenges were provided as recommendations for possible consideration, customisation and implementation.

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THE IMPLICATIONS OF REMOTE WORKING ON PERFORMANCE MANAGEMENT DURING THE COVID-19 PANDEMIC; A CONCEPTUAL PAPER

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INTRODUCTION

Performance management can be a daunting task for both managers and employees (Holbeche, 2015; Saurombe, 2015), and measuring performance is arguably more complicated when done at a distance in today's world of remote work (van Zoonen et al., 2021). Before the Covid-19 pandemic, the global industry in general was already turbulent due to digitalisation, which is critical for improving organisational performance (Neeley & Leonardo, 2021). The most forward-thinking, technology-driven organisations have long acknowledged the need to perpetuate a culture of lifelong learning as a critical underpinning of their digital transformation (Li et al., 2022; Ngobeni et al., 2022).

The Covid-19 pandemic has fast-forwarded the adoption of technology-enabled remote work and meetings, teleworking, and automation (Li et al., 2022). A study among South African firms revealed that at least 38% of the country's active workforce worked from home in 2020, as opposed to 4% before the pandemic (Statistics South Africa, 2021). Pechan (2021) highlighted projections by Gartner that found that a little over half (53%) of American companies would become either fully remote or hybrid (that is, a combination of both physical office and remote working) by the end of 2022. With remote work currently being a long-term reality, as opposed to a mere short-term solution (ILO, 2020), organisations must become more intentional about remote performance management. The mere digital recreation or translation of traditional performance review processes will not enhance the remote work performance management of employees and teams, as remote performance management has specific needs that organisations must meet to ensure success (Pechan, 2021).

The function of performance management faces radical change due to minimised measurement and control and a heightened emphasis on ongoing feedback and lifelong individual and organisational learning. Organisations, managers, and employees must be more transparent, agile, and adept if remote working is to be operated efficiently (Hatami & Segel, 2021). Congruent with organisational digital transformation, performance management places less focus on performance ratings. Rather, it highlights the enhancement of motivation and the crafting of new skills and ongoing learning, with less emphasis on performance itself as the outcome (Brigid et al., 2021; Neeley & Leonardo, 2021). This paper theoretically assessed the key implications of working from home on the ability of line managers to conduct effective performance management of their subordinate employees.

RESEARCH PURPOSE

The purpose of this research was to make conceptual inferences on the ways in which remote working or working from home (WFH) has affected middle management's performance management of employees working remotely during the Covid-19 pandemic.

Research objectives

- To conceptually ascertain the role of middle management in performance management.
- To conceptually ascertain the effectiveness of performance management on employees working remotely.

LITERATURE REVIEW

The subsequent sections under this literature review present an argumentation of the theories considered most pertinent to this research, as well as a conceptual framework and discussion highlighting the key extant literature on the research topic. Most of the sources consulted (except for the theoretical underpinning) were online-accessed journal articles and similar scholarly material published between 2017 and 2022 to provide an accurate overall picture of the research topic during and slightly preceding the Covid-19 pandemic.

Management control theory

Although some characteristics of management control are noted earlier in the management literature (Chua et al., 1989), the groundbreaking theoretical work of Robert Anthony (1965) is considered the underpinning of contemporary management control theory (Otley, 1999). This work is primarily known as the classical model or the classical theory (Berry et al., 2009). Anthony separated management control from strategic planning and operational control and viewed it as a mediating function between the two. In his time, these insights were a significant theoretical contribution, as they unequivocally distinguished the domain of management control theory (Broadbent & Laughlin, 2009; Otley, 1999). A benefit offered by this view was that it cultivated the further investigation of management control as a middle-level (i.e. in between strategic and operational levels) organisational process. Management control supports organisations' pursuit of envisaged or desired results or performances. Consequently, organisations may employ different mechanisms to minimise the adverse effects resulting from the internal and external environments. Management control offers a method for managing organisational performance, including employee performance (Saurombe & Barkhuizen, 2022).

Sound performance management of remote employees necessitates a mindset overhaul; organisations and management must assess people based on outcomes, results, and contribution (Saurombe & Barkhuizen, 2022) rather than mere presence. Regarding performance assessment, specifically performance appraisals, the working location of employees should matter less than having the right strategies and approaches for both the physical organisational and remote contexts (Brown et al., 2019). From a short-term perspective, as individuals and businesses continue to face the many complications of the Covid-19 pandemic, priorities may need to change frequently (Kollamparambil & Oyenubi, 2021; Ngobeni et al., 2022). Organisations and employees alike need to adapt fluidly to changing situations.

Agency theory

Early researchers employed agency theory (Baiman, 1990; Jensen & Meckling, 1976) to delineate the principal-agent dynamics underpinning management control matters. Consequently, it is imperative to dissect the main elements of agency theory to understand how they influence management control theory. Agency theory seeks to explain this relationship using the metaphor of a contract (Jensen & Meckling, 1976). An agency scenario results when one of two or more parties—that is, the agent—acts on behalf of or represents the other part, called the principal, in decision-making (Eisenhardt, 1989). Agency theory seeks to resolve two challenges in agency relationships. The first challenge occurs when (a) the goals of the principal and agent are incongruent, and (b) it is either problematic or expensive for the principal to verify the agent's work. The challenge is that the principal cannot verify any appropriate or inappropriate behaviour of the agent. Second, the principal and the agent may prefer different actions due to varying risk preferences (Jensen & Meckling, 1976). Since the contract governs the relationship between the principal and the agent in this instance, the focus of agency theory is on determining the best contract to govern the principal–agent relationship, considering preconceptions about people (e.g. self-interest, bounded rationality, and risk aversion), organisations (e.g. goal conflict among parties), and information (i.e. information is a commodity for sale/purchase) (Eisenhardt, 1989). The question then becomes, is a behaviour-oriented contract (e.g. salaries and hierarchical governance) better than an outcome-oriented contract (e.g., commissions, stock options and market governance)?

The developed theory concerning the efficiency of the agency contract highlights two solutions that the principal can choose to solve the agent–principal contention (Tosi et al., 2000). First, when the principal can comprehensively access information regarding the agent's efforts, the best contract is based on an observation of the agent's behaviour (monitoring) (Zengler & Gubler, 2018). This prevents the contract from being based on results, which unnecessarily transfers the risks to the reluctant agent. Second, when the principal cannot monitor the agent's efforts and there is high amount of information misalignment, the principal is led to transfer the risks to the agent using an incentive contract (Zengler & Gubler, 2018).

Remote performance can be more challenging to observe in practice, as presence is often associated with performance. Before the Covid-19 pandemic, managers were mainly reluctant to permit their employees to work from home and utilise similar methods of flexible work (Brigid et al., 2021). The prevailing sentiment among managers was that they worried about tracking what employees were doing at any given time. The global remote working movement driven by the Covid-19 pandemic has revealed that such concerns are not as weighty as they were thought to be (Pechan, 2021). Nevertheless, organisations and managers still tend to favour being able to see people working long hours and people being visible around the office (Lal et al., 2021).

Challenges associated with working remotely

It is important to acknowledge that working remotely during the Covid-19 pandemic has been particularly challenging for both employees and managers. As with most (if not all) other talent management elements (Saurombe et al., 2017), appropriate training is necessary to ensure the effective implementation of the performance management of remote work, which was not previously possible due to the Covid-19 pandemic having been unforeseen (Wang et al, 2020).

Consequently, both managers and employees were forced to ‘go with the flow’, particularly in the earlier stages of the pandemic. Some of the challenges related to remote work performance management that stand out the most are delineated subsequently.

Lack of physical interaction (Hatami & Segel, 2021; Nguyen, 2021)

Managers and employees often express concerns about limited face-to-face interaction. They further worry that their subordinates will not work as diligently or efficiently as when in the office (despite research proving otherwise for many jobs). On the other hand, numerous employees grapple with limited managerial support and access to communication. Employees also often feel that remote managers are not in touch with their needs and are neither supportive nor assistive in achieving their work.

Limited access to information (Wang et al., 2020; van Zoonen, 2021)

Recent remote workers are often shocked by the added time and effort it sometimes takes to locate information from co-workers. Even obtaining answers to simple questions can be an enormous obstacle to a worker based away from the office. This phenomenon goes beyond task-related work to interpersonal problems among remote co-workers. Research has found that limited common knowledge among remote workers results in less willingness to give co-workers the benefit of the doubt during challenging situations. For instance, if one is aware that their officemate is having a difficult day, they would view a standoffish email from them as a natural indication of their stress. However, if that individual receives the same email from a remote co-worker without knowing their current circumstances, they are likelier to be offended or think badly of that co-worker’s professionalism.

Isolation (Lal et al., 2021; van Zoonen et al., 2021)

Loneliness is a significant complaint about working remotely, with employees missing the informal social interaction of a traditional office setting. Extroverts may suffer more from isolation in the short term, especially if they lack opportunities to interact with others in their remote-work environment. However, over a more extended period, isolation can result in any employee feeling a lesser sense of belonging to their organisation, thus resulting in an increased intention to quit.

Distractions at home (Li et al., 2022; Nguyen, 2021; van Zoonen et al., 2021)

Photos of a parent holding a child and typing on a laptop while usually sitting on a sofa or living room floor have widely been used to portray remote work. However, this is hardly a good representation of a healthy work situation. Employers are ideally encouraged to ensure that their remote employees have a dedicated workspace and sufficient childcare prior to being permitted to work remotely. Nevertheless, due to the sudden transition to virtual work prompted by the Covid-19 pandemic, employees had to make do with suboptimal workspaces and unexpected parenting responsibilities. Even under ordinary circumstances, blurs between family and home demands can impede remote work, and managers have had to expect these distractions to be more significant during this unplanned work-from-home period. Furthermore, despite improvements in the pandemic situation and the general ease of restrictions, in countries like Botswana and South Africa, the government and many organisations (particularly those that have transitioned back to

working from the office) continue to encourage those infected with moderate to severe (but not mild) Covid-19 to work from home during the recommended isolation period (usually 5–7 days) (China Global Television Network (CGTN), 2022; National Institute for Communicable Diseases (NICD), 2022). This has also impacted employee and team performance management.

A conceptual framework for effective remote performance management

Figure 1 below shows the author’s own conceptual framework of this study. This framework was adapted from a combination of best practices identified in the literature (Dale, 2021; Kollamparambil & Oyenubi, 2021; Li et al., 2022; Neeley & Leonardo, 2021; Pechan, 2021; van Zoonen et al., 2022; Wang et al., 2020) that were used by leading organisations to swiftly transition from traditional to unconventional performance management strategies during the height of the Covid-19 pandemic, that is, when most employees were working remotely. This study established the key components of effective remote performance management, as subsequently delineated: providing regular feedback, training managers to hold fruitful conversations, adopting outcome-based performance appraisals, conducting quarterly performance reviews, and fostering healthy boundaries.

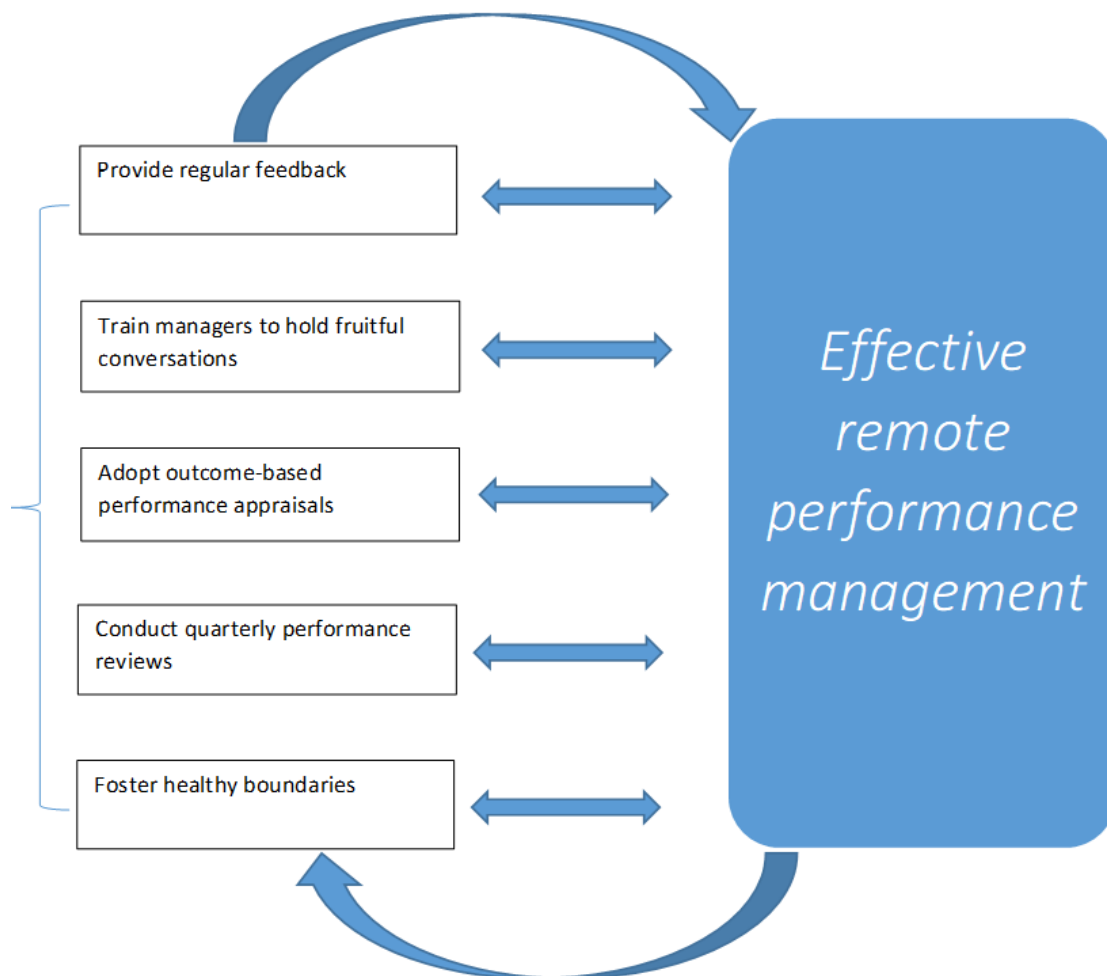


Figure 1: Recommended model for effective remote working performance management
(Author’s own illustration, 2022)

The global lockdowns prompted by the Covid-19 pandemic hastened a universal transition to remote work that was well on its way (Li et al., 2022; van Zoonen et al., 2022). While many companies still plan on completely returning to the office, many more have embraced long-term remote working, or at least a hybrid work structure (Pechan, 2021). As depicted in Figure 1 above, the following strategies can be employed to overhaul performance management for employees and teams working remotely to ensure their engagement and productivity.

Provide regular feedback

Regular communication is critical for remote workers, as they may feel isolated from their workplace and their colleagues or feel as though they are operating in a vacuum, which leads to disengagement and burnout. Thus, workplace communication between managers and their subordinates must be purposeful and constructive; otherwise, employees may feel micromanaged. Remotely working employees benefit most from a constant feedback model of performance management (Dale, 2021). Employees desire helpful, practical feedback, mainly when they feel isolated in their remote working environment, and a regular feedback model offers precisely that, as it allows managers to provide feedback that encourages solutions. Instead of chastising an employee for lousy performance on a task, the manager should investigate what caused it and recommend changes to curtail that behaviour. Regular feedback further builds rapport between managers and their employees, enabling them to have sincerer and more productive conversations (Kollamparambil & Oyenubi, 2021). Since line management is typically responsible for devolving the overall vision, mission, and strategy of the organisation to subordinate employees, frequent communication between the two parties would ensure that the organisation and its talent do not lose direction when working remotely, which is critical to organisational success, as demonstrated by management control theory.

Train managers to hold fruitful conversations

The effectiveness of a regular feedback model on performance management hinges on the manager's ability to hold fruitful conversations (Wang et al., 2020). Managers must be trained to focus on the bigger picture rather than micromanaging specific elements of employee performance. Managers must also know how to ask leading questions that unravel weaknesses in processes or behaviours that could affect performance (Hatami & Segel, 2021). Since they cannot physically observe their subordinates at work, ascertaining the causes of poor performance requires more effort. Once managers have noted problem areas, they must be able to assist employees in improving their performance outcomes. Managers must also be trained to serve more as performance coaches, assisting employees in setting personal goals that enhance performance in alignment with organisational strategic objectives, a notion supported by management control theory. Performance conversations for remote work should emphasise the performance goals associated with business outcomes (Lal et al., 2021). Managers must foster a sense of mutual responsibility to assist employees in reaching their goals.

Adopt outcome-based performance appraisals

Conventional indicators of high performance, such as constant activity, are no longer accurate. Observing an employee's presence at the office until late, for example, does not translate into their performance being better than their co-workers who finish work on time (Wang et al., 2020).

Often, this could be an indication of overload or unsatisfactory performance. At the beginning of the pandemic-related lockdowns, many managers grappled with assessing the productivity of their employees who were not physically observable (Lal et al., 2021), as corroborated by the fundamental underpinnings of agency theory. Good managers, however, do not need to see their subordinates to determine whether they are working, as there are other means of judging performance such as an output/outcomes-based approach. Remote performance management must, therefore, emphasise the importance of output instead of dwelling on or micromanaging input since employees are typically ‘out of sight’ in such employment instances. Employing objectives and key results (OKRs) can assist as these results are tangible, measurable, and indicate progress towards a particular objective. Regular feedback conversations must not focus on input except if it directly affects output, such as a manager assisting an employee in establishing a more efficient and less stressful work process (Li et al., 2021).

Conduct quarterly performance reviews

Although remote performance management hinges on regular personal check-ins, managers must still conduct remote performance reviews to gather performance data, establish a baseline, and determine sustainable growth (Neeley & Leonardo, 2021). These reviews must occur more regularly than orthodox annual reviews. Conducting performance evaluations every quarter is satisfactory enough to keep employees engaged and follow their growth trajectory throughout the year, which would assist in alleviating some of the challenges associated with verifying employees’ efforts in line with agency theory. Since the success of formal quarterly reviews relies on daily or weekly check-ins, the ultimate evaluation for the performance period would not shock the employee. Furthermore, if managers have access to a watertight performance management tool for keeping track of daily conversations, the evaluations become easier to write and track overall (ILO, 2020). When the time for these reviews comes, the employee should be prepared and comfortable to have a face-to-face meeting via videoconferencing software to foster a better sense of personal connection (Dale, 2021).

Foster healthy boundaries

Employees might have trouble setting distinct boundaries between their work and personal lives when working remotely (Brigid, 2021), which is one of the apprehensions of managers in accordance with agency theory. Employees may often feel that they must work more to prove their productivity. Research has shown that many employees currently working remotely feel the urge to log into their remote workstations earlier and remain online after knock-off time to prove their productivity to their managers (ILO, 2020; Seetharaman, et al., 2020). In the long term, this could result in burnout. Developing a more intentional remote performance management approach could curtail such behaviour and aid employees in creating healthy and sustainable work cultures (Holbeche, 2015). Successful and sustainable remote performance management clarifies employees’ priorities, makes their schedules much easier to manage, and thus improves productivity towards the attainment of operational and strategic objectives, as is the ultimate aim of managers adopting the management control theory.

DISCUSSION

This paper primarily sought to conceptually understand the effect of working remotely on employee performance management. The author conceptualised a framework that is believed to be pivotal towards ensuring the effective performance management of remote working employees and teams. The components of this model and recommended solutions to the remote work performance management challenges outlined earlier in this paper are subsequently discussed in this section.

Establish clear objectives and frequently review them: Even when working from the office, it is critical for employees and teams to know what is expected of them and how to go about the duties in the most effective manner (Dale, 2021). This is even more crucial for remote workers, as ambivalence concerning what they should do and what constitutes satisfactory and outstanding performance may increase frustrations among these workers, over and above the challenges that primarily accompany working in an unconventional manner (i.e. either remotely or hybrid).

Set up structured daily check-ins: Effective remote managers typically ensure a phone call or other type of call with their remote employees each day. This may be in the form of several one-on-one calls if employees work more autonomously from each other, or a group call if employees work more collaboratively. The essence is that the calls are frequent and anticipated and are also a platform for employees to consult with their managers, which assures employees that their concerns and questions are heard and considered (Dale, 2021). Frequent check-ins also allow employees and teams to ascertain whether they are on the right track (Seal, 2020).

Offer various technological communication options: More comprehensive technological tools like video conferencing offer participants many visual cues they would have in the face-to-face context and should be leveraged beyond traditional email correspondence (Brigid et al., 2021). Video conferencing has numerous benefits, particularly for smaller groups; for instance, visual cues increase awareness of co-workers and reduce feelings of isolation among teams. Video conferencing is also handy for intricate or sensitive conversations, as it mimics a more personal interaction than written or solely auditory communication (Lal et al., 2021). However, there are instances in which swift access to collaboration is more essential than visual nuance. In such instances, instant messaging tools and applications can be used to ensure instantaneous and effortless communication. Organisations should preferably consult their IT departments for advice on tools that can be used uniformly throughout the organisation according to appropriateness and data security levels (Neeley & Leonardo, 2021; Papagiannidis et al., 2020).

Establishing the rules of engagement: Working remotely is more efficient and satisfying when managers denote expectations regarding frequency, methods, and optimal communication timings for their teams (ILO, 2020). For instance, videoconferencing can be used for daily check-ins, but instant messaging is more appropriate in urgent situations. In addition, managers should inform their employees, to the greatest extent possible, of the best means and time to communicate during the workday; for instance, phone calls and video conferences may be more appropriate earlier in the day, and text messaging later in the day or after hours, depending on both the manager's and employee's preference (Morrison-Smith & Ruiz, 2020). Managers should ultimately also appropriately monitor communication among team members to ensure that they share information accordingly and accurately. Managers are recommended to lay down these rules of engagement

with employees as early as possible, preferably during the initial online check-in meeting. Despite differences in expectations that may exist, what is critical is for all employees or team members to abide by the same set of communication rules and expectations (Morrison-Smith & Ruiz, 2020).

Provide more remote social interaction opportunities: Managers must foster ways for their employees to mingle socially through informal, non-work-related conversations while working remotely (Seetharaman et al., 2020). This is particularly beneficial for workers who abruptly transitioned out of the office. The best way to encourage social interaction is to allow some time before or after the formal part of the team calls for non-work items, such as sharing about one another's weekend. (McKinsey Quarterly, 2020). Virtual/video parties could also be beneficial for achieving lighthearted engagements and work settings. Although these events may seem artificial or overboard, the best managers of remote workers and their employees attest that informal virtual engagements reduce feelings of isolation and encourage a sense of belonging (McKinsey Quarterly, 2020).

Provide encouragement and emotional support: Managers must acknowledge stress, heed employees' concerns and anxieties, and empathise with their challenges, especially when the transition to remote work is abrupt (Nguyen, 2021). If an employee who recently started working remotely is evidently struggling to cope but not communicating stress or anxiety, their manager should reach out to find out about their experiences (Seetharaman et al., 2020). Managers should be intentional when asking questions, with the primary intention of supporting employees to work past their challenges. Emotional intelligence and contagion research suggests that employees rely on their managers for cues regarding how to respond to sudden changes or crises (Seal, 2020). If a manager portrays or embodies stress and helplessness, this will trickle down to employees. A good manager will take a two-pronged approach: acknowledging the challenges experienced by employees during difficult circumstances while simultaneously expressing affirmation of the confidence they have in their teams (McKinsey Quarterly, 2020). Employees will be likelier to assume the challenge with a sense of purpose and focus through such support.

CONTRIBUTION OF THE STUDY

With many organisations having resorted to remote work arrangements during the Covid-19 pandemic, and with some opting to continue with this work setup or at least a hybrid system beyond the pandemic, it is important that more research on this subject becomes available to provide future research with a sound foundation. From a theoretical/conceptual perspective, this research paper offers valuable insights, adding to the relatively minimal existing body of knowledge regarding the best practices that have been used by various organisations and work settings where effective remote performance management has successfully been implemented.

LIMITATIONS AND RECOMMENDATIONS

As is inherently the case with conceptual studies in general, this study lacked pragmatic substantiation. Further, the study focused on specific but not all-encompassing aspects of organisational control, whereas other concepts not explored in this study may arrive at different inferences. Furthermore, the study explored the research topic using theories more inclined towards a middle manager's perspective, which may have restricted the insights discovered by the author. The author recommends further enquiry using qualitative methods, quantitative methods,

or a combination of both methods to empirically explore and substantiate the inferences of this research. The author also recommends the consideration of remote working performance management from other perspectives, such as subordinates, particularly those subject to the performance management process while working remotely.

CONCLUSION

The Covid-19 pandemic has seen the accelerated implementation of the long-underway transition to hybrid and remote work. While these novel approaches to work on a larger scale are not void of challenges, globally, organisations are confronted with the urgency to develop and incorporate them or run the risk of falling behind in the contemporary industrial revolution, where talent is more mobile and accessible from vast geographic locations through technology. Consequently, organisations and managers must adopt pertinent strategies for managing remote working employees and team performance in the most effective way possible to ensure and maintain optimal productivity.

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MODELLING SYSTEMATIC RISK FOR JSE-LISTED COMPANIES

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ABSTRACT

The modern portfolio theory argues that systematic risk and returns are positively and linearly interrelated. Although the modern portfolio theory has been widely accepted, many researchers have empirically questioned its viability. Findings of previous research have resulted in inconclusive and diverse findings. These findings hinge on the level of market development and the type of sample selected. This study aims to determine whether leveraged and unleveraged systematic risk can be modelled for JSE-listed companies by means of accountancy related items other than the returns. The study applied a correlational research design in order to estimate systematic risk, as it relates to sampled JSE-listed companies. Judgement sampling was applied in the selection of the included companies. Data were collected from IRESS and empirical analysis was done by means of SPSS. Where data proved to be non-parametrically distributed, data were then mathematically transformed. Multiple regression analysis was applied in order to predict systematic risk as a dependent variable. Through statistical analysis, the multiple-regression models found that liquidity, cash flow per share, market value-added, gearing, debt-to-assets, price-to-book value, price-to-net assets and return on external investments affect leveraged and unleveraged systematic risk in an impactful manner. The modern portfolio theory has generalised the risk-return trade-off principle and has failed to consider the findings of valuable empirically research conducted. This study could potentially assist academics, financiers, managers, practitioners, shareholders, as well as other stakeholders not to generalised financial theories as systematic risk and returns are complex concepts, and there is no ‘one-size-fits-all’ solution.

Keywords: JSE, modern portfolio theory, portfolio management, risk-return trade-off, systematic risk, systematic risk models, financial returns

1. INTRODUCTION

Uncertainty and volatility of financial markets experienced currently, make investors nervous, due to the associated risk (Reilly & Brown, 2011; Marx *et al.*, 2017). Investors’ concerns are rooted in the fact that risk can lead to potential financial losses. In order to create some degree of reassurance, investors intend to measure and monitor risk, by scrutinising market volatility. This is referred to as “systematic risk”, which is concerned with macroeconomic factors and the way such factors affect financial market behaviour (Szczygielski & Chipete, 2015; Vaidy, 2021). Systematic risk is therefore, an uncontrollable inherit risk within financial markets.

Chhapra *et al.* (2020) describe systematic risk as ‘distress risks’ which are instigated by market fluctuations and cannot be controlled nor be mitigated through diversification. Systematic risk originates from fluctuations in external factors such as: changes in gross domestic product, inflation rates, interest rates, exchange rates, taxation, political uncertainty and commodity prices

(Ahmed & Ramzan, 2016; Brueckner & Lederman, 2017; Rittenburg & Tregarthen 2017; Darby & Roy, 2018). Systematic risk is measured by monitoring the volatility of share prices (Mokoka, 2019). The extent and frequency of variability in share prices influence volatility (Ahmed & Ramzan, 2016), which will influence investment portfolio returns. Investors want investment portfolios to yield the highest possible return at a specific systematic risk level.

Miller (2019) explains that the modern portfolio theory (MPT) governs how returns and systematic risk levels are interrelated. MPT postulate that if all factors are equal, systematic risk and return are directly related — the higher the risk, the higher the return on an investment, and vice versa (Rusoff, 2019). This is universally adopted throughout financial markets (Miller, 2019) and consequently various other financial management principles, such as, capital asset pricing model (CAPM), capital investment valuations through net present value (NPV) measurement, free cash flow (FCF) valuations, dividend discount model, and arbitrage pricing theory (APT) are also based on this hypothesis that risk and return are related linearly.

Even though the risk-return trade-off is widely accepted and applied by financial theorists, the viability of the theory has been brought into question since the 1970s. Researchers such as Armour and Teece (1978), Treacy (1980) and Fiegenbaum and Thomas (1986) found that an inverse relationship exists between risk and return variables. March and Swanson (1984) posited that their findings indicated that no relationship exists between risk and return measures. From the perspective of more recent research conducted within developing countries, several opposing views arose. Table 1. summarise these views.

Table 1: Opposing research findings of studies within developing markets

| Researcher(s) | Year | Location | Finding |
|-----------------------|------|-----------|--|
| Natarajan | 2011 | India | This study concluded that risk and return are positively associated when markets are less volatile, but when volatility increases, there is no association between risk and return. |
| Hunjra <i>et al.</i> | 2011 | Pakistan | The researchers indicated that the Pakistani markets were volatile and that the relationship between risk and return was non-linear, rather than linear. |
| Mulli | 2013 | Nairobi | There is no significant association between risk and return measures. |
| Kouhian & Sharifabadi | 2015 | Iran | All return measures are positively associated with systematic risk. |
| Dedunu | 2017 | Sri Lanka | The return on assets ratio was positively correlated with beta, while dividend payouts were negatively associated with systematic risk. |
| Ramarow | 2017 | Malaysia | The return on assets ratio and return on capital employed are significantly associated with systematic risk. Other return measures are not significantly related to systematic risk. |
| Kamran & Malik | 2018 | Pakistan | Return measures are negatively associated with systematic risk. |
| Ioannis | 2019 | Greece | Return measures were negatively associated with systematic risk. |

Source: Researchers as listed in the table.

From Table 1, the opposing views are clear. Koushian and Sharifaba (2015) indicated that the relationship between systematic risk and return is indeed feasible, while Kamran and Malik (2018) found that the relationship was in fact inverse. Mulli (2013), on the other hand, even found that no significant relationship exists. These opposing views lead to questioning the generalisation of the risk-return trade-off theory. It can be argued from Table 1, that the assumption that systematic risk

and return are directly and linearly related, does not apply under all circumstances. It is submitted that the risk-return trade-off theory should not be accepted as an absolute truth.

Researchers should analyse systematic risk within specific bounds, such as specific markets, sub-markets or investment portfolios, and determine unique prediction models which relate to circumstances within those bounds. In following such an approach, generalisation is avoided, and researchers and investors can better understand systematic risk as it relates to different markets or environments. Since limited research has been done on the prediction of systematic risk within the South African perspective, this study intends to bridge this research gap by formulating systematic risk prediction models for sampled Johannesburg Stock Exchange (JSE) companies. In order to achieve the aim of this paper, the following hypotheses were formulated:

H1: Liquidity ratios can be applied to predict systematic risk for sampled companies.

H2: Market ratios can be applied to predict systematic risk for sampled companies.

H3: Solvency ratios can be applied to predict systematic risk for sampled companies.

H4: The gearing ratio can be applied to predict systematic risk for sampled companies.

2. LITERATURE PERSPECTIVES

2.1 Measuring systematic risk

Systematic risk is caused by share price volatility due to changes in investor sentiment, which are brought about by macroeconomic factors, not within the control of the company or the investor (Mokoka, 2019). Volatility is measured by means of mathematical expression. The calculation of volatility can be done through four different approaches (Mokoka, 2019). The four different approaches are: (1) measuring standard deviations of share prices, (2) measuring an alpha coefficient, (3) measuring a beta coefficient, and (4) estimating a R-squared value based on investment returns. This paper applied beta as the proxy for systematic risk estimation. An approach that was successfully applied by Rutkowska-Ziarko (2022), Tekin (2021), Arora and Kumar (2019), Karakus (2017), as well as Li (2016). Beta compares the performance of the company to that of the industry. It assumes a baseline value of 1. If the company has a beta value greater than 1, its share price behaviour is more volatile than the industry. A beta value of less than 1 indicates that the share price behaviour is less volatile than the industry (Amihud & Goyenko, 2018; Kiersz, 2014). According to Vigario *et al.* (2014), systematic risk can be leveraged (referred to as leveraged beta) or unleveraged (referred to as unleveraged beta).

2.1.1 Unleveraged beta

Unleveraged beta represents a beta measurement through which business debts are ignored. Unleveraged beta estimates systematic risk in the instance where the company is only funded by means of equity contributions (Mehta, 2021). Unleveraged beta is normally a lower risk figure than leveraged beta. Not incorporating debt into a beta measure, decreases systematic risk, as debt renders the company more vulnerable to macroeconomic effects (such as inflation and interest rates) (Abidin *et al.*, 2021). The calculation of unleveraged beta is displayed by Formula 1.

$$\beta_U = \beta_L / [1 + (1 - T) (D/E)] \dots\dots\dots (Formula 1)$$

Where:

- β_u = unleveraged beta
- β_L = leveraged beta
- T = tax rate in decimal
- D = total debt
- E = total equity

From the Formula 1, it is evident that unleveraged beta is calculated by adjusting leverage beta through elimination of the gearing factor. The gearing factor (debt-to-equity ratio) is adjusted for the taxation rate. Thereafter, leveraged beta is divided by 1 + the tax adjusted gearing factor (Abidin, Ahmed, Shah, Khan, Arif & Khan, 2021).

2.1.2 Leveraged beta

Leveraged beta is a beta measurement that accommodates the capital structure of a company. It takes into account that systematic risk is increased when debt is obtained by the company and therefore leveraged beta is a somewhat higher than unleveraged beta (Lesseig & Payne, 2017). Leveraged beta is applied in financial modelling (Sarmiento-Sabogal & Sadeghi, 2014). Formula 2 indicates the calculation for leveraged beta.

$$\beta = \frac{\text{Cov}(r_i, r_m)}{\sigma^2_m} \dots\dots\dots \text{(Formula 2)}$$

Where:

- β = leveraged beta
- Cov = covariance
- r_i = share return
- r_m = market return
- σ^2_m = variance in market return

As per Formula 2, leveraged beta is dividing the covariance between share return and market return by the variance of the market return. The covariance between the share and its market is expressed as a fraction of the variance within the market. Therefore, if the covariance is larger than the market variance, the fraction results in an answer larger than 1. If the covariance is smaller than the market variance, the factor results in an answer smaller than 1 (Abidin *et al.*, 2021).

2.2 Modelling of beta

In order to model leveraged and unleveraged systematic risk, possible independent variables had to be identified. As indicated in the introduction to this study, such independent variables were selected through the identification of four different hypotheses. These hypotheses attempt to estimate leveraged and unleveraged beta values (dependent variables) based on the principles of liquidity, market ratios, solvency and gearing.

2.2.1 Liquidity

Liquidity refers to the ability of the company to meet its short-term commitments (Lovemore & Brummer, 2013). For the purpose of empirical analysis, three liquidity ratios were selected for inclusion: cash flow per share, current ratio and quick ratio.

a) Cash flow per share

The cash flow per share ratio (CF/share) measures the free cash that is available per ordinary share. It divides the FCF by the total ordinary shares in issue. When it comes to cash flow, there are two main arguments put forward. The first argues that cash flow is of great interest to a company to ensure that all short-term obligations can be met as soon as possible. The other argument states that higher free cash leads to smaller potential to generate returns, as cash is left idle and not invested appropriately (Marx *et al.*, 2017). From a risk standpoint, FCF can assist in minimising risk. The immediate availability of free cash can assist a company in its response to risk, as risky circumstances can be prevented or overcome when the company can afford to introduce preventative or corrective measures (Marx *et al.*, 2017; Moles *et al.*, 2011).

a) Current ratio

The current ratio (CR) expresses the relationship between current assets and current liabilities held by the company. This ratio measures the ability of a company to meet short-term obligations within the foreseeable short-term future (within the next 12 months). The CR depends on the effectiveness of working capital aspects. For example, the CR assumes that the company owns inventory that is vendible and market worthy. In circumstances of owning inventory that is obsolete or nonsalable, the relationship expressed by the ratio will not be useful. Furthermore, the ratio accepts that trade debtors are collectable. In circumstances where trade debtors are unable to pay their debt, the CR expresses a misleading relationship between current assets and current liabilities. In terms of risk, the CR measures the ability of quick cash-turning assets to cover current liabilities. Where inventory and debtors can be converted into cash quickly, risk can be minimised for the company (Vigario, 2008; Fabozzi & Drake, 2009; Bose, 2011).

b) Quick ratio

The quick ratio (QR) measures the ability of cash and receivables to cover current liabilities. Like the CR, this ratio is a potential indicator of risk, as the conversion of receivables into cash, can ensure that short-term debts are paid or that risk is responded to by means of liquidity (Bose, 2011; Pinder-Ayres, 2008).

2.2.2 Market ratios

Market ratios are used to evaluate the financial performance of a company (Lovemore & Brummer, 2013). Based on the literature review, four different market ratios were selected: market value added, price per share-to-book value per share ratio, price per share-to-net asset value per share ratio, and return on external investments

a) Market value added

The market value added (MVA) measures the difference between the company's market capitalisation and the cost of capital. From a financial standpoint, it is ideal for the market capital to exceed the cost of obtaining capital. Both market capitalisation and cost of capital are strongly affected by systematic risk factors. In terms of market capitalisation, share prices are affected by demand. In return, demand is often subject to fluctuation in macroeconomic factors. With regard to the cost of capital, changes in costs to obtain capital are often a result of factors that are not within the control of the company. For example, changes in interest rates and corporate tax rates

will affect the cost of debts and funding. Such circumstances are unavoidable (Berk *et al.*, 2018; Knott, 2005).

b) Price per share-to-book value per share ratio

The price per share-to-book value per share ratio (Price/Book) indicates how many times the market price per share can cover the book value per share. Ideally, the market value should be marginally higher than the book value per share. This ratio can indicate riskiness, as incremental increases in book value, paired with incremental decreases in market value demonstrates that increases in book value is not reflected by the shareholder's behaviour (Berk *et al.*, 2018; Lasher, 2021).

c) Price per share-to-net asset value per share ratio

The price per share-to-net asset value per share ratio (Price/net assets) indicates how many times the market price per share can cover the net asset value per share. The net asset value is represented by the total equity of the company, divided by the number of shares in issue. This ratio is a potential indicator of risk to the investor, as the market price per share should ideally be higher than the net asset value per share. In instances where this is not the case, shareholder wealth is not created, and the investor will be unable to generate a capital appreciation of the investment (Berk *et al.*, 2018; Pinder-Ayres, 2008).

d) Return on external investments

Return on external investments (RoEI) refers to circumstances found within business combinations where the company invests in another by obtaining a percentage ownership in the other company. This return is calculated by dividing the returns (normally dividends paid to the company by the other) by the market value of the total shares owned. Investing in other companies contribute to risk, as the market value of shares and returns paid by other companies can fluctuate. In instances where the company, which was invested in, fails financially, the company will also lose the resources originally invested (Sharan, 2012; Corelli, 2014).

2.2.3 Solvency ratios

Solvency ratios are used to evaluate the ability of the company to meet its long-term obligations (Lovemore & Brummer, 2013). The literature suggests debt-to-assets and total assets to capital employed ratios are the most appropriate solvency ratios.

a) Debt-to-assets ratio (D/A)

The debt-to-asset ratio indicates how much of the debt can be covered by the value of total assets. In order to maintain solvency, this ratio should be smaller than 1. The smaller the ratio, the better. In instances where the ratio is larger than 1, the company is not solvent. This ratio can be considered a good indication of risk, as it can indicate bankruptcy or movement towards bankruptcy over a specific timeframe. In instances where the company fails to meet long-term commitments, continuity cannot be ensured, without intervention such as business rescue (Brigham, 2021; Collis, Holt & Hussey, 2012).

b) Total assets-to-capital employed ratio (assets/cap)

The total assets-to-capital employed ratio indicates the relationship between total assets and capital employed. Capital employed is calculated by adding equity and non-current liabilities together. This ratio assumes that capital is employed in order to obtain assets, which in return can generate revenue. The ratio can indicate risk, as investors hold the expectation that the capital they provide to the company, should be invested to obtain assets that can ensure that a flow of revenue is maintained and grown (Collis *et al.*, 2012; Brigham, 2021).

2.2.4 Gearing ratio/debt-to-equity ratio (D/E)

The gearing ratio expresses the relationship between debt and equity. It provides the user with insight into the funding approaches of the company. Typically, the use of debt funding is biased due to the interest payable being tax-deductible and therefore perceived as a “cheaper” source for funding. However, debt is also associated with risk, as interest rates may fluctuate, to the company’s disadvantage of the company. The issuance of shares in order to obtain capital is viewed as a more expensive venture, as failure to pay dividends to the shareholders’ satisfaction may entail negative consequences for the firm. Equity is riskier than debt, as future earnings and the ability to maintain dividend growth rates are uncertain (Brigham, 2021; Lasher, 2021).

3. METHODOLOGY

3.1 Research design

Mouton (2013) describes the term “research design” as an overall blueprint of a research study. According to Van der Niet (2020), research design is affected by the type of study, the type of data collected and the time frame of the research. For the purpose of this research, the predictive correlational research design was utilised. Predictive correlational research is applied under circumstances where researchers study the association between and predictive value of selected variables (Jenkins, 2015). This research design is non-experimental in nature, as the variables are tested as they exist. No interventions or control measures are used to affect variables (Kumar, 2013). This study is undertaken with the intent of formulating independent variables, which predict systematic risk, through statistical analysis. The research applies quantitative empirical research using data over a five-year period and is therefore longitudinal in nature.

3.2 Population

The term “population” is defined as a group, event or phenomenon that is of interest to a researcher (Mouton, 2013). The researcher aims to draw conclusions about the population through data collection (Babbie, 2013). The population of the study is represented by the top 100 companies listed on the JSE. These companies are selected as an appropriate population as they hold 95% of the total JSE market capitalisation, therefore representing the majority of market value maintained by the JSE (Bosiu *et al.*, 2018).

3.3 Sample

The sampling frame of the study is determined through the application of non-probability sampling, in the form of homogenous purposive sampling. Non-probability sampling represents a circumstance under which all units of a population do not have an equal chance of being selected (Creswell, 2014). Purposive sampling or judgement sampling requires that the researcher selects

a sample based on its specific characteristics (Bell, 2015). Homogenous purposive sampling entails that the research sample should have shared characteristics and commonalities. Such characteristics can be summarised through the setting of a criterion (Creswell, 2014). The following sampling criteria have been established for the empirical analysis:

- Criterion 1: All applicable data for the sampled company should be readily available on IRESS for all years under review.
- Criterion 2: The company should be listed on the JSE for all years under review.
- Criterion 3: The company should not operate within the financial sector, as such companies do not publish accountancy related measures that are consistent and comparable to those of other sectors (Chabalala, 2015).

After the application of the criteria, a total of 33 JSE-listed companies were sampled. However, the use of the IRESS database posed a limitation in terms of sampling, as the database was frequently unable to present a complete set of data needed for effective statistical testing. Since consistency and comparability remain key considerations, only data made available by the IRESS were sampled.

3.4 Data collection

It is important that data are collected from recognised and reliable sources, as the data collection can greatly impact statistical findings. It is a classic case of rubbish in, rubbish out (Bell, 2015). In order to ensure that data are collected efficiently, data are retrieved from a recognised database: IRESS. IRESS is a database that contains financial data that relates to listed companies in South Africa (IRESS, 2022). This database was used to retrieve the necessary financial data. It is, therefore, posited that the study is orientated towards the collection of secondary data. As all other research, this study relies on a number of assumptions, when it comes to data collection. These assumptions are: 1) the financial information published on IRESS has been audited and that such information is free from material error and misstatement; 2) accounting-related measures (such as financial ratios) are calculated in a consistent manner by IRESS and 3) IRESS publishes financial information in its entirety, as originally published by the listed company. As a result, no relevant data are omitted.

The data collection time frame spans between 2015 and 2019. According to Field (2009), data should be collected for at least five years, if the researcher wishes to draw conclusions from it. The business environment is often seen as a fast-changing milieu (Vermeulen, 2020), and for this reason, it is argued that the collection of data pertaining to recent financial years can better reflect relevant trends and findings.

3.5 Data analysis

According to Pallant (2013), data analysis should be done by means of an organised and methodical process. Figure 1 demonstrates that such a process was followed in the analysis and presentation of empirical findings.

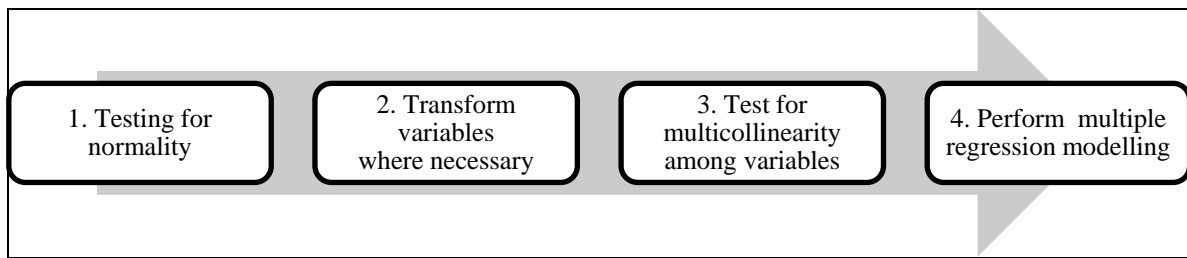


Figure 1: Sequence of empirical analysis

Source: Authors

In organising the empirical analysis, testing for normality served as the starting point. Both dependent and independent variables were tested for normality through the application of the Shapiro-Wilk test. Subsequently, variables had to be statistically log-transformed where necessary, in cases where distribution was found to be non-parametric in nature. Where log-transformation was applied, the variable was renamed, for example where the CR was converted by log-transformation, it was presented as \ln_CR .

Once all variables were parametrically distributed, testing for multicollinearity was executed. This was done by means of measuring a Pearson correlation coefficient. The Pearson correlation coefficient tests for correlation among variables that are parametrically distributed. The purpose of this testing was to ensure that independent variables are not highly correlated with one another. In cases where independent variables share a high association with one another, multicollinearity exists, and it is put forward that the correlated variables measure the same effect or change (Einspruch, 2015). Consequently, the prediction merit of a regression model is overestimated, as it consists of independent variables that reflect one another. Essentially, this means that the same measurement variable is added to itself repetitively and a form of “double counting” is brought about. As can be deduced, this situation results in fictitious statistical outcomes that should be avoided (Antonius, 2013). After testing for multicollinearity was done, regression modelling was performed. For the purpose of this research, multiple regression modelling was executed. This entails that multiple independent variables were applied in order to predict a dependent variable. This resulted in the construction of two different prediction models: one to predict leveraged systematic risk (LB) and unleveraged systematic risk (UB).

4 RESULTS AND DISCUSSION

This section of the paper presents and briefly discusses the findings as it relates to the empirical findings of the study. Par. 4.1 focuses on the model for leveraged beta, while par. 4.2 focuses on the model relating to unleveraged beta. Par. 4.3 indicates whether the hypotheses were accepted or rejected.

4.1 Modelling leveraged and unleveraged beta

The results of the multiple regression modelling can be observed in Tables 2, 3 and 4.

Table 2: Combined model summary for LB and UB

| | R | R² | Standard error (SE) |
|-----------------------------|----------|----------------------|----------------------------|
| Model summary for LB | 0,732 | 0,536 | 0,393 |
| Model summary for UB | 0,739 | 0,547 | 0,309 |

Source: Authors

Table 2 demonstrates that the proposed model can predict 53,6% ($R^2 = 0,536$; $SE = 0,393$) of changes in the dependent variable (LB) while the model for UB can estimate 54,7% ($R^2 = 0,547$; $SE = 0,309$) of changes in unleveraged systematic risk.

Table 3: Combined output for LB and UB regression (ANOVA)

| | Output for LB regression (ANOVA) | | | | |
|------------|----------------------------------|------------------------|-------|---------|-------|
| | Sum of squares | Degree of freedom (df) | Mean | F-ratio | Sig. |
| Regression | 11,943 | 8 | 1,493 | 9,680 | 0,000 |
| Residual | 10,333 | 67 | 0,154 | | |
| Total | 22,276 | 75 | | | |

| | Output for UB regression (ANOVA) | | | | |
|------------|----------------------------------|------------------------|-------|---------|-------|
| | Sum of squares | Degree of freedom (df) | Mean | F-ratio | Sig. |
| Regression | 7,996 | 6 | 1,333 | 13,878 | 0,000 |
| Residual | 6,626 | 69 | 0,096 | | |
| Total | 14,623 | 75 | | | |

Source: Authors

In Table 3, the F-ratio, together with its significance value (Sig.) indicates whether the regression model is an overall good fit for the data. In the instance of Table.3, $F(8,67) = 9,680$, $p < 0,005$. This demonstrates that the model can reliably predict LB, as $p = 0,000$, which is smaller than 0,05. The UB regression's F-ratio, together with its significance value (Sig.) indicates that the model can predict UB reliably, as $F(6,69) = 13,878$, $p < 0,005$, and the p-value is smaller than 0,05.

Table 4 indicates that LB can be predicted by means of eight independent variables, which are all statistically significant, as p-values were smaller than 0,05. The independent variables consisted of: \ln_assets/cap ($\beta = 0,676$, $p < 0,01$), \ln_CR ($\beta = -0,356$, $p < 0,05$), \ln_D/E ($\beta = -1,434$, $p < 0,01$), $\ln_Price/Book$ ($\beta = 1,1910$, $p < 0,01$), $\ln_Price/net\ assets$ ($\beta = 0,668$, $p < 0,01$), \ln_RoEI ($\beta = 0,171$, $p < 0,01$), $\ln_CF/share$ ($\beta = 0,301$, $p < 0,01$) and \ln_MVA ($\beta = -2,487$, $p < 0,01$). Subsequently, the significant variables can be modelled as:

$$LB = -0,723 + 1,186(\ln_assets/cap) - 0,356(\ln_CR) - 0,895(\ln_D/E) + 1,480(\ln_Price/Book) + 0,395(\ln_Price/net\ assets) + 0,046(\ln_RoEI) + 0,146(\ln_CF/share) - 2,391(\ln_MVA)$$

Furthermore, Table 4 indicates that UB can be predicted by means of six statistically significant independent variables: \ln_D/A ($\beta = -1,159$, $p < 0,01$), $\ln_Price/Book$ ($\beta = 1,829$, $p < 0,01$), \ln_RoEI ($\beta = 0,280$, $p < 0,01$), $\ln_CF/share$ ($\beta = 0,381$, $p < 0,01$), \ln_MVA ($\beta = -1,851$, $p < 0,01$) and \ln_QR ($\beta = -0,520$, $p < 0,01$). Subsequently, the significant variables can be modelled as:

$$UB = -1,383 - 0,933(\ln_D/A) + 1,148(\ln_Price/Book) + 0,061(\ln_RoEI) + 0,150(\ln_CF) - 1,442(\ln_MVA) - 0,347(\ln_QR)$$

Table 4: Output for LB and UB regression coefficients

| Variable | Output for LB regression coefficients | | | | |
|--------------------------|---------------------------------------|-----------|-------------------|--------|-------|
| | Unstandardised Beta | Std error | Standardised Beta | t | p |
| Constant | -0,723 | 0,345 | | -2,096 | 0,040 |
| \ln_assets/cap | 1,186 | 0,283 | 0,676 | 4,187 | 0,000 |
| \ln_CR | -0,356 | 0,155 | -0,356 | -2,299 | 0,025 |
| \ln_D/E | -0,895 | 0,137 | -1,434 | -6,519 | 0,000 |
| $\ln_Price/Book$ | 1,480 | 0,279 | 1,1910 | 5,295 | 0,000 |
| $\ln_Price/net\ assets$ | 0,395 | 0,147 | 0,668 | 2,694 | 0,009 |

| Output for LB regression coefficients | | | | | |
|---------------------------------------|---------------------|-----------|-------------------|--------|-------|
| Variable | Unstandardised Beta | Std error | Standardised Beta | t | p |
| ln_RoEI | 0,046 | 0,027 | 0,171 | 1,694 | 0,009 |
| ln_CF/share | 0,146 | 0,044 | 0,301 | 3,342 | 0,001 |
| ln_MVA | -2,391 | 0,329 | -2,487 | -7,260 | 0,000 |
| Output for UB regression coefficients | | | | | |
| Variable | Unstandardised Beta | Std error | Standardised Beta | t | P |
| Constant | -1,383 | 0,308 | | -4,488 | 0,000 |
| ln_D/A | -0,933 | 0,125 | -1,159 | -7,474 | 0,000 |
| ln_Price/Book | 1,148 | 0,189 | 1,829 | 6,075 | 0,000 |
| ln_RoEI | 0,061 | 0,021 | 0,280 | 2,865 | 0,006 |
| ln_CF/share | 0,150 | 0,035 | 0,381 | 4,320 | 0,000 |
| ln_MVA | -1,442 | 0,219 | -1,851 | -6,579 | 0,000 |
| ln_QR | -0,347 | 0,086 | -0,520 | -4,036 | 0,000 |

Source: Authors

4.2 Hypotheses acceptance or rejection

In this penultimate section of the paper, the hypotheses are either accepted or rejected, based on findings listed in Par. 4.1.

4.2.1 Liquidity hypotheses

H1 is accepted for both LB and UB. In the instance of LB and UB (Table 3), ln_CF is a significant statistical contributor to the estimation of systematic risk, where $p < 0,01$. Table 3 indicates the LB's ln_CR was also listed as a significant contributor ($p = 0,025$, thus $p < 0,05$) to the prediction of leveraged systematic risk. While the UB's ln_QR in Table 3, was identified as a significant independent variable ($p = 0,000$, therefore $p < 0,05$) in predicting unleveraged systematic risk. Due to these findings, H1 is accepted, under the condition that the *type* of liquidity measure is paid special attention to. The ln_CR is best associated with leveraged systematic risk, while the ln_QR is best associated with unleveraged systematic risk. ln_CF is associated with both LB and UB.

4.2.2 Market ratio hypotheses

As it relates to ln_MVA, it is posited that H2 is accepted in both the prediction of LB and UB. In Table 3, it can be observed that ln_MVA is a significant predictor, where $p = 0,000$ in both instances and $p < 0,01$. While the ln_Price/Book independent variable, H2 is also accepted, as it was a significant contributor to the estimation of both LB and UB (Table 3), where $p = 0,000$ and $p < 0,01$. The ln_Price/net assets independent variable proved to only contribute to the estimation of LB (Table 3), where $p = 0,000$ and $p < 0,01$. In this instance of predicting LB, H2 is accepted. As it relates to UB, H2 is rejected, as ln_Price/net assets did not contribute to the predicting of UB. Furthermore, the ln_RoEI, H2 is accepted since ln_RoEI contributes significantly to both the estimation of LB and UB, where $p = 0,000$ and $p < 0,01$ as observed in Table 3.

4.2.3 Solvency hypotheses

ln_D/A, H3 is accepted, in the instance of predicting UB. From Table 3 the observation is that ln_D/A is listed as a significant contributor ($p = 0,000$, thus $p < 0,01$) to predict UB. While the LB's ln_D/A was not a prediction contributor. Therefore, H3 is rejected, in the instance of leveraged systematic risk. Furthermore, ln_assets/cap, H3 is accepted for LB. In Table 3, it can be

observed that \ln_assets/cap was a significant contributor to the estimation of LB, where $p < 0,01$. This did not hold true for UB. Therefore, H3 is rejected for UB. It was found that \ln_assets/cap is not a significant contributor to the prediction of UB.

4.2.4 Gearing hypothesis

Finally, H4 is accepted, only in the instance of leveraged systematic risk. Table 3, clearly indicate that \ln_D/E was a significant predictor of leveraged systematic risk ($p = 0,000$, therefore $p < 0,01$). Contradictory to unleveraged systematic risk, H4 is rejected, as \ln_D/E was not a predictor of unleveraged systematic risk.

5. CONCLUSION

To conclude this paper, it is posited that the prediction or estimation of systematic risk should be placed within a predetermined context. For a long time, academics and researchers have accepted that systematic risk is predicted by movements in returns. The MPT was generally accepted without consideration of context, in terms of timing of development, location of development and the market within which the theory was developed. The MPT was absorbed into academic literature and further developed without questioning its substance.

This paper has proven that academics and researchers need to move away from “textbook” thinking. When a financial phenomenon requires understanding, model development needs to be placed within the context of the problem. In order to understand systematic risk, it needs to be analysed and modelled within the specifications of markets, market segments or on a more micro level, within companies. There is no “one-size-fits-all” solution. This research has contributed to the field of finance by demonstrating that a more open-minded approach needs to be adhered to, when financial phenomena is analysed and theorised. Portfolio theories have been generalised to a great extent and such generalisation needs to be questioned if researchers intend to understand systematic risk from different perspectives.

This study, however, has some limitations which include: 1) relying on the integrity of audited financial statements and 2) data collected limited to 33 JSE-listed companies only, due to the availability of relevant data. Based on these limitations the following suggestions are made for further research: 1) consider a larger sample of listed companies, 2) or even compare companies listed on different indexes, such as the AltX, 3) duplicate the study with the intent of sampling companies from other African countries, to observe whether findings share a similarity.

Finally, this paper has proven that systematic risk can be estimated by means of liquidity, market ratios, solvency and gearing, for the sampled companies included in this study. It is submitted that the prediction models were able to combine different financial aspects (not just returns) to predict systematic risk. This finding can benefit investors by encouraging an open-minded approach to the analysis of systematic risk. Investors are encouraged to investigate a range of financial aspects when systematic risk is explored and avoid the limitation of focusing on the analysis of returns, to the exclusion of other financial indicators.

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THE APPROACHES OF NATURE RESERVES' ECOTOURISM: AN EXAMINATION OF ITS EFFECTS ON COMMUNITY PARTICIPATION OF NYONGANE VILLAGE IN SOUTH AFRICA

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ABSTRACT

The move from sustainability to the management of nature has become apparent in the literature that discusses sustainable tourism with predominant focus on ecotourism. The main focus on ecotourism is ecological sustainability, conservation and gratitude of the world and outdated philosophies situated in natural parts. Ecotourism could be undertaken through various approaches such as the industry-oriented approach, community-based natural resources management, and spatial/physical-oriented approach, among others. However, not all the approaches favour and promote the participation of communities in various activities within these nature reserves. Some approaches, instead, promote the privatisation of nature reserves in a way that excludes communities from decisions' making processes, even on matters affecting them. This empirical paper relies on data collected from Nyongane Village and a literature-based methodology to analyse the nature and approaches of ecotourism in the study area. It further examines of effects ecotourism on the participation of communities in nature reserves. Most nature reserves often adopt approaches that ignore the participation of the communities in the activities of those reserves. Thus, bureaucracy in decision making and management of some nature reserves makes it difficult for communities to participate. The paper concludes that such approaches negate community participation in the activities of the nature reserve under investigation. This paper recommends approaches that support and promote the participation of communities in nature reserves, such as the Community-based Natural Resources Management.

Keywords: Community Participation; Poverty; Development; Ecotourism; Nyongane Village; Nature Reserves; South Africa

1. INTRODUCTION

Ceballos-Lascuran (1993), cited in Chiutsi, Mukoroverwa, Karigambe and Mudzengi (2011), described ecotourism as "traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, enjoying the scenery, wildlife and any existing cultural manifestations". Although this description is clear in explaining what ecotourism is, it only focuses on the intentions of the tourist, it does not, however, comment on the effects of the practice on local communities' environmental and economic advancements. Ecotourism, in all of its forms, is frequently touted as a way to protect the environment while also economically benefiting local communities (Eshun, and Tichaawa, 2020). With the rise of sustainable tourism discourse globally, a plethora of tourism projects have been packaged as ecotourism, which is a more sustainable form of tourism than mass tourism (Chiutsi *et al.*, 2011; Wenjie, Xiaolei,

Zhaoping, Wenmin, Fan, and Cuirong, 2015). Evidently, a shift from sustainability to environmental management has occurred where discussions in the literature on sustainable tourism are increasingly focusing on ecotourism (Wenjie *et al.*, 2015; Ramaano, 2021). Ecotourism concentrates on ecological sustainability, conservation, and thankfulness for the earth, as well as ancient philosophies linked to the natural environments (Tseng, Lin, Lin, Wu, and Sriphon, 2019). Ecotourism could be undertaken through various approaches such as the industry-oriented approach, community based natural resources management, spatial/physical-oriented approach, among others (Wenjie, Xiaolei *et al.*, 2015; Mnisi and Ramoroka, 2020). However, not all approaches favour and encourage community participation in nature reserves. Some, on the other hand, advocate the privatisation of nature reserves, even excluding affected communities from decision-making processes (Tseng, Lin *et al.*, 2019).

In 1996, the government of South Africa through the Department of Environmental Affairs and Tourism established a plan on how to sustainably and responsibly develop as well as manage ecotourism (Su, Wall, and Zhong, 2014). However, the management of ecotourism in the country has always been seen as unreliable and impolite due to the instabilities characterising the tourism sector (Tseng, Lin *et al.*, 2019; Ramaano, 2021). Although South Africa's Department of Environmental Affairs and Tourism acknowledges the necessity of ecotourism in ensuring that there is no overutilisation and misuse of resources, most nature reserves are turning a blind eye on the promotion of community participation (Chaminuka, Groenveld, Selomane, and Van Lerland, 2012; Su, Wall *et al.*, 2014; Bianco, and Marciano, 2018). Seemingly, the best way to keep natural resources safe in nature reserves is by restricting the neighbouring communities from participating in its activities, including decision making processes (Wenjie, Xiaolei *et al.*, 2015). It is also believed that the lessor people involved, the quicker it is to make and honour decisions (Chaminuka, Groenveld *et al.*, 2012; Wenjie, Xiaolei *et al.*, 2015). This practice, however, does not leave the neighbouring communities with any chance to voice out their opinions and needs during decision-making processes on matters affecting their development. It is against this background that the purpose of this paper is to investigate the effects of ecotourism on community participation in nature reserves with specific reference to their scenery and approaches in Nyongane Village. This paper consists of five sections. The first section introduces the paper. The second is the literature review, which contains four sub-sections, namely: theoretical framework; the scenery of ecotourism and the approaches of ecotourism. The third section presents the methodology adopted in undertaking this paper. In the fourth section, the outline and discussion of the results are provided. The last section provides the conclusions and recommendations of the paper.

2. LITERATURE REVIEW

This section discusses the theoretical framework; the scenery of ecotourism; the approaches of ecotourism and the examination of the effects of ecotourism on community participation in Nyongane Village in South Africa as follows:

2.1. Theoretical Framework

Ecotourism has been hailed as a form of sustainable tourism that is expected to enhance the maintenance and development of underprivileged societies in South Africa (Mnisi and Ramoroka,

2020; Rahman, Masud, Aktar and Hossain, 2021). For this paper, Ecotourism Theory, which encourages stakeholders' engagement with, and sustainability of the environment is adopted. The Ecotourism Theory propounds a need for ecotourism to provide all the tourists and neighbouring societies with education regarding the environment (Kiper, 2013). Every nature reserve should ensure that education regarding conservation is provided to the neighbouring communities. Ecotourism Theory foregrounds the need for ecotourism to ensure that its reimbursements are shared with all underprivileged and neighbouring communities (Rahman, Masud *et al.*, 2021). Therefore, for communities to be reimbursed as required, the representatives of nature reserves should ensure that neighbouring community members are involved in tourism activities as well as decision-making processes affecting their development.

An amalgamation of a wider literature review on stakeholders' engagement demonstrates that identifying stakeholders is substantial (Kiper, 2013; Mnisi and Ramoroka, 2020). Therefore, the Ecotourism Theory calls purports that there are numerous stakeholders involved in the decision-making process (Rahman, Masud *et al.*, 2021). In this paper, stakeholders are all the individuals directly and indirectly affected by the activities and decisions making process in nature reserves. The Ecotourism Theory argues that representatives of nature reserves should have an association with all stakeholders, which in South Africa include neighbouring communities, municipality, traditional authority, and the department of tourism, among others (Kiper, 2013; Mnisi and Ramoroka, 2020; Rahman, Masud *et al.*, 2021). Furthermore, the Ecotourism Theory contends that the participation process involving stakeholders should also benefit those stakeholders, including in the decision-making process, where all stakeholders' opinions should be taken into consideration and benefits should be shared with them. (Rahman, Masud *et al.*, 2021).

The theory calls for a need for sustainability in a way that an equilibrium amongst development and the environment is established (Kiper, 2013; Mnisi and Ramoroka, 2020). Moreover, the theory affirms a need for growth activities to promote the stewardship of the environment (Rahman, Masud *et al.*, 2021). It prescribes the sustenance of all significant assortments of practices of life in the biosphere (Kiper, 2013; Mnisi and Ramoroka, 2020). Therefore, representatives of nature reserves should ensure that during the conservation of ecology, neighbouring communities also benefit for the purpose of their well-being.

2.2. The Scenery of Nature Reserves' Ecotourism

Ecotourism is seen as a mounting industry in South Africa (Bianco and Marciano, 2018). It has been recognised that ecotourism bears the potential of being the main strategy of job creation, generation of income and enhancement of livelihood of local societies (Su, Wall *et al.*, 2014). According to Cheia (2013), ecotourism promotes prospects of a maintainable utilisation of natural resources in local societies of the country, which leads to the stewardship of the environment. Ecotourism recognises the need to make an appropriate declaration of the upkeep of the natural environment and further proffers that much attention should be paid on individuals misusing natural resources, and that, mechanisms should be engaged to deal with such (Wenjie, Xiaolei *et al.*, 2015; Tseng, Lin *et al.*, 2019). In addition, ecotourism stands firm in restricting human activities such as animal riding, hunting, cutting of trees, burning of the vegetation and other activities that potentially contribute to the destruction of the environment. Therefore, the South African government recognises the essence of the Department of Environmental Affairs and

Tourism to preserve the environment. Ecotourism ensures that the administration of its industry in South Africa's environment is always or often steady and well-mannered (Bianco and Marciano, 2018). There is an increase in the endangerment of ordinary tradition and resources; thus, it is crucial for ecotourism to deliver mechanisms that will ensure that the environment is secured (Eshun and Darko, 2015).

South Africa is one country with best flora and fauna with conditions where natural resources are overutilised and demoralised (Aryal and Maharjan, 2018; Tseng, Lin *et al.*, 2019). Previously, before ecotourism gained recognition among societies, deforestation and soughing had become widespread for sustaining lives (Wenjie, Xiaolei *et al.*, 2015). Presently, there are many faunas that are scarce, which resulted in discouraging deforestation and ensuring that rare animals were/are secured against the local societies and other individuals whose aim is to slaughter, waste and trade fauna and flora (Aryal and Maharjan, 2018). Therefore, ecotourism discourages society's destruction of natural resources by providing strategies that could be adopted to protect flora and fauna (Eshun and Darko, 2015; Bianco and Marciano, 2018). Hence, safeguarding the environment from organic imbalance, corruption, and wide-fluctuating destruction is a necessity.

It is the duty of ecotourism to ensure a creation of an equilibrium amongst the bio centric and anthropocentric opinions to guarantee long-term sustainability (Tseng, Lin *et al.*, 2019). Aryal and Maharjan (2018) state that, ecotourism contributes immensely to the conservation and enhancement of biodiversity and surroundings. Ecotourism assists in environmental consciousness by delivering learning practices and imposing a philosophy of education regarding the environment to both tourists and local societies (Eshun and Darko, 2015; Tseng, Lin *et al.*, 2019). There is, therefore, a dire need to upsurge the awareness on the importance of ecotourism, particularly where it concerns the protection of fauna and flora (Bianco and Marciano, 2018; cf. Cheia, 2013).

2.3. The Approaches Used to Undertake Ecotourism in Nature Reserves

The level of participation of community members in a nature reserve during eco-tours is determined by the type of approach adopted by a nature reserve for ecotourism (Mondino and Beery, 2019). Seemingly, nature reserves turn a blind eye on community participation where most of these reserves use approaches such as an industry-oriented approach and physical or spatial approach. The industry-oriented approach encourages the private ownership of nature reserves (Aryal and Maharjan, 2018). It neither calls for nature reserves to consider community participation nor the enhancement of rural areas. The industry-oriented approach is used where fiscal encouragements, private marketplaces and other wreckages of government could accomplish their determinations (Eshun and Darko, 2015; Mondino and Beery, 2019). This approach primarily concentrates on generating profit and views ecotourism as an exportation business.

The physical or spatial approach necessitates the consideration of social, physical, and ecofriendly capacity when undertaking ecotourism (Bianco and Marciano, 2018). It does not encourage the improvement of the standards of living of households in rural areas (Eshun and Darko, 2015). This approach to ecotourism emphasises that attention should be paid to the protection of the environment (Chengcai, Linsheng and Shengkui, 2012; Cheia, 2013). The Physical Approach to ecotourism encourages the need to concentrate ecotourism on spatial forms to lessen harmful effects on the environment (Mondino and Beery, 2019). It is quite rare to find a nature reserve that

uses the Community-Based Ecotourism approach in South Africa (Su, Wall *et al.*, 2014; Mohd, Razzaq, Mustafa, Nordin and Ibrahim, 2020). This approach emphasises the obligation to the enhancement of disadvantaged civilisations and the need to allow community members to participate in ecotourism matters that concern them (Mohd, Razzaq *et al.*, 2020).

3. RESEARCH METHODOLOGY

The study was based at Nyongane Village under the Mbombela Municipality in the Mpumalanga Province, South Africa. Nyongane Village is about 10 kilometres away from Kruger National Park, Phabeni Gate. This area is characterised by high levels of poverty (Mbombela Local Municipality, 2017), due to unemployment, illiteracy and lack of skills prevalent in the village.

3.1 Research Design

This is a conceptual and empirical paper which relied on both primary and secondary data to investigate the aim of the study. The paper adopted the normative design since human beings and their life activities were the focus, and there were no controlled variables.

3.2 Sampling Method

The target population for this paper was the community members of Nyongane Village and Kruger National Park, Phabeni Gate Nature Reserve. Nyongane Village had about 500 households (Mbombela Local Municipality, 2017) and the paper sampled 10% of the households, i.e. 50 heads of households, using the systematic sampling design. The respondents were assured of their privacy, anonymity and confidentiality. The Kruger National Park, Phabeni Gate had about 10 officials under the section of community development facilities. Only 1 official was sampled using judgemental sampling method.

3.3 Data Collection

The paper reviewed documents, journal articles, newspapers, etc., to collect secondary data. It proceeded to use interview schedules and questionnaires to collect primary data. The questionnaires were used to collect data from the heads of households in the community of Nyongane Village. The interview schedules were used to collect data from the Kruger National Park, Phabeni Gate Nature Reserve officials.

3.4 Data Analysis

The qualitative data in this paper were analysed using thick description, which assisted in providing an in-depth description of the aim of the study. The quantitative data were analysed using Statistical Package of Social Sciences.

4. RESULTS AND DISCUSSION

The denial of poor local communities from using conserved natural resources combats the economic development of the same poor local communities (Liu, Li and Pechake, 2013). Hence, most local communities are still faced with high levels of poverty regardless of ecotourism activities located within or next to their communities. Access to resources in nature reserves is mostly given to elites (people who are rich or financially stable) and people of high profiles

(Mondino and Beery, 2019). This section provides a discussion of the results from Nyongane Village and Phabeni Gate Nature Reserve as follows:

4.1. Approaches to Ecotourism

Nature Reserves use approaches that overlook the participation of the communities in those reserves, such as the Industry-Orientated Approach and Physical or Spatial Oriented Approach. It was found that the Kruger National Park, Phabeni Gate adopted the Industry-Oriented Approach to ecotourism (Figure 1). The approach was adopted because the nature reserve is privately-owned, and its main focus is profit-making.

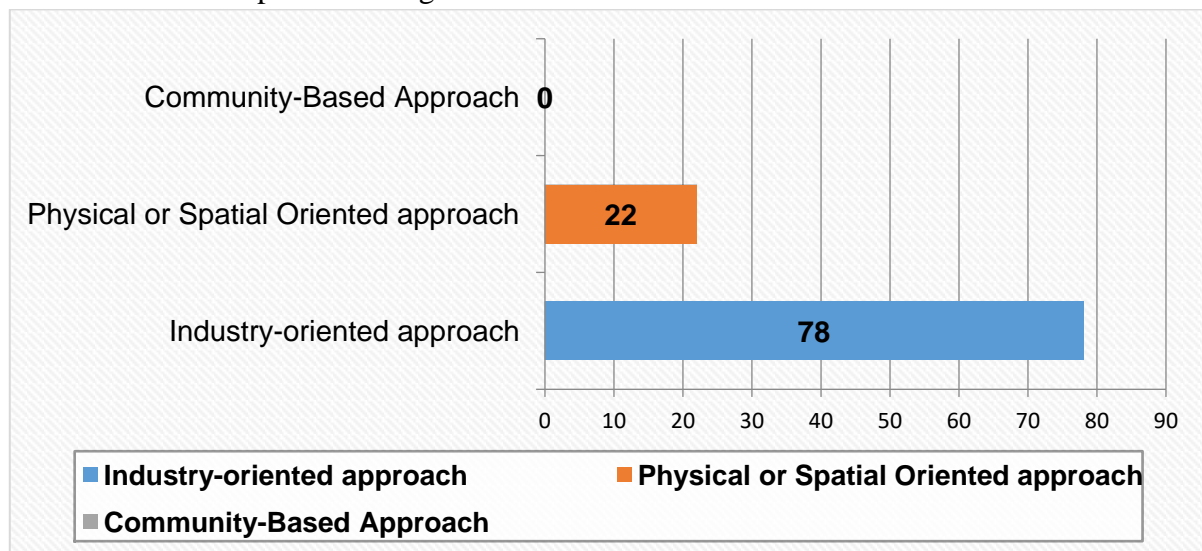


Figure 1: Approaches to Ecotourism

The Industry-Oriented Approach to ecotourism disregards the improvement of the standards of the communities in their vicinity living in poverty. It promotes private ownership of nature reserves. It endorses a bureaucratic way of decision-making in the nature reserves, which makes it difficult for communities to participate. In essence, the approach ensures an extensive separation development of communities and the environment. It ignores the need to include local communities in decision making processes. The Physical or Spatial Oriented Approach, on the other hand, aver that too much attention should be paid to the protection of the environment. The approach pays attention to social, physical and environmental capacity when undertaking ecotourism. It advocates the need to focus ecotourism on spatial patterns to diminish negative impacts on the environment. It affirms the need to raise environmental awareness while ignoring development. From the findings, 78% of the community members of Nyongane Village contended that ecotourism is undertaken using the Industry-Oriented Approach (Figure 1). Moreover, the figure shows that 22% of the community members of the same village, argued that the Kruger National Park, Phabeni Gate Nature Reserve practices ecotourism using the Physical or Spatial Oriented Approach. Lastly, the figure shows that concerning the adoption of the Community-Based Approach, none of the respondents confirmed neither its existence nor adoption in the reserve. Thus, the Kruger National Park, Phabeni Gate has adopted approaches that ignore the participation of the community of Nyongane Village.

4.2. The Community’s Access to resources in the Reserve

The findings from Nyongane Village confirm that 100% of the respondents do not have access to resources in the reserve (Figure 2). The situation is influenced by the approaches adopted by the nature reserve to undertake ecotourism, as they ignore community participation. Lastly, the findings reveal that in terms of the options for both flora and fauna, the responses were 0% because the community members stated that they do not have any access to all the natural resources in the nature reserve.

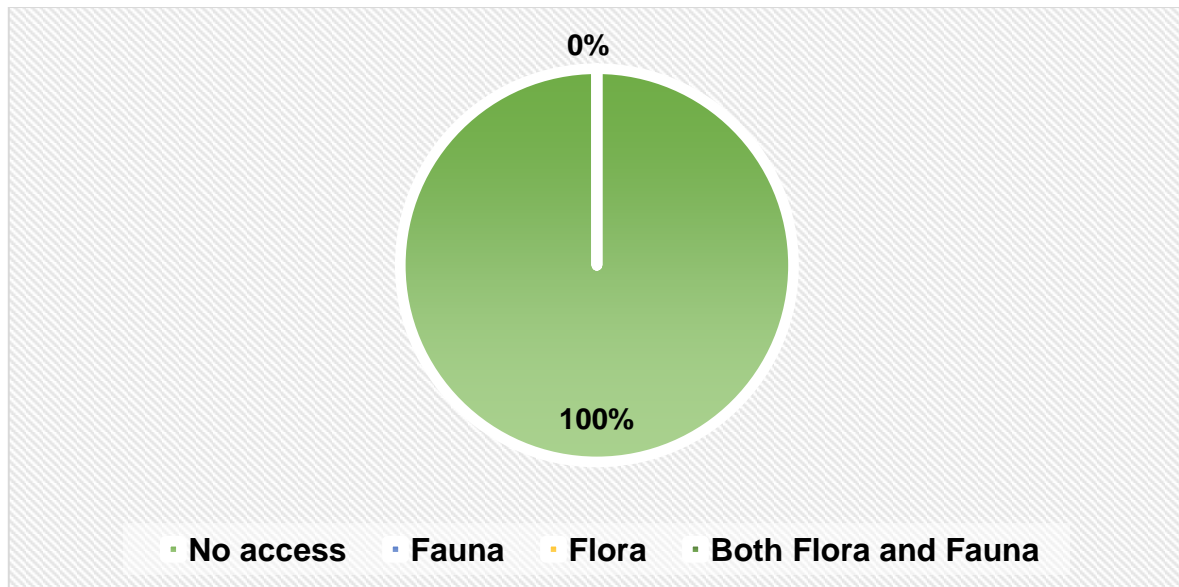


Figure 2: The Community’s Access to resources in the Reserve

Some parts of the land used by the nature reserve could be useful to the community members in Nyongane Village for income generation activities. Nature reserves such as the Kruger National Park, Phabeni gate conserve resources for financial purposes from which the money made from ecotourism is not shared with the residents of Nyongane Village. This leaves the community members with no hope of being provided with development as well as income generating activities.

The study found that the community members of Nyongane Village do not have access to resources in the reserve as they are denied the opportunity to consume resources that are necessary for their survival. In addition, they are also denied the opportunity to participate in resource management authority. The belief is that decision making processes concerning the resources in the reserve should only include the reserve’s representatives. The reserve argued that the smaller the decision-making process, the easier it becomes to take informed decisions and reach conclusions within a very short period of time. The main reason for the residents’ restrictions from accessing resources in the reserve are promoted and encouraged by the types of approaches that were adopted by the Kruger National Park, Phabeni Gate nature reserve.

4.3. The Community’s Communication with the Nature Reserve

The paper also found that a large number of community members of Nyongane Village had no mode of communication between them and Kruger National Park Phabeni Gate nature reserve (Figure 3). On the other hand, very few people from the village stated that the nature reserve communicates with them through community meetings and emails.

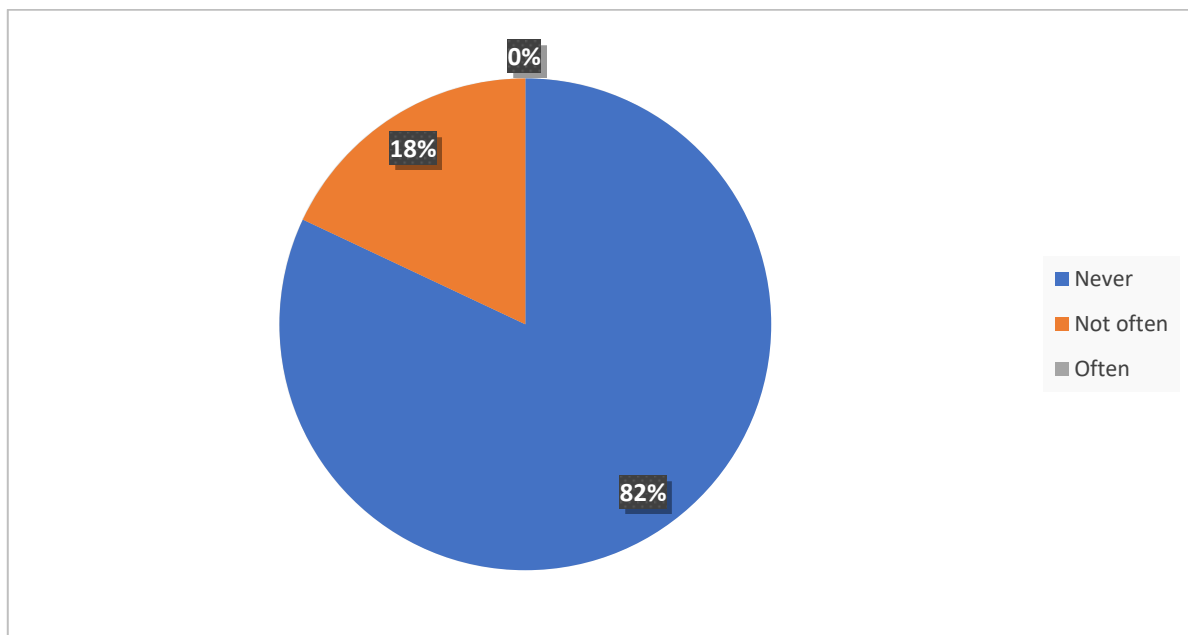


Figure 3: The Community's Communication with the Nature Reserve

The few people who are communicated with through emails are those who work at the reserve and those doing art crafting around the nature reserves. Those communicated with through community meetings are traditional authorities and those who are working for the traditional authorities. The findings further demonstrate that 18% said they did receive communication, but not often. The respondents who receive communication from the reserve are the people who do art crafting, work as tour guides and security guards around the reserve. On the other hand, 82% of the respondents did not have any communication with the reserve (Figure 3). Lastly, the findings demonstrate that in terms of the option for receiving the communication 'often', there was confirmation from the residents. The respondents did not select the option 'often' because the Kruger National Park, Phabeni Gate Nature Reserve adopted the Industry-Oriented Approach, which does not even consider the development of rural areas. Literature supports the findings by stating that the Industry-Oriented Approach primarily focuses on making profit and views ecotourism as an exportation business (Stem, Lassoie, Lee, Deshler, and Schelhas, 2003; Aryal and Maharjan, 2018). Literature reveals that practically, ecotourism mostly ignores the development of local communities and their livelihoods (Aryal and Maharjan, 2018). Although the majority of respondents stated that there is no communication between the Kruger National Park, Phabeni Gate Nature Reserve and the community members of Nyongane Village, some community members stated that they do have communication with the nature reserve, but not often.

4.4. Communication Methods Used by the Nature Reserve with the Community

From the findings, 84% of the residents of the Nyongane Village are excluded from the decision making processes on matters affecting them (Figure 4). From the remaining 16% of the respondents who have communication with the nature reserve, 8% stated that they communicated with the reserve using email while the other 8% said that they communicate with the reserve through community meetings.

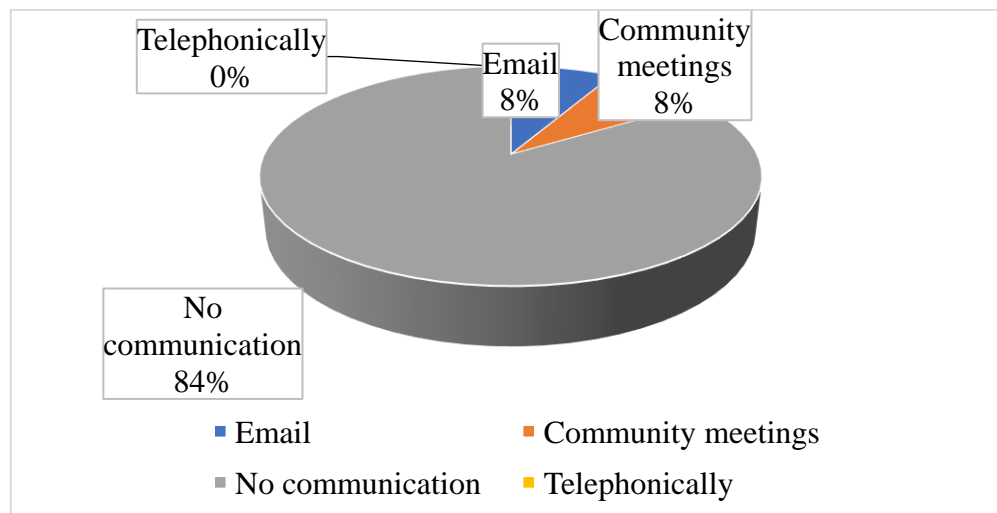


Figure 4: Communication Methods Used by the Nature Reserve with the Community

The figure demonstrates that on the option ‘telephonically’, there was a 0% response. Most of the respondents emphasised lack of communication between the community of Nyongane Village and the Phabeni Gate Nature Reserve. Literature supports the findings by stating that generally, most nature reserves engage mostly with people who directly generate profit for the reserves (Liu, Li *et al.*, 2013). The findings demonstrate that 84% of the respondents do not have any specific methods of communication used with the reserve (Figure 4).

5. CONCLUSION

The paper concludes that the approaches used to undertake ecotourism affect the process of Nyongane Village’s participation in the nature reserve. Hence, it recommends a serious consideration of approaches that support the participation of communities in nature reserves, such as the Community-based Natural Resources Management. Ecotourism should provide education, not only to tourists, but also to the people living in Nyongane Village. Experiences should not be provided to tourists only, but also to local communities. This will aid in the provision of full and important knowledge concerning ecotourism and promoting environmental awareness. Access to the reserve should be given to the community members with continuous monitoring to avoid a situation where community members might start poaching or overusing the resources. Providing the community with access to resources in the reserve will enable them to learn the importance of conservation.

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OPTIMISING DISRUPTION THROUGH MANAGING KNOWLEDGE AND DYNAMIC CAPABILITIES

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ABSTRACT

Organisations with advanced knowledge management (KM) capabilities and indeed the efficiency to continue operations in the face of major disruptions, such as those caused by the COVID-19 pandemic, have been found to not only adapt well, but flourish under conditions of volatility, uncertainty, complexity and ambiguity (VUCA). Dynamic capabilities (DC) are those management competencies found in routines, shared practices and collective actions, and may be categorised into the three primary activities of sensing, seizing and reconfiguring resources, to make the organisation excel amidst disruption. Dynamic capabilities, especially when coupled with the advanced competencies of collecting, storing, sharing and managing organisational knowledge, may improve competitive capability or, in a non-competitive environment such as public education, enhance service delivery and superior provision of intended objectives. The purpose of this theoretical paper is to critically examine the current state of utilisation and application of knowledge management and dynamic capabilities as management tools, in the context of an education system characterised by noticeable inequalities. Theoretical, abstract research was conducted to uncover current research trends in South Africa and globally, in the fields of knowledge management and dynamic capabilities. Borrowing from the field of management strategy, we are viewing school managers and their competencies in creating value for stakeholders such as employees, learners, parents and the broader community. This conceptual study has resulted in a summary of the evolution of knowledge management practice and the practice of dynamic capabilities. Although the literature has a strong management angle, we would like eventually to empirically test these theoretical findings in a South African high school. Policy makers in the Department of Higher Education in South Africa, school managers and researchers may benefit from this theoretical knowledge and use it to improve their abilities to sense, seize and reconfigure existing knowledge and capabilities in the face of major events that result in operational disruptions.

Keywords: COVID-19; dynamic capabilities; knowledge management; public schools; South Africa.

INTRODUCTION AND BACKGROUND

The education system in South Africa (SA) faces unique challenges, many of which preceded the onset of the COVID-19 pandemic (unicef.org, 2021). Despite the relatively high level of public spending on education, education quality in SA is a matter of concern (Mlachila & Moeletsi, 2019).

The Mail & Guardian (2020) mentioned that 18 schools received a zero percent pass rate while 30 schools achieved a pass rate of less than 20% during the period 2017 to 2019. Chris Gilili from the Mail & Guardian (2020) observed that while politicians talk about a fourth industrial revolution (4IR) and laud a matric pass rate of more than 81%, the reality is that South African pupils face significant challenges. They do not have access to professional teachers, textbooks, drinking water or functioning school buildings (unicef.org, 2021). By comparison, sub-Saharan African countries that invest far less per pupil, achieve better academic outcomes (Mlachila & Moeletsi, 2019). Approximately half of South African pupils drop out before completing school, while less than 5% who begin primary school end up with a university qualification (Mlachila & Moeletsi, 2019).

Education levels and prosperity go hand in hand and in SA, a country in which 80% of schools perform poorly and only 17% of school leavers qualify for university (Mail & Guardian, 2020). The persistent low levels of education are responsible for a large share of the population remaining unemployed and living in abject poverty (de Clercq, 2020). This inequality is far more pronounced in the rural and informal areas, where many of the poorest performing schools could not easily transition to remote learning following the COVID-19 outbreak (unicef.org, 2021). Learning time was lost forever, and 750 000 pupils dropped out of school. Simultaneously, during the 2021 unrest in KwaZulu-Natal and Gauteng, looting and vandalism caused severe disruption to schools. For vulnerable pupils who are already experiencing the brunt of household poverty, exposure to violence and other social ills, education and, therefore, a potentially better life, are placed even further out of reach (news24.com).

Van der Berg, Hofmeyr and van Broekhuizen (2017) regard a lack of teacher accountability and teacher effort as South Africa's most significant educational challenge. With their weak content knowledge, teachers lack the ability to accurately judge and enhance pupils' performance (Mlachila & Moeletsi, 2019). This problem was confirmed by Spaul (2019) who states that despite adequate remuneration, most South African teachers lack the content knowledge or pedagogical skills necessary to impart the curriculum. This vital human resource that is missing in many South African schools has forced school managers, educators and researchers to rethink the current outdated model of schooling and, instead, to focus on the needed education. Surprisingly, the COVID-19 pandemic may have provided an opportunity for a radical transformation in the country's education system. The already volatile, uncertain, complex and ambiguous (VUCA) school environment, aggravated by the COVID-19 pandemic, may have created a space for improved management of school knowledge and for the modification of schools' existing resources to keep pace with environmental reforms and challenges (Mlachila & Moeletsi, 2019).

The concept of dynamic capabilities (DC) was initially developed by the business strategy scholars, Teece, Pisano and Shuen (1997) to answer the fundamental question of how organisations create wealth by achieving and sustaining a competitive advantage. The notion of DC comprises the potential of an organisation to create, extend or modify its resource base purposefully (Helfat & Peteraf, 2009; Roos, 2017). This resource base includes the tangible, intangible and human assets and the capabilities owned, controlled or accessed by the organisation (Helfat & Peteraf, 2009) together with the managers' ability to continuously adapt and re-allocate the organisation's existing resources to achieve organisational effectiveness (Roos, 2017; Walters & Watters, 2017).

Abecker, Dignum and van Elst (2004) define knowledge management (KM) as a systematic, holistic approach to sustainably improve knowledge on all organisational levels (individual, group, organisation and inter-organisation) in support of organisation goals. Garcia and Sosa-Fey (2020) assert that KM comprises leadership, organisation, learning and technology and involves processes to effectively manage and apply organisational knowledge to create value, enhance performance and gain a strategic edge in the market (Kaur, 2019).

Asad, Rind and Abdulmuhsin (2021) highlight the increased disproportion between well-resourced and under-resourced schools that perpetuates education inequalities in SA. Many schools lack the necessary ability to make full use of their resources (Shahzad, Bajwa, Siddiqi, Ahmid & Sultani, 2016). DC and KM may provide a better understanding of how schools can use available knowledge and resources to help alleviate some of the inequalities between well-resourced and under-resourced schools, exacerbated by the rapid changes in our VUCA environment. The vast quantity of knowledge available in schools has increased the need for and importance of its management. Knowledge in schools cannot be optimised until proper systems and processes exist to manage that knowledge optimally.

Although some research has been undertaken on KM in schools, very little research about DC in schools is available. Schools are dramatically different in structure and culture from private sector organisations which compete for services, resources and turnover. Nevertheless, research outside the corporate environment has revealed that DC and KM may improve school performance (Santo, 2005). School leaders appear to be unaware of the relevance of DC and KM processes and how their use could enhance school performance. Hence, exploring the knowledge of and experience with DC and KM in a public-school setting in SA may assist school leaders to navigate some of the challenges facing SA schools (Asad, Rind, & Abdulmuhsin, 2021).

The purpose of this paper is to explore the value created by effectively managing knowledge so that it becomes a dynamic capability. Two objectives are addressed in this theoretical paper: the first is to review literature on KM and DC and the second is to recommend a way forward based on our findings.

This paper proceeds with a literature review of DC and KM in the context of the SA education system, severely disrupted by the COVID-19 pandemic. The content of this paper illustrates the constructivist approach applied to make recommendations to South African schools. The findings that follow may be useful for policy makers, education managers and researchers of school education, KM and DM. This paper may have theoretical implications for all South African schools because it suggests a turning point that can potentially improve the management of schools in a VUCA environment.

LITERATURE REVIEW

Dynamic capabilities (DC)

Dynamic capabilities theory (DCT) has advanced an area of research that describes how and why successful organisations adapt to environmental changes (Nair, Rustambekov, McShane & Fainshmidt, 2014). With its origins in strategic management, scholars, managers and leaders attempted to understand how organisations achieved and sustained competitive advantage (Teece, Pisano & Shuen, 1997). Theories related to organisational performance and competitive

advantage, such as the competitive forces model pioneered by Porter in 1980, the strategic conflict approach to organisation performance published by Shapiro in 1989 (Teece, Pisano & Shuen, 1997), and the resource-based perspective proposed by Barney in 1991, all preceded DC theory and provided its building blocks.

DCT is premised on four principles, including the resource-based view (RBV), the knowledge-based view (KBV), the evolutionary perspective and the market-based view (Mara, 2019). Only the underlying theories of resources and knowledge are singled out in this study on KM as a DC. Gakuo and Rotich (2017) found that knowledge in banking is a strategic resource, which creates organisational success and sustainability, yet few organisations view it in that light. While organisational performance could be measured by financial or non-financial indicators, an organisation's use of technology, organisational processes, people's mindset and culture are important enablers of KM (Odero & Otuya, 2017). In a knowledge economy, therefore, managing knowledge successfully may be considered a resource and a capability that drive organisational success and sustainability (Chatterji & Patro, 2014). However, Roos (2017) says that only those knowledge resources that are valuable, rare, inimitable and non-substitutable (VRIN), can truly be considered as superior resources that may improve organisational performance.

DC can be grouped into three primary activities: (1) sensing, (2) seizing and (3) transformation or reconfiguration (Endres, 2017). Organisations engaged in sensing actively seek and recognise opportunities and threats in the business environment (Chatterji & Patro, 2014). Sensing is the primary activity for gathering and interpreting information to build knowledge regarding organisational opportunities and threats (Teece & Pisano, 1994; Endres, 2017). Organisations must continuously respond to opportunities and threats posed by their changing environment to succeed under challenging circumstances (Endres, 2017).

Threats, often the consequence of adverse environmental conditions, are characterised as undesirable, unmanageable events that can lead to possible losses (Wang, Ellinger & Wu, 2013). In contrast, opportunities could come in the form of innovation through new ideas and needs expressed by customers (Wang et al., 2013). Opportunities are the extent to which management perceives a market condition to be beneficial to the organisation, and views it as being positive, manageable and resulting in possible gain (Odero & Otuya, 2017). The ability to recognise opportunities depends greatly on the learning and knowledge capacity of the organisation as well as the collective capabilities of individuals belonging to that organisation (Teece, 2007; Mara, 2019). Sensing environmental changes allows an organisation to reconfigure specific capabilities before organisational change becomes unattainable (Protogerou, Caloghirou, & Lioukas, 2012). Management teams can use internal and external data sources to continuously examine the organisation's context, pay attention to problems and identify new opportunities (Teece, 2018). Sensing is the most important aspect of DCT, because it provides the foundation for the other features, namely seizing and transformation (Protogerou et al., 2012; Teece, 2007).

Seizing is the actualisation and execution of potentialities, which involves the mobilisation of internal and external resources and competencies (Schelling & Pierling, 2015; Teece et al., 2016). Seizing can occur internally when individual employees or entire teams are empowered to perform new or additional functions, i.e. to create new capabilities, or to prevent the possibility of human capital being seized externally by contracting consultants. Seizing involves choosing and developing opportunities by facilitating and improving resources, support systems, routines and

abilities (Teece, 2007). Seizing activities typically include developing a business plan, staff communication, coordinating stakeholders, raising capital, preparing for strategy execution, implementing organisational innovations and setting the scene for strategy implementation (Feiler & Teece, 2014). These activities occur concurrently throughout the organisation and contain organisational processes and unique managerial decisions (Teece *et al.*, 2016). Once the organisation's leaders have a deeper comprehension of their needs through sensing, they can bring solutions to people, who often might not yet realise that they need them, through the activity of seizing (Amiripour *et al.*, 2017).

While sensing prepares stakeholders for change and seizing involves changing the organisation to capitalise on opportunities and create value through actions to minimise risks (Feiler & Teece, 2014), transformation is the continued recombining and reconfiguring of resources within the organisation as changes or opportunities evolve (Amiripour *et al.*, 2017). Rapid change in the external environment compels organisations to acquire and perfect the ability to reconfigure their resource structure to achieve desired internal and external transformation (Altamony, Al-Salti, Gharaibeh, & Elyas, 2016). Transformational capabilities are the routines designed to maintain strategic applicability in changing environments through continuous configuration and reconfiguration of tangible and intangible assets (Feiler & Teece, 2014). The combination of sensing, seizing and transformation can be described as recurrent DC mobilisation, which enhances a resource base, without the addition of new resources and allows organisations to thrive in the face of turbulence (Feiler & Teece, 2014).

Organisations that can optimally implement sensing, seizing and transformation strategies are better equipped to orientate their resource base to the environment than their rivals with less accomplished skills (Teece, 2007). Management teams' unwillingness, delay or inability to use DC to respond to rapidly changing environments leads to poor alignment of the resource base with the environment (Feiler & Teece, 2014). While DC are developed internally through actions and intellectual processes focused on tried and tested organisational practices (Breznik & Lahovnik, 2016), such capabilities are ineffective when unaligned to changing external demands. All organisations strive for better performance and, in that respect, sensing, seizing and transformation equip organisations to improve and create tangible and intangible capability changes for enhanced performance (Teece, 2007). DC have been shown to influence performance by changing existing capabilities and enhancing existing skill sets with the goal of receiving higher economic rewards (Wright, 2016).

Knowledge management (KM)

Knowledge can be explained in terms of data, information, expertise, experiences, skills, intelligence, intuition, insight and ideas (Shahzad *et al.*, 2016). Collective knowledge residing in the minds of employees is considered one of the most vital intangible resources an organisation owns (Barney & Arikan 2001; Wilkens, Menzel, & Pawlowsky, 2004). The fact that organisations house an abundance of knowledge, yet have difficulty locating and effectively implementing it, launched the KM movement (Leidner & Kayworth, 2015).

Becerra-Fernandes and Leidner (2015) divided the development of KM into three generations. First-generation KM, from the 1950s to the 1980s, focused on individual knowledge needs. Knowledge was treated as an "object" (Nonaka & Takeuchi, 1995), but not necessarily one that

could be collected, stored or shared for the benefit of the organisation (Muthuveloo, Shanmugam & Teoh, 2017). Second generation KM, between the 1980s and 1990s, focused on interactive knowledge exchange (Kaur, 2019). Knowledge began to be seen as a process of social construction that is partly explicit and partly implicit (Nonaka & Takeuchi, 1995). As the use of technology for global brainstorming and collaboration emerged in the 2000s, so did the third generation of KM (Wilkins et al., 2004). In third generation KM, knowledge is viewed extensively as a process of knowing rather than an object (Meissner & Wolf, 2008). Technology is a critical component of KM because technological tools support knowledge workers' interaction and collaboration by enabling knowledge sharing, integration and collaboration (Garcia & Sosa-Fey, 2020).

Deve and Hapanyengwi (2014) explore three forms of knowledge that an organisation must manage: tacit, explicit, and embedded knowledge. Information is converted to tacit knowledge once processed in the human mind (Andreeva & Kianto, 2011). Tacit knowledge is based on practice, acquired through personal experience, it is rarely expressed openly and it embodies organisational beliefs and values (Mohajan, 2016). Tacit knowledge consists of thought processes, which are highly personal and difficult to formalise because they are based on the actions and experiences of individuals who are often unaware of the knowledge they possess (Muthuveloo, Shanmugam & Teoh, 2017). To be of value to an organisation, tacit knowledge needs to be made explicit, which is possible once articulated and presented in text, graphics, words or other form of symbolic representation (Kaur, 2019). Once recorded in writing, processed by information systems, codified and/or recorded and protected by the organisation (Frost, 2017), explicit knowledge may be shared, communicated and made accessible to other people (Muthuveloo et al., 2017). Finally, embedded knowledge is the knowledge rooted in processes, products and structures and is difficult to discern and alter (Deve & Hapanyengwi, 2014).

KM is a field of study that promotes the creation, sharing, storage and application of organisation knowledge and these qualities relate KM to the field of DC (Becerra-Fernandes & Leidner, 2015). Organisational knowledge creation is increasingly becoming an organisational priority. It refers to the organisation's ability to develop new ideas, solutions in response to change (Andreeva & Kianto, 2011), and recognising opportunities for innovation and organisational growth (Soto-Acosta, Popa, & Martinez-Conesa, 2018). The organisation should utilise the knowledge obtained from employees and other stakeholders to improve organisational performance. Individual factors, such as a positive attitude, intrinsic motivation and staff members' absorption capacity, encourage knowledge creation (Wee & Chua, 2013). Internal organisational knowledge creation processes may be through learning, research and development, training and experience accumulation. However, knowledge creation can be limited by organisational factors such as a lack of incentives to create new ideas, low tolerance for error and a lack of policies and procedures to support new ideas (Soto, 2018). Knowledge creation also is promoted by providing external knowledge creation processes, such as social networking opportunities among the organisation's stakeholders (Wee & Chua, 2013) i.e. customers, suppliers and competitors.

The effectiveness of KM relies heavily on the organisation's ability to share knowledge successfully (Garcia & Sosa-Fey, 2020). Knowledge is shared when tacit or explicit knowledge is transferred or communicated to other users, and it enables an organisation to facilitate learning by reusing a complex set of routines and knowledge in a new setting (Frost, 2015). Eaves (2014) found that knowledge sharing is activated by four conditions: (1) motivation to share knowledge,

(2) the nature of the knowledge in itself, (3) the opportunity to share the knowledge and (4) the organisation's culture. Eaves (2014) argued that culture is the most significant factor that influences knowledge sharing. Culture comprises the beliefs, values and norms shared by an organisation's members (Dei, 2019). A culture of distrust, conflicting values or attitudinal and behavioural issues have been established as some of the reasons people are unwilling to share knowledge (Enakrire & Onyancha, 2020).

Knowledge storage, also referred to as organisational memory, which includes lessons learned and best practices, is a critical facet of organisational KM and includes components such as written information, electronic databases, codified human knowledge, documented organisational procedures and processes, tacit knowledge and individual networks. Knowledge storage is needed to store acquired knowledge and to retrieve it when needed (Alavi & Leidner, 2001). Document management technology can play a significant role in enhancing and expanding organisation memory. It allows knowledge from an organisation's past, often scattered among various departments, to be effectively stored and made accessible (Stein & Zwass, 1995). When knowledge is not routinely and systematically captured, an organisation might not benefit from accumulated knowledge. For knowledge to be valuable, captured knowledge should be easy to retrieve (Alavi & Leidner, 2001).

Of all the processes discussed, knowledge application is the one process that enhances organisational performance (Alavi & Leidner, 2001). Knowledge application means making knowledge active and relevant in creating organisational value (Bhatt, 2001). Knowledge application involves using knowledge to solve problems, improve efficiency, adjust the strategic direction, and learn from past mistakes (Paliszkiwicz, Svanadze & Jikia, 2017). The organisation should use the knowledge obtained from customers, employees and other stakeholders to improve its overall performance (Abbas, 2020). The practical application of knowledge assists organisations with efficiency and cost reduction (Enakrire & Onyancha, 2020). An organisational culture that values knowledge and encourages its creation, sharing, storage and application is supportive of KM (Frost, 2015).

School management in South Africa

South Africa, after years of reform, is failing to close the gap between historically advantaged and disadvantaged pupils (Bush & Glover, 2014). Among the many reasons, poor leadership by school principals is cited (Jacobs, 2014). As the head of the school governing body, many principals are failing to effectively use the schools' resources, whether physical or human (Xaba, 2012). A major part of leading a team of teachers lies in the principals' training and empowerment, performance management processes as well the ability to develop their leadership capabilities, in addition to encouraging a culture of teaching and learning – all traits that many principals as leaders and managers fail to practice (Bush & Glover, 2014).

Despite the possibilities presented by blended learning, such as keeping pace with education schedules and changes despite the lockdowns imposed by the COVID-19 pandemic, school management in SA is plagued by a myriad of challenges (Parent24, 2021). These trials include limited financial resources to hire additional teachers, overcrowded classrooms, poor infrastructure and a lack of teacher effort and accountability (Bush & Glover, 2014). While the advantages of blended learning could translate into, for instance, transportation savings, the implementation of

this model appears only likely to benefit the rich, which will further increase the gap between rich and poor pupils (Parent24, 2021). A major portion of the money for teacher training or devices made available to teachers and pupils to enable blended learning is likely to find its way into the pockets of corrupt education department officials (Parent24, 2021).

In light of the above challenges, together with the fact that, almost 30 years after the advent of democracy, many SA schools are still contending with the post-apartheid legacy and slow progress in transforming education (Jacobs, 2014), it stands to reason the idea of KM is not yet a priority for most of these schools.

Dynamic capabilities and knowledge management integrated

Wigg (1997) observed that instead of implementing KM as a standalone activity, it should be integrated with other processes such as DC. The terms DC and KM are frequently used together to determine the most effective ways in which to manage organisations in dynamic and discontinuous environments (Easterby-Smith & Prieto, 2008). While DC highlights the renewal and transformation of resources into new capabilities and competencies (Teece et al., 1997), KM focuses on equipping managers to create, share, store, and use an organisation's tacit and explicit knowledge (Cepeda & Vera, 2007).

The development of DC depends to a large extent on the organisation's KM (Easterby-Smith & Prieto, 2008). Organisations that want to achieve DC need to develop individual and collective learning capacities (Oliva et al., 2019). Wang and Ahmed (2004) found that effective KM enhances an organisation's DC, while Akram and Hilman (2018) found that integrating KM and DC can have a significant positive effect on an organisation, including improving employees' job performance. Akram and Hilman (2018) also found that KM processes, such as knowledge acquisition, creation and sharing, played a vital role in elevating employee skills and capabilities. Kamal and Shawkat (2020) hold that effective KM is an organisational capability. In conclusion, researchers agree that KM and DC significantly impact employee and organisational performance (Akram & Hilman, 2017; Easterby-Smith & Prietow, 2008; Nguyen & Neck, 2008). These studies show that organisations that continually developed their knowledgebase and DC performed more effectively and, thus, were better equipped to deal with rapidly changing environments.

RESEARCH METHOD

A conceptual approach was followed to compile a framework for KM and DC. Using a constructivist paradigm, we aimed to make sense of reality and to find the meaning of certain characteristics. In this study, understanding and making sense of the constructs and their characteristics from the literature studied was needed to predict the relevance of KM and DC. As this study is conceptual, the research process was operationalised using the following two research questions:

Research question 1

Which dimensions of DC and KM apply to the education field?

We performed a literature search on the major search engines available to our academic institution, being Ebscohost and Google Scholar. According to SCI Journal (2022), Google Scholar is the

most efficient search engine, standing out among 28 other such systems for academics, researchers and scholars. The search parameters and keywords used were: dynamic capabilities, knowledge management, high schools South Africa, COVID-19, VUCA. There was no timeframe restricted during the search, however, apart from seminal works, we endeavoured to cite only the most recent articles, being no older than five years. Content analysis was applied to identify the dimensions of DC and KM as well as the authors of each work. The outcomes of the content analysis informed Research Question 2 of this research.

Research question 2

Which recommendations may be made regarding the potential future use of DC and KM in South African schools? This second outcome entails the researchers’ synthesis of the dimensions and application of DC and KM, the theories of DC and KM and, finally, our interpretation of how the combination of these two practices could be made applicable to SA schools. The expertise of the researchers is important, and our collective interpretive ability influences the credibility of the research and our findings. The researchers have many years of experience in secondary and tertiary education, and in schools’ management. We also hold practical experience in managing and leading schools, as well as teaching management and leadership skills.

In addition, we invited two peers to ‘soundboard’ and validate our original theoretical ideas. Both peers are business management experts, but one has extensive expertise in both teaching as well as the management of an educational institution. Based upon the recommendation of authors such as Anney (2014) and Henry (2015), who advocate peer-debriefing as a process for increasing the rigour of qualitative research, we requested the above two colleagues to interrogate and validate the research dimensions identified and the reasoned arguments.

FINDINGS

To truly investigate KM as a DC, we endeavoured to illustrate the constructs and their relationships as follows:

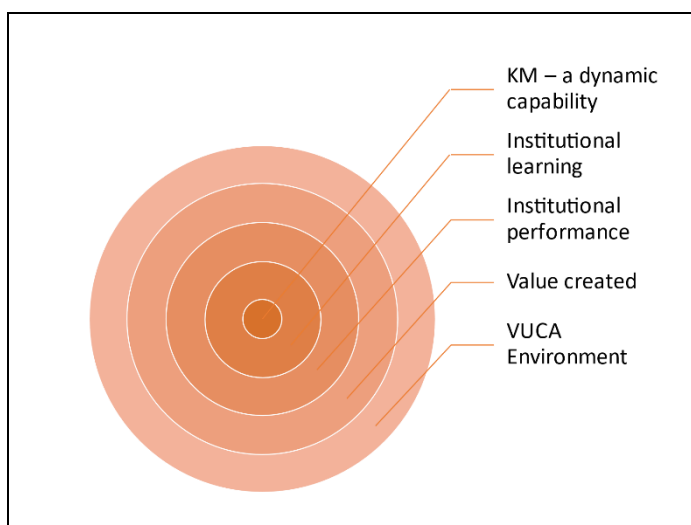


Figure 1: KM in relation to other constructs (authors’ design)

Figure 1 illustrates that KM, in its various forms of acquisition, management and application, can become a dynamic capability. From it, institutions can learn, perform better, create better value

for stakeholders and enhance institutional ability to survive in a VUCA environment. As part of our analysis of the available academic articles addressing these constructs, we have summed up the constructs in a table (Table 1 below), illustrating the dimensions of KM and how it relates to organisational processes, tools, mindset and culture.

Table 1: The dimensions of KM and its application over the years (authors' compilation).

| | KM and organisational constructs | Dimensions of KM* | Application | Authors cited in the research on KM |
|---|---|--------------------------------------|--|---|
| 1 | KM a dynamic capability | Organisational process | Sensing, seizing and reconfiguring activities to better manage knowledge and build dynamic capabilities | Teece et al., 2016 Roos, 2017 |
| | | Organisational process | Move from face-to-face learning and teaching to home-based, online teaching and learning due to COVID-19 lockdowns. | Mail & Guardian, 2020 |
| | | Mindset/culture | Opportunity recognition and innovation | Wang et al., 2013 Odero & Otoy, 2017 |
| | | Tools | Enhanced proficiently to function in uncertain and intensely competitive environments | Singh, Obero, and Ahuja, 2013 |
| | | Tools | KM as an intangible strategic asset and a vital resource in any organisation | Grant, 1996 |
| | | Tools/mindset | A competent workforce who can make quick, informed decisions | Gao, Chai, & Liu, 2018 |
| 2 | Institutional learning | Mindset/organisational process/tools | Creating intellectual capital can be an institutional asset | Alavi & Leidner, 2001 |
| | | Organisational process | Collaboration and brainstorming sessions have fundamental importance in generating new ideas and proposing viable solutions. | Lee & Wong, 2015 |
| | | Tools | Better employee and organisational performance | Akram & Hilman, 2017 |
| | | Organisational processes/tools | KM is considered the most appropriate strategy to streamline knowledge flow in organisations | Nonaka & Takeuchi, 1995 Prado-Gasco et al., 2015 |
| | | Tools | Knowledge application involves using knowledge to solve problems, improve efficiency, adjust the strategic direction, and learn from past mistakes | Paliszkievicz, Svanadze & Jikia, 2017 |
| 3 | Institutional performance | Tools | KM and technology combined found to enhance KM | Krzakiewicz, 2013 |
| | | Tools | Technology as a critical component of knowledge management, as technological tools could support knowledge workers' interaction and collaboration | Garcia & Sosa-Fey, 2020 |
| | | Tools | Technological tools support knowledge workers' interaction and collaboration by enabling knowledge sharing, integration, and cooperation (Garcia & Sosa-Fey, 2020) | Alavi & Leidner, 2001 |
| | | Organisational process/culture | Incentives to create new ideas, Tolerance for errors Policies and procedures to support new ideas | Soto, 2018 |
| | | Mindset/tools | Utilise the knowledge obtained from customers, employees & other stakeholders | Solek-Borowska, 2017 |
| | | Tools | KM found to enhance school performance | Cheng, 2020 |

| KM and organisational constructs | | Dimensions of KM* | Application | Authors cited in the research on KM |
|----------------------------------|------------------|------------------------------|---|---|
| 4 | Value created | Organisational process/tools | KM may equip managers to create, retain, transfer, and use an organisation's tacit and explicit knowledge | Cepeda & Vera, 2007 Gakuo & Rotich, 2017 |
| | | Organisational process/tools | For organisations to achieve DC, they need to develop individual and organisational learning capacities | Oliva et al., 2019 |
| | | Tools | KM as DC improved SME performance | Tseng & Lee, 2014 |
| | | Mindset | Knowledge creates value that benefits a variety of stakeholders | Teece, 2005 Garcia & Sosa-Fey, 2020 |
| | | Mindset/culture | Effectively managing and applying organisational knowledge can create value, enhance performance, and provide a strategic edge in the market | Kaur, 2019 |
| 5 | VUCA environment | Tools | KM is the skill of shaping intellectual assets to create value for a school and its stakeholders | Shahzad et al., 2016 |
| | | Mindset | Transformation through continued recombining and reconfiguring as changes or opportunities evolve | Amiripour et al., 2017 |
| | | Culture | Organisations that continually evolved and developed their knowledgebase and DC performed better and were better equipped to deal with rapidly changing environments. | Nguyen & Neck, 2008 |
| | | Mindset | The rapid change caused by the COVID-19 pandemic accelerated the implementation of technology as a resource to apply knowledge | Mail & Guardian, 2020 |

* Dimensions of KM are deliberately limited to organisational processes, tools, mindset and culture.

The concept of KM as a DC has been researched many times as found in the 30 papers cited in Table 1 above. The articles and books on KM go back to 1995, and the articles on DC go back to 1997, hence, it is evident that the conversation has been in the making for some time. Most of the sources refer to KM as a means of improving organisational performance, and that is why we investigated the specific tenets of processes, tools, mindset and culture, in line with the work of Eaves (2014) and Gakuo and Rotich (2017).

Two papers worth noting are those of Odero and Otuya (2017) and Roos (2017) which critiqued the concepts of KM and DC. Odero and Otuya (2017) studied 15 recent articles on KM and found their authors disagreeing on elementary issues such as the process of identifying KM as a DC and measuring it. While these authors agree that KM leads to improved organisational performance, and that it requires between three and eight steps to execute successfully, they are not in accord about the conceptual linkages between KM and organisational performance. Roos (2017) in turn critiques the resource-based view of DC stating that the concept remains vague and unproven, and that only VRIN resources can significantly improve organisational performance. We appreciate such criticism, and all academics and proponents at least should be willing to consider that there is no simple route to improved organisational performance. Many authors, such as Gao et al. (2018) and Kaur (2019), refer to some type of mindset or culture that is needed to see the true effect of KM and DC on organisational performance. In a VUCA world further disrupted in 2020

it is reasonable to question the future trajectory of KM and if it can truly stand out as a VRIN capability.

CONCLUSIONS AND MANAGEMENT IMPLICATIONS

Since this section of the paper is from a constructivist perspective, we adopt the stance as proponents of KM as a DC. We, therefore, offer our arguments from a speculative point of view of the results that we consider will be possible if KM as a DC is properly executed. Much of the discussion above flows from literature read on KM and DC in business organisations and we can merely speculate that KM could be a DC in secondary education in SA.

The post-COVID-19 world is indeed very unpredictable and uncertain and, in common with all organisations, secondary education has been equally compelled to change. In the case of secondary education, blended teaching and learning will need to be embraced because it allows pupils to study, catch-up lost teaching/learning time and remain in contact with their educators and peers. The dimensions of KM, as we interrogated these features, albeit in the context of commercial organisations, should be easily adaptable to a school context. A sense of urgency exists to transform, in light of the poor and worsening pass rates at both schools and universities, which further exacerbates low levels of unemployment and the continuation of abject poverty for many South Africans. However, the already poor performance of SA schools further worsened during the COVID-19 pandemic and the lockdown imposed, and the many challenges mentioned continue unabated, such as inequality, poor transitioning to 4IR and the connectivity advantages offered by the internet, teachers' lack of effort and accountability are resulting in a slow post-pandemic recovery. In addition, the inequality of urban and rural schools means there is no 'one-size-fits-all' solution to assisting schools to transition simultaneously to blended teaching and learning.

Most importantly, all the articles interrogated for the purpose of this research study use commercial organisations, and the notion of schools managing knowledge as a DC has not been investigated previously in SA. This paper has shed light on that possibility, although we are aware that the many challenges plaguing the SA's school system will likely enjoy priority over this notion. Either way, future empirical research, perhaps in the form of a case study, may shed light on such possibilities.

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UNDERSTANDING THE ADOPTION OF THE COVID ALERT SA APP AMONG YOUNG ADULTS IN SOUTH AFRICA: AN EXTENSION OF THE META-UTAUT MODEL

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ABSTRACT

The study investigates the factors that promote the adoption of the COVID Alert South Africa (SA) application (app) among young adults in South Africa. The study adapted and extended the meta-unified theory of acceptance and use of technology model through examining the theoretical connection between performance expectancy, effort expectancy, social influence, facilitating conditions, privacy concerns, innovativeness, and behavioural intention. A quantitative and descriptive design was employed and primary data were collected using a self-administered questionnaire. A total of 261 responses were collected and analysed using structural equation modelling to verify the hypothesised relationships between the constructs in the proposed meta-unified theory of acceptance and use of technology model for the study. The empirical findings confirm that performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concerns have a positive and significant influence on behavioural intention. In addition, innovativeness significantly moderated the effect of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concerns on the level of behavioural intention. The study offers insights into the role of performance expectancy, effort expectancy, social influence, facilitating conditions, privacy concerns, and innovativeness in stimulating the adoption behaviour of young adults towards the COVID Alert SA app. It also provides guidelines for understanding the adoption behaviour of young adults towards the COVID Alert SA app, which assists in the development of policies and strategies for controlling the spread of the coronavirus in South Africa.

Keywords: Performance expectancy, effort expectancy, social influence, facilitating conditions, privacy concerns, innovativeness, behavioural intention

1. INTRODUCTION

Over the past two years, the health sector in developed and developing economies has been hard hit by the COVID-19 pandemic, leading to higher levels of hospitalisation, reduced mortality rates, and increased public health expenditure (Organisation for Economic Co-Operation and Development [OECD], 2020). Consequently, COVID-19 has led to over 505 million infections and 6.2 million deaths worldwide (World Health Organization [WHO], 2022). As new COVID-19 variants continue to spread across the world, more countries (e.g., South Africa) are emphasising the need for mass vaccination and contact tracing to reduce the spread of the disease (OECD, 2020). This notion is validated by the WHO (2022), which argued that there is a growing demand for the development of digital health technologies that can effectively assist in the screening and tracking of infections among communities, thereby contributing to the use of appropriate response mechanisms for dealing with current and future pandemics. For this reason,

South Africa has responded to this call by implementing a Bluetooth contact tracing app that can assist in reducing the risk of exposure, empower communities, and safeguard many lives against COVID-19 (COVID-19 South African Online Portal, 2022). This contact tracing app, the COVID Alert SA app, has been downloaded by more than one million users and is perceived as an exposure notification app for slowing the spread of COVID-19 (COVID-19 South African Online Portal, 2022).

As part of the COVID Alert SA app, Bluetooth technology is utilised to gather location-based personal information of users to notify them of possible exposure to COVID-19, in order for them to quarantine, monitor their symptoms, and prevent the rapid spread of the virus (COVID-19 South African Online Portal, 2022). This Bluetooth technology operates by allowing users who are in close proximity to send each other random codes to alert them about their potential exposure to COVID-19 (COVID-19 South African Online Portal, 2022). In this way, users receive timely notifications about hotspot areas where positive cases have been reported so that they may avoid those areas and alert others (COVID-19 South African Online Portal, 2022). Conversely, a possible means of increasing the adoption of the COVID Alert SA app is to stimulate its uptake among young adults in South Africa. Young adults are attracted to digital technologies, have a greater buying power and represent a sizeable population for the wider adoption of the COVID Alert SA app (Euromonitor, 2021). Therefore, young adults will be motivated to adopt this app as they are highly concerned about maintaining good health and prefer to engage with brands that offer digital solutions (Ledikwe et al., 2020).

Despite the fact that COVID Alert SA app has been considered an effective tool for monitoring and limiting the spread of the coronavirus, it has not yet been researched among young adults. Extant research (Akinuwa et al., 2022; Cocosila et al., 2022; Fox et al., 2021; Hasan & Bao, 2022) has concentrated on examining the antecedents that promote the adoption of contact tracing apps among developed economies, with little emphasis from an emerging economy perspective. This study addresses this research gap by investigating the factors that promote young adults' adoption of the COVID Alert SA in South Africa.

The study comprises five sections. The first section contains the literature review, followed by the methodology, results and discussion, research implications, and conclusion.

2. LITERATURE REVIEW

2.1 Theory grounding the study

The current study is premised in the theoretical lens of the meta-extended unified theory of acceptance and use of technology (UTAUT) to understand the theoretical linkage between the main factors that promote the adoption of the COVID Alert SA app. The meta-UTAUT is a comprehensive theory that was proposed by Venkatesh et al. (2003) to understand individuals' beliefs and intention to adopt and use a particular technology. According to Venkatesh (2021), performance expectancy, effort expectancy, social influence, and facilitating conditions are the key determinants that predict the adoption and usage of a technology. The meta-UTAUT has been widely adopted in technology acceptance studies to predict consumers' adoption and usage behaviours (Alalwan 2020; Shaw & Sergueeva, 2019). The meta-UTAUT has also been tested within the health sector to examine the drivers that promote the acceptance of contact tracing apps

among developed and developing economies (Akinuwesi et al., 2022; Cocosila et al., 2022; Fox et al., 2021; Hasan & Bao, 2022). On this basis of this empirical evidence, the current study will apply the principles of the meta-UTAUT to understand young adults' behavioural intention towards the COVID Alert SA app.

2.2 Conceptual model and hypotheses

2.2.1 The influence of performance expectancy on behavioural intention

Performance expectancy relates to users' beliefs that using a specific technology will provide benefits for performing their work activities (Ramos, 2021). This suggests that the COVID Alert SA app should be useful in ensuring that young adults are protected from contracting the coronavirus, thereby promoting their adoption behaviour. Performance expectancy is a strong predictor of behavioural intention (Siyal et al., 2020). Previous studies (e.g., Chakraborty et al., 2021; Wu & Lai, 2021; Wut et al., 2021) discovered that performance expectancy is positively related to behavioural intention. Therefore, it is proposed that:

H₁: There is a positive relationship between performance expectancy and the intention to adopt the COVID Alert SA app among young adults.

2.2.2 The influence of effort expectancy on behavioural intention

Effort expectancy refers to a degree of ease in using a specific technology (Chakraborty et al., 2021). This implies that COVID Alert SA app should require less effort in downloading and installing it on a smart device, which creates a basis for stimulating the adoption behaviour of young adults. Effort expectancy is considered to directly impact the level of behavioural intention (Wut et al., 2021). This finding is supported by Ramos (2021) and Siyal et al. (2020), who posited that effort expectancy has a significant influence on behavioural intention. Consequently, it is proposed that:

H₂: There is a positive relationship between effort expectancy and the intention to adopt the COVID Alert SA app among young adults.

2.2.3 The influence of social influence on behavioural intention

Social influence relates to a degree to which individuals perceive that their significant others believe that they should adopt a specific technology (Wu & Lai, 2021). This suggests that if the friends and families of young adults perceive the COVID Alert SA app to be an effective tool for preventing them from possible exposure to the coronavirus, their adoption behaviour will be enhanced. Social influence is a key driver of behavioural intention towards technology adoption and use (Ramos, 2021). This finding is corroborated by the empirical work of Chakraborty et al. (2021) and Wut et al. (2021), who established that social influence has a positive association with behavioural intention. Hence, it is proposed that:

H₃: There is a positive relationship between social influence and the intention to adopt the COVID Alert SA app among young adults.

2.2.4 The influence of facilitating conditions on behavioural intention

Facilitating conditions refers to an individual's belief that there are available resources and support to perform a specific behaviour (Ramos, 2021). This implies that, if young adults perceive that sufficient infrastructure and related support services exist for operating the COVID Alert SA app, their adoption behaviour will be stimulated. Facilitating conditions are considered a catalyst for behavioural intention (Chakraborty et al., 2021). Siyal et al. (2020) and Wut et al. (2021), agreed, asserting that facilitating conditions are necessary for predicting the behavioural intention. As a result, it is proposed that:

H₄: There is a positive relationship between social influence and the intention to adopt the COVID Alert SA app among young adults.

2.2.5 The influence of privacy concern on behavioural intention

Privacy concern relates to an individual's concern of the sharing of personal information in a publicly available technology (Duan & Deng, 2021). This implies that, if young adults perceive the COVID Alert SA app to have good safety measures for safeguarding their personal information, their adoption behaviour will be enhanced. Privacy concern is directly related to behavioural intention (Duan & Deng, 2021). Previous findings by Sharma et al. (2020) and Walrave et al. (2020) validate this view, highlighting that privacy concern positively affects behavioural intention. Therefore, it is proposed that:

H₅: There is a positive relationship between privacy concern and the intention to adopt the COVID Alert SA app among young adults.

2.2.6 The moderating role of innovativeness on the impact of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on behavioural intention

Innovativeness refers to users' desire to seek and try new technologies (Patil et al., 2020). This implies that if young adults perceive the COVID Alert SA app to be innovative and engaging, their adoption behaviour will be stimulated. Innovativeness is a significant predictor of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern, which leads to increased behavioural intention (Walrave et al., 2020). Palash et al. (2022) and Wu and Lai (2021) support this argument, stating that innovativeness moderates the influence of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on the level of behavioural intention. Consequently, it is proposed that:

H_{6a-e}: Innovativeness significantly moderates the influence of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on the intention to adopt the COVID Alert SA app among young adults.

Figure 1 depicts the proposed conceptual model for the study that is built on the principles of the meta-UTAUT and explains the interconnection between performance expectancy, effort expectancy, social influence, facilitating conditions, privacy concern, innovativeness, and behavioural intention. The study extended the meta-UTAUT by including privacy concern and innovativeness to gain insights on young adults' adoption behaviour towards the COVID Alert SA app in South Africa.

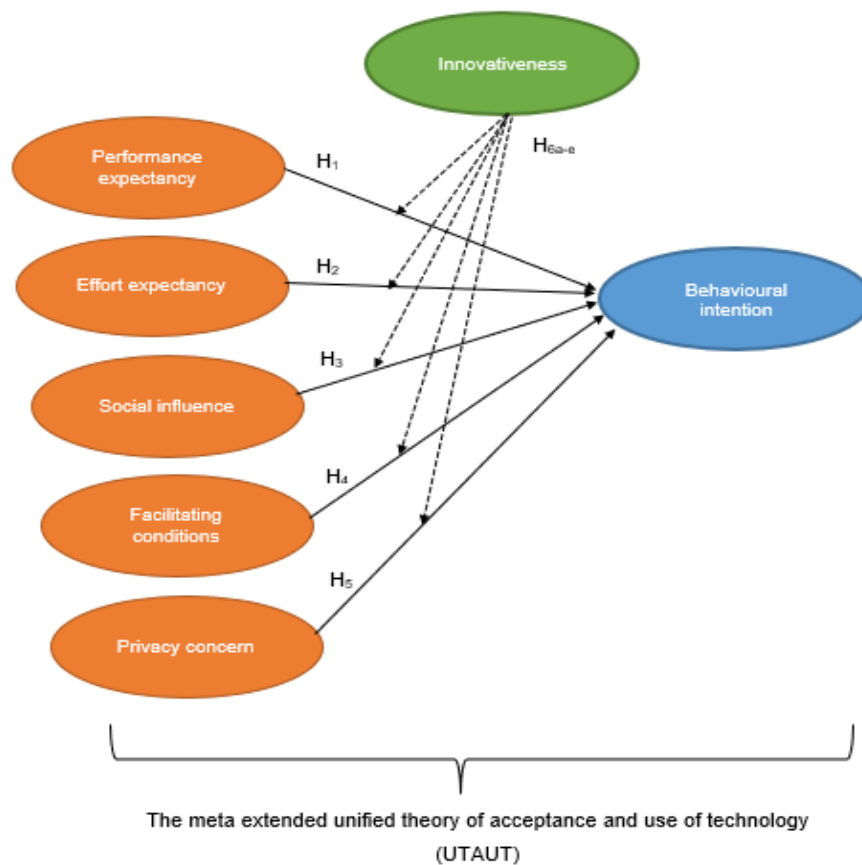


Figure 1: Conceptual model for the study.

3. METHODOLOGY

3.1 Research design

The study used a quantitative and descriptive research design. The target population comprised young adult consumers (aged 18 to 40) who used a smart device in the previous 12 months and are based in the Gauteng province of South Africa. The rationale for using Gauteng as the main location for conducting this study was that it is one of the provinces where most young adults are found in South Africa (Statistics South Africa, 2021).

3.2 Sampling method

A convenience sampling method was utilised to invite respondents to partake in this study. This sampling method was useful in gathering the required number of responses through surveying respondents on the basis of convenience (Hair et al., 2016).

3.3 Research instrument

The study's required data were collected via self-administered questionnaires. This measurement instrument comprised of the explanatory statement, screening questions, demographic information, and measurement statements related to the different constructs in this study. The measurement scale items were measured on a five-point Likert scale (ranging from 1 = "strongly disagree" to 5 = "strongly agree") and were adapted from the empirical works of Sharma et al. (2020) and Walrave et al. (2020).

3.4 Data collection

The data were collected over five weeks. After the data collection was finalised, 270 responses were received. From these, only 261 responses were considered viable and could be used for further analysis.

3.5 Data analysis

Once the data collection was completed, the data were captured and analysed using version 27 of IBM's Statistical Package for Social Sciences (SPSS). The data analysis procedure included the use of structural equation modelling (SEM) and moderation analysis to validate the proposed conceptual model for the study via Analysis of Moment Structures (AMOS) (version 27) and Hayes Process Macro (version 3.5.3).

4. RESULTS AND DISCUSSION

4.1 Measurement model results

Table 1 provides the results of the confirmatory factor analysis to evaluate the reliability and validity of the proposed conceptual model (Figure 1) for the study. From a reliability perspective, all constructs had favourable reliability scores (Cronbach's alpha and composite reliability values > 0.70) that were within the required limits. From a validity standpoint, face validity, convergent validity, and discriminant validity's conditions were satisfactorily met. Face validity was addressed by using previous empirical scales that were found to be adequate for measuring the different constructs in the study. Pilot testing was also conducted to enhance the face validity of the questionnaire prior to collecting empirical data for the study. Discriminant validity was achieved as all the average variance extracted (AVE) values were higher than the shared variances. Convergent validity was met as the AVE values and factor loadings were within the required norm (0.50). The measurement model possessed acceptable level of model fitness. This was evidenced by the measurement indices – Chi-Square/Degrees of Freedom (2.098), Tucker Lewis Index = 0.885, Comparative Fit Index (0.901), and Root Mean Square Error of Approximation (0.066) – which were within the required standards.

Table 1. Reliability and validity of the measurement model.

| Construct, item | Factor loadings | Composite reliability | AVE | Shared variance | Cronbach's alpha (α) |
|-------------------------------------|-----------------|-----------------------|-------|-----------------|-------------------------------|
| Performance expectancy (PE) | | 0.905 | 0.710 | 0.172 | 0.890 |
| PE1 | 0.910 | | | | |
| PE2 | 0.860 | | | | |
| PE3 | 0.810 | | | | |
| Effort expectancy (EE) | | 0.825 | 0.600 | 0.421 | 0.820 |
| EE1 | 0.780 | | | | |
| EE2 | 0.750 | | | | |
| EE3 | 0.820 | | | | |
| Social influence (SI) | | 0.895 | 0.710 | 0.172 | 0.890 |
| SI1 | 0.795 | | | | |
| SI2 | 0.900 | | | | |
| SI3 | 0.872 | | | | |
| Facilitating conditions (FC) | | 0.720 | 0.500 | 0.364 | 0.715 |
| FC1 | 0.699 | | | | |
| FC2 | 0.710 | | | | |
| FC3 | 0.680 | | | | |

| Construct, item | Factor loadings | Composite reliability | AVE | Shared variance | Cronbach's alpha (α) |
|--|-----------------|-----------------------|-------|-----------------|-------------------------------|
| Privacy concern (PC) | | 0.805 | 0.600 | 0.421 | 0.800 |
| PC1 | 0.865 | | | | |
| PC2 | 0.870 | | | | |
| PC3 | 0.880 | | | | |
| Innovativeness (IN) | | 0.880 | 0.730 | 0.172 | 0.878 |
| IN1 | 0.845 | | | | |
| IN2 | 0.880 | | | | |
| IN3 | 0.870 | | | | |
| Behavioural intention (BI) | | BI1 | 0.902 | 0.930 | 0.740 |
| BI2 | 0.890 | | | | |
| BI3 | 0.930 | | | | |
| BI4 | 0.771 | | | | |
| BI5 | 0.869 | | | | |
| Model fitness | | | | | |
| Chi-square/degrees of freedom | 2.098 | | | | |
| Tucker Lewis Index | 0.885 | | | | |
| Comparative Fit Index | 0.901 | | | | |
| Root Mean Square Error of Approximation | 0.066 | | | | |

4.2 Structural model results

Table 2 provides the results related to the hypothesised relationships between the constructs in the study. The structural model was assessed using standardised beta (β) and p -values to validate each hypothesis.

Table 2. Hypotheses results

| Hypotheses | Direct path estimates (β) | Probability value (p) | Hypothesis result ($p < 0.05$) |
|--|-----------------------------------|---------------------------|----------------------------------|
| H ₁ : Performance expectancy → Behavioural intention | 0.326 | 0.001 | Supported |
| H ₂ : Effort expectancy → Behavioural intention | 0.110 | 0.010 | Supported |
| H ₃ : Social influence → Behavioural intention | 0.315 | 0.000 | Supported |
| H ₄ : Facilitating conditions → Behavioural intention | 0.221 | 0.001 | Supported |
| H ₅ : Privacy concern → Behavioural intention | 0.103 | 0.000 | Supported |
| Model fit statistics | | | |
| Chi-square/degrees of freedom | 1.902 | | |
| Tucker Lewis index | 0.901 | | |
| Comparative fit index | 0.995 | | |
| Root mean square error of approximation | 0.058 | | |

The results highlighted in Table 2 indicate that most of the hypotheses for the study can be accepted (H₁–H₅). This implies that performance expectancy ($\beta = 0.326$, $p = 0.001$), effort expectancy ($\beta = 0.110$, $p = 0.010$), social influence ($\beta = 0.315$, $p = 0.000$), facilitating conditions ($\beta = 0.221$, $p = 0.001$), and privacy concern ($\beta = 0.103$, $p = 0.000$) had a positive effect on the intention to adopt the COVID Alert SA app. Interestingly, the results also show that performance expectancy contributed to the highest prediction of behavioural intention, followed by social influence, facilitating conditions, effort expectancy, and privacy concern. To this end, the structural model was deemed to possess a satisfactory level of fitness (Chi-Square/Degrees of Freedom = 1.902, Tucker Lewis Index = 0.901, Comparative Fit Index = 0.995, and Root Mean Square Error of Approximation = 0.058).

4.3 Moderation results

Table 3 indicates the results of the moderation analysis. This analysis was performed using the Hayes Process Macro (version 3.5.3) with a 5 000 bootstrapping sample and a 95% confidence interval (comprising of upper limit confidence interval [ULCI] and lower limit confidence interval [LLCI]).

Table 3: Moderation results

| Construct X → M → Y | Interaction effect (β) [LLCI; ULCI] | t-value (t) | Probability value (p) | Hypothesis result (p < 0.05) |
|--|--|-------------|--------------------------|--|
| Performance expectancy → Innovativeness → Behavioural intention | 0.015 [0.061; 0.160] | 2.232 | 0.033 | Moderation supported (H _{6a}) |
| Effort expectancy → Innovativeness → Behavioural intention | 0.047 [-0.010; 0.261] | 2.851 | 0.001 | Moderation supported (H _{6b}) |
| Social influence → Innovativeness → Behavioural intention | 0.019 [0.031; 0.269] | 3.245 | 0.000 | Moderation supported (H _{6c}) |
| Facilitating conditions → Innovativeness → Behavioural intention | 0.036 [-0.066; 0.105] | 4.001 | 0.000 | Moderation supported (H _{6d}) |
| Privacy concern → Innovativeness → Behavioural intention | 0.010 [0.050; 0.158] | 2.325 | 0.000 | Moderation supported (H _{6e}) |

Table 3 indicates a significant moderating effect of innovativeness on the relationships that performance expectancy ($\beta = 0.015$, $p = 0.033$, LLCI = 0.061, ULCI = 0.160), effort expectancy ($\beta = 0.047$, $p = 0.001$, LLCI = -0.010, ULCI = 0.261), social influence ($\beta = 0.019$, $p = 0.000$, LLCI = 0.031, ULCI = 0.269), facilitating conditions ($\beta = 0.036$, $p = 0.000$, LLCI = -0.066, ULCI = -0.105), and privacy concern ($\beta = 0.010$, $p = 0.000$, LLCI = 0.050, ULCI = 0.158) had with behavioural intention. For this reason, H_{6a-e} can be accepted. In order to enhance the influence of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on the level of behavioural intention, innovativeness should be included as a moderator.

4.4 Discussion

The results demonstrate that performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern had a direct effect on the intention to adopt the COVID Alert SA app. This finding aligns with the empirical work of Chakraborty et al. (2021), Ramos (2021), Walrave et al. (2020), and Wut et al. (2021), who contended that performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern are true predictors of behavioural intention. This implies that young adults will adopt the COVID Alert SA app if it is effective in monitoring their exposure to the coronavirus, requires less effort in installing it, is approved by their significant others, has available resources and support in operating it, and has safety protocols to protect against the unlawful use of personal information.

Finally, the results prove that innovativeness moderated the impact of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on the level of behavioural intention. This finding is validated by Palash et al. (2022) and Wu and Lai (2021), who speculated that innovativeness stimulates the effect of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on behavioural intention.

Therefore, it is likely that young adults will adopt the COVID Alert SA app if it is engaging and unique to use on their smart devices.

5. RESEARCH IMPLICATIONS

5.1 Theoretical implications

The study responds to a call in the literature (e.g., Akinnuwesi et al., 2022; Cocosila et al., 2022; Fox et al., 2021; Hasan & Bao, 2022) by exploring the adoption behaviours of contact tracing apps among young adults in an emerging economy. For this reason, the study enriches current literature from a young adult perspective by providing insights on the influential factors that promote the adoption of contact tracing apps (e.g., COVID Alert SA app). In addition, the study extends the meta-UTAUT with privacy concern and innovativeness, which contributes to the explanatory power of the model. The research findings indicate an array of significant relationships exist between performance expectancy, effort expectancy, social influence, facilitating conditions, privacy concern, innovativeness, and behavioural intention. These findings validate the usefulness of the meta-UTAUT conceptual model and its constructs, which provides a gateway for future researchers to test and expand the model in other parts of the world.

5.2 Managerial implications

The study proves that performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern have a positive impact on behavioural intention. It is important for health practitioners and policymakers to foster the development of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern among young adults, thereby leading to increased levels of behavioural intention towards the COVID Alert SA app. This can be achieved by providing creative and insightful awareness campaigns on national television, radio stations, and social media channels that highlight the features and benefits of the COVID Alert SA app; how to download, install, and use it; how it limits the spread of the coronavirus; how it provides real-time notifications; and how it maintains its users' anonymity. These campaigns could be presented in a video, voice, and imagery format, and include celebrities and medical practitioners who can clearly demonstrate the functionality of the COVID Alert SA app among young adults. As a result, these awareness campaigns will create positive impressions in the minds of young adults and stimulate their behavioural intention to adopt the COVID Alert SA app.

Finally, the study establishes that innovativeness moderates the effect of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on behavioural intention. It is vital for health practitioners and policymakers to promote the uniqueness and effectiveness of the COVID Alert SA app in an effort to stimulate the adoption behaviours among young adults. This can be addressed by setting up a dedicated team of app developers responsible for monitoring the usage of the COVID Alert SA app and addressing any challenges that affect its usability. This team of app developers could also review the feedback from consumers about their experiences in using the COVID Alert SA app, adapt it in their monthly brainstorming sessions, and improve its functionality. This could create a positive experience among young adults in using the COVID Alert SA app, as it is updated regularly, is safe to use, and operates within the required standards, which enhances their adoption behaviours.

6. CONCLUSION

The purpose of this study was to examine the determinants that promote the adoption of the COVID Alert SA app among young adults in South Africa. The study applied the meta-UTAUT as a theoretical basis for examining the association between performance expectancy, effort expectancy, social influence, facilitating conditions, privacy concern, innovativeness, and behavioural intention. The findings propose that performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern have a direct effect on behavioural intention. In addition, innovativeness was found to be a significant moderator in stimulating the effect of performance expectancy, effort expectancy, social influence, facilitating conditions, and privacy concern on the level of behavioural intention. The study provides theoretical and managerial implications that can assist health practitioners and policymakers to understand the behaviour of young adults and devise strategies that assist them to increase the wide adoption of the COVID Alert SA app. Therefore, these insights could provide pathways for policy development to help predict the adoption behaviour of young adults, which assists in monitoring and controlling the spread of the coronavirus.

This study has some limitations that provide a foundation for future research. First, the study only focused on investigating the perceptions of young adults towards the adoption of the COVID Alert SA app, which limits its generalisation to other generational cohorts. Second, the study used a self-administered questionnaire that was fielded in the Gauteng Province, which implies that the findings of these respondents are not representative of South Africa's true population or other countries across the world. Consequently, future researchers should explore other consumer behavioural theories (e.g., innovation resistance theory, theory of planned behaviour) that can predict the adoption behaviour of young adults to enhance the explanatory power of the meta-UTAUT conceptual model. Finally, future studies could conduct comparative studies on the adoption behaviour of the different generations to illuminate insights on the factors that affect the adoption of contact tracing apps.

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EXAMINING SOUTH AFRICAN CONSUMERS' ONLINE GROCERY SHOPPING BEHAVIOUR

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ABSTRACT

The advancement of technology has changed the way consumers shop for products and services worldwide. Consumers in South Africa are now avid online shoppers, just like those in other countries. However, in spite of the benefits associated with online shopping, evidence shows that many South Africans are still not buying their groceries online. As a result, the adoption and acceptance of online grocery shopping is moving at a slower pace than for other consumer goods categories. Despite this challenge, research on the issue is still limited. Addressing this gap, this study aims to investigate the drivers and inhibitors of consumers' online grocery shopping behaviour among South African retail consumers using the UTAUT model, extended by the addition of perceived risk. A quantitative research method in the form of an online questionnaire was used to collect data from 200 South African online grocery shoppers, and structural equation modeling (SEM) was used to analyze the data. According to the findings of this study, performance expectancy, effort expectancy, social influence, and facilitating conditions are all positively related to the intention to use online grocery shopping, whereas perceived risk has a negative influence on online grocery shopping acceptance. The study found that, customers will generally adopt online grocery shopping if they feel that it is useful, easy to use, is accepted by their friends and family, and if they feel that support is provided by retail outlets to help them shop online. Last, consumers will adopt online grocery shopping if its perceived risk is minimal. Thus, online retailers need to develop strategies to reduce risk concerns. This could be done by creating a comprehensive online retail shopping space and introducing safety majors to reduce risk concerns.

Keywords: Online grocery shopping, UTAUT, Perceived risk, e-commerce, South Africa

1. INTRODUCTION

The use of the Smartphones for commercial uses among companies and customers (B2C) is increasing rapidly across the globe. As a result of this, digital revolution in retail is utilizing the internet as an important channel for bringing an efficient and effective shopping experience to consumers (Singh & Rosengren, 2019). To remain competitive in the industry, South African retail stores continue to improve their services within the framework of international best practice by developing new technologies to provide value-added services to the clients, such as online grocery shopping platforms. Testa (2020) defines online grocery shopping as a form of shopping for food

items or any other household essentials using internet-based buying services. This form of shopping enables consumers to access and compare a large number of alternatives in a simpler way; they can access items that are not available in a physical store; transactions can take place at any time; and delivery is conveniently made to the customer's door, saving their need to travel (Singh & Rosengren, 2019). Online shopping has attracted several consumers by developing more reliable online transaction payment options such as cash-on-delivery (COD) (Rishi, Kapoor & Bhatia, 2016).

Furthermore, e-grocery shopping is especially beneficial for consumers who have physical disabilities that prevent them from going to stores. However, in the South African retail space, home delivery and logistics remain a challenge. As a result, the adoption and acceptance of online grocery shopping is moving slower than for other consumer goods categories. The evidence of the industry figures highlighted by Desrochers, Léger, Fredette, Mirhoseini and Sénécal (2019) demonstrated the growth of online shopping in different categories: durable items such as fashion (58%), electronics (40%), packaged groceries (24%), and fresh groceries (21%) in 2018. According to Singh & Rosengren (2019), only a limited number of consumers have adopted and accepted this seamless and frictionless digital offering. Still, there is no doubt that this shopping experience has improved the convenience of grocery shopping worldwide (Chawla, Khan, & Pandey (2015); Zheng *et al.*, 2020; Kureshi & Thomas, 2019; Harris, Riley, Riley & Hand, 2017). Most developed nations such as the United Kingdom (UK), the United States of America (United State of America), France, and Finland known as developed online grocery shopping market, however emerging economies such as South Africa are still in the infancy stage. Most research about online grocery shopping (OGS) has taken a Eurocentric perspective. However, a few studies have been conducted to investigate the factors that drive consumers to adopt, or that prevent them from adopting, this technology in countries such as South Africa (Johnson & Iyamu, 2019; Makhitha, Scheers & Mogashoa, 2019). Despite extensive research into consumer behavior and the acceptance of online grocery shopping in the US and European markets, it is unclear whether the findings can be applied to other parts of the world. As a result, researchers (Driediger & Bhatiasevi, 2019; Kureshi & Thomas, 2019) have called for more research into the factors that influence consumers' acceptance of e-grocery shopping in developing countries. This paper responds to that call by investigating the factors influencing the South African online grocery market and answering the question: *What are the drivers and inhibitors of online grocery shopping in South Africa?*

The following section includes a literature review as well as the research model and hypotheses. It is followed by a discussion of the research methods used to collect data for the study, and then the findings of the empirical data analysis are presented. This is followed by a discussion of the findings and a focus on the study's practical and theoretical contributions. The final section discusses the study's limitations as well as future research directions.

2. LITERATURE REVIEW

2.1. Defining 'online grocery shopping'

According to Wienclaw (2017), e-commerce is a way in which companies perform their business online and is an "electronic equivalent of a physical store or mall". With the use of e-commerce,

businesses are not the only ones that benefit so too do consumers (Wienclaw, 2017). In e-commerce, the most developed e category is currently online food and beverages, even though it had been lagging behind for two decades (Statista, 2020). OGS, also known as electronic grocery shopping (EGS), is the use by individual households or private individuals of online platforms to purchase perishable or non-perishable goods as well as household supplies that are then delivered to them or picked up at the supermarket by the individual (Driediger & Bhatiasevi, 2019). OGS is a newer environment that is quickly gaining traction. According to (Statista, 2020), approximately one-fifth of UK households buy groceries online at least once a month. For about a third of these people, online shopping is their primary source of food, while the other two-thirds use it to supplement their offline purchases. This growth in OGS is expected to be around 15% per year, with the sector accounting for 10% to 12% of the market by 2021 (Rankin, 2016). Moreover, Chin & Goh (2017) states that online grocery shopping is a discontinuous innovation that requires a considerable change in behaviour.

To expand above its recent 'niche' size, online retailers must know not only what motivates change in the behaviour of consumers to change their purchasing habits, but also the degree to which the online shopping experience encourages and boost the adoption rates According to Davies, Dolega, & Arribas-Bel, 2019), Amazon had done an amazing job at restructuring the grocery business by going digital and allowing customers to purchase food and drinks online via Amazon Pantry, and to receive the packaged goods in two days. On the other hand, Amazon Fresh allowed customers to order fresh produce online and collect the goods at allocated pick-up stations. Amazon successfully led the OGS market and was followed by Walmart; 47 per cent of online shoppers stated that they shopped on Amazon.com, while 37 per cent said that they shopped on Walmart.com (White, 2020).

2.2. Benefits and challenges of online grocery shopping

The advantages of shopping for groceries online far exceed the benefits of shopping for groceries in physical grocery stores; and these significant advantages are abundantly clear for both retailers and consumers. The introduction of mobile applications and the use of e-commerce websites has made the everyday lives of consumers much easier (Wienclaw, 2017). The benefits for consumers include time savings, convenience, and the ability to find products in a variety of ways, such as using the search tab, navigating through product categories, or browse special offer pages. When shopping online, consumers have the option of selecting offers that are tailored to their specific needs (Singh & Rosengren, 2019). A lot of the time that is normally spent on transactions is saved, since customers can transact on an e-commerce platform or mobile app without having to stand in a long queue waiting to be attended to (Wienclaw, 2017). OGS also essentially allows users to make informed purchasing decisions because of the large amount available about products as well as the reputation of the grocery retailer. For businesses, e-commerce and the adoption of OGS are beneficial because of the ability to improve operational efficiencies and decrease costs (Wienclaw, 2017). Businesses are also able to collect data from customers and potential customers who use the websites or applications to purchase groceries online (YouAppi, 2020). This data is very useful, as it provides accurate predictions on stock levels for certain offers and helps to determine how goods should be placed on in-store shelves (YouAppi, 2020).

Given the immense perceived benefits of OGS, it has some drawbacks. For instance, when purchasing groceries online, consumers are unable to satisfy their need for sensory stimuli such as touch, feel, and smell (Tanskanen *et al.*, 2018). According to Trevinal and Stenger (2014), the sensory aspects of online shopping are also essential in determining the levels of shopping enjoyment and aesthetic enjoyment. Furthermore, consumers are concerned about their online privacy and security (Kempiak & Fox, 2002; Datamonitor, 2010). These and other OGS disadvantages have been identified as the most likely cause of OGS non-adoption. According to Kurnia and Chien (2003), OGS has not been as widely adopted or accepted as initially predicted; and Morganosky and Cude (2000) contend that new technologies such as online shopping take time for the majority of consumers to fully adopt

2.3. Adoption of online grocery shopping in South Africa

Online grocery retailing has the potential to be profitable for South African retailers. South African retailers and consumers, on the other hand, have been slow to adopt and actively engage in this type of grocery retailing. Woolworths and Pick' n Pay are the leading online grocery retailers in South Africa, and they were the first to introduce online grocery store networks in 2000 and 2001, respectively. Technically, they can only take orders via their websites; delivery (or collection) has to be physical – using a delivery van or motorbike or whatever (Moodley, 2020). Moodley (2020) observed some of the factors that differentiate these grocery delivery services, such as the differing delivery fees: Pick n Pay is the highest at R60 per delivery, while Woolworths charges R50 per delivery. UCOOK is another South African example of an online grocery platform that provides customers with ready-measured portions of ingredients that are ready to use; they include local ingredients that are freshly picked, and customers also receive recipe cards for the packaged goods they buy (UCOOK Home, 2020). This niche service was officially launched in 2015 by David Torr and Chris Verster Cohen, with the sole purpose of closing a gap by offering a service that provided convenience and healthy meals (UCOOK Home, 2020). As an independent online grocery store, UCOOK competes with supermarket chains such as Shoprite-Checkers, Woolworths, and Pick n Pay.

Checkers launched their grocery delivery service in South Africa via an application called Sixty60, a sixty-minute grocery delivery service – the first to be launched by a supermarket chain (Rajgopaul, 2019). The mobile application is available for download on the App Store and Google Play Store and delivers groceries and drinks to the customer's doorstep; deliveries are available in Johannesburg suburbs and the Western Cape (for example in Durbanville, Willowbridge, Okavango Crossing, Rondebosch, Kloof Street, and Sea Point) (Rajgopaul, 2019).

The majority of South Africans still shop for groceries at traditional brick-and-mortar consumers (Datamonitor, 2010; Douglas, 2013). Despite having a well-developed and competitive retail market, South Africa seems to be lagging behind in online grocery retailing (Douglas, 2013). According to MacClathey *et al.* (2007), South Africa's online grocery market is still in its infancy. The online grocery market has been operating in South Africa for more than two decades, having begun in 2000 (Croker, 2005); but even so, the contribution of online grocery store sales to total grocery sales is still less than 5%. (Writer, 2020). However, the Covid-19 pandemic and the associated implementation of lockdowns and social distancing led to an increased demand for OGS activities for many South Africans. As a result, South African supermarket chain stores such as

Shoprite and Checkers, Pick’ n Pay, and Woolworths Food have experienced an increase in OGS as individuals avoid having to go to malls and shopping centres (Horner, 2020). A Nielsen-syndicated study showed an increase of 37 per cent in South Africans buying groceries online during the lockdown period. Thus, additional services such as ‘click and collect’ and automated online subscriptions and personal shopping represent a positive future for South African the online shopping market (Mwangi & Marvin, 2020). We can expect to see a positive outcome in the behaviour of consumers in online shopping even after the pandemic, simply because of the adaptations that have been made during the Covid-19 pandemic.

2.4. Perceived risk and user acceptance of online grocery shopping

Perceived risk is defined by Cocosila and Trabelsi (2016) as the user’s uncertainty with buying from online retailers. A number of these studies (Cocosila & Trabelsi, 2016; Shuhidan *et al.*, 2017; Khasawneh, 2015; Joubert & Belle, 2009) have confirmed a significant and negative influence of perceived risk on the adoption of technology. Moreover, research shows that depending upon the type of the goods or services being evaluated, the buyer identifies different types of risk (Chavali & Kumar, 2018). As a result, ‘perceived risk’ can be viewed as a multi - dimensional construct consisting of performance risk, privacy risk, financial risk, social risk, time risk, and psychological risk (Featherman & Pavlou, 2002; Park & Tussyadiah, 2016; Shuhidan *et al.*, 2017). In the context of online shopping, ‘perceived risk’ signifies the consumer’s perception of the risk associated with the acceptance and use of OGS. In fact, the perception of risk among individuals has been proved in the OGS literature to be a salient predictor of the acceptance and use of OGS services (Lue *et al.*, 2005; Crespo *et al.*, 2009). Crespo *et al.* (2009) affirmed the negative influence of perceived risk on internet shopping behavior in people with prior online shopping experience, but they noted that the effect is insignificant in non-buyers.

RESEARCH MODEL AND HYPHOTHESIS

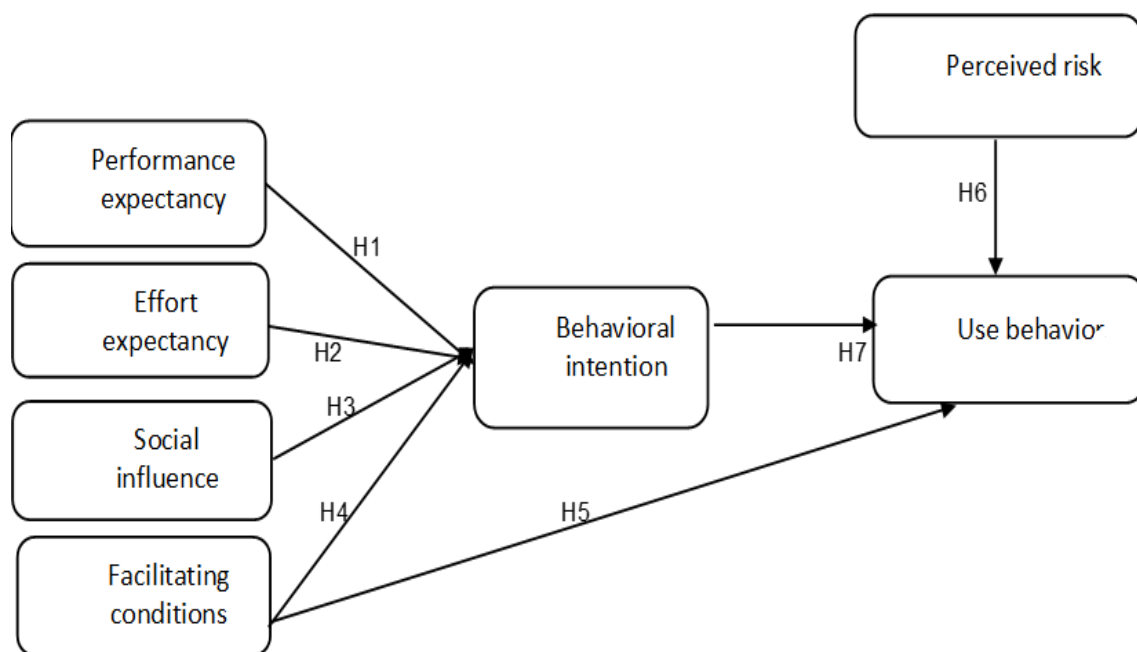


Figure 1: Research model

3.1 Performance expectancy

Performance expectancy is a UTAUT model component that denotes the degree to which a person believes that utilizing a technology will improve job performance or task performance (Venkatesh *et al.*, 2003). In terms of OGS, performance expectancy can be defined as the benefits that customers expect from an OGS experience, such as time savings, bargain hunting, 24-hour convenience, a wide range of product availability, and hassle-free shopping (Celik, 2016). Research has generally emphasized the significance of performance expectancy in technology acceptance behaviour (Celik, 2016; Alalwan, 2020; Tandon, Kiran, and Sah, 2018; Fröhlke & Pettersson, 2015). Tandon, Kiran, and Sah (2018) identified performance expectancy as a significant determinant of customers' behavioral intention in a study to examine the influence of website functionality, drivers, and risk perception on customer satisfaction. As such, this study suggests that:

H1: Performance expectancy is positively related with behavioural intention to adopt online grocery shopping.

3.2 Effort expectancy

Effort expectancy is an aspect formulated for the UTAUT model that describes the level of ease or effortlessness related to using a technological system (Venkatesh *et al.*, 2003). In relation to OGS, effort expectancy can be defined as the intrinsic benefit that rewards customers with the convenience of reduced physical and mental energy required in a grocery shopping experience (Celik, 2016). Empirical research has generally highlighted the significance of effort expectancy in innovation adoption behavior (Celik, 2016; Alalwan, 2020; Tandon, Kiran, & Sah, 2018; Fröhlke & Pettersson, 2015). Fröhlke and Pettersson (2015) noted effort expectancy as a critical predictor of users' behavioral intention to use the service in a study to determine the factors influencing a consumer's intention to use mobile devices in the grocery shopping process. Based on that argument, this study proposes the following hypothesis.

H2: Effort expectancy will have a positive effect on consumers' intention to accept online grocery shopping.

3.3 Social influence

Social influence can be described as a certain behaviour that a person would exhibit because of their surroundings in a social or public setting. This change in behaviour can be influenced by factors such as decision-making or conforming to fit in with those close to them or with the public (Flache, Mäs, Feliciani, Chattoe-Brown, Deffuant, Huet & Lorenz, 2017). The internet and shopping can be seen as a way to share information and cultural trends respectively; and so, we can conclude that subjective norms influence online shopping. This suggests that a person performs OGS based on the views of significant individuals in their surrounding (Driediger & Bhatiasevi, 2019; Pauzi, Thoo, Tan, Muharam & Talib, 2017). Therefore, the following hypothesis is formulated:

H3: Social influence has a significant and positive influence on the behavioural intention to accept online grocery shopping.

3.4 Facilitating conditions

'Facilitating conditions' refers to one's level of perception about the resources in a firm that will assist in an engagement with an innovation (Pauzi *et al.*, 2017). In the context of OGS, it refers to the systems and support experienced in the process of shopping online. Pauzi *et al.* (2017) suggest that some individuals have been 'tech savvy' since their youth, and that others who are tech savvy have factors that influence their intention, such as children with internet access (with parental supervision). Without the resources needed to facilitate OGS, this could hinder usage behaviour (Hossain, Hasan, Chan & Ahmed, 2017). In a study to determine the difference in the adoption of e-commerce between Y Generation and Z Generation, Harnadi, Dwiyooga and Prasetya (2019) noted that behaviour intention and use behaviour in online shopping innovation have a significant link to facilitating conditions. As a result, we propose the following:

H4: Facilitating conditions will play a key role in having a positive effect on the behaviour intention to buy groceries online.

H5: Facilitating conditions will play a key role in having a positive effect on use behaviour to buy groceries online.

3.5 Perceived risk

According to Shiau, Dwivedi and Lai (2018), one of the most important concerns of customers who purchase goods online is perceived risk, as much uncertainty is associated with online shopping. Consumers are concerned about the safety of their personal details that they share online when they make purchases; and they are also concerned that system hackers might have access to their sensitive personal details such as banking details and identity numbers. Perceived risk alone has six facets to it: psychological risk, social risk, performance risk, financial risk, time risk, and privacy risk (Rogers, 2010). A study by Driediger and Bhatiasevi (2019) on OGS in Thailand found that perceived risk had a significant and negative influence on consumers' use of OGS services. Therefore, the following hypothesis is proposed:

H6: Perceived risk is negatively related to the use of online grocery shopping.

3.5 Behavioural intention

The majority of models based on psychological theories have specifically identified behavioral intention as a major predictor influencing customer use behavior (Yu, 2012:105; Gupta & Dogra, 2017:151). The UTAUT theory proposed and affirmed behavioral intention as a significantly positive predictor of users' use of technology innovation (Venkatesh *et al.*, 2003). Previous research in the field of online shopping has highlighted the impact of behavioral intention on consumers' actual use behavior. (Hansen, Møller Jensen & Stubbe Solgaard, 2004; Amaro & Duarte, 2015). Amaro and Duarte (2015) mention in their study that the OGS behaviour of consumers was influenced by behavioural intentions, and that behaviour, focusing on attitudes, played a critical role in repurchasing in OGS, thus supporting the previous statement. Therefore, the following hypothesis relating to this study is proposed:

H7: The impact of behavioural intention on use behaviour in online grocery shopping is positive.

4. RESEARCH METHODOLOGY

4.1 Measurement, data collection, and sample

The study utilized a self-administered online questionnaire. All items were tested on a seven-point Likert scale, with anchors ranging from 1 ('strongly disagree') to 7 ('strongly agree'). Adults (18 years and older) living in Gauteng, South Africa, with smart devices were defined as the target population. The reasoning behind this was that these potential respondents were in charge of their household and family purchases, including grocery shopping. To select the sample, the researcher relied on their personal knowledge, convenience, and expert judgment (Cooper & Schindler, 2011). Due to the lack of a sampling frame, non-probability sampling in the form of quotas and random sampling were used to select participants. The sample was chosen using quota sampling from demographic quotas (gender and race). In this study, quota sampling was used to make sure that the demographic characteristics of gender and race were fairly represented equally and reflected their distribution in the general South African population. Following the establishment of quotas, a random sampling method was used to select participants from these predefined quotas. Data were gathered through home and office visits. A total of 400 questionnaires were distributed to respondents. However, only 200 valid responses were obtained and analyzed, representing a 50% effective response rate.

A pilot test with 30 participants was conducted. This was done to see if the respondents understood the questionnaire's guidelines and the wording of the questions and/or statements. The pilot study also helped the researcher assess the scale's internal consistency. The pilot test results indicated that respondents were clear with the instructions in general and that the questions and scales were reliable.

5. DATA ANALYSIS PROCEDURE AND RESULTS

The proposed research model was evaluated using the partial least squares structural equation modelling (PLS-SEM) technique (Hair, Hult, Ringle, & Sarstedt, 2017) and the SmartPLS 3 software (Ringle, Wende, & Becker, 2015). Because the structural model for this study was comprehensive and included numerous constructs, the PLS-SEM technique was deemed an appropriate approach to data analysis (Sarstedt, Ringle & Hair, 2014). When evaluating the model, the validity of the measurement model was first evaluated, followed by an examination of the structural model to test the study's hypotheses.

5.1 Measurement model evaluation

The validity of the measures was assessed during the measurement evaluation. The convergent validity of the model's indicators was examined to accomplish this. Cronbach's alpha, composite reliability, and average variance extracted (AVE) were used to assess convergent validity. Cronbach's alpha for internal consistency of reliability and composite reliability should be greater than 0.7 to establish convergent validity, and the AVEs for each construct should be greater than 0.5. (Hair, Marko & Ringle, 2018). Table 1 shows that the Cronbach's alpha and composite reliability estimates all exceeded the recommended level of 0.7. Similarly, the AVEs were greater than the 0.5 threshold, with the AVE for actual use behavior having the lowest score of 0.612.. Consequently, the formative constructs were empirically proven to be valid and reliable.

Table 1: Convergent validity of the reflective constructs

| | Cronbach's alpha | Composite reliability | AVE |
|--------------------------------|------------------|-----------------------|-------|
| Use behaviour | 0.803 | 0.863 | 0.612 |
| AU1 | 0.710 | | |
| AU3 | 0.759 | | |
| AU4 | 0.795 | | |
| AU5 | 0.859 | | |
| Behaviour intention | 0.918 | 0.948 | 0.860 |
| BI1 | 0.924 | | |
| BI1 | 0.924 | | |
| BI3 | 0.948 | | |
| Perceived risk | 0.940 | 0.962 | 0.893 |
| PR1 | 0.943 | | |
| PR2 | 0.947 | | |
| PR3 | 0.946 | | |
| Performance expectancy | 0.949 | 0.963 | 0.867 |
| PE1 | 0.943 | | |
| PE2 | 0.947 | | |
| PE3 | 0.946 | | |
| Effort expectancy | | | |
| EE1 | 0.916 | | |
| EE2 | 0.870 | | |
| EE3 | 0.850 | | |
| Social influence | 0.930 | 0.955 | 0.877 |
| SI1 | 0.899 | | |
| SI2 | 0.896 | | |
| SI 3 | 0.896 | | |
| Facilitating conditions | 0.990 | 0.950 | 0.977 |
| FC1 | 0.878 | | |
| FC2 | 0.887 | | |
| FC3 | 0.860 | | |

Notes* AU: actual use; BI: behavioural intention; PR: Perceived risk; PE: performance expectancy; EE: effort expectancy; SI: social influence; FC: facilitating conditions.

In assessing discriminant validity, the heterotrait-monotrait ratio (HTMT) (Henseler, Ringle & Sarstedt, 2015) was used. This procedure is generally considered to be a more robust approach to examining discriminant validity than the commonly used Fornell-Larcker technique and the cross-loadings assessment (Henseler *et al.*, 2015). According to Henseler *et al.* (2015), for discriminant validity to be established, the HTMT should not exceed 0.85. The results of the discriminant validity analysis presented in Table 2 indicate that, for all the constructs, the HTMT was below the critical threshold of 0.85, thus confirming discriminant validity among the constructs.

Table 2: Discriminant validity (HTMT)

| | 1 | 2 | 3 | 3 |
|---------------------------------|-------|-------|-------|-------|
| 1 Perceived risk | | | | |
| 2 Intention | 0.825 | | | |
| 3 Performance expectancy | 0.816 | 0.750 | | |
| 4 Effort expectancy | 0.765 | 0.568 | 0.570 | |
| 5 Use behaviour | 0.473 | 0.481 | 0.396 | 0.654 |

5.2. Hypotheses testing

The structural model was analyzed using SmartPLS 3 and the partial least squares structural equation modeling (PLS-SEM) technique. Table 3 shows the results of the structural model's PLS-SEM analysis.

The results of the present study indicated that performance expectation had a significant and positive relationship with the intention to accept OGS, providing support for H1 ($\beta = 0.778, p < 0.001$). The positive relationship between effort expectancy and intention was noted ($\beta = 0.765, p > 0.05$), providing support for H2. Furthermore, the results of this study showed a significant and positive relationship between social influence and behavioural intention ($\beta = 0.552, p < 0.001$); thus, H3 was supported. Similarly, the relationship between facilitating condition and intention (H4) was supported ($\beta = 0.116, p < 0.05$), H5 was also supported ($\beta = 0.217, p < 0.05$). The results of this study further suggested that perceived risk had a significant and negative influence on use behaviour ($\beta = -0.368, p < 0.00$), thus H6 is supported. Last, the results of this study indicated that the behavioural intention to use grocery shopping positively influence use behaviour ($\beta = 0.466, p < 0.05$), providing empirical support for H7.

Table 3: Summary of hypothesis testing

| Path | Coefficient | T statistics | P values | Result |
|--|-------------|--------------|----------|-----------|
| Performance expectancy -> Intention | 0.778 | 22.395 | 0.000 | Supported |
| Effort expectancy -> Intention | 0.765 | 7.052 | 0.002 | Supported |
| Social Influence -> Intention | 0.552 | 6.772 | 0.000 | Supported |
| Facilitating conditions -> Intention | 0.116 | 2.046 | 0.041 | Supported |
| Intention -> Use behaviour | 0.466 | 8.517 | 0.000 | Supported |
| Perceived risk -> Use behaviour | -0.368 | 2.828 | 0.005 | Supported |
| Facilitating conditions -> Use behaviour | 0.217 | 2.248 | 0.025 | Supported |

6. RESULTS DISCUSSION AND IMPLICATIONS

The study's findings indicate a significant and positive relationship between performance expectancy and behavioral intention, thus, H1 is supported. These findings are consistent with those of previous research (Pascual-Miguel *et al.* 2015; Tarhini *et al.*, 2016 Ungerer, 2020). This means that the usefulness of OGS results in consumers' positive intentions to use OGS. Furthermore, there is a significant and a positive relationship effort expectancy and behavioural intention thus, H2 is supported. These findings are consistent with other OGS studies (Mandilas *et al.*, 2013; Tarhini *et al.*, 2018). This implies that, if customers find OGS easy to use, they will form a positive intention to adopt OGS. Similarly, the relationship between social influence and intention (H3) is supported. This is consistent with the findings of prior studies (Ingham *et al.* 2015; Ungerer, 2020). This implies that the influence of peers, friends and family is a significant factor towards the acceptance of OGS. Moreover, this study confirms a strong and positive relationship between facilitating conditions and intention; thus, H4 is supported. These results support the findings of Ungerer (2020) and Venkatesh *et al.* (2012), implying that, if consumers believe that there is infrastructural support to use OGS, they will have a positive intention to adopt it. Also, the relationship between facilitating conditions and the use of OGS is supported, in line with the findings of Van Droogenbroeck and Van Hov (2021). Lastly, the results of this study confirm the relationship between behavioural intention and use behaviour; thus, H7 is supported. These results support the findings of Baptista and Oliveira (2017) and Venkatesh *et al.* (2012). This implies that, if consumers have a positive intention towards OGS, they will use this innovation.

The results of this study further indicate that perceived risk is negatively influencing use behaviour of OGS, thus providing empirical support for H6. These results suggest that, if consumers are fearful of using OGS, they will not use it. These results are consistent with the findings of

researchers (Van Droogenbroeck & Van Hov, 2021) who have identified perceived risk as a barrier to the use of online shopping.

The purpose of this study has been to examine the factors influencing the adoption of OGS among South African consumers using the UTAUT model, extended to include perceived risk. The conclusion drawn from the findings is that customers will generally adopt OGS if they feel that it is useful, easy to use, and is accepted by their friends and family, and if they feel that support is provided by retail outlets to help them to shop online. Last, consumers will adopt OGS if the perceived risk in using it is minimal. The findings of this study could be embraced by South African retailers that have an online presence in order to increase the level of OGS adoption among South African customers. This could be done by manipulating the effective variables in the model – performance expectancy, effort expectancy, facilitating conditions, and social influence – which were shown to be salient predictors of behavioural intention and use behaviour. Furthermore, retailers must come up with strategies to eliminate risk concerns by implementing effective risk majors.

7. KEY CONTRIBUTIONS

Researchers have encouraged the use of an all-inclusive approach to study the adoption of new technological innovations in developing countries (Fichman, 2004; Oliveira *et al.*, 2014; Lyytinen & Damsgaard (2011). Considering that perceived risk has been highlighted as an important factor in explaining consumers' online behaviour, incorporating perceived risk into the UTAUT is expected to increase the model's predictive power in explaining OGS behaviour among South African consumers. The current study responds to this call by using an integrated model that joins together the components of UTAUT and perceived risk to study OGS adopting in a developing country (South Africa). Although there is a considerable body of research on online grocery adoption, only limited work has been done to understand the influence of perceived risk on the acceptance of OGS (Mortimer, Hasan, Andrews & Martin, 2016). Therefore, by explaining the effects of risk on the acceptance of OGS, this study not only provided insights into strategies that should be implemented to achieve favourable perceptions of OGS, but also contributed to the limited literature of this nature. In addition, an understanding of the factors influencing the adoption of OGS is important to the retail industry, given its significance in potentially addressing the sluggish rate of adoption facing this industry in emerging African economies such as South Africa.

8. CONCLUSION

To summarize, the internet's significant and rapid expansion has reformed the retail space in numerous ways. However, target customers' acceptance and use of these technologies is not as widespread as academics and industry experts predicted. As a result, retailers, financial and business analysts, marketers, policymakers, and strategy developers in this industry must understand the key factors influencing customers' intentions to adopt these innovations. This would allow them to devise appropriate strategies for increasing OGS acceptance and usage. According to the findings of this study, consumers will adopt OGS based on its usefulness, ease of use, social influence, and available infrastructural support from retailers. Thus, this study encourages online retailers to provide the necessary support to their customers – for example, by

providing online tutorials on how to buy groceries online and how to protect their identity when shopping online; to emphasise OGS' useful benefits when communicating with their customers; and to make shopping sites easy to use for all their customers.

9. LIMITATIONS AND FUTURE RESEARCH

While the study has significant implications for theoretical and practical aspects, it also has drawbacks that point to future research directions. First, in this study, a single cross-sectional descriptive design was used. As a result, future research studies could use a longitudinal research design to gain a thorough understanding of any changes in the factors that influence customers' intent to purchase and use OGS. Second, because the study's sample was limited to South Africa, the findings only reflect the reality in one developing country. The study could be replicated in other developing countries in the future to validate the findings. Finally, because the study only looked at current OGS users, future research could look at non-users' intentions as well.

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AN EMPTY PROMISE? A VIEW ON THE NATIONAL CREDIT AMENDMENT ACT, 7 OF 2019

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ABSTRACT

In a financially strained South Africa, over-indebted consumers rely on insolvency or other debt-relief measures to assist during these difficult times. The South African debt-relief systems, particularly debt counselling, do not facilitate for marginalised groups of people, known as NINA (no income, no assets) and LILA (low income, no assets) debtors, due to the high administrative costs associated with the relief offered. It was not until the enactment of the National Credit Amendment Act 7 of 2019 (the Act) that there was hope for NINA and LILA debtors. Once the new Act comes into force, the promise of a better future for NINA and LILA debtors will be realised, by providing free debt intervention to qualifying debtors. History has taught us, though, that some promises are not always fulfilled. Hence, the same may be presumed about the new intervention process as introduced by the Act. The Act will empower the National Credit Regulator (NCR) to rearrange the consumer's debts and/or to suspend such obligations of qualifying debtors. Therefore, this article seeks to analyse whether the Act will really bring about the intended relief promised to these debtors. This literature study will critically evaluate the Act. Consideration will be given to legislation, published articles, legal reports, and international comparisons. As of date, the Act is not yet in operation. Before the outbreak of the Covid-19 pandemic, the estimated cost to the state to implement debt intervention would have been R407 million per annum, and the possibility of it being implemented soon seems bleak. The debt intervention process provides different timeframes to assess a debtor's financial situation. Under the Act, NINA debtors will be subjected to prolonged waiting times before debts can be extinguished. Prior to the promulgation of the Act, creditors in the formal sector raised their concerns and indicated that they would limit their exposure to these debtors. To ensure that the proposed intervention will achieve its purpose, there is once again a need to amend the National Credit Act 34 of 2005 (NCA). The NCA must be amended to include an expansion in the definition of 'credit agreements' so that it can include dozens of debts currently excluded from the application of the NCA. Furthermore, one would have to increase the cap of R50 000 to an amount that is conscious of the South African circumstances.

Keywords: Debt intervention, credit-relief measures, low-income (LILA) debtors, no-income (NINA) debtors, unsecured credit

1. INTRODUCTION

On 31 December 2019, the World Health Organisation reported a phenomenon known as the Coronavirus or Covid-19. The virus was first reported in China and little did we know that in the months and years to follow, the entire world would succumb to the effects of this virus. Like the rest of the world, South Africa fell victim to the spread of the Coronavirus when the first case of

an infected person was reported on 5 March 2020 (Mkhize, 2020). The spread of the Coronavirus in South Africa did not mean the beginning of financial troubles for our country, but rather the exacerbation of an existing economic crisis. Before Covid-19, Statistics South Africa (Stats SA), in its quarterly labour-force survey, ending 2019, reported that our country's unemployment rate stood at 29.1%. The unemployment rate by the end of 2021 stood at 35.3%. This increase implies that more debtors, including NINA and LILA debtors, are now financially distressed.

The Covid-19 pandemic and the Regulations that came with it, meant that certain people could not resume work as they did before the pandemic. Over and above issues of unemployment, South Africa found itself having to approach the International Monetary Fund (IMF; IMF approves COVID-19 loans to South Africa; SA-news); the World Bank; the African Development Bank and other international institutions to fund some of the Covid-19 measures imposed by State (Ramaphosa, 2020). It is therefore clear that South Africa is in serious debt following the pandemic, which is cumulative of the debts it already had before the pandemic (South African Government, 2021). The evidence points to severe economic distress, which is slowly manifesting in various spheres of Government (South African Government, 2021). Over-indebted debtors' last resort to overcome their debt trap is to rely on debt-relief measures.

Debt-relief measures currently available to natural persons in South Africa consist of the statutory insolvency law proceeding as set out in the Insolvency Act 24 of 1936, administration orders following the Magistrates' Court Act 32 of 1944, and the debt review proceeding as set out in the National Credit Act 34 of 2005. Only proceedings governed by the Insolvency Act provide the discharge of a debtor's debts. Administration orders and debt rearrangement (debt review) proceedings do not extinguish a debtor's debt, but merely prolong the repayment of such debt. Due to some limitations in the existing debt-relief measures, not all debtors are able to benefit from the proceedings, especially the most vulnerable LILA and NINA debtors. This article will assess whether the National Credit Amendment Act of 2019 will provide for a life in the Promise Land for individual debtors who are excluded from the current debt-relief options available in South Africa, or not. Therefore, this article will assess whether the amendment, as mentioned earlier, will benefit NINA and LILA debtors, by looking at the benefits, as well as the challenges of such an amendment.

2. METHODOLOGY

In pursuit of the above, we shall look at natural persons' debt-relief mechanisms in South Africa, as well as natural persons' debt-relief mechanisms in foreign jurisdictions. This will be done by using the doctrinal methodology as the methodology used in legal writing. As this study is a literature study, we will use legislation, journal articles, and research dissertations to evaluate the effectiveness of debt-relief measures for LILA and NINA debtors. Emphasis will be placed on the related provisions of the National Credit Amendment Act of 2019. As the Act is not yet in force, the requirements of the Act have not yet been tested by South African Courts.

3. SOUTH AFRICA'S NATURAL PERSONS' DEBT-RELIEF MECHANISMS PRIOR TO THE AMENDMENT

South Africa's natural persons' debt-relief mechanisms operate in various legislations (Klaasen, 2020) which include the National Credit Act 34 of 2005, the Insolvency Act 24 of 1936, and the

Magistrate's Act 23 of 1944 (Klaasen, 2020). All these statutes make provision for natural persons' debt-relief mechanisms that are deemed to be inadequate for NINA and LILA debtors (Ministry of Trade and Industry, 2019). Therefore, the National Credit Amendment Act was introduced to mitigate the inadequacy. We shall thus focus on the three debt-relief mechanisms currently available to natural persons, whereafter we shall discuss the amendment Act.

3.1 Insolvency Act 55 of 2008: Sequestration

Sequestration is the only debt-relief measure that results in the discharge of all debts prior to the sequestration (Klaasen, 2020). It is the primary debt-relief measure (Klaasen, 2020). The purpose of sequestration can be found in section 129 of the Insolvency Act, which provides for the rehabilitation of the insolvent person after sequestration. Rehabilitation will result at the end of sequestration and fully discharge all debts before sequestration (Section 129 of the Insolvency Act). The debtor himself can initiate sequestration by applying to the High Court through the process of 'voluntary surrender' (Kopel, 2017). Alternatively, sequestration can take place at the behest of the creditor(s), through an application to the High Court, known as 'compulsory sequestration' (Klaasen, 2020).

Sequestration has rigid requirements, which, in South Africa, few can afford (Klaasen, 2020). The most strenuous requirement is that it must be to the advantage of creditors (Magau, 2020). In contrast to the requirement for compulsory sequestration, this requirement is imperative and thus strictly applied when it comes to voluntary surrender. There must be a reason to believe that the sequestration will be to the advantage of the creditors (Magau, 2020). The 'advantage to the creditor' would entail that the assets owned by the debtor are enough to cover the cost of sequestration and that the residue will be to the advantage of creditors (Coetzee & Roestoff, 2013). Although the two kinds of sequestrations have other requirements over and above the requirement that it must be to the creditor's advantage, such additional requirements shall not be discussed in this article, as it is not difficult to meet. The requirement that the sequestration must be to the creditors' advantage is challenging to meet and can be fatal to the pursuit of obtaining a discharge – on application, the court must be satisfied that the sequestration will be to the advantage of creditors, or it shall not grant such an order (Coetzee & Roestoff, 2013). Therefore, although a debtor may be factually insolvent because he has more liabilities than assets, he still may not qualify to be sequestrated. The advantages associated with sequestration of a debtor outweigh the disadvantages of being insolvent for a lifetime. Unfortunately, sequestration, as a relief tool, is reserved for only an affording few and this is to the detriment of NINA and LILA debtors, as they cannot access it.

3.2 National Credit Act 7 of 2005: Debt Review

Section 86 of the National Credit Act provides the debt-review procedure (Section 86 of the National Credit Act 4 of 2005). The process of debt review is commenced by an application to a debt counsellor who will charge an amount within the prescribed amounts (Section 86(3) (a) of the National Credit Act 4 of 2005). The consumer makes an application to be declared overly indebted. As held in the case of *Collet v FirstRand Bank Ltd* 2011 (4) SA 508 (SCA), the purpose of debt review is not to discharge the consumer of his debt, but to establish a voluntary debt rearrangement by the Magistrate's Court. There is therefore a clear distinction between debt review

and sequestration. Debts arise from different events in life, which are not limited to credit agreements, and can include judgment debts that do not fall within the definition of credit agreements under the NCA (Leathern, 2018). The NCA defines a 'credit agreement' as an agreement that fits the criteria as set out in section 8 of the NCA (Section 1 of the National Credit Act 4 of 2005).

Section 8 of the NCA pertains to the classification and categories of credit agreements. For the purpose of the NCA, a credit agreement includes credit agreements from a credit facility, a credit transaction, and a credit guarantee (Section 8(1) National Credit Act 7 of 2005). Section 8(2) explicitly excludes debts arising from the lease of immovable property (National Credit Act 7 of 2005). The NCA further excludes debts arising from municipal accounts and even maintenance from its criteria (Magau, 2020). Therefore, debt review cannot be implemented for anything other than those credit agreements listed in the NCA. The limited criteria of a credit agreement as set out in the NCA is problematic. It implies that a person with debts that do not fit the criteria will forever be overly indebted despite having the will to enter into a rearrangement that would help him to ultimately pay off the debts (Magau, 2020). Over and above the issues of debt review not being inclusive, it is viewed as neither prudent nor cost effective for LILA debtors to employ the process of debt review as a debt-relief tool (Klaasen, 2020). The fact that debt review requires the debtor to make continuous payments means that NINA debtors are automatically excluded from employing debt review as a debt relief tool.

3.3 The Magistrate's Court Act 32 of 1944: Administration

The Magistrate's Court Act, 32 of 1944, created a natural person's debt relief mechanism, called 'administration'. Section 74(1) of the Magistrate's Court Act reads as follows:

“Where a debtor-

(a) is unable forthwith to pay the amount of any judgment obtained against him in court, or to meet his financial obligations, and has not sufficient assets capable of attachment to satisfy such judgment or obligations; and

(b) states that the total amount of all his debts due, does not exceed the amount determined by the Minister from time to time by notice in the Gazette upon application by the debtor [...] make an order providing for the administration of his estate and for the payment of his debts in instalments or otherwise.”

The administration order referred to in the above-mentioned provision requires that a person must have some form of income and assets to be able to make such payment in instalments and cover the cost of administration (Bar, 2019). Administration orders, like debt reviews, are aimed at debt rearrangement (Bar, 2019). It, therefore, requires that the debt must not exceed a certain amount set from time to time, which currently is R50 000 (Section 74(1)(b) of Magistrate's Court Act 32 of 1944). Section 74(10(a) suggests that the administration order caters for those who do not qualify for sequestration due to not having adequate assets to satisfy the requirement of 'advantage to creditors'. However, a question would be – what about those who have debts or obligations that exceed the amount set from time to time and still do not meet the requirements for sequestration? The administration order, unlike debt review, is wide enough to accommodate obligations that fall outside the definition of a credit agreement under the National Credit Act of 2005. Still, such

broadness is of little effect in the presence of limitations imposed by the amount set from time to time (Section 74(1) (a) of the Magistrate's Act 32 of 1944).

4. CONCLUSION

What is common about the natural persons' debt relief in South Africa, whether it is debt review, sequestration, or administration order, is that none is devoid of problems. It excludes the marginalised (Preamble of the National Credit Amendment Act of 2019). These debt reliefs are not sensitive to the circumstances of LILA and NINA debtors in South Africa (Coetzee & Roestoff, 2013). As discussed earlier, South Africa's economy is in shambles, with many not able to afford the minimum living standard (Coetzee & Roestoff, 2013). These debt reliefs are not designed for NINA and LILA debtors (Boterere, 2019). The problems herein may have necessitated the amendment Act, which is the core subject of this article. Still, the question remains, as shall be discussed later - is the amendment Act, as a new form of debt relief in South Africa, a promise of better days for the marginalised, over-indebted consumer?

5. INTERNATIONAL COMPARISONS

The Constitution of the Republic of South Africa of 1996 provides the use of foreign law, although primarily for persuasion (Kopel, 2017). One can infer that South Africa's Constitution, which is the supreme law of our country, makes room to learn from those who may be doing better or even those who are not doing so well, to bring about positive conclusions. Therefore, this article needs to look at some of the international trends to see if we too can come to a positive conclusion. We shall thus look at various countries and their natural person debt-relief regime. In looking at international trends, we shall consider New Zealand and the United Kingdom.

5.1 New Zealand

The insolvency regime in New Zealand operates in terms of the Insolvency Act 55 of 2006 (Boterere, 2019). The legislation creates various natural persons' debt-relief measures (Bar, 2019). Some of these measures are not so different from South African measures, but only differ in name. New Zealand has bankruptcy, proposal, debt-repayment order, and no-assets procedures (Bar, 2019). We shall briefly look at bankruptcy, proposal, and debt repayment order, before we draw attention to the no-assets procedure as part of our focus in this article.

5.1.1 *Bankruptcy, proposal, and debt repayment*

Although the procedures may differ from South Africa's insolvency procedures, there is a reasonable belief that New Zealand's bankruptcy procedures are equivalent to South Africa's sequestration proceedings. Bankruptcy in New Zealand can commence either on the debtor's accord or on the initiative of the creditor (Part 2 of the Insolvency Act 55 2006). The procedure in New Zealand is also aimed at discharging the debts (Part 2 of the Insolvency Act 55 of 2006). Assets of the debtor are realised as payments to creditors (Bar, 2019). The requirement that the debtor must meet is that there must be a particular debt that is due and payable, either immediately or at a future date (Part 2 of Insolvency Act 55 of 2006). The total debt owed must not be less than \$1000 (Part 2 of Insolvency Act 55 of 2006). Once this requirement has been met, the debtor must have committed an act of bankruptcy, such as leaving New Zealand, avoiding creditors, failing to comply with the bankruptcy notice, disposing of assets, etc. (Klaasen, 2020). These requirements

are less rigid than the South African requirement because New Zealand's requirement is said to be a 'due debt', and not necessarily that there must be an advantage to creditors.

The option of a proposal, available in New Zealand as an alternative to bankruptcy, is similar to South Africa's debt review (Bar, 2019). This debt-relief mechanism allows a debtor to approach the creditors with an alternative payment plan or even a plan to pay in the future as opposed to the time at which the debt is due (Bar, 2019). If the creditors accept the proposal, it is filed in court for the court's approval, wherein after it will be made an order of the court. The order is binding on creditors (Bar, 2019).

The last alternative to bankruptcy is the repayment order (excluding the no-assets procedure). A debt repayment order is defined as "... an order by the Assignee that the debtor pays his debts in instalments or otherwise; and in full or to the extent that the Assignee considers practicable in the circumstances of the case" (Section 340, Insolvency Act 55 of 2006). The debt-repayment order is very approximate to South Africa's administration order, except that in South Africa, the court makes the administration order. The application to an Assignee can be made either by the creditor or the debtor himself (Section 341, Insolvency Act 55 of 2006). Therefore, the Assignee will make such an order provided he or she is satisfied that the total unsecured debt does not exceed \$50 000, and that the debtor is in no position to pay off those debts immediately. The above limitation is also one feature that resembles South Africa's administration order: with minor differences, such as the name. The repayment order, fortunately, has a time limit, unlike the administration order (Section 349, Insolvency Act 55 of 2009). The time limit set on the repayment order is ordinarily up to three years and, in exceptional circumstances, five years.

5.1.2 No-assets procedure.

This article focuses on efficient and effective access by NINA and LILA debtors to natural person's debt relief mechanisms. (Boterere, 2019). In pursuit of providing access to NINA and LILA debtors, New Zealand created a procedure in its Insolvency Act called the 'no-assets procedure' (Klaasen, 2020). This procedure is offered with other alternatives instead of bankruptcy (Bar, 2019). Once the debtor is admitted to the no-assets procedure, the creditor cannot take steps to recover the debts or enforce the debts (Boterere, 2019). Noteworthy, is that this does not apply to certain debts such as student loans, child support, and maintenance. When done in good faith this procedure results in full discharge of the debts; thus, allowing a consumer to be free of the burden of being over-indebted (Section 364 of the Insolvency Act 55 of 2009). The discharge happens automatically at the end of 12 months from the day the debtor was admitted in the no-assets procedure (Boterere, 2019).

The procedure commences through an application by a debtor for entry into the no-assets procedure (Bar, 2019). Similar to the repayment order, the application is made to the Assignee. The Assignee has the authority to reject or accept the application if he or she is satisfied that the requirements are met (Keeper, 2014). The requirements are that the debtor must not have any realisable assets, must not have been previously accepted into the procedure, must not have been previously adjudicated bankrupt, and must have a total debt of less than \$50 000 but greater than \$1000 excluding debts that are excluded by the Act. Furthermore, the debtor must have no means of repaying any amount of the debt, and lastly, that adjudicated bankruptcy would not leave any creditor materially better (Keeper, 2014).

Although the regime seems prone to manipulation, as consumers could possibly use it to escape liability, the provisions have curtailed any possible manipulation, by excluding specific individuals from benefiting from this regime (Keeper, 2014). These individuals are debtors who have concealed assets in order to defraud creditors; debtors who have conducted themselves in a manner that would constitute an offence under the Act if they were adjudicated bankrupt; a debtor with mala fide, not paying back the creditors when he incurred the debt despite knowing that he has no means of paying; and debtors whose creditors would be better off if the debtor is adjudicated bankrupt as opposed to being admitted to the no-asset procedure (Keeper, 2014).

5.2 The United Kingdom

At this point, we shall consider the debt-relief mechanisms in the United Kingdom. It is worth pointing out that part of South African law came from English Law, and to this day, South Africa borrows *inter alia* from English Law (Kopel, 2017). The natural persons' insolvency regime or debt-relief mechanisms essentially consist of bankruptcy, the individual voluntary agreement (IVA), county court administration order (CCAO), debt-management agreement (DMA), and the debt-relief order (DRO) (Xulu, 2015).

We shall first briefly consider all the mechanisms, in insolation to the debt-relief order. The debt-relief order was tailored for the group of people that form part of the subject matter of this article, namely NINA and LILA debtors.

5.2.1 Bankruptcy; IVA; DMA; and CCAO

We shall start with bankruptcy. Anyone who understands South Africa's sequestration and its effect, will at least, to a reasonable extent, understand the English bankruptcy regime. However, bankruptcy seems like a shocking state, considering that the English law insolvency regime is largely influenced by the idea of giving debtors a fresh start (Bar, 2019). This process is regulated by part IX of the Insolvency Act 1986, which applies in England and Wales (Bar, 2019).

In the application, the debtor will, among other things, provide a state of his or her affairs, showing that he or she is unable to meet their obligations (Part IX of the Insolvency Act of 1986). The fact that this process requires the debtor to have assets so that it can be realised for the benefit of his creditors, calls for us to not discuss this process any further, as it cannot be a solution to the NINA and LILA debtors' lack of accessibility to debt-relief mechanisms (Bar, 2019).

An alternative to bankruptcy is the IVA or the individual voluntary agreement (Xulu, 2015). The IVA can be defined as a composition between the creditor(s) and the debtor, done by a proposal made by the debtor to his or her creditors and binding on both parties (Xulu, 2015). The parties can agree to the disposal of specific properties within the ambit of the framework. An insolvency practitioner is assigned to the debtor to supervise the agreement (Bar, 2019). Under the inclusion of the sale of property, one can note that this mechanism is also meant for those with assets, which unfortunately excludes the marginalised group and shall thus not be entertained any further.

Another alternative to bankruptcy is the debt-management agreement (DMA). The DMA is done on the initiative of the debtor himself, following consultation with a debt counsellor. The DMA is aimed at the payment of the entire debt and thus requires the debtor to have a regular surplus income. In this regard, the requirement of an income also places this mechanism out of reach for the marginalised who have no surplus income or no income whatsoever. Fortunately, the British

Insolvency Act of 1986 provided for these marginalised groups with the introduction of the DRO in 2009.

5.2.2 Debt-relief order (DRO)

In 2009, the British Insolvency Act of 1986 introduced the debt-relief order. This procedure has specifically been introduced to assist debtors who have difficulty settling all their debts, due to low or no income (Conway, 2021). A debtor may apply for DRO for certain qualifying debts (Conway, 2021). An initial fee of £90 must accompany the application (Conway, 2021). ‘Qualifying debts’ implies liquidated due debts and excludes secured debts and debts subject to prescription (The Insolvency Service, 2021). The application debtor must satisfy specific requirements that include the following: the total debt amount must not exceed £30 000; the gross assets of the debtor may not exceed £2000; the debtor’s disposable monthly income, after tax and governmental deductions, must be £75 or less; and the debtor must not have been granted a DRO in the previous six years. (The Insolvency Service, 2021).

An approved intermediary brings the application for debt relief by the debtor to the official receiver (The Insolvency Service, 2021). Once the DRO is made, all existing debt-management arrangements are halted, and a moratorium is imposed for 12 months (251H of Insolvency Act 1986). The duration may, in some instances, be extended (Conway, 2021). During this time, the debtor has specific duties towards the official receiver that include the duty to report an increase in income or obtained property (251E of the Insolvency Act 1986). Creditors can object to the order, and the official receiver can convey such investigations as deemed necessary and has the power to amend or revoke the DRO (251K of the Insolvency Act of 1986). Once the moratorium ends, the debtor will be discharged from all qualifying debts (251L of the Insolvency Act 1986).

6. THE NATIONAL CREDIT AMENDMENT ACT 7 OF 2019: DEBT INTERVENTION.

The purpose of amending the NCA by means of the National Credit Amendment Act of 2019 – other than to protect consumers, to promote an accessible credit market industry and promote and advance the social and economic welfare of South Africans – is to make provision for insolvency measures and debt-rearrangement procedures to over-indebted individuals who are currently excluded from the existing insolvency proceedings and debt-restructuring proceedings.

The preamble of the National Credit Amendment Act provides as follows:

“[...] there are categories of consumers for whom existing natural person insolvency measures are inaccessible, either because of the focus that these measures place on the benefit to credit providers or the cost involved with such natural person insolvency measures; and

[...] without suitable alternative natural person insolvency measures being made available to over-indebted individuals who do not have sufficient income or assets to show benefit to creditors, to afford the costs associated with an administration order, or to be an economically viable client for a debt counsellor, it is not only an insurmountable challenge for them to manage or improve their financial position, but it also amounts to unjustified and unfair discrimination on socio-economic grounds[...]”

In light of the above preamble, read together with the purpose of the NCA, which is to *inter alia* “promote a fair, transparent, competitive, sustainable, responsible, efficient, effective and

accessible credit market industry; and to protect consumers”, it can be concluded that the proposed intervention must not only include the previously marginalised group, but it must also do so in an efficient and effective manner (The purpose of the National Credit Act 34 of 2005).

We shall now look at the proposed debt intervention. We shall first look at the proposed changes necessary for the debt intervention, whereafter, we shall look at the debt intervention in greater detail.

6.1 The proposed changes

The Amendment Act introduces certain changes to the NCA. The purpose of the new Amendment Act, among other things, is to amend the NCA to accommodate the new functions of the National Credit Regulator, which includes the evaluation and referral of debt intervention (The Purpose of the National Credit Amendment Act 07 of 2019). The Act adds additional functions of the National Credit Tribunal (NCT) to include considering referrals from the National Credit Regulator (NCR) regarding debt-intervention applications. The functions of the NCR are listed in Section 15A of the Act under "other functions of the National Credit Regulator". These functions include assisting applicants of this process, by having qualifying debtors declared over-indebted, by having qualifying debtors' obligations rearranged, and by having debtors' applications for debt intervention processed. These changes are over and above the introduction of the debt-intervention process and other changes that are not important for the purposes of this article.

6.2 Debt intervention: The process

Before we discuss the process, it is imperative that we define the term that needs to be understood for the purpose of understanding the process, namely ‘debt-intervention applicant’, as the term that is largely used in the process of debt intervention and is closely linked to eligibility. A debt-intervention applicant is a natural person who, at the time of the debt-intervention application, has unsecured credit agreements (short-term credit transactions or credit facilities only) and either receives zero income or a gross income that, on an average of six months prior to the application, did not exceed R7500 per month, and has reached a stage of over-indebtedness; who is neither sequestrated nor a subject of an administration order (Section 86A of the NCA).

Debt intervention commences through an application to the Regulator following its new functions. The procedure is reserved for those eligible in terms of the criteria set in the Act. (Section 86A(1) and 86A(6) of the NCA) The Act requires that the consumer with less than R50 000 unsecured debt owing to credit providers be declared over-indebted. The above requirement is over and above the requirements contained in the definition of debt-intervention applicant, as it is defined above. Upon receiving the application from the debt-intervention applicant, the Regulator must conduct an assessment in accordance with section 86(6) of the NCA. The assessment is aimed at determining whether or not the applicant appears to be over-indebted and whether or not the credit agreements in question were granted in a reckless manner.

The assessment will influence the decision of the Regulator. The Regulator may decide to reject the application on the basis that the applicant does not qualify for debt intervention. In the alternative to rejecting the application, the Regulator may recommend that the applicant and his creditors enter into a voluntary plan of debt rearrangement if the Regulator believes that the applicant is battling to satisfy his obligations under credit agreements when they become due.

(Section 86(7) of the NCA) Where the Regulator believes there was reckless lending, it shall refer such credit agreements to the Tribunal to have them declared reckless. Where the applicant is eligible for intervention and the obligations can be rearranged within a period not exceeding five years (or longer), the Regulator must refer such credit agreement to the Tribunal for an order for rearrangement. Should the applicant qualify for debt intervention but does not have the income or adequate assets to allow for rearrangement, the Regulator will make a referral to the Tribunal. The Tribunal may suspend the credit agreements either in part or in full for 12 months, which may further be extended by another five months.

6.3 Challenges with debt intervention

We shall now look at the challenges or shortcomings presented by debt intervention. It is necessary, at this point, to give credit to the legislature for making an effort or having the will to address the unconstitutional exclusion of the marginalised debtors based on socio-economic status. Hence, any criticism levelled herein is to contribute to the legislature's goal, which is to be inclusive in an effective and efficient manner.

At the helm of the challenges of the intervention process is the limitation placed on a credit agreement as defined in the NCA. It, therefore, has operation only within the scope of the application of the NCA; the result of which is unpleasant due to the exclusion of certain debts. The NCA excludes certain credits from its application, which means that such credits will also not form part of the debt intervention (Coetzee, 2018). These excluded credits include clothing accounts, professional services accounts, and municipal accounts where no interests are charged. This exclusion is concerning, because the reality is that NINA and LILA debtors struggle to afford the minimum standard of living, which draws them to such excluded obligations (Coetzee & Roestoff, 2013). One can only imagine a mother of many kids who require winter clothes or a household with many members who are either unemployed or earning close to nothing. What options do they have other than opting for credit and defaulting on some of their obligations?

In a world of global connectedness, it is important that South Africa's debt intervention legislation is in line with current international standards. (Coetzee, 2018). Although, this is nearly the case, there is still room for improvement. According to the World Bank, the insolvency system must not be overly cumbersome, and it must be brief (Magau, 2020). The international standards focus on debt discharge within a short period of fewer than three years and afford the consumer a fresh start (Magau, 2020). Hence, with the limitation that comes with the type of credit that are eligible for discharge in a country with all sorts of debts, such discharge will only be a portion of the debtors' obligations, thus denying them an opportunity to a fresh start.

Debt intervention will not entirely result in the elimination of the exclusion of the marginalised (Coetzee & Roestoff, 2019). The requirement that the applicant must not have more than R50 000 unsecured debt will, by default, exclude dozens of debtors from debt relief and discharge (Coetzee & Roestoff, 2019). This amount is set without any justification by the legislature and is analogous to the limitation set for administration orders. Once converted to the South African Rand currency, the South African R50 000 cap is way below the monetary cap of foreign jurisdictions, such as New Zealand (\$1000).

Currently, debtors who either have secured debts or unsecured debts of more than R50 000 are given an option to enter into a voluntary rearrangement with their credit providers (Bar, 2019). A debtor in such a position has weakened negotiating power against a vastly experienced credit provider; thus, making this option of little to no help to LILA and NINA debtors (Bar, 2019). Cumulatively, one can also note that even the voluntary-rearrangement option is not available for all obligations of the debtor, as it still has to be qualifying credit agreements in terms of the NCA (Bar, 2019).

The implementation of the new Amendment Act and the role and function to be played by the National Credit Regulator and National Credit Tribunal might not be easy. For the Regulator to take over the administration function of already existing debt counsellors will be cumbersome, due to the high implementation costs. According to the Socio-Economic Impact Study (Portfolio Committee on Trade and Industry (2019)) Government has currently borrowed money from various institutions to finance Covid-19 measures during the pandemic. The cost of implementing the additional functions of the Regulator will place an additional burden on the already financially strained budget. In addition, most South African government departments or organs battle to execute their mandates because they are overburdened. The question can be asked whether the functions of the National Credit Regulator will not be impaired by such expansion of its functions (Coetzee & Roestoff, 2019). To date, the new Amendment Act is not yet in operation.

7 RECOMMENDATIONS AND CONCLUSION

It is clear that there is a burning desire for South Africa to be as inclusive as possible. New debt-intervention measures that had been put into place opened the door to an identified group of LILA and NINA debtors to overcome their financial over-indebtedness and to have an opportunity to a fresh start and to re-enter the economy. This intention of the legislature to accommodate the marginalised group of NINA and LILA debtors is a move in the right direction. Unfortunately, it is questionable if the new amendment Act will serve this purpose envisioned by the legislature, as the proposed debt intervention is still lacking as an ideal debt-relief measure. Perhaps one can start by noting that it requires some changes to properly fulfil its purpose – to be inclusive in an effective and efficient debt-relief measure. While the Act is a noble idea and comes with good intentions, we cannot ignore our current state of crisis in pursuit of inclusion that could do our entire economy more harm than good.

A credit agreement, as defined in the NCA, includes credit agreements that arise from a credit facility, a credit transaction, and a credit guarantee. Section 8(2) specifically excludes a variety of debts or obligations such as debts arising from the lease of immovable property, debts arising from municipal accounts or other accounts, maintenance obligations, or obligations arising from delicts. In order to ensure that the proposed intervention will achieve its purpose, there is further a need to amend the NCA to include an expansion in the definition of credit agreements, so that it can be inclusive of dozens of debts currently excluded from the application of the NCA.

The costs of implementing the new Amendment Act will be dire and without any guarantee that it shall be effective. It would have cost the Government approximately R407 million per annum to compensate the National Credit Regulator and Tribunal employees for fulfilling the role of debt counsellors in 2019. It is therefore recommended that the current debt-review mechanisms must be used. Registered debt counsellors should fulfil the roles to be played by the Regulator and

Tribunal. The National Credit Regulator should subsidise the administration costs of these registered counsellors.

Furthermore, one would have to increase the cap of R50 000 of unsecured debts under the new Amendment Act to an amount that is conscious of the South African circumstances. The South African R50 000 cap is way below the monetary cap of foreign jurisdictions, such as New Zealand (\$1000).

Although there was a will from the legislature to introduce the new National Credit Amendment Act, with or without its shortcomings, the Amendment Act is not in force. LILA and NINA debtors are still in the same position as prior to the Act's promulgation. These marginalised groups of persons do not have access to debt-relief measures whereby their debts can be extinguished. The unconstitutional and discriminatory debt-relief measures in South Africa, as at this moment, remain unchanged.

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RESOURCE DEPENDENCY EVALUATION MODEL OF SERVICE DELIVERY IN A SOUTH AFRICAN MINING FIRM

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ABSTRACT

This paper addresses South African mining firms' service delivery and resource dependency. Resource Dependency Theory is evident when entities cannot produce all the support needed to sustain themselves internally. Therefore, the entities rely on other external entities for their existence. The criticality of resource dependency has the potential to place the firm at risk of not delivering service due to the absence of resources. Therefore, the goal of this paper was to report on the conceptualisation of a resource dependency evaluation model for mining firms. To achieve this goal, the researcher followed an interpretivist research philosophy and a case study as a research approach. The underpinning theory was the Resource Dependency Theory, which facilitates a deep understanding of how resource dependency manifests in South African mining firms. In this paper, the author gives recommendations in the form of a conceptual framework that reveals how resource dependency could positively influence the resources evaluation of the resource for the SA mining firm to yield positive service delivery for the firm. An interpretative philosophy and inductive approach were followed using both thematic and content analysis methods to analyse the data. Findings suggest that a sound Resource Dependency Evaluation Model could have a positive impact on the firm if there is 1) a suitable synchronisation of outside resource dependency; 2) factors recognised when outsourcing is uniform; 3) processes are not compromised; 4) criteria used for selecting preferred supplier are strictly observed; 5) supplier performance monitoring accomplishes the firms' critical functions and 6) obtains strong relationships with suppliers. The Resource Dependency Model conceptualised in this study unpacks the theoretical, practical and contextual contributions of this paper. The paper concludes that Resource Dependency positively influences firm service delivery when there is an appropriate alignment of outside resource dependency.

Keywords: Resource dependency; service delivery; South Africa; mining firm

INTRODUCTION

Resource Dependency Theory (RDT) highlights that organisations consist of critical resources. It is necessary first to define which resources are essential for the firm's daily operations to understand organisational culture. Scholars have defined the criticality of resources in various ways. The definition of RDT provides board contributions to the process, control, and delivery of firm resources through timely strategic choices (Sanchez, Guerrero-Villegas, & Hurtado Gonzalez, 2017), as well as attention to the company's interaction with external resources (Ozturk, 2020).

According to Rossignoli and Ricciardi (2015), "the survival of an organisation is tied to the resources it does not directly control." The RDT claims that organisations rely on various resources to survive (Ilyas et al., 2020). When an organisation operates in a restricted environment, they tend to manage their settings to lessen uncertainty to survive and function efficiently (Pfeffer & Salancik, 2003). Through the various explanations of RDT, the basic principle of this theory is its dependence on "critical", and essential resources that affects organisations' behaviour. The firm must reduce the scarcity of critical daily operating resources to ensure the continued delivery of products or services. The critical challenge to resource dependency raised in this paper is that the company could potentially be at risk if it cannot supply products or services when resources are unavailable. As a result, this study aimed to develop a resource dependency evaluation model for SA mining firms. The study was conducted in mining companies in South Africa. South Africa is a developing country. As a result, it may be anticipated that resource management that works in other countries, especially in developed countries, may not work as expected in South Africa (Modiba et al., 2020). SA mining firm's development and deployment of technologies are driven by various factors, including the growing cost of electricity and compliance with laws (Basson & Basson, 2013; Mogoale et al., 2021).

In this paper, resource dependency is defined as participating in commercial transactions with other firms to obtain an organisation's resources to succeed. Organisations aim to minimise their demands, obtain new suppliers of resources, or maintain leverage over those resources to reduce their dependency on external resources. Attempting to minimise uncertainty is essential for survival, but understanding how much effort is required to do so is also crucial (Poyraz & Yener, 2021).

All organisations strive to survive. However, to survive, an organisation must manage resource dependency. Because controlling resource dependency is crucial for organisational existence. This paper seeks to address the resource dependency of mining firms and conceptualise a model that can be used to guide organisations and their leaders on how to gain control over their dependencies. The paper's contribution is the Resource Dependency Model conceptualised which unpacks the theoretical, practical and contextual contributions of this paper. The conceptualised framework for practice and theory are guided by the study's practical findings. The framework shows the practical elements of how Resource Dependency can positively influence mining firms service delivery when there is an appropriate alignment of outside resource dependency.

New knowledge should encourage leadership in the mines to implement interventions that benefit the organisation. The information shared in the article can assist mine management to better manage their resource dependency by offering practical methods of reducing dependency and gaining control over their suppliers. The conceptualised framework is a set of recommendations for practice and theory-guided by the researcher's findings.

Since its initial publication, resource dependence theory has been one of the most prominent concepts in organisational theory and strategic management (Hillman et al., 2009). However, there appears to be little publication in the context of South African mining companies. It is important to investigate the resource dependence theory in the context of South African mining firms, as cultural and environmental factors differ from one country to the other. As a result, the resource dependency of SA's mining firms should be considered in light of the country's peculiarities.

The rest of this paper is organised as follows: the next section reviews the literature on what researchers have done on resource dependency within the context of the mining sector. This is followed by a summary of the paper's theoretical framework, the methodology used to explore the research problem, the research findings and implications, and the paper's recommendations and conclusion.

LITERATURE REVIEW

Resource Dependency Theory (RDT) investigates how organisations work, interact, solve issues, and use, distribute and optimise resources (Bradley, 2021). However, in this paper, resource dependency is regarded as engaging in business transactions with other businesses to access an organisation's resources to thrive. A "resource" is defined as everything that may be transported and exchanged from one person to another or between organisations (Foa & Foa., 2012). "Human, financial, technological, and organisational resources" are the four categories that resources may be (Uhm et al., 2018). Health, well-being, family, self-esteem, and a feeling of purpose and meaning in life were identified as widely valued resources in organisational psychology and organisational behaviour research studies (Hobfoll et al., 2018). A resource is defined as any business input with the potential risk of causing reduced organisational operations due to its absence. Other researchers state that the dimensions of resources are particularism and concreteness (Mitchell et al., 2012). According to Foa and Foa (2012), resources might include "any commodity – material, social exchange or interpersonal relationships or symbolic" that is transferred via interpersonal conduct.

Since its publication, resource dependence theory has been one of the most prominent concepts in organisational theory and strategic management (Hillman et al., 2009). However, there is little publication observed within the context of mining firms. This gap calls for more papers to address the cultural and environmental contexts. This paper could be the first to bridge the gap in SA mining firms. This paper emphasises that mining firm managers should be sensitive to their organisations' uniqueness or settings when managing resource dependency to continue operating and delivering services without the resource.

South Africa Mining Context

The study was conducted in South Africa. South Africa has a wealth of natural resources. The mining industry is pivotal in the country's socio-economic and economic growth. South Africa has 96% of the world's total platinum group metal (PGM) reserves, 7% chromium, 26% manganese, 26% vanadium, and 11% gold reserves (South African Mineral Industry, 2016). The country is one of the world's main mining and mineral jurisdictions (DMRE, 2020). South Africa trades in a global setting and is impacted by global trade. South Africa's population is expanding faster than at any other time in history, and mineral consumption is growing faster than the population as more local and foreign customers enter the South African mining market, increasing demand for the country's minerals (DMR, 2018/2019). Given the resources accessible in South Africa, it is vital to maximising the economic growth, development, and employment potential contained in such national assets (DMR, 2018/2019).

The mining industries in South Africa have contributed significantly to the growth of the South African economy for over 150 years. The mining sector contributes significantly across the continent by increasing the share of exports and tax revenues that need to sustain economic growth

and reduce poverty. Amongst others, the sector contributed directly to the development, at the turn of the nineteenth century, establishing the Johannesburg Stock Exchange (JSE), which still accounts for one-third of its market cap. Besides the direct contribution, the indirect effect of mining increases the Gross Domestic Product (GDP), which directly contributes to the country's GDP by between 15% and 20%. The South African Government acknowledges the crucial role that mining plays in increasing production, exports, the gross national product (GDP), and job creation in its development policies, such as the National Development Plan (NDP) and the New Growth Route (NGR). According to the Chamber of Mines (2016), South Africa is the largest chromium provider globally. It was noted as the second-largest producer of Ilmenite, Palladium, Rutile and Zirconium. Besides, it is the world's third-largest coal exporter.

This paper was conceptualised because the current competence paradigms for the resource dependency evaluation model were inadequate. Although the existing resource dependency models are profound, they mainly apply to the western and/or developed countries and are not contextualised to the South African mining organisation environments (Mogoale et al., 2021). It is inferred from this that it could be why the South African mining firms struggle or are limited in realising how resource dependency is critical for the organisation's survival, especially concerning the return on investments.

THEORETICAL FRAMEWORK

Scholars have developed a diverse range of theories and models. Most research studies either expanded or changed the original theory to explain the idea of the topic they are studying (Gunasinghe et al., 2019). At the same time, numerous studies have used theories to study the elements that might influence and contribute to the effective use of technology in various contexts (Alshammari and Rosli, 2020). However, adopting an appropriate theory or model is crucial for most scholars.

The RDT as underpinning theory in this study was chosen because it is relevant at the organisational level and because the paper's goal is to examine a single case study of a mine with several case units. RDT is used to understand the purpose of the resource the organisation is dependent on. RDT is not the only theory applicable at an organisational level. The Resource-based theory (RBT) focuses on the organisational level, and its philosophy focuses on understanding the strategic management of organisations about resources. The theory has been given substantial coverage in the literature on strategic management. Resource-based theory is rooted in economic theory (Penrose, 1959), and strategy theory (Selznick, 1957; Ansoff, 1965). RBV developed as a dominating theory in the Academy of Management's strategic management branch (AoM). Resources are identified as human resources, technical resources, operational resources, organisational measures, and many other characteristics of the organisation. However, the resource-based theory does not consider all resources held by an organisation but focuses exclusively on key or essential resources (Rangone, 1999).

While most theories concentrate on internal resource utilisation methods, RDT is concerned with resource procurement. The core of the resource dependency theory is to explain organisations' actions in their environment (Reference). A critical aim has been identified as the essential scarcity of manufacturing capital. Although a single resource may only account for a small percentage of the entire need, it is an important element. RDT promotes the theory that organisational activity is

directly affected by the environment, but RDT accepts a dependent relationship between the environment and the organisation (Reference). RDT received extensive attention in the literature on strategic management and organisational theory. The basic principle of RDT is its dependence on "critical" and essential resources that affect the behaviour of organisations and that organisational decisions and actions can be clarified by the real condition of dependency (Werner, 2008). According to resource dependency, businesses must implement several techniques to control their reliance on resources obtained from the outside environment (Sherer et al., 2019). The theory has been criticised for its unclear constructs, particularly when choosing which techniques to use (Drees and Heugens, 2013). However, the theory provides an externally based insight into companies purchasing other companies (Haleblian et al. 2009). Some studies have established mergers and acquisitions. According to several research studies, mergers and acquisitions occur when two or more firms come together to provide a bigger value than the companies operating alone (Soundarya et al., 2018). Merger and acquisition is a firm restructuring procedure that is thought to provide prosperity and profits in a short period (Zuhri et al., 2020). Mergers and acquisitions have become an essential component of the best business strategy in the business sector since they play an important part in reasserting a corporation (Soundarya et al., 2018).

More precisely, there are three reasons organisations can participate in mergers and acquisitions (M&A): "First, to reduce rivalry by absorbing an essential competitor organisation; second, to manage the interdependence of either input sources or output buyers by absorbing them; and third, to diversify operations and thereby to reduce reliance on the current organisations with which they are engaged" (Pfeffer, 1976). Companies engage in M&A. These include shareholder advantages, management gains, economies of scale, economies of scope, cost savings, tax exemption, diversification, raising entry barriers, obtaining multimarket contact, and having more robust research and development (Motis, 2007). This is true because resource dependency stresses that firms must engage in partnerships to minimise dependency on others. Finally, analysis shows that M&As also eliminate direct competition (Pfeffer, 1972a). In conclusion, M&A of firms that rely on one another, such as buyers/suppliers and competitors, is widely supported as a strategy to reduce dependency. In addition, the degree of reliance determines the likelihood of M&As. This study reveals that this perspective on M&As is informative yet inadequate. There are other significant determinants of M&As, that merit observations from other theoretical perspectives.

The principle of resource dependency is illustrated in a diagram (Figure 1). The figure was adapted by Nienhuser (2008) from work done by Pfeffer and Salancik (2003). The diagram offers a kind of framework, but it does not indicate explanatory solutions. Pfeffer and Salancik (2003) did not propose a model of theoretically interconnected ideas but introduced their framework as a theory.

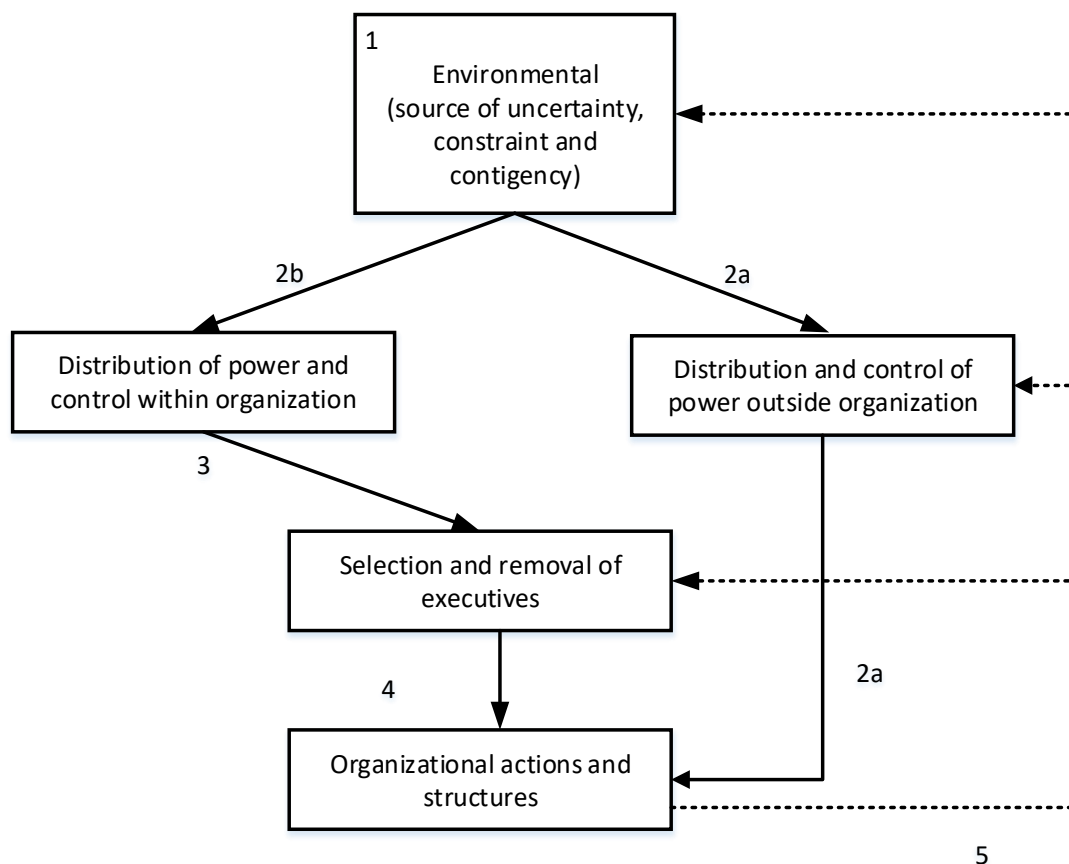


Figure 1: The Connection between Environment and Organisational decisions or action (Pfeffer & Salancik, 2003:229; Nienhuser, 2008:11)

The key concept of RDT is the interpretation of organisational actions in the environment (Figure 1). Pfeffer and Salancik (2003:3) explain the environment as a source of uncertainty and constraint. RDT highlights that the internal environment comprises the organisation's critical assets. It is necessary first to define which resources are critical to comprehend organisational behaviour. To lessen their reliance on critical resources, organisations seek to reduce demand, find other resource providers, or preserve power over those assets.

The theory depicted in figure 1 implies that the organisation that strives to reduce uncertainty needs to (Figure 1,2a) explain the external transfer of power and the management of relationships between dependencies. RDT assumes that the power of an organisation that owns resources is over the organisation that requires those resources. The higher the dependence of organisation A upon organisation B, the greater the control of B over A. There is relative power among the players who manage the vital services required by other organisations. Figure 1,2b applies to the distribution of power internally. It is believed that an organisation that wishes to minimise its dependency must decrease their need for resources managed by other organisations to increase its influence over others. External factors influence the organisation, but essential resources from within the establishment, such as personnel or units, also have an impact. Figure 1,3 illustrates the relationship between the organisational distribution of power and control. This phase is that of the executive post. Authority may be used to control the selection of top managerial staff. Figures 1,2b and 1,4 explain the relationship between management structure, power distribution, and decisions or organisational structures. The priority of strong decision-makers is believed to be more likely than

other desires to be realised. This decision results in inefficient behaviour and organisational structure required to keep the dominant coalitions in power. Actions meet the expectations of important resource providers, contributing to the provision of vital functions to the company and the organisation's long-term viability. Figure 1,5 demonstrates the feedback results. According to Pfeffer and Salancik's (2003) argument, organisational decisions and behaviour have a feedback impact on both the resource situation and the powerful group's demands. If they succeed in detaching themselves from the environment, and both external and internal actors, stakeholders within organisations will protect their control. This could result in the organisation's downfall if it can no longer protect vital resources.

To summarise, RDT integrates political economics theory regarding power-sharing of organisational resources. According to RDT, companies can conserve their capital by adapting strategic choices based on dependence-exchange, such as cooperation, joint ventures, and coalitions. Then, to manage a changing environment, organisations must understand active decision-making actions. Finally, RDT gives a thorough description of inter-organisational relationships and a useful framework for recognising and improving environmental resource sharing.

METHODOLOGY

This paper addresses resource dependency with a focus on South African mining firms. The case study approach was used in this study. A case study approach is a research approach that is focused on an in-depth analysis of a particular person, organisation or event (Hollweck, 2016). The researcher employed a case study of a mine with multiple case units (10 case units). The organisation, Chrome Ore Mine, is this paper's analysis unit. The organisation, not the person, was the unit of analysis. Employees from multiple case units represent the average South African mine population.

Purposeful sampling is the selection to "choose places, persons or activities that supplied information relevant to the paper questions" (Palinkas et al., 2013). It is ideal to obtain in-depth data for the research project when the investigation attempts to extract deep-rooted knowledge from the participants about a topic (Hollweck, 2016). Semi-structured interviews, observations and lived experiences of stakeholders are at the core of the qualitative research methodologies used to collect in-depth data for this research project and uncover extensive empirical information about the mine's resource dependency. The case study participants were chosen based on their knowledge, experience and expertise with the topic area. An open-ended questionnaire was applied. Semi-structured face-to-face interviews were carried out at the organisation's location, and observations were used to collect data. The face-to-face, semi-structured interviews took 30 to 45 minutes, were audiotaped and then transcribed.

The open-ended questionnaire and the face-to-face interviews sought to explore and examine how resource dependency manifests in mining firms. The researchers evaluated all the various internal entities incapable of producing all the support needed to sustain themselves or the organisation. The findings sought to explore factors considered when selecting suppliers or outsourcing services, the procedure and criteria used, performance and improvement insights, qualities considered, challenges faced, business unit delivery independence, and recommendations on what could be altered for improvement.

The paper's research design was organised around thematic semi-structured questions that were guided by the paper's purpose and the underpinning conceptual elements of the research framework. Also, the thematic approach was used to analyse, discuss and describe the researcher's data gathering in detailed data sets (Clark, 2001). Data analysis, according to Kenneth (2014), aids in "identifying evidence, detecting patterns, enhancing explanations, and theory development." We acquired deeper insights into the data by using the familiarisation phase of thematic analysis. Firstly, the demographics of the participants were transcribed. The interviews were held across 10 business units, which are regarded as case units for data analysis. Data were analysed and discussed per each case unit. The interpretations of the findings were presented following the theme. Findings that appear to be similar throughout the 10 case units are articulated and interpreted as a single unit. The ability to determine themes is part of the flexibility of thematic analysis. Interesting features of the data were coded across the entire case unit. The coded potential themes emerged across the case units. Quantitative measurements in this study did not determine the themes that occurred from the transcripts. However, the themes were chosen based on how they capture something significant in connection with the broader research questions. To this end, this paper sought to conceptualise a resource dependency evaluation model for mining organisations.

DISCUSSION OF FINDINGS AND THE FRAMEWORK

Informed by the empirical evidence, this section provides and discusses the elements of the conceptualised resource dependency evaluation model. The interpretations of the findings are presented following the themes. Findings that appear to be similar throughout the 10 case units are articulated and interpreted as a unit. Thematic analysis, which was used to analyse the data, entails identifying, analysing, and reporting patterns (themes) within the data (Braun & Clarke, 2006). Interesting features of the data were coded across the case units. The coded potential themes emerged across the case units. There ought to be several examples of the theme across the data collection, but more instances do not always imply that the theme is more important. A theme indicates some level of patterned response or meaning within the data set and captures something essential about the data in connection with the research question (Braun & Clarke, 2019). A theme may be given significant attention in certain data items while receiving little or no space in others, or it may exist in only a small portion of the dataset. As a result, judgement was required to establish themes.



Figure 2: Thematic codes

Figure 2 shows a word cloud of thematic codes that emerged from the findings. It shows identified patterns and reports on the codes from all the various case units of the mine. The similarity throughout all the 10 case units is articulated and interpreted as a unit. The identified themes that emerged from these codes are 1) outside resources dependency, 2) factors considered when outsourcing, 3) procedures, and 4) criteria used when outsourcing, supplier performance monitoring, suppliers' critical functions, business unit delivery independence, and supplier preference.

Outside Resources Dependency

Some business units rely on external resources, while others do not use external services. Pfeffer and Salancik (1978) provide a comprehensive theory of how organisations may decrease environmental dependency and uncertainty. They explain the effectiveness of pursuing the theory of resource dependency and characterise the theory as an organisation seeking to optimise its strength. With this finding, the paper urges the organisation to reduce its dependence on other organisations. An organisation may strengthen its power by reducing its dependence on other organisations. By doing so, can minimise the potential uncertainty caused by its interdependence on the external surroundings (Fraczkiewicz-Wronka & Szymaniec, 2012). Pfeffer and Salancik's (1978) theory articulates how they can achieve power by having the right resources. Correct resources give the organisation power because it creates a competitive advantage to ensure partnering with other organisations, which could create a dependency for other organisations.

Factors Considered When Outsourcing

Factors considered when outsourcing are resources available within the organisation, skills, expertise, and cost. Organisations must seek to reduce their dependence by reducing their needs,

acquiring new suppliers of resources or maintaining influence over those resources (Pfeffer & Salancik, 2003). Managers must subjectively understand and interpret resource allocation in the organisation. Pfeffer and Salancik (2003) expand RDT theory to include interactions with both the external and internal environment. According to the theory, the organisation attempts to eliminate uncertainty. The degree of uncertainty changes depending on how critical resources are distributed in the ecosystem. The research recommends that organisations transmit external authority and manage interdependency connections.

Procedure and Criteria Used When Outsourcing

The main procedure followed is the tender process. Criteria for selecting suitable suppliers include BEE compliance and impact analysis results. While the literature and this paper emphasise several recommendations, this paper is aligned with the literature. As a result, the researcher explored the organisation's resource dependence and constructed essential resources. Thus, critical resources that might risk an organisation's capital may be maintained by adopting strategic interventions based on dependency exchange, such as collaboration, joint ventures and partnerships. Then, to manage a changing environment, organisations must understand active decision activities.

Supplier Performance Monitoring

This finding demonstrates that performance monitoring is diverse. Most business units indicated that they do not have any service level agreements (SLAs). Only a few business units indicated that they have SLAs. However, other methods used for performance monitoring are the rating form, Safety, Health, Environment and Quality (SHEQ) agreement, and a performance evaluation process. One business unit indicated that if there is a need to pass the skills to internal staff, then an agreement would be drafted. Talluri and Sarkis (2002) developed an approach for evaluating and monitoring supplier performance by various performance measures. In supplier monitoring, the model's development generated intriguing insights for procurement managers involved in supplier monitoring and ongoing performance monitoring. Literature about supplier performance monitoring extensively studies production and economics. Organisations may efficiently use such literature to provide feedback to suppliers, therefore increasing performance. However, this paper correlates with Talluri and Sarkis (2002) by selecting input and output criteria as performance monitoring. The selection of these measures is essential in putting this technique into action. Any resources utilised by the supplier might be considered inputs, and the outputs are often some performance measures.

Suppliers' Critical Functions

The critical functions rendered by suppliers include reliable safety performance, external audits, assessment, training and counselling, instant repairs, product certification, access control, and gas detection. One basic assumption of the RDT is that dependency on "critical" and significant resources impacts organisations' revenue activities (Nienhuser, 2008). Hillman et al. (2009) emphasise a synthesised approach to provide insight into the competitive advantage of businesses and organisations by controlling critical resources and how the development of resource interdependencies around critical resources affects their benefits. For an organisation to maintain its power over suppliers, it has to control critical resources.

Business Unit Independence Service Delivery

For the organisation to deliver the services, the employees need training, be accredited, and ensure they have the necessary qualifications. The other aspect is to ensure there are proper facilities in place. Recruiting supplier employees was also mentioned. Three participants indicated that it is impossible to deliver the services themselves, for example, in external auditing and assessment. Literature states that an organisation needs to attain its independence through M&As. The reasons organisations can participate in M&As include: "To start, the organisation can reduce rivalry by absorbing an essential competitor organisation, followed by managing the interdependence of either input sources or output buyers by absorbing them; and lastly, to diversify operations and thereby to reduce reliance on the current organisations with which they are engaged" (Pfeffer, 1976). Pfeffer (1972a) analysis shows that M&As are primarily used to eliminate direct competition.

Supplier Preference

Most business units indicated that they prefer working with local suppliers since they are cheaper and more convenient and also offer support to locals to grow their businesses. Reliability, quality service, competence, accreditation, leadership, and pricing are part of supplier preferences. This is an important element in selecting suppliers. However, there is a substantial subjective dispute in procurement, and business unit preferences (many differing viewpoints), especially when managerial leadership, skills, and knowledge are limited.

THE CONCEPTUAL MODEL

The model's key elements are: External Resources, Outsourcing factors, Procedure & criteria, Performance monitoring, Critical functions, Service delivery and Supplier preferences.

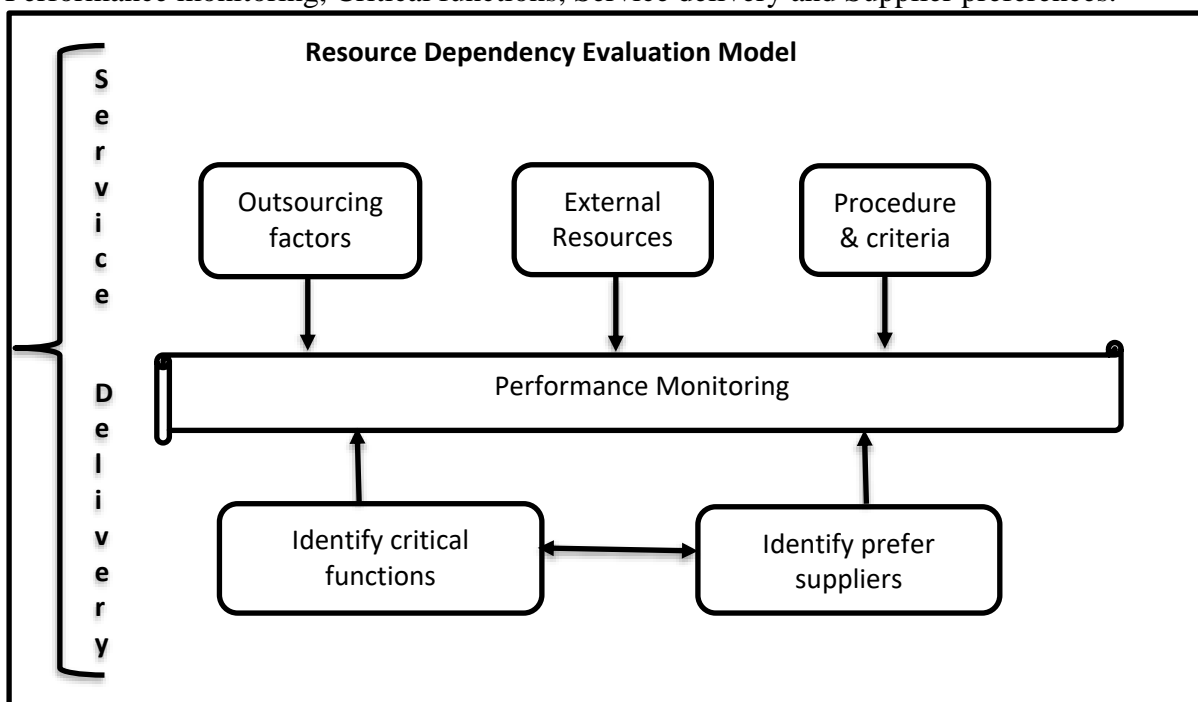


Figure 3: A conceptualised Resource Dependency evaluation model

Recommendations for evaluation of service delivery for the SA mining firms is to 1) Reduce suppliers and enrol required suppliers only if applicable; 2) Incorporate highly skilled people into the mine; 3) Improve the supplier performance evaluation process; 4) Provide staff training for all mine workers; 5) Support local small businesses if preferences are mostly given to suppliers outside local communities; 6) Implement SLAs throughout all suppliers; 7) Conduct continuous performance monitoring and evaluation is highly important as it forms part of supplier preference and critical functions and engages in corporate social investment, thereby contributing to socio-economic upliftment of the people in the local communities.

CONCLUSION

All organisations' principal purpose is to survive, but dependency is inescapable. Controlling critical resource reliance is crucial for survival. Because environmental laws and mineral resources govern mines, there is a need to ensure that every product and service can be substituted unless there is a regulatory restriction. Trying to eliminate uncertainty is essential for life, but understanding how much effort is required to do so is crucial. Future fieldwork and empirical studies by researchers can better grasp the behaviour of regulating environmental imbalances with appropriate levels of dependency. The paper's findings suggest that a sound Resource Dependency Evaluation Model could have a positive impact if 1) there is suitable synchronisation of outside resource dependency; 2) factors recognised when outsourcing is uniform, while processes are not compromised, and 3) criteria used for selecting preferred supplier are strictly observed; and supplier performance monitoring that can accomplish firms' critical functions and obtain strong relationships with suppliers. The conceptual framework is presented, as well as recommendations. Within SA mining enterprises, this is how resource dependence evaluation of service delivery generates and provides important business resources.

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A FRAMEWORK FOR BUSINESS AND INFORMATION TECHNOLOGY ALIGNMENT IN THE DEVELOPMENT BANKING SECTOR OF SOUTH AFRICA

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ABSTRACT

In South Africa, outcry continues against underperforming development banks. Most of the development banks are mismanaged, and they do not fulfil their government-given mandate. The challenge is that development banks in South Africa lack guiding frameworks for their business and IT strategies. This study is aimed at describing the alignment of business and IT strategy. In this study, the alignment of business and IT strategies of an organisation was performed using a case study approach. Interviews were conducted with purposefully selected employees because of their wealth of knowledge until saturation was reached. Qualitative data were transcribed and analysed using the thematic method. An extensive review of literature resulted in the development of a conceptual Strategic Alignment Model. Constructs in the model alignment were business strategy, IT strategy, organisational infrastructure and processes, IT infrastructure and processes were explored. Results show that the South African development bank's business and IT strategies were misaligned. The process that led to the formulation of the bank's strategy was ineffective and the Chief Innovation Officer (CIO) was not involved in the process. The non-involvement of the CIO in the process who should provide valuable input on how technology can enable the strategy was a concern. Findings also reveal that South African development banks do not use any alignment frameworks nor models as a guiding framework to align business and IT strategies. The study has provided a framework for consideration when developing business and information technology strategies in the development banking sector of South Africa. The study has also provided strategies for aligning business and information technology within South African development banks context. Through this study, the framework that has been developed shows the functional and strategic aspects that need to be included in aligning business with IT in a developmental bank context. The practical importance of this study lies in the way business and IT strategies must be developed, the vital position that technology plays in all strategies. Furthermore, their development, and the development of platforms to continuously evaluate the ongoing alignment of strategies.

Keywords: Business Strategy; IT Strategy; Business-IT alignment; atrategic alignment model; South African Development Bank

INTRODUCTION

In South Africa recently, there has been an outcry against underperforming development banks and other state institutions. It has emerged that most development banks are mismanaged and do not fulfil their government-given mandate. South Africa's banking industry is the largest and most advanced in Africa. Its sophistication is equivalent to that of the financial industry in developed nations (Nyasha & Odhiambo, 2015). South African banks are extensively regulated, and governance plays an important part in aligning business and IT strategies. The bank's capacity to compete and deal with issues such as government constraints, technology advances, and consumer requirements all have an influence on its business strategy. In certain circumstances, business and IT collaborate; nevertheless, IT managers are not involved in creating the business strategy other than providing technological recommendations. This is the problem that development banks face.

Financial institutions, including commercial banks, development banks, insurance companies, and investment firms, are significantly more likely to invest heavily in the technology that powers their businesses than other industries, as they view IT as a critical component of customer proximity and operational excellence. Financial institutions are pursuing the goal of running their whole business activities entirely on IT platforms. They struggle to use their business systems' capabilities well to enjoy the benefits of process optimization, automation, and digitization (Wagner *et al.*, 2014).

South African Commercial banks are a type of financial institution that is homogeneous. There is little that differentiates South African commercial banks; even their products are comparable. Commercial banks are profit-driven organizations. As a result, commercial banks establish business strategies to preserve a healthy financial position and profit margins (Roberts-Lombard & Reynolds-de Bruin, 2017). On the other hand, development banks are not profit-oriented and are financed by the government. Their strategies aim to achieve their development mission (Carrasco *et al.*, 2009).

Critics have criticized empirical studies of business-information technology alignment for concentrating their attention exclusively on developed countries rather than developing countries (Jonathan *et al.*, 2019). The current paper was conceptualised in response to the inadequacy of current paradigms for business-IT alignment models. While they are profound, they are primarily applicable to western and/or developed countries and are not contextualized within the South African development bank context. Additionally, there are numerous gaps in the research on business-IT alignment, as numerous factors can affect the alignment relationship and the study results, either directly or indirectly (Kyobe, 2008; Prieto & de Carvalho, 2018).

Development banks must align their business and information technology initiatives to increase their performance. When a company's business and IT strategies are aligned, it improves its performance. The problem is that South African development banks lack a guiding framework for harmonizing business and IT strategies (Mongale *et al.*). The objective of this paper was to conceptualise a framework for harmonizing business and information technology strategies in South African development banks.

The paper makes two contributions: first, it contributes to the theoretical knowledge base for business-IT alignment in the context of South African development banks; second, new knowledge should encourage development bank leadership to do things better and differently. Second, this

paper encourages the development bank's executive management to improve their alignment of business and information technology by providing practical tips for reducing misalignment. The paper concludes with recommendations for practice and theory based on the findings.

LITERATURE REVIEW

Spósito *et al.* (2016) analysed the most investigated dimensions for aligning business and IT strategies to provide an overall view of research on business-IT alignment. These researchers conducted a systematic literature review to determine which business-IT alignment dimensions are most prevalent. The study highlighted four dimensions: strategic, structural, social, and cultural.

Spósito *et al.* (2016) conducted 15 years of research to compile their findings. The researchers studied peer-reviewed journals and conference proceedings while utilizing only three scientific research databases, one of which was the International Conference on Enterprise Information Systems (ICEIS). Their findings suggested that every article they analysed discussed strategic alignment. As a result, it is the most addressed aspect of business-information technology alignment. Approximately 75% of the articles reviewed by these researchers mentioned strategic alignment. Social and cultural themes were mentioned in 40% and 30% of the publications reviewed, respectively. This highlights the critical nature of these factors in terms of business-IT alignment.

Regrettably, this analysis is entirely dependent on three scientific research databases. These are limited resources and do not include the multitude of peer-reviewed articles accessible via the many databases. According to Kekwaletswe and Mathebula (2014), external factors driving business-IT alignment include consumer preferences, competitive landscape, rivalry, related legislation, technological innovation, information systems trends, and information systems control. They propose in their study on the alignment of business and IT strategies in South African banks that business strategies be developed in partnership with IT and that business and IT leadership maintain frequent relations and collaboration.

The researchers established a framework to assist South African banks in aligning their business and information technology initiatives. Using a case study from one of South Africa's commercial banks, the researchers employed the Strategic Alignment Model (SAM) to assess the alignment of the business and IT strategies and the synergy between the two.

An e-mailed open-ended questionnaire was distributed to 15 individuals from the same bank as the data collection tool. Only nine of the fifteen open-ended questionnaires received were completed in full or partially. In a follow-up semi-structured interview, three individuals who had not completed their questionnaires completely were interviewed. Because the study focused primarily on one commercial bank in South Africa, the conclusions are difficult to generalise. Additionally, it was said that the participants' responses were comparable and arranged as if they had examined the literature. This brings the responses into doubt. Additionally, further study would be necessary to confirm the suggested conceptual framework. Eom *et al.* (2015) examine the effect of IT leadership on business-IT alignment by leveraging shared domain knowledge and knowledge integration.

Eom *et al.* (2015) describe transformational leadership as the capacity of a leader to transform and motivate those they lead by encouraging them to pursue greater goals. Transformational leaders motivate and inspire others, drive transformational culture through reinvention, and cultivate a culture of continuous improvement. Aligning business and IT is a process that demands ongoing collaboration, task synchronization, and sharing of information between the parties. The data collection instrument was a web-based questionnaire distributed to 69 organizations representing various industries and sizes. Some 672 organizations received the survey through e-mail, yielding a 10.3% response rate.

The findings underscore the importance of IT leadership and its capacity to affect the structural and social components of business-IT alignment. In practical terms, this study recommends that corporate executives understand that transformational leadership stimulates creativity, empowers people, and fosters collaboration between IT and other business divisions to achieve business-IT alignment. Furthermore, business-IT alignment cannot be accomplished only through IT leadership; it requires organizational mechanisms that empower IT and business workers to take ownership of business-IT communication, domain knowledge building, and IT-involved business planning.

In their article titled "How information technology governance mechanisms and strategic alignment influence organizational performance: insights from a matched survey of business and IT managers", Wu *et al.* (2015) convey a conceptual framework that incorporates business-IT alignment and an IT governance model. The purpose of these researchers' study was to illustrate that alignment between business and information technology can operate as a mediating element in evaluating the effectiveness of information technology governance on organizational performance.

Their article develops a conceptual framework around the hypothesis that IT governance can improve business-IT alignment, ultimately leading to enhanced organizational performance. IT governance comprises the construction of institutions, processes, and mechanisms designed to improve business and information technology alignment. Furthermore, the research identified ways to improve business-IT alignment, including decision-making structure, formal processes, and communication tactics. These three variables all contribute to the synchronization of business and information technology.

A field study with 136 organizations in Taiwan validated the conceptual model. The study employed a quantitative methodology. Researchers contacted the CEOs and CIOs of mid- to large-sized organizations via mail, e-mail, and online questionnaires. 71% of respondents responded. Over 70% of responders were executive or senior managers. The study concluded that the three methods of IT governance examined—decision-making structure, formal processes, and communication approach—all contribute to business-IT alignment.

Additionally, they discovered that connecting business and information technology boosts the performance of the organization. According to the study's findings, IT governance, business-IT alignment, and organizational performance are all related. Additionally, they give practical advice to executives and information technology practitioners based on their findings. They recommend that the chief information officer (CIO) serve on the executive committee in the study. This will

improve common domain comprehension, which is a necessary component of business-IT alignment on the social level.

THEORETICAL FRAMEWORK

The Strategic Alignment Model (SAM), a framework based on the MIT90s (Amarilli, 2014), is widely used to align business and information technology (Reynolds & Yetton, 2015). It has been cited widely for its intuitively compelling argument establishing the necessity and importance of business-IT alignment for organizational performance improvement (Henderson & Venkatraman, 1999). SAM proposes four alignment constructs for business and information technology strategies: business strategy, business infrastructure and processes, information technology strategy, and information technology infrastructure and processes (Bhattacharya, 2018). Two concepts connect these constructs: functional integration and strategic alignment (Kekwaletswe & Mathebula, 2014). SAM was never intended to be a method for measuring business-IT alignment. Its purpose is to find a way to think about IT strategy and whether business strategy informs IT strategy or vice versa (Coltman *et al.*, 2015). SAM is depicted in Figure 1.

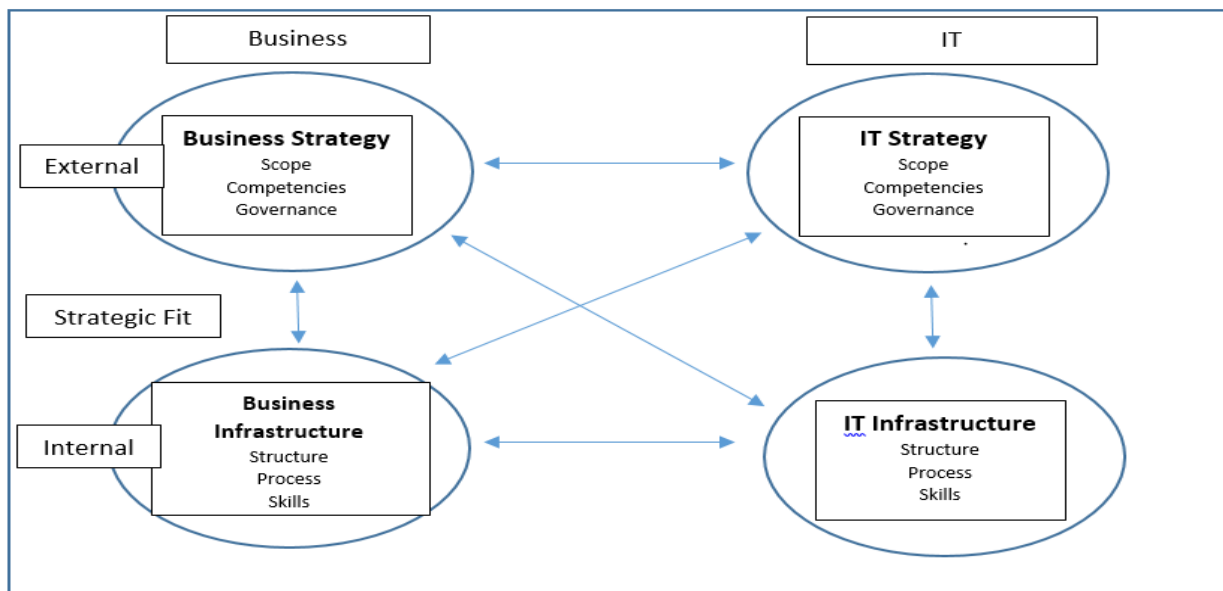


Figure 1: Strategic Alignment Model (Henderson & Venkatraman, 1994)

METHODOLOGY

This paper used qualitative methodology and approaches due to its inductive reasoning and interpretivism paradigm. The qualitative approach's major purpose is to attempt to make meaning of some observable occurrence in the world. It needs an interpretive approach as a subject matter, linking it with the interpretivism paradigm (Sarma, 2015). According to Rahman (2020), qualitative approaches and methodologies are undoubtedly superior when the research focuses on extracting greater insight from a phenomenon, interpreting evaluations or examinations, analysing a subject, and conducting, thoughts, emotions, and understanding.

Research Strategy

The case study strategy was chosen for this study's research approach. Due to the qualitative nature of case studies, they are preferred (Mayer, 2015). Gustafsson (2017) asserts that a single case study

has distinct advantages over a multiple case study. Gustafsson identifies five advantages of conducting a single case study as follows: 1) The single case study is much more appropriate when the researcher is developing a high-quality theory, as this strategy elicits additional depths that result in more robust and diverse theories (Gerring, 2004); 2) single case studies provide the researcher with much deeper insights and understanding of the subject under investigation; 3) single case studies can more fully depict the presence of occurrence and its process than multiple case studies.

A single case carries more weight and provides the researcher with more robust findings and accurate facts about a phenomenon than multiple cases would (Gerring, 2004). However, a single case must be observed in conjunction with its case units to provide more detailed evidence (Gerring, 2004). In this study, a single case study strategy is appropriate because it entails an exhaustive analysis of a single case with multiple case units (Gerring, 2004). The Case Study strategy is subjective and all-inclusive in nature. Dyer Jr and Wilkins (1991) argue that the single case study strategy is highly effective and that its capacity to generate additional context is unmatched by the multiple case study strategy.

Sampling method

This paper utilized a technique known as purposive sampling. Because purposeful sampling enables the researcher to select an analysis unit that possesses the appropriate features required of sample units, is believed to be relevant to the research topic, and is readily available to him, this method is relevant and selected for this study. The study purposely selected one of the three largest national development banks to see how business and information technology are aligned there. The organizational unit of analysis was one of the huge national development banks in South Africa.

Additionally, the participants representing the organization were intentionally chosen based on their understanding and experience with business and information technology strategy. The study enrolled 40 individuals, including executives, general managers, line managers, and operational workers from each business division, also known as case units. A typical major national development bank is divided into the following business units (case units): human capital, information technology, strategy and marketing, finance, risk and credit, legal, audit, and banking operations.

Data collection

Semi-structured interviews, document analysis, and observation were chosen as the most appropriate data collection methods for this study. The selection was made based on their advantages and applicability to the research type. According to the researcher, these three strategies could produce high-quality data. Due to the constraints imposed by Covid-19, semi-structured interviews were done via the Skype for Business communication tool.

Data analysis

This paper used both thematic and content analysis to conduct qualitative research. Two reasons why thematic analysis is preferred are its adaptability and accessibility. It explains the mechanics of systematizing the coding and analysis of qualitative data (Cooper *et al.*, 2012). Qualitative

content analysis is a technique for analysing qualitative data. It focuses on the content and context but also on instances of change, such as the similarities and differences between text portions (Gokhale & Srivastava, 2017).

DISCUSSION AND FINDINGS

The findings drawn from semi-structured interviews reveal that EXCO develops the business strategy for the organization and then conveys it to all employees. It is not further workshopped and revisited regularly across the organization to cement its value and ensure that it is fully understood at all levels of the bank. Additionally, the findings indicate that the business strategy is not further dissected down to the level of business units to solidify its impact on specific business units. As a result, employees lose sight of the business strategy. According to the literature, this creates several difficulties, including an unknown, ambiguous, or lack of buy-in for the business strategy.

The findings indicate that the IT strategy was formed in response to the requirement to enable the organization's business strategy and to the concerns and issues presented by the CEO, EXCO, and other business divisions within the bank. The findings indicate that there is a disconnect between business and information technology. The organization's demand for IT to enable it does not match its financial investment in IT. Aligning business and information technology strategies is not a considered concept during the formulation and execution of business strategy. Furthermore, the findings confirm that EXCO develops the strategy and then shares it with the rest of the business divisions. This indicates that information technology is not incorporated into the strategy formulation process. While one could argue that IT is represented at the bank by the CFO, the CFO may lack the technical expertise of a CIO.

The findings indicate that top management, the EXCO, and the board of directors have a limited awareness of information technology. Without strong technical skills and IT involvement, strategic decisions, including the creation of the business strategy, are made. There is a lack of faith in IT's capacity to deliver due to a history of failed projects, missed deadlines, obsolete technology still being used, and systems that do not match user expectations.

Description of relevant constructs for the framework

The business strategy establishes the organization's market conduct, which is governed by its goals, rules, and processes. The business strategy must be established in response to the unfolding social, economic, political, and technological developments. Additionally, it should specify the product-market options, product quality, pricing, value-added services, and distribution channels that contribute to the competitive advantage. Strategic alliances and joint ventures directly affect the organizational processes that govern business operations.

All employees must be included in the development of the business plan to increase trust in top management and buy-in. It is strongly suggested that a CIO be recruited to serve as a member of the executive management team and participate in developing the organization's business strategy. Businesses are attempting to become more customer-centric while simultaneously increasing their agility. With the rapid advancement of technology, the client is more tech savvy than at any other point in time. As a result, client access and demand are rapidly changing. The findings are in line

with Wu *et al.* (2015) where they recommended that a CIO is an essential member of the executive committee and must be involved in formulating the business strategy.

IT Strategy

The IT strategy describes how development banks will employ all available technological tools, systems, hardware, software, local and wide area networks, and the bank's whole IT infrastructure to accomplish the organization's business strategy objectives. The term "IT strategy constructs" refers to the IT scope and architecture, IT management, IT capabilities, IT mandate, and budget necessary to execute a South African development bank's business plan.

Success is determined by the ability to translate IT strategy into action. A good IT strategy should enable the organization to capitalise on new business prospects by leveraging consumer data and identifying smart ways to increase client loyalty. It should foster capability and capacity development, paving the path for an innovative vision. The IT strategy should be liberated from its traditional internal focus in order to address external concerns about the company's position in the rapidly changing IT industry. The IT strategy should establish a framework for the organization to leverage technology to discover and exploit opportunities and gain a competitive edge over competitors. This recommendation is in line with Wagner *et al.* (2014) finding that development banks must invest significantly more in the technology to power IT as it is a critical component of customer proximity and operational excellence.

Organisational Culture

Strategic alignment, functional alignment, and social alignment are facilitated frequently by organizational culture. The term "organizational culture" refers to the interactions, communication, practices, and collaboration that occur between business units, upper management, and information technology. It is advised that the organization initiate a campaign to change the organization's unfavourable culture.

The Framework

Figure 2 illustrates the framework for harmonizing business and information technology initiatives in South African development banks. It is important to highlight that this framework serves as a prescription for practice and theory which are affected by the study's findings and related research.

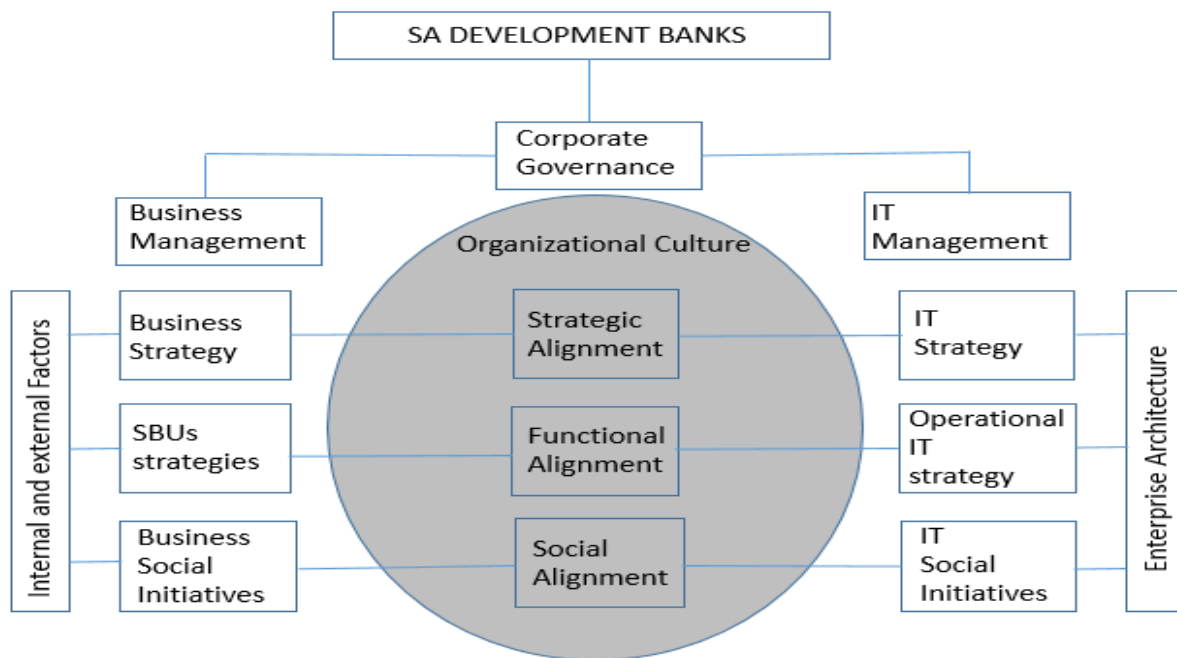


Figure 2: A framework for business-IT alignment in SA development banks (Mongale et al., 2021)

South Africa is an uncommon state with an unusual political past, culture, and socioeconomic structure. Therefore existing theories, models, and frameworks for aligning business and information technology do not adequately consider the different issues faced by South African development banks. Wu *et al.* (2015) give practical advice for executives and information technology practitioners based on their findings. They recommend that the chief information officer (CIO) serve on the executive committee in the study. This will improve common domain comprehension, which is a necessary component of business-IT alignment on the social level. The business-IT alignment framework is organised around three levels of alignment: strategic alignment, functional alignment, and social alignment.

CONCLUSION

The challenge observed is that development banks in South Africa lack guiding frameworks for developing their business and IT strategies. This study aimed at analysing the business and IT strategy's formulation and alignment. The study's practical implications include a framework for what should be considered when building business and information technology strategies and the alignment of business and information technology in South African development banks.

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THE APPLICATION OF THE FOURTH INDUSTRIAL REVOLUTION TOOLS IN THE MANAGEMENT OF KNOWLEDGE IN PUBLIC GOVERNMENT ORGANIZATIONS.

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ABSTRACT

For government departments to function effectively, provide quality governance and gain the trust of the citizenry, efficient knowledge management is a crucial requirement. Recently, modern technologies such as Fourth Industrial Revolution (4IR) tools have been progressively adopted by government organizations to manage knowledge, while many other organizations are in the process of doing so. The future of government organizations in South Africa is in need of a report on trends in the development of knowledge management to ensure that the country is well positioned in the light of changes in service provision taking place globally. This paper is concerned with a critical evaluation of the existing situation in South African government organizations, given their strategic importance to organizational development in general, and the enhancing of the quality of knowledge management activities in particular. Undoubtedly, effective knowledge management is to a large extent dependent on well-trained staff members and the provision of adequate resources and facilities. This study utilizes a literature review to investigate the pros and cons of 4IR technology usage in the knowledge management of government organizations. The study highlights how various innovative tools can revolutionize the practices of government organizations in South Africa. This study is of a qualitative type and uses content analysis of the literature review to address the study objectives. The rapid changes, resulting from 4IR in today's smart environments, cannot be ignored. This study established that the 4IR assists information professionals to fulfil their tasks with a maximum of effectiveness and efficiency. The implementation of 4IR tools in knowledge management leads to enhanced transparency, accountability, and security, while saving costs. Tools such as cloud computing, the Internet of Things, Artificial Intelligence, and blockchain-based technology support and improve knowledge management. Key recommendations provided by this study include the application of different technologies, the need for employees to be thoroughly trained in the use of technological tools, and for organizations to develop modern management practices.

Keywords: Fourth Industrial Revolution, knowledge management, public government organizations, South Africa.

1. INTRODUCTION

With the rapid developments in Information and Communication Technologies (ICTs), knowledge management activities are becoming significant in the management of knowledge for achieving competitive advantage in the organizational environment (Maphoto and Matlala 2021:545). Bandera et al (2017:164) note that knowledge management is today a well-developed discipline

in academia and business operations, due to increased competitive pressure and the increased emphasis on results. Modern organizations tend to rely on knowledge and its exploitation to sustain a long-term advantage. Yesil and Dereli (2013) note that knowledge in the contemporary world has proved to be a strategically significant resource and a crucial driver of organizational performance. Chikati and Mpofu (2013:77) poignantly posit that knowledge regarding business processes and business assets is taken into account as a factor that can foster sustained competitive advantage as well as increase organizations' ability to recognize novel solutions and to develop products that meet their clients' needs.

Chikati and Mpofu (2013:77) aver, that knowledge has to be packaged and managed in a way that guarantees it is readily available for use by anyone throughout the entire organization. If the knowledge is well aligned with organizational strategy, it allows the organization to create new knowledge and new business values for customers. Even though a widely agreed-upon definition of knowledge management has not been established, Chikati and Mpofu (2013:77) define knowledge as meaningful information or understanding, awareness, and familiarity, acquired through study, observation, or experience. It is contextual information or information combined with interpretation and reflection. Zeleny (2000) and Moutiho and Southern (2010) state that the knowledge originates and is applied in the minds of the "knowers". Additionally, Xu and Quaddus (2012:19) define knowledge management as a systematic and organizational framework to capture, acquire, organize and communicate both the tacit and the explicit knowledge of employees.

Thus, knowledge management relates to a combination of processes that coordinate a firm's cumulative knowledge to capitalize on it by achieving sustainability and by adapting to knowledge referring to changes emerging in the environment (Boyd and Crawford 2012:664). Research has shown that successful knowledge management improves organizational effectiveness, specifically in knowledge-intensive organizations. Knowledge can be fixed in organizational routines, procedures, and structures. Organizations need to manage their knowledge as an instrument of differentiation, to boost productivity, leverage competitive advantage, and spur on innovation (Mazorodze and Buckley 2019:2). Rizk and Kamel (2013) note that recent advances in ICTs have promoted and fostered knowledge management in organizations. This growing technological agenda has driven the acceleration of institutional change.

For Schwab (2016), the Fourth Industrial Revolution (4IR) began at the turn of the century, based on the digital revolution and leading to transformations that are felt in the economy, throughout society as well as in governments. The 4IR is also referred to as the digital revolution and brings together human and technical capabilities (Schäfer 2018). Thus, the 4IR is notably integrated in, and cutting across, technical, societal, organizational, and environmental spheres (Prifti, Knigge, Kienegger, and Krcmar 2017). The World Economic Forum (2017:3) defines the 4IR as "a fusion of disruptive technologies that are blurring the lines between the physical, digital, and biological spheres." Xing, Marwala, and Marwala (2018:171) and Xing and Marwala (2017:11) note that such fusions of disruptive technologies represent mainly the transformative, scientific, and technological developments occurring in numerous fields, such as innovative robotics, the Internet of Things (IoT), Artificial Intelligence (AI), wearables, blockchain technologies, drones, virtual reality (VR), three-dimensional (3D) printing, bioscience technologies and augmented reality (AR), to mention but a few. These are reshaping the way people live, work and relate to one

another. Xing and Marwala (2017:11) suggest that the 4IR promises to bring about an age of abundance, based on the prediction of it being one of the most disruptive and transformative eras in world history.

Xing et al (2018:173) state that this future era will to a great extent endanger governments' operations, ranging from defense and intelligence to public sector departments. It is therefore critical, that government departments are equipped with up-to-date intelligence enabling them to envision new techno-economic requirements and enact bold policies (Nalubega and Uwizeyimana 2019:3). The 4IR is challenging traditional management and norms of governance in public and private sectors globally. The technological advancements of the 4IR are uprooting and changing the ways in which societies have normally done business and gone about their daily work (World Economic Forum [WEF] 2017:6). To prepare for, and be able to cope with, the 4IR a deliberate effort needs to be made to get an understanding of it. The 4IR aims to disrupt the habitual business models in various sectors, such as manufacturing, mining, fashion, and so forth, with the use of digital technologies. Many initiatives and strategies for knowledge management have been implemented to deal with the processes of creating, capturing, organizing, and leveraging the knowledge of individuals. But today it is technology that dictates the way forward on how we manage the knowledge available to, and the work processes performed in, organizations.

2. PROBLEM STATEMENT

Akporhonor (2020:1) notes that around the world, individuals, organizations, and government departments recognize the essential need of effective knowledge management. Properly managed knowledge preserves crucial aspects of an organization's memory. Most of this knowledge is kept as evidence of activities, transactions and decisions. Tarantino (2008) states that the basic importance of managing an organization's knowledge lies in the fact that it assists in the organization's broader function of governance, risk management and compliance. It is primarily concerned with managing the evidence of an organization's activities, as well as the reduction or mitigation of risks associated with the organization's business. The increasing deployment of ICTs in knowledge management has given the impetus for the serious creation of a knowledge base, which is imperative to the functioning of modern public sector organizations. The increasing use of ICT tools in operations around the world and driven by reforms, has resulted in the generation of new knowledge, touted as a strategic asset vital to the functions of an organization (Akporhonor 2020:4).

The influx of modern technologies and their peripherals in the electronic world cannot be undermined. Currently, modern technologies such as blockchain, cloud computing, and the Internet of Things (IoT) are increasingly adopted by organizations to manage knowledge, while other organizations lag behind in adopting them. Public institutions are positioning themselves to take advantage from the implementation of innovative technologies for knowledge management (Masenya 2020:65). Public sector organizations globally are deploying modern technologies in their activities and operations. They have come to rely on a growing array of these technologies to create a knowledge store and manage their records (Masenya 2020:66). Many public sector organizations are struggling to manage their knowledge. Effective management of knowledge ensures the ability of public sector organizations to function successfully and to promptly produce documentary evidence of their activities whenever required. Also public institutions in South

Africa have adopted modern technologies such as blockchain, cloud computing, and IoT technologies to meet the challenge of having to provide relevant and solid information about any aspect of their business (Masenya 2020:67).

Hence, it is pertinent that public sector organizations recognize the impact of technological tools applied to today's knowledge management. Attention should be paid to keeping abreast of innovations concerning records management since development in this field is dynamic and organizations worldwide are seeing the need to introduce the novel electronic tools into their processes and activities for optimal performance (Akorhonor 2020:16). Therefore, this study investigates the application of 4IR technologies in the knowledge management of government organizations with a view to highlighting how these can revolutionize the efficacy of government organizations in South Africa. This paper is thus a response to both observed challenges and prospects for improvement by the adoption of 4IR tools that have triggered new conversations on how to discharge and manage knowledge electronically.

3. METHODOLOGY

This study uses a qualitative approach and adopts content analysis of reviewed literature to address the research problem. According to Babbie (2010), qualitative research comprises the subjective, rigorous assessment of opinions, behaviours, and attitudes and involves the researchers' opinions, insights, and sentiments. This kind of approach produces and establishes results that cannot be reduced to statistical and numerical laborious analysis. This study explores literature to critically analyze the application of modern technologies in knowledge management in the government organizations of South Africa. A similar study by Masenya (2020) investigated the application of modern technologies in the management of records in public libraries in South Africa, also based on the critical analysis of a literature review. To carry out the literature review for the present study, the researchers selected relevant articles about previous studies and initiatives concerned with the application of modern technologies to knowledge management in the South African public sector.

Data were collected from secondary sources, including books, journals, and research reports published by governmental on official websites. Perusal of relevant "grey" literature, including unpublished research commissioned by public institutions, and policy briefs from public sector institutions, identified through electronic searches, provided some additional information. This methodology served to collect information on this study's particular area of research which subsequently has been synthesized and critically analyzed. The data collected from secondary sources such as journal articles, theses and conference papers and government departments records. A literature search was conducted online, using the web of science, Scopus database and Google Scholar. The search terms included the 4IR, knowledge management in government, technological tools, blockchain technology, cloud computing, internet of things, artificial intelligence, and South Africa as evidential documents for this systematic review study.

For sampling and procedures, non-probability, also known as purposive, sampling was used to restrict the literature review to documents dating from between 1990 and 2009 [not in order of importance or sequence]. This was an exploratory approach aimed at establishing the various aspects of the problem and determining possible solutions. The sources of information were arranged in broad categories of public documents, for example official statistics, government

policies, internet resources, data archives, and books based on the application of 4IR, and reviewed as such. Content analysis was used to analyze consulted textual materials and to collect as well as classify relevant information on the subject. Content analysis “is a technique which aims at describing, with optimum objectivity, precision, and generality, what is said on a given subject in a given place at a given time” (Lasswell, Lerner and de Sola Pool 1952:34). Additionally, Dunphy, Smith, and Ogilvie (1966:5) state that “content analysis is any research technique for making inferences by systematically and objectively identifying specified characteristics within text.” According to Leedy and Ormrod (2001), content analysis should be defined as a detailed and systematic examination of the contents of a particular body of materials for the purpose of identifying patterns, themes, or biases. Leedy and Ormrod (2015:275) describe document/content analysis as an approach to identify the specific characteristics of a body of material with a focus on verbal, visual or behavioural forms of communication.

Hence, all pertinent data was analyzed so as to distil answers to the research questions. Matthews and Ross (2010) argue that “one can ask questions of documents in the same ways as one might ask questions of research participants.” Bowen (2009:28) notes that content analysis is a “systematic procedure for reviewing or evaluating documents both in printed and electronic materials.” Furthermore, Johnson and Reynolds (2012:2) posit that content analysis is the “study of existing documents to understand their substantive content and to illuminate deeper meanings which are revealed by their style and coverage.” Rakemane and Mosweu (2020) point out that some studies in the Library and Information Science discipline have applied content analysis as a data collection method. Content analysis is thus an acceptable method for the present study.

4. RESULTS AND DISCUSSION

The findings of this study are discussed in line with the themes mentioned in the subheadings below.

4.1 Application of Fourth Industrial Revolution tools in knowledge management

Kasozi (2012) mentions the great advancements made over the past decades in the field of information and knowledge management, due mainly to the emergence of modern technologies. Before the digital era, the knowledge management practices of organizations and institutions metamorphosed from a physical (hands-on) activity to an analog pattern of electronically managing knowledge. Schoenherr (2014) argues that the shift to digital electronics took place from the late 1950s to the late 1970s, with the adoption and proliferation of digital computers and digital knowledge systems that continue to the present day. The increasing deployment of ICTs in knowledge management has given the impetus for the creation of digital information and knowledge which are imperative for the functioning of modern public sector organizations (Akporhonor 2020:16).

Hence, in the context of the 4IR, blockchain technology, cloud computing, the Internet of Things and Artificial Intelligence are considered as beneficial tools in government departments and as a possible solution to the challenges involved in the optimal management of departments’ knowledge and other archival material. The South African government acknowledges that it must prepare for the 4IR. To ensure that the country is in a position to reap the full benefits of 4IR tools and machine learning, the government has established a Presidential Commission, tasked with

helping government to develop a strategy for harnessing the next wave of technological advancements which is expected to impact almost every industry (Lefakane 2020:58). The use of these 4IR technology tools can enhance transparency and accountability in the systems, while reducing the risk or prevalence of corrupt activity and preserving the records of every single transaction or activity occurring (Gwala 2022). Various additional benefits can be derived using these technological tools.

4.1.1 Blockchain technology

Bordeianu (2015) stipulates the huge role played by technology in the knowledge management of organizations, because the development of most organizations has to rely to a large degree upon information communication technology capital. Advanced ICT tools have helped to increase transparency, privacy, accuracy, security, and value capture. The use of these tools has in particular resulted in cost saving and the establishment of a value network, while largely improving data accessibility and minimizing intermediation within digital processes (Palas and Bunduchi 2020). Hence, due to the application of ICT tools in the knowledge management of organizations giant leaps have been affected in how knowledge is shared, created, and stored. Marquardt (2002) notes that the expanded use of ICT tools and computer-based programmes are generally fundamental elements of society today.

According to Suominen (2018), as part of the increased spread of ICT in the 21st century, the use of blockchain technology or blockchain-based systems has gained momentum and generated much attention. It is considered as the foundation of a technology that can affect social and economic transactions, as well as business models (Suominen 2018). The technology may also foster social, technical, legal, ethical, and environmental abilities which make blockchain in its current form practical and effective for mainstream use in public sector organizations. According to Swan (2015), blockchain technology is a tool capable of ensuring the reliability and security of data.

The usage of blockchain technology thus might take over the role of the notary. Benton and Radziwill (2017) remark that it involves a shared ledger that cannot be changed or altered once a specific transaction has been verified or recorded. Similarly, Ali, Ally, and Dwivedi (2020) stipulate that a blockchain is a distributed database of records or a public ledger of all operations or digital events that are accomplished and shared amongst the participating stakeholders in the organizations. McArthur (2018) notes, that at its core, blockchain technology is a system solution-based protocol that represents decentralized, authentic, trustworthy, and distributed digital ledgers. Furthermore, McArthur (2018) and Funk, Riddel, Ankel, and Cabrera (2018) point out that since transactions and records are simulated across software and are coded to be permanent, blockchain technology systems do away with security issues or hacking.

Notably, blockchain technology operates or functions as a type of network that offers numerous management possibilities and, due to its many innovative applications, blockchain continues to arouse the interest of a growing number of organizations. Moreover, blockchain would enable a proficient mechanism for decentralized processes, corroborating more participatory models in public policy decisions, allowing for agility and anonymity. It would also be an important tool for logistics control of products that require state regulation. The rapid development of blockchain technology is set to play a crucial role in the advancement of public sector organizations because

of the inherent technological attributes and abilities that enhance the effectivity of many elements of public sector activities.

According to Xu et al (2017), blockchain is an evolving technology used for exchanging transactional data across a comprehensive network of participants in a decentralized way. It permits for new designs of distributed software architectures, in which the consensus on the states of the shared database can be reached without requiring reliance on a trusted central integration point. Olnes, Ubacht, and Jansen (2017:357) argue that blockchain is considered as one of the most critical and applicable technological trends that meaningfully impact business operations, society, and organizational sectors. Therefore, Yli-Huumo et al. (2016) poignantly aver that blockchain has emerged as a potentially disruptive and general-purpose technology for organizations seeking to develop information and transactions that demand authentication and trust.

Rana, Dwivedi, and Hughes (2021:3) argue that blockchain technology has the potential prospect of providing essential benefits to many public sector organizations and to society in general through presenting the next step forward in electronic government development by offering promotion of trusted processes and recordkeeping, in addition to reduced costs. Blockchain is also used as a mediating variable for knowledge management as it strives to achieve a stronger, sustainable competitive advantage. By using blockchain the work of knowledge management teams may give members of staff more confidence to share their knowledge as they gain a belief that their shares of knowledge are regarded as a precious source of personal intellectual capital.

Killmeyer, White, and Chew (2017) argue that the potential benefits of implementing blockchain-based technology in public sector organizations consist in such advantages as securing storage of government, citizens, and business data, eliminating redundancy in the operational processes, avoiding disproportionate costs associated with managing accountability, enhanced and improved possibilities to reduce corruption and manipulation, increasing trust in government and online civil systems, and improving efficiency and speed. All these aspects highlight why governments globally are using, or considering the introduction, of blockchain systems.

Rana, Dwivedi, and Hughes (2021:4) confirm that blockchain technology is in high demand in public sector organizations, as it offers vital prospects for transforming and advancing the public sector. In the post-COVID-19 period, when public sector organizations are rethinking their digital strategies, choosing the optimal use of blockchain has the potential to move organizations away from siloed and inefficient centralized systems. Furthermore, Rana, Dwivedi, and Hughes (2021:4) state that the blockchain network permits organizations to create more secure, agile, and cost-efficient structures as compared to the current systems. Existing blockchain technology would need to re-invent itself to some degree, so that it can support public sector organizations to remain viable in the face of growing competition and security threats.

In addition to blockchain technology providing public sector organizations and their administrations with knowledge security and increased efficiency, it also strengthens the exercising of democratic participation (de Moura, Brauner, and Janissek-Muniz 2020:271). Blockchain technology thus enables horizontality, transparency, and reliability in knowledge management, as long as its instrumentation is done in a way that serves social interests, so that it becomes a means of developing constructive, participatory actions (de Moura, Brauner, and Janissek-Muniz 2020:271). Above all, the use of blockchain can improve the quality of the

governments' knowledge management ensuring its reliability and increasing its agility in the execution of public administration contracts, while assisting to inhibit bid fraud, and the tampering with documents and payment notes, among other advantages.

Alketbi, Nasir, and Talib (2018) posit that, although blockchain use overcomes some challenges including the securing of data sharing and data integrity, it also presents some new security challenges that need to be confronted and further examined. Atlam et al. (2018) underscore several challenges encountered in blockchain adoption and implementation, such as scalability, matters of legality and compliance, and a lack of adequate skills of management staff. Crosby et al. (2016) contend that the challenges confronting blockchain technology are similar to those that accompany the use of any other technology that threatens to disrupt existing processes. The authors mention problems linked to interoperability, security and privacy, as well as the need to explore suitable and sustainable business models of implementation.

Gwala (2022) states that South African government departments are often marred by irregularities and allegations of corruption that are reported annually by the Auditor-General South Africa (AGSA), and other bodies as well as the media. Of even greater concern is the lack of quality service delivery that may result from these irregularities and corruption which has tarnished the reputation of government and eroded citizens' trust in the state's ability to deliver services. The challenges are worsened by a lack of transparency, inadequate record-keeping, and low accountability. In order to deal with such issues, government and public sector institutions should focus on the possible introduction of 4IR technologies to achieve efficiency and ensure effectiveness in service delivery to the country's citizens. The implementation of blockchain technologies does present a whole world of new possibilities and will play an important role in unlocking new corporate opportunities while helping to curb the unemployment rate in the country (Gwala 2022).

In short, it is critical for contemporary, good governance to be accompanied by the implementation of blockchain technology to maximize potential, transparency, and accountability in the public sector. Implementing blockchain in government departments would assist the supplier management, fraud and corruption prevention, smart contracts, traceability and ledger trust. Most importantly, to strengthen the integrity of governance, a clear legal framework has to be established, based on international best practice and taking account of all objectives and policy positions of the government. Gwala (2022) indicates that some South African government departments have managed to implement the e-procurement project which seeks to support fair, equitable, transparent, competitive and cost-effective procurement in an easy to access single point of entry, technology-driven facility, which is a step in the right direction. However, other South African government departments are getting left behind while governments worldwide are embracing blockchain to maintain control of transactional activity flows, enhance efficiency and expunge corruption (Fourie 2021).

Fourie (2021) further indicates that blockchain technology can assist government organizations in shift their focus from post-hoc inquiries, investigations and endless commissions, to the prevention of corruption and the loss of billions of rand in the public sector. The blockchain platform may make public sector procurement more efficient, transparent and less susceptible to corruption. For instance, with blockchain technology, all transactions or "blocks" in the "chain" are irrefutable and protected from deletion, tampering and revision. Blockchain creates an immutable trail of

information, allowing every transaction to be fully traced. Given these benefits and responses to challenges, blockchain technology can disrupt the status quo in the public sector. It can bring efficiency by spanning siloes, flattening tiers, and inspiring new service delivery models for governments.

4.2 Cloud computing

In today's rapidly changing technology and the ongoing transition to the 4IR, the world of computing has taken on new dimensions. The development of cloud computing technology as a new platform for computing has made a huge impact on the technology industry which benefits from this innovation. Cloud computing is defined as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Mell and Grance 2020).

Furthermore, cloud computing is used to disseminate resources such as applications and data through a cloud platform that hosts spaces over the internet platform (Mell and Grance 2020). Mokwena and Hlebela (2018) note, that the majority of studies have proven that cloud computing provides positive results to organizations and staff members, such as the ability to enhance collaboration, reduce operation costs, offer more security levels, and increase mobile accessibility. Therefore, cloud computing permits a greater number of users and organizations to share resources, that are optimized for users who thereby become less dependent on the hardware and software installed on an individual workstation (Amron, Ibrahim, and Chuprat 2017).

According to Meenu, Mikku, and Shishodia (2013:620), cloud computing services are gradually coming to be utilized for the sole purpose of knowledge management, and such precisely because it represents technological development linked to ubiquitous high-speed internet connectivity, the propagation of smart mobile devices at electric speed around the globe, and the shrinking of data storage costs. These positive factors assist in fulfilling the requirements of simple, authentic, cost-effective, and flexible information. Furthermore, Meenu, Mikku, and Shishodia (2013:620) point out that the usage of tablets and smartphones validates the potential of cloud computing technology to enable sophisticated and high-powered, yet simple and easy to use, computer applications and information, which is otherwise not easy to access.

The potential benefits of cloud computing for knowledge management processes consist of sufficiently reducing technology-related costs, while synergies are generated through the reduction in computing resources, time and modeling processes, and in the large and variable storage needs for establishing huge knowledge management systems by applying cloud storage models. Besides, clouds provide users access to a variety of services, as well as opening gates to several options that were earlier unknown to the knowledge users (Meenu, Mikku and Shishodia 2013:621).

Gillward and Moyo (2012) are of the opinion that government departments in a majority of African regions are widely involved in cloud computing technology activities delivering electronic government services. Mosweu, Luthuli, and Mosweu (2019:2) note that cloud computing technology ensures that information, data, and records are always available, as they are backed up on several computers, diminishing the risk of loss. Various scholars and commentators, such as Bassett (2015), McKemmish (2013), and Kabata (2012), opine that cloud computing technology

plays a huge role in managing knowledge in the public sector because it enhances reliability and remote access to knowledge, results in significant cost savings, improved flexibility and scalability, thus promoting organizational processes. Among its advantages are its protection against information loss, facilitation of collaboration and business continuity.

Adams (2022) notes, that the South African Department of Public Service and Administration (DPSA) has gazetted a directive on cloud computing in the public service. In essence, the directive instructs government departments to adopt, use, manage, scale, and terminate cloud services. However, South African government is unable to provide efficient Information Technology (IT) services to citizens because of its fragmented dealing with technological support systems in the sense that each government department procures its own IT services and equipment. This leads to a silo approach and a lack of sharing across departments (Chetty 2014:iii). A survey has been conducted among government users of which the primary objectives were to determine the awareness of government IT employees as regards cloud computing and their readiness to implement cloud computing solutions. The results showed that employees were in favour of using cloud computing and understand its many benefits and challenges. Poor security is seen as the number one disadvantage and government departments deciding to adopt cloud computing need to ensure data is kept secure (Chetty 2014:iii).

Meanwhile South African government departments are actively looking into cloud computing as a means to increase the efficiency of service delivery and to reduce infrastructure costs. However, as a result of introducing cloud computing, issues of interoperability will arise and as it is vital that e-government services are realised with maximal efficiency, this is seen as a challenge for the South African government (Mvelase, Dlamini, Sithole and Dlodlo 2013:150). African governments generally are facing serious challenges that affect their economies and their abilities to deliver core services to citizens. They have to take account of the realities of growing populations demanding more services, aging infrastructures, declining budgets, and increasing threats. As such, they are constantly looking to adopt approaches and technologies that may help to address these problems. The benefits of cloud computing for e-governance are clear, but one cannot deny the accompanying challenges (Mvelase, Dlamini, Sithole and Dlodlo 2013:150).

In brief, findings from the relevant literature reveal that most existing South African ICT policies are not comprehensive and inadequate in the context of cloud computing developments with their complexities and challenges. In addition, the findings indicate that most South African policies and regulatory laws that have been put in place are not specific to a particular domain (i.e. cloud computing), but are rather designed as blanket type of regulations. The findings also make clear that there exists a need to formulate ICT policies that are specific to a subject domain as discussed in the above analysis (Mohlameane and Ruxwana 2020:6).

In addition, government is hampered in its response to the demand for e-government by rigid procurement procedures which make establishing a new service and getting the necessary equipment into a laborious task. It can therefore be concluded that the emergence of cloud computing technology has exposed the existing ICT policies and regulatory laws as being inadequate, especially when it concerns addressing issues of public confidence regarding the usage of cloud computing services and their competitiveness. The effect of a lack of confidence is aggravated by the notion that the approach to developing ICT policies is holistic, rather than

specific and focused on a particular issue or problem of ICT provision (Mohlameane and Ruxwana 2020:8).

4.3 Internet of things

While South Africa is one of the fastest growing Internet of Things (IoT) markets in sub-Saharan Africa, it is not yet fully mature and comprehensive adoption is impacted by several challenges. There is, for example, a lack of understanding concerning the business benefits of IoT, while there are concerns about cybersecurity and privacy, inadequate skills of staff, limited resources, and the difficulty of proving returns on investment. These challenges are affecting budget allocations and the overall IoT adoption rates (Burger 2021). Mohanty and Mishra (2020:6) note that the development of the Internet of Things affects the organizational sector as it aims to adopt a focused approach for work-space and design technology utilized, and having to make way for the IoT ecosystem.

Mohanty and Mishra (2020:6) stipulate that the IoT has now entered into the working environment and offers various exciting and innovative possibilities to the organizational domain, inviting staff members to engage with modern ways and rethink their workplace. Such an approach leads to better workplace planning and developing buildings that support IoT. IoT and knowledge management are inspiring public sector organizations to rethink their strategies and aims and to reconsider how value is created and how to position themselves in a competitive world. In view of these new demands, organizations have to adapt and become more agile, as they perceive that information creation is no longer a matter of price performance alone, but happens through focusing on revenue that is produced by the effective use of intellectual capital. The properly established Internet of Things is a device that, importantly, facilitates on-demand data access for organizations and members.

Many public sector organizations have realized that unsatisfactory work areas can be transformed into more useful spaces to accommodate expanded business operations and to aid in diversification. The development of IoT has led to a considerable paradigm shift in the way organizations conduct the planning and designing of work areas. For instance, public sector organizations are modifying their workplaces today to accommodate IoT and incorporate its applications into the business environment, as well as offering spaces for staff analyzing processes and results, IoT usage will increase organizational productivity and make it easier for employees to perform tasks (Mohanty and Mishra 2020:6). The IoT improves knowledge management in the real world by offering the information lifecycle and by inspiring people to collaborate, sharing insights and actions. For instance, IoT platforms have the potential to activate knowledge platforms' insights, based on well-developed information while it enhances processes and uses resources more efficiently. The IoT aids in facilitating and identifying the knowledge needed to efficiently carry out certain operations on connected equipment.

The things in the IoT refers to uniquely identifiable objects (things) and their virtual representations in an internet structure (Beck 1992). Additionally, Mohanty and Mishra (2020:5) describe the IoT as an innovative device that has sufficient computing capacity and a system that depends on the autonomous communication of a group of physical objects. The IoT can also be seen as an article of developing global internet-based information architecture, enabling the exchange of goods and services. The system has rapidly gained a reputation as the most disruptive

phase of the internet revolution. IoT may also be considered as a broad terminology used for applications interrelated and connected through networks that include processing and sensor capabilities, allowing devices to transmit recorded information from the outside environment.

Guo et al (2013) define IoT as providing the ability to connect physical apparatus or smart things to the internet and thereby generating autonomous context-adequate behavior. Hassan et al (2017) consider IoT as a series of devices and objects, interlinked to one another and to the web to optimize outputs via sending and receiving information. Hence, it is the joining and combining of computing tools by using internet tools that are embedded in everyday objects, thereby permitting objects to send and receive data (Hassan et al 2017). Weber (2013) states that IoT processes ensure better productivity, efficiency, and quality, for several service providers and business activities. IoT is thus based on social and economic trust, culture, and related to trust-management skills, which broadly implies developed security services and anti-fragility functions.

Borgia (2014) notes that public sector organizations are employing IoT in different ways for various purposes such as collecting huge amounts of information and data, producing digitally charged products and services which are equipped with sensors and adaptors, and finally providing an opportunity to others to use IoT. Furthermore, Borgia (2014) mentions that organizations implementing IoT in their operations need to make some changes to workspaces so that they become fitting for IoT use in their business. The reason why IoT applications are required by organizations is that they assist in the management of information, advance efficiency, security, transparency, and objectivity while avoiding bias, thereby enhancing organizational performance. In addition, IoT assists in overall innovative business processes by applying high-resolution data for measuring all operatives in real-time, thus gaining in quality and flexibility. IoT allows organizations to connect, track, monitor, analyze and evaluate tools and humans alike, in a digital forum. It influences corporations in their dealings with both organizational and personal gadgets of employees, including connecting to apps-driven populations (Mohanty and Mishra 2020:7).

Mohanty and Mishra (2020:7) remark that the objective of knowledge management is a thorough process of refining and synthesizing information that comes from various, perhaps unreliable, sources, so as to arrive at new knowledge. In modern days, knowledge management is more proficient in handling the actual and real updates, due to its usage of the IoT. The IoT alters the way business operations are transacted and changes how knowledge is handled within organizations. This requires inventive knowledge management strategies and an open approach to knowledge flows. The convergence of knowledge enhances the development of internal knowledge management capacity in organizations which in turn stimulates innovative thinking. The IoT is premised on the ways in which “things” collaborate and information is created, processed, shared, organized and made sense of.

When the IoT is viewed from the perspective of knowledge management, it becomes apparent that IoT allows for managing and monitoring the knowledge in organizations in various ways which requires the application of innovative management systems that can be adapted to more abstract and complex knowledge flows. Moreover, the IoT is seen as a crucial enabler of all knowledge management processes, because of the objects' interconnectivity that the IoT offers and that is related to an expanding potential for information creation, acquisition, storage, transfer, and applications (Santoro, Vrontis, Thrassou and Dezi 2018). The IoT's role in the knowledge management of organizations comes with such benefits as the provision of expedient and prompt

access to services and experiences, while minimizing the loss of time which is a crucial factor in enhancing the customers' experience. In addition the IoT does identify and quick resolves challenges, thereby anticipating employee issues as they arise, giving departments opportunities to deal with these and so enhancing the employees' experience. As IoT usage alters the way in which people work, it facilitates the sharing of the economy, encouraging close cooperation between, and authentic experiences of employees on each side of a transaction. As more aspects of the used devices and of IoT are connected, more information is shared, translated for easy comprehension, and delivered in contexts that create more real-time information than employees have ever accessed before.

The re-use of knowledge in organizations permits decision-making to be premised on experience, on large sample sizes and practical lessons learned, including the real-time information attained from sensors and other devices. The combined usage of the IoT with knowledge management has affirmed the augmented significance of knowledge management in the global environment and permitted the delivery of greater operational effectiveness. In that context IoT is viewed as the connectivity of every element through the internet to send, exchange, share and comprehend information (Jarwar, Ali, Kibria, Kumar, and Chong 2017). Burzland, Wilken, Bartelt, and Stuckenschmidt (2019) state that IoT applications create new information that can be easily turned into useful knowledge which will enable the adoption and implementation of different kinds of smart applications and solutions.

Burger (2021) posits there are measurable benefits to IoT implementation and application. However, strategic application of the IoT is still at a nascent stage in the government departments of South Africa. In fact, a recent white paper report found that not a single government department has mentioned the IoT in its strategic plan. The diverse nature of public sector missions and the citizens they serve, frequently complicates attempts to implement new technology. Yet, if public sector organizations do not start analysing the implications of the IoT today, they risk being left behind, making it more difficult to effectively regulate or efficiently deliver services in the shifting reality (Meyers and Eggers 2015). Dlamini (2017:iv) points out that government departments in South Africa are potentially looking at using the IoT for business processes in future years. Currently, South African government departments are not making extensive use of the IoT, as the devices and outfits that power the IoT are not widely available in South Africa. Other barriers that limit uptake are the costs of IoT devices and bandwidth locally (Dlamini 2017:iv).

Government departments are looking into the use of the IoT for internal business processes rather than public interaction. The public service believes that the South African environment is not ready for the confrontation with a fully-fleshed IoT structure, as the average South African is not technologically savvy. Technology, organization, and environment are the forces driving for a decision to apply technological innovation (Dlamini 2017:iv). It is expected that an IoT-driven business environment will transform the physical business procedures into efficient digital processes, as IoT enables businesses to digitize, sell, and deliver physical assets to a large degree virtually (Brody and Pureswaran 2015).

The IoT can be used to improve the efficiency of organizational processes, reduce the costs of warehouse logistics, as well as in service industries (Murray, Papa, Cuzzo, and Russo 2016). Organizational departments in the South African environment are aware of the great potential of IoT usage in automation and in the supply chain, where it can unlock possibilities that were a few

years ago only imaginable. However, government departments in South Africa are lacking the right capacities to handle these innovations that hence have remained a possibility rather than a reality (Dlamini 2017:55). Therefore, the potential benefits of IoT in South African government departments, including greater efficiency in the supply chain and more collaboration within the ecosystem, are today still castles in the air. IoT, when eventually established in South African public sectors, will enable collaboration between suppliers as well as centralized activity between businesses of departments that exist in different parts of the country and the world (Dlamini 2017:63).

4.4 Artificial intelligence

The fourth industrial revolution confronts us with digital transformation processes whose main objective is to provide the public sector with an organizational structure proficient at promptly and continuously developing new technologies to support innovation in the field of, among others, knowledge management and explicability (Ghosh et al, 2018). In the current digital environment, there is a need for organizational structures to advance and to establish innovative, problem-solving systems that encourage the expanded digitization awareness of organizations. Ghosh et al., (2018) define artificial intelligence as the introduction of intelligence in machinery to provide it with proficiency in performing tasks that would normally need the intervention of the human mind. Fugere (2019) notes that a majority of organizations adopt and implement artificial intelligence technologies, because these may provide the organization with a competitive edge and enhance its performance, its productivity and its profitability.

Furthermore, Fugere (2019) argues that “the sooner organizations can adopt modern technologies such as artificial intelligence, the more they can add to the longevity of their business operations because artificial intelligence allows to scale and provide answers.” Artificial Intelligence, through machine applications, allows for the acquisition, processing and use of knowledge to perform tasks and to unlock information that can be delivered to people to advance and enhance decision-making processes. Meanwhile, artificial intelligence is replicating human intelligence and as such it is used by organizations in interactive systems, involving both humans and artificial intelligence. In the general framework of knowledge management in organizations, artificial intelligence is a part of knowledge-creation processes.

The use of artificial intelligence tools facilitates the acquisition of knowledge, and the associated display, search, and sharing of content and files, including the improving of communications, both within the workteam and outside of it. Artificial intelligence aids organizations leverage knowledge management whereby it advances and promotes performance and innovation, while adding more perspective for both the organizations and their employees. Increased perspective results, for instance, when artificial intelligence tools empower different organizations to connect and combine knowledge across different platforms, allowing their employees access as needed. Artificial intelligence assists and facilitates the design of organizations and the delivery of more effective knowledge management programmes to better inform the evolving workforce. As artificial intelligence contributes to better knowledge management, it will make organizations more stable and effective.

The use of artificial intelligence in knowledge management is not meant to replace staff, but rather as an opportunity for supporting employees so that organizations can perform at high levels. The

core concept of artificial intelligence is the production of machines that are useful to human beings who are analyzing highly complex and fast data processing. Smith and Farquhar (2000) note that artificial intelligence in organizations stimulate the collaborating, sharing, using, and reusing of created knowledge. Artificial intelligence assists in making complex calculations with high-speed image processing, in transmitting a signal via satellites, and in controlling complex production systems and complex warehouse logistics systems, at a level of complexity that is beyond human ability.

Akerkar (2019) avers that artificial intelligence permits organizations to acclimate rapidly to changes in the patterns of internal data or business environment data and underlying business conditions. Artificial intelligence tools are useful in making better and faster decisions as they can maximize the value of all information and move from predictive analytics to prescriptive analytics. Moreover, artificial intelligence accelerates innovation by contributing to the creation of new business models and by simple value creation through the discovery of new patterns in data and by fully utilizing knowledge assets (Akerkar, 2019). The role of artificial intelligence is highly significant in delivering knowledge in a digitized organization, where it enriches the delivery of knowledge to the people who require it. Artificial intelligence is also used to scale the volume and effectiveness of knowledge distribution.

The machinery used by artificial intelligence systems can detect patterns in huge volumes of information and model complex, interdependent systems to produce outcomes that improve efficient decision making. Its usage in the discharge of knowledge is based on information used to train the machine systems algorithms. The effect of artificial intelligence on knowledge management consists in the delivery of knowledge in a dynamic, ever-changing, and accurate way throughout an entire organization (Rhem 2021:33). Artificial intelligence applied in an organization does capture and codify data, extending organizational knowledge and information. Organizations also make use of artificial intelligence to help the capture and preservation of tacit knowledge, for knowledge discovery in general and to create solutions to specific situations that are too abstract and complex to be solved by human analysts on their own, while AI can equally help organizations to search for and filter needed information. Smith and Farquhar (2000) note that knowledge management and the artificial intelligence community share a goal, namely development by using computational techniques to improve the performance of individuals and communities whereby the ideas and the technology that have been developed by the AI community are required for the successful managing of knowledge (Smith and Farquhar 2000).

A peculiar characteristic of artificial intelligence when it is pragmatically employed to deliver knowledge for people who need to make decisions - including in the case of AI being used for decision-making without any human involvement - that the provided knowledge is without any bias whatsoever and that the decisions made on basis of this knowledge are ethical. Akerkar (2019) states that artificial intelligence is often responsible for processing the massive amounts of information currently circulating in organizations and between employees, locally, nationally or internationally, while it is also left to AI to rapidly transform this information into useful knowledge. Artificial intelligence moreover enhances the relationship of organizations with clients by creating and applying innovative knowledge about the clients' behaviours. Artificial intelligence aids furthermore in keeping the knowledge base content of organizations current, through using technology tools that inspire employees to keep finding up-to-date information. The

overall management of organizations is thus improved by artificial intelligence facilitating their functioning, in particular by growing their knowledge bases and the management thereof, and by optimizing processes to obtain quick responses, automating the interaction with the environment completely so that the artificial intelligence won't send information that is by users rated as unsatisfactory, while it will pass on information that seems better suited to a user's intention. AI thus provides mechanism that enable a machine to learn.

Organizations incorporating artificial intelligence in the execution and delivery of knowledge, ensure fast, efficient and accurate decision-making, because artificial intelligence provides the ability to magnify, use, and create new knowledge in ways thus far not imaginable. South African government has acknowledged the importance of educating persons in readiness for interaction with advanced technology such as artificial intelligence systems. Apart from acknowledging this responsibility, the government has done a poor job so far, when it comes to promoting artificial intelligence and related knowledge. Lefakane (2020: 58) indicates that one way of addressing this problem is by establishing a government agency that is especially tasked with the promotion of advanced technological skills in South Africa, focusing on informing the public about the potential offered by, for example, artificial intelligence systems, to protect the rights of citizens (Lefakane 2020: 58).

Government departments' ability to ensure efficient use of resources in the delivery of public services is impaired due to factors such as corruption and lack of transparency, as well as by modes of public service delivery that struggle to respond to present day needs. Thus, while delivery of public services commonly accounts for a large proportion of government budgets, increased spending is often not matched by improvements in outcomes. Through automation, artificial intelligence technologies can significantly streamline processes and reduce costs, while easing administrative burdens, paperwork, and backlogs, thus increasing public sector efficiency and the speed at which public services are delivered. This will allow public sector managers to resolve resource allocation constraints, redirecting staff members to where they can be most productive (Berryhill 2019:3). Besides making the delivery of existing services more efficient, artificial intelligence will drive innovation, enabling new and better types of public services. Artificial intelligence's predictive capabilities are a game-changer for how government services and policies respond to society's needs, from pre-emptive social service interventions to help children and struggling students to better crime reporting and emergency response. Artificial intelligence tools can also better administer infrastructure, anticipating the need for repairs, and manage cyberattacks that threaten critical systems (Berryhill 2019:3).

In practice, most government departments are hampered by a limited understanding of the multifaceted implications for public governance brought about by the use of artificial intelligence. Meanwhile, thought-leadership in the area of governance and artificial intelligence, is shrinking as compared to the pace at which artificial intelligence applications are infiltrating governments globally. This knowledge gap is a critical developmental barrier as many governments are ill at ease with the societal, economic, political, and ethical implications of transformations resulting from the use of artificial intelligence (Zuiderwijk, Chen and Salem 2021:2). Lefakane (2020:46) notes that South Africa is in fact not even among the top ten on the list of countries that are advanced in the employment of technology. This should be an issue of concern. It implies that the wider application of artificial intelligence systems in South African government departments may

still take a while. Additional challenges arise from the lack of transparency of black-box systems, such as unclear issues of responsibility and accountability when artificial intelligence is used in decision-making by governments.

According to Rhem (2021:34), artificial intelligence plays a crucial role in managing knowledge in organizations in the following ways.

- 1) When delivering knowledge in a digitized organization it elevates how the delivery of knowledge occurs to the people who need it.
- 2) artificial intelligence is used to scale the volume and effectiveness of knowledge distribution by predicting the trending knowledge topics needed by employees.
- 3) artificial intelligence assists in identifying which targeted knowledge will resonate with employees, based on real-time engagement and content consumption.
- 4) artificial intelligence enhances content decisions by leveraging machine systems focusing on what content will be best suited to address a specific situation.
- 5) Artificial intelligence, through intents, will be able to better distinguish what content and knowledge employees need (Rhem 2021:34).

Apart from potential benefits, the usage of artificial intelligence in government departments also poses challenges. Some of the problems encountered have been classified in categories such as data challenges, organizational and managerial challenges, skills challenges, interpretation challenges, ethical and legitimacy questions, political, legal, and policy issues, social and societal challenges, and economic challenges (Zuiderwijk, Chen and Salem 2021:10)

5. CONCLUSION

The present study has established that ICT tools play a crucial role in managing knowledge in organizations. It has shown that the implementation of ICT tools in knowledge management enhances transparency, accountability, security and saves costs for the organization. Blockchain-based technology provides government institutions with benefits that improve service delivery and increase efficiency. The Internet of Things in the workplace provides innovative ways of strategizing and planning to enable competition with the outside world. The use of cloud computing enables convenient access to organizations' electronic records, regardless of place or time. Government departments are using cloud computing to offer electronic services. Artificial intelligence plays an important role in knowledge management. It enhances content decisions by leveraging machine systems. The expanding use of 4IR tools in government departments is triggering numerous opportunities for all-inclusive governance. For instance, with the introduction and implementation of 4IR tools in government department practices and public-sector ecosystems, traditional forms of service provision, policy-making, and enforcement can be changed rapidly. Moreover, government departments can use 4IR tools to improve the quality of public services, to foster citizens' trust and to increase efficiency and effectiveness in service delivery. Additionally, 4IR tools may also be used by governments to generate more accurate forecasts and to simulate complex systems that allow experimentation with various policy options.

6. RECOMMENDATIONS

In the view of stated outcomes of the 4IR tools in the management of knowledge in the public sector, the study presents the following recommendations.

- Training programmes should be a must for employees in organizations to be able to cope with advanced technological tools. In building capacity, government organizations should enable quality technical skills as scarce skills in order to retain skilled employees.
- Provide support, clear direction, and create space for flexibility and experimentation, for instance by establishing overarching strategies and principles, communicating senior support for the 4IR tools experimentation, and developing structures inside government departments to incubate new approaches and scale-up successes.
- Develop a trustworthy, fair, and accountable approach to using 4IR tools, such as through establishing legal and ethical frameworks, maintaining a focus on individuals who may be affected, clarifying the role of humans in 4IR tools driven processes, pursuing the explainability of 4IR tools outcomes, and developing open accountability structures.
- Ensure government departments have access to funding, internal and external capability and capacity, and infrastructure to use 4IR tools through training and recruitment, collaborating and partnering externally, designing procurement mechanisms that work for 4IR tools.
- There is a need to build local and knowledge hub in high technology and continuous education can also raise awareness of services and their impact on knowledge management.
- Public organizations are evolving with the introduction of new technologies and solutions. It is of paramount importance that organizations work more efficiently and enhance modern management practice.
- As the blockchain systems suffer from latency problems, this may cause major issues for the organizations in synchronizing the advancement of technology with relatively high-performing legacy systems. Therefore, it is critical that organizations solve these issues to avoid serious transfer delays and exorbitant costs on the blockchain network.
- These application technologies should be established to enhance transactional speeds so as to better synchronize with the prevailing systems to save time and costs.
- In principle, the 4IR technologies should be used for providing government services that involve the overall handling and management of knowledge that is difficult to access. Specifically, blockchain systems could be utilized to sustain the overall provision of public goods and services to the citizenry and various participants.
- The public sector organizations should organize training and capacitation programmes to enhance the employees' skills and awareness enabling them to appropriately use the developed technological systems in their daily operations. The employees should be efficiently capacitated and well-resourced and familiarize themselves with the ever-changing technologies and their complexity. This will also aid in overcoming a possible reluctance to use the applications of established technologies for better work processes.

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PROSPECTS FOR, AND CHALLENGES OF, KNOWLEDGE SHARING IN THE SOUTH AFRICAN PUBLIC SECTOR: A LITERATURE REVIEW

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ABSTRACT

Today's rapid pace of globalization has driven the current business environment into a permanent state of dynamic change. In the process, organizations have realised that, to ensure their survival, they need to efficiently manage the knowledge and skills available to them. Central to such a management practice is knowledge sharing which has come to play an important role in the building of sustainable competitiveness in a turbulent business climate. In a knowledge culture, it is the sharing of information that promotes innovative thinking. If government departments fail to adopt knowledge sharing practices, the preservation of their organizational memories is put at risk, also in view of the regular transfer of experienced workforces. The lack of a fruitful implementation of knowledge sharing practices diminishes the capacity to sustain government departments and this impacts negatively on the country's economic growth. The current study reviews the prospects for, and the challenges posed by, knowledge sharing practices in the South African public sector. The objective of the study is to describe what possibilities the 21st century holds for improved knowledge sharing in the South African public sector. The collected data is analysed using a thematic content approach. The results outline that organizational structures in government departments are hierarchical and this hampers information sharing. The prevailing organizational culture does not support and encourage the creation and sharing of knowledge among staff members. The skills needed to facilitate the sharing of knowledge are insufficient, while there is no clearly defined responsibility for initiatives concerned with knowledge management. The study recommends the public sector organizations of South Africa to clearly formulate precise processes, policy frameworks and responsibilities that ensure the effective identification, capturing, managing, transferring and sharing of knowledge within the organizations.

Keywords: Knowledge management; knowledge sharing; government departments; South Africa.

INTRODUCTION

In the context of a massively evolving information field, knowledge has come to be recognized as the main source of wealth production. As new methods for the creation and practising of knowledge are introduced, the application of such knowledge offers organizations a crucial resource for achieving sustainable competitive advantages (Hongmei, Chai & James, 2013). Basic is the notion that an organization can be strengthened by using the wealth of knowledge in the possession of the organization and its members. That knowledge is today considered as the lifeblood of organizations is confirmed by Asrar-ul-Haq and Anwar (2016). Ramohlale (2014) defines knowledge as "fluid or framed experience, values, contextual information and expert

insight that provide a framework for evaluating and incorporating new experiences and information in organizations.”

As knowledge is considered a crucial resource for attaining competitive advantage and as fundamental for long-term success and sustainability of public sector organizations. Kase et al. (2009) argue that in today’s economic setting, public sector organizations need to be inventive and innovative and create new knowledge, incorporating this into their existing body of knowledge, thus acquiring new capabilities to suit the requirements of various patrons. In support, Argote and Miron-Spektor (2011) stress the critical status of knowledge as a resource that enhances organizations by enabling them to be creative, learn, and adopt the use of other organizational resources. Therefore, Dei and Van der Walt (2020) state that any public sector organization trading in the present economy needs to develop a strong and continuously evolving knowledge-base in order to solidify the fundamental attributes of innovation and flexibility. The loss of such intellectual capital may, for some obvious reasons, threaten organizational performance, since knowledge, skills and experience provide organizations with sources of sustainable competitive advantage (Phaladi, 2021).

Mamabolo (2021) notes that knowledge management continues to remain relevant even in the fourth industrial revolution era across all organizations in the sense that, its main objective is to evolve over time in order to sustain and preserve vital knowledge that is critical in sustaining operations in the organizations. Knowledge management plays an important function as it provides organizations with the capabilities to sustain the process of transferring, sharing, disseminating and retaining knowledge that is vital to organizations to sustain the integrity of service delivery to the general public (Mamabolo, 2021). According to Alhawari, Nehari-Talet, Mansour, Alryalat and Musa-Hadi (2010), many organizations recognize the need to establish effective provision platforms for creating, managing and leveraging knowledge in order to grow profitability, become more competitive in global contexts and be responsive to current dynamically changing settings. Literature points at well-managed knowledge as the most significant antecedent for continuing successful innovation. If not properly managed and shared, knowledge will easily corrode. Particularly, the tacit knowledge accrued over time and residing in the minds of people, must be shared (Asrar-ul-Haq & Anwar, 2016).

The strength of an organization lies in its ability to manage its human capital. Ideally, organizations that wish to remain service-oriented in this Fourth Industrial Revolution need to comprehend the importance of tacit knowledge and ensure that is shared at all levels. Many organizations fail to capitalise on the value within their tacit knowledge reserves until when employees leave their jobs (Nkomo, Maluleka & Ngulube, 2021). It is evident from the literature that, the management of knowledge in the South African public sector plays a critical role to the functioning of the organizations for a better service delivery through the creation and sharing of knowledge. It is through the organizational culture and teamwork that instil and infuse the belief of knowledge sharing and management in the departments. However, the management of knowledge in the public sector can be improved through the establishment of policy frameworks nor strategies aligned to the organizational goals (Maphoto & Matlala, 2021).

Knowledge management is as significant as other fundamental requirements for the successful survival of an organization. Rachele and Krishna (2013) state that knowledge management encapsulates the methodologies and processes used by an organization in order to produce;

effective knowledge acquisition. According to Shah and Kant (2018), knowledge management has been widely defined as a set of processes involving the identification, creation, acquisition, capturing, storage, organization, evaluation, socialization, dissemination and distribution of knowledge and the associated application activities supported by the employees, structure, culture, procedures and technology of the organization. In the present knowledge-based economy, it is evident that knowledge management and its processes should be the foci of organizational departments (Blankenship & Ruona, 2009). Witherspoon, Jason, Cam, and Dan (2013) describe knowledge sharing as a building block for the success of an organization and recognize it as a survival strategy. Furthermore, Park, Saplan-Catchapero and Jaegal (2012:96) state that the “ability to share knowledge, thoughts, perspectives and solutions among collaborators represents possibly the greatest advantage any organization can achieve.”

Mosala-Bryant (2015) cites Amayah (2013), who points out that knowledge sharing in public sector organizations is inadequately practised. This has in the past 20 years led to drastic changes in government organizations aiming to move from traditional bureaucratic systems to a more managerial approach and to become what is termed a knowledge-based organization. The worldwide increasing recognition of the importance of knowledge management in public sector organizations has given rise to the establishment of knowledge-based organizations. Abili (2010) remarks that these knowledge-based organizations are searching for ways to make effective use of existing knowledge as well as seeking ways of creating new knowledge. Against this background, Abili (2010) mentions that knowledge-based organizations have realized that there is more benefit in sharing knowledge than in hoarding it. Therefore, they align their knowledge management processes with their organizational strategies in order to achieve a maximum of success.

The review of relevant literature reveals that, in spite of the expanding number of studies on knowledge sharing in general, limited attention has been paid to public sector organizations and their knowledge sharing practices. In developing countries, however, several studies have been carried out focusing on public and private organizations (Ngcobo, 2020). In this context, the current study seeks to investigate the prospects for, and the challenges posed by, knowledge sharing in the South African public sector. As knowledge sharing is still an emerging concept, many of its aspects remain to be studied in depth. Although numerous scholars have discussed knowledge sharing, there is little evidence of research concerning knowledge sharing in the public sector. The dearth of empirical studies on knowledge sharing in the public sector exacerbates the broader problems of service delivery. The current study reviews the prospects for, and the challenges posed by, knowledge sharing practices in the South African public sector.

Problem statement

Today’s rapid pace of globalization has driven the current business environment into a permanent state of dynamic change leading the public sector organizations to function in a dynamic, competitive environment. To achieve performance excellence and sustain the higher position, it is not enough to only focus on the quality output aspects, intellectual knowledge is one of the critical and vital elements that has proven beyond doubt for organizational success (Maphoto & Matlala, 2021). Therefore, keeping up with the rapidly changing organizational landscape, government organizations are shifting perceptions and, for example, moving from a product-centred to a

knowledge-centred approach (Mahilda, 2007). In the process, organizations have realised that, to ensure their survival, they need to efficiently manage the knowledge and skills available to them.

Jain (2017) notes that the contemporary economy is characterized by being knowledge-based. Knowledge has thus become a strategic force, promoting corporate survival and giving an organization a sustainable, competitive edge over rivals in the global market. In today's environment, "successful and thriving organizations are those which create or gain new knowledge and convert it into applicable methods for improving their activities and performance" (Akhavan, Ramezan & Moghaddam, 2013). Central to such a management practice is knowledge sharing which has come to play an important role in the building of sustainable competitiveness in a turbulent business climate. Organizations of today face many waves of change in their organizational life cycle. The environment in which organizations function is paved with many difficulties and obstacles.

The effective implementation of suitable knowledge management practices is both a key challenge and a critical tool for organizations, making them more adaptive and responsive to changing circumstances and ultimately enabling them to achieve a strategic and competitive position (Juma & Mzera, 2017). Unfortunately, in government departments there is only limited or no internal sharing of expertise, regarding knowledge management practices and their effectiveness. Knowledge in public sector organizations is mostly shared in an unstructured, informal manner without being linked to the strategic goals of the organizations (Boltman & Bankole, 2017). Hence, if knowledge is not shared, it is meaningless to manage knowledge. There has been no baseline review of prospects for, and challenges of, knowledge sharing in the South African public sector.

Key objectives of the study

- To examine the extent to which knowledge sharing in the 21st century has shaped the South African public sector, as apparent from a literature review.
- To determine challenges posed to knowledge sharing in the South African public sector today.
- To make recommendations and suggest strategies for South African public sector organizations to optimize knowledge sharing.

LITERATURE REVIEW

In view of today's eventful economic climate, the knowledge base of an organization is rapidly becoming its only sustainable, competitive tool (Mphahlele, 2010). Consequently, knowledge management increases an organization's competitive abilities and may seriously contribute to the attainment of organizational objectives (Qi & Chau, 2018). Public sector organizations are basically about the creation of knowledge, and about its usage, transmission, and communication in their daily operations. The knowledge available in organizations depends on the employees who constitute a particular organization, and it exists to achieve collective outcomes. For instance, serving the public citizenry is achieved by competent members of staff who have various skills and relevant knowledge, and who work together, following prescribed rules and organizational procedures, generating knowledge in the process (Moahi, Rathapo & Sebina, 2017).

Knowledge can be generated and utilized in various ways for example by collaborating teams, during meetings, in one-on-one sessions, by training workshops, and through recording human

interactions (Moahi, Rathapo & Sebina, 2017). Knowledge management focuses on people and processes which are expected to enhance the organizations concerned as a result of the proper implementation of knowledge management practices. Staff members are of importance in knowledge management, because most of the knowledge available in an organization rests with individual employees. Oliva (2014) notes, that the lack of knowledge management in organizations does often lead to the degeneration of learning and, subsequently, to the diminished effectiveness of organizational processes. It is therefore understood that, for organizations to be effective and competitive, knowledge must reign supreme and flow unhindered.

Hu, Ou, Chiou and Lin (2012: 785) conceptualized knowledge sharing as “activities involving transferring or disseminating knowledge from one person, group, or organization to another.” Lin (2007) regards knowledge management as the process of “capturing, organizing, reusing and transferring experience-based knowledge that resides within the organization and making that knowledge available to others.” It is a mechanism through which information is transmitted among individuals within the organization. It is therefore imperative that the government departments put in place mechanisms that would strengthen and better support daily management of knowledge and ensure service delivery activities (Matlala, Ncube, & Parbanath, 2022). Mothamaha and Govender (2014) are of the opinion that knowledge management improves the processes followed in an organization and the processes determine how work will be carried out. If the processes are improved, performance and output are expected to follow suit. Thus, as Mphahlele (2010) notes, knowledge management does enhance knowledge sharing by improving service delivery and maximizing the prospects of the organization and its individual members of staff. Foss, Husted and Michailova (2010) report, that most organizations engaged in knowledge sharing practices aim to transform individual knowledge into organizational knowledge and to enhance the sharing of such knowledge.

Nazim and Mukherjee (2016) consider knowledge sharing as an essential element of knowledge management and stress that it is through the sharing of knowledge that organizations can expand. Knowledge sharing as the exchange or dissemination of expressed or implicit facts, thoughts, suggestions, expertise and scientific know-how among individuals or groups of staff members. Similarly, Buckova (2015) states that knowledge sharing is the systematically capturing and organizing of the vast amount of knowledge and experience of staff members, stakeholders, patrons, beneficiaries and partners, by documenting the knowledge and making it readily available and accessible, internally as well as externally. The involvement of interest groups and knowledge communities that work together on similar initiatives and projects should be encouraged, with a view to intensifying and growing knowledge and improving its effectiveness. Additionally, Turban, Mclean and Wetherbe (2004, p.412) define knowledge sharing as “the wilful application and transfer of one or more persons’ ideas, insights, solutions and knowledge to another person(s), either directly or via an intermediary”. Witherspoon et al. (2013, p.252) consider knowledge sharing as the “intention or expectation to exchange information, skills, or expertise with others for the benefit of the sharer.”

Because knowledge sharing assists in the building of human capital, it is guaranteed to give public sector organizations a competitive advantage for their survival (Cabrera & Cabrera, 2005). Wang, Noe and Wang (2014) add, that knowledge sharing is crucial in public sector governments because it contributes to knowledge acquisition. It helps organizations to deal with problems as it offers

solutions to these through the sharing of ideas and experience (Mosha, 2014). It creates opportunities to maximize organizational abilities to meet needs and offers solutions that give an organization an advantage over rivals (Dikotla 2016, cited Reid, 2003).

Through the implementation of knowledge management practices, such as knowledge sharing, the public sector could be in a position to deliver the best possible services, function effectively and operate an environment characterized by transparency and accountability (Makhanya 2018). Knowledge-sharing practices rely on the willingness and the habits of the knowledge worker to seek out knowledge sources. Knowledge sharing in an organization is essential, as it creates awareness and acceptance of new ideas, increases coordination and improves response times (Sandhu and Goh 2015). The growth of knowledge, therefore, requires sharing within the organization between management and staff. Therefore, in this study, the researchers' operationalized knowledge sharing as practices that are fully concerned with the exchange of valuable information, with the know-how processes possessed by the organizational members, and with the distribution of critical information for the use and mutual benefit of members. This knowledge sharing is the transference of knowledge among individuals, groups, teams, departments and organizations.

Knowledge sharing is a very important activity in any organization on which the daily operations of organizations depend. This is because the organizational knowledge in the form of information, skills or know-how is exchanged amongst staff in the organization during knowledge sharing (Nkomo, Maluleka & Ngulube, 2021). It is worth noting that the practice of knowledge sharing may be ineffective, if there are staff members who resist sharing their knowledge and experiences with the organization in its entirety (Kamatula, 2017). It is thus clear that a knowledge sharing culture is of vital importance within any organization, and its absence could lead to employees not taking any real interest in management's objectives. It is imperative that organizational employees share problems, experiences, insights, templates, tools and best practices with the management (Nkomo, Maluleka & Ngulube, 2021). The rationale of knowledge sharing is to use available and accessible knowledge to enhance the group's performance. Thus, knowledge sharing takes place during the induction process of new employees. However, experienced, knowledgeable staff members have to be willing to share their knowledge in order to enhance the performance of new employees which in turn benefits the organization.

Knowledge sharing is one of the knowledge management processes, which is also central to the success of all knowledge management strategies. Effective knowledge sharing practices enable reuse and regeneration of knowledge at an individual and organizational level (Makhanya, 2018). The staff knowledge sharing attitudes improve when they realise that knowledge sharing contributes to the organization's successful operations. Clearly, knowledge sharing is an important management tool that can be used to bring new service innovations for organizations. However, sharing such knowledge and how it is shared crucially depends on a number of individual attitudes and organizational variables (Molose & Ezeuduji 2015). In a nutshell, knowledge sharing has been widely considered as an important response to change.

According to Mphahlele (2010), there are enough indications that knowledge sharing has been implemented and developed in the public sector in South Africa although there is little evidence of progress and benefits achieved. However, the literature on knowledge sharing in the South African public sector reviewed by the present researchers, indicates that organizations need

intellectual capital to expedite the acquisition, maintenance, and depositing of intellectual assets in the organizational knowledge storage, and to share it so that it may leverage the organizational competitive edge (Dewah & Mutula, 2014; Martins & Martins, 2011).

METHODOLOGY

The present researchers use a literature review to consider empirical studies on knowledge sharing prospects and challenges in the public sector. Nwone and Mutula (2019) state that this approach involves a search on various databases that host empirical studies on knowledge sharing and that cover a wide range of resources. For this paper the search covered scholarly journals in a number of electronic databases and search engines like ProQuest, ERIC, Google Scholar, Goole and Social Science Citation Index.

This study applies a qualitative research approach based on document content analysis extracted from a variety of information sources. According to Monyela (2020), a qualitative research approach implies that literature can be formulated based on the search of the researchers' key concepts of the chosen topic. The key concepts used in this study consist in knowledge management, knowledge sharing, and the challenges posed by knowledge sharing. This approach provides a better insight in the state of knowledge sharing in the South African public sector. The researchers performed content analysis on research studies published between 2000 and 2020. Krippendorff (2013, p.24) notes that following the content analysis technique results in "*scrutiny of the manifest of a body of the communicated material/text through classification, tabulation, and evaluation of its key symbols and themes in order to ascertain its meaning and make valid inferences*". The technique was considered adequate for addressing the objectives of this study.

A review of the literature was performed to acquire information about the prospects of, and the challenges posed by, knowledge sharing in the South African public sector. The variables are further discussed in different segments in the findings of this paper. An integrative review procedure was followed as per the guidelines of Torraco (2005, cited by Snyder, 2019). The aim was to assess, critique, and synthesize the literature on knowledge sharing and to identify new perspectives. The specific body of materials was identified and scrutinized, using the evaluation criteria. The raw content of various sources was organized into categories or themes, as informed by the research objectives. The researchers carefully examined themes emerging from the literature. Conventional content analysis is normally used in a study design that aims to describe phenomena and where the availability of relevant literature is limited (Hsieh & Shannon, 2005).

RESULTS

This section provides the findings on the prospects for, and challenges of, knowledge sharing in the South African public sector. The reviewed literature involved numerous articles, conference proceedings, and thesis. Hence the following summarised results are classified in the below themes.

Knowledge sharing today in the South African public sector

In a dynamic economy, knowledge sharing is vital for the survival of organizations. Ngei (2011) notes that the digital age, characterized by widespread communication and collaboration through websites, email, social media and other web applications to which their employees are exposed,

affects many organizations. Dikotla (2016) states that the significance of knowledge sharing has become especially apparent with the development of Information and Communication Technology (ICT) applications in service delivery. ICT facilitates knowledge sharing in an organization. It is in that context necessary that organizations create a secure environment for the dissemination of knowledge amongst its employees (Ngei, 2011).

The procedures through which knowledge is shared, determine the success of the organizational learning. This means that, for public sector entities to use knowledge assets, their exchange in the organizations must be a smooth process. Munyua (2011) remarks that the sharing of knowledge allows for the learning and re-examination of created knowledge which is needed for the organization to attain a competitive advantage. Indeed, shared knowledge keeps the organization alive. It can serve as a reference for future use by staff members of the organization. Hence, knowledge sharing is thus a very important knowledge management process within organizations. It is a process of interchanging knowledge, skills, information, expertise, experience, intelligence and understanding (Nkomo, Maluleka & Ngulube, 2021).

Knowledge sharing among employees contributes to the creation of new knowledge in a public sector organization. This critical activity promotes the success of an organization; as new knowledge becomes available of which every employee can take advantage. This may inspire innovative initiatives, giving the organization an advantage over the competition. Employees thus get activated and the organization can respond quickly to new situations (Munyua, 2011). As knowledge is shared, people no longer merely receive it, but become innovative actors, using the new knowledge and making it context-specific. Wan Fakeh, Shahibi and Hussin (2015) accentuate that knowledge management is the most significant and effective instrument for organizations to remain competitive. Through the creation, identification, storing, organizing, utilizing and disseminating of knowledge, an institutional memory is built, so that critical knowledge is not lost when experienced staff members leave (Ngcobo, 2020). However, even though public sector organizations highly regard knowledge creation, its capturing and acquisition, very few have introduced and implemented a formal knowledge management application system as a tool for knowledge sharing (Mpofu, 2011).

Dikotla (2016) researched “the role of knowledge sharing in improving the municipal governance in the local government sector of South Africa.” The study focused on determining what kind of knowledge management programmes are in place in the municipalities of Limpopo Province and to establish the extent to which Limpopo municipalities encourage knowledge sharing for the improvement of municipal governance. The study also examined factors that affect knowledge sharing among municipal workers in Limpopo Province, and made recommendations for strategies to affect the optimal sharing of knowledge. The study sampled 438 employees and 21 managers from selected municipalities and its key findings are that knowledge management programmes in Limpopo municipalities are poor and that knowledge sharing among employees and across municipalities is not encouraged. The knowledge sharing is hindered by both individual and organizational barriers, while the information communication technology tools that support knowledge management programmes are insufficiently utilized. Notably, the findings of Dikotla (2016)’s study confirm to a large extent what has been reported in relevant literature.

Knowledge sharing challenges in the South African public sector

Although knowledge sharing is of critical importance for the functioning of public service organizations, efforts to introduce the practice in the South African public sector have met with challenges (Gaffoor & Cloette, 2010). Chipeta (2018) notes for instance, that staff members in public sector organizations are still battling to integrate a knowledge sharing culture into their work processes, because there is no strategy for knowledge management and inadequate collaboration, while levels of skills and capabilities for knowledge sharing are low. Adeinat and Abdulfatah (2018) note that knowledge sharing practices are rendered ineffective by insufficient organization communications, an absence of organizational training, a lack of staff development, and the non-existence of trust in the organization.

The lack of a knowledge-driven organizational culture remains a challenge for the public sector across globe. Phaladi (2021) notes that organizational cultures in the public sector are not shaping and reinforcing the required knowledge management behaviours and activities. Furthermore, Phaladi (2021) indicated that organizational cultural issues remain problem areas in many of the state enterprises. For instance, a silo mentality, a lack of recognition and rewards, a lack of awareness and KM education, organizational red tape and a lack of knowledge leadership all impacted negatively on knowledge management. The widely held view that knowledge is a powerful source for competition does not help to promote a knowledge-driven culture and behaviour (Phaladi, 2021). Furthermore, organizational culture is not supporting knowledge management behaviour and initiatives in many of the state organizations. Their organizational culture does not exhibit a knowledge-driven culture and behaviour.

Knowledge sharing in majority of South African organizations face hindrances. For instance, lack of clear integration of knowledge management strategies and policies into organizational management, no clear leadership or direction, lack of facilities and resources that promote knowledge sharing, no transparency or clarity in how recognition and reward systems are implemented, no unsupportive corporate culture, stiff competitiveness between individuals, business units or functional areas of the same organization (e.g. not invented here syndrome), Communication and knowledge flow channels restricted, The physical work environment restrictive (Nkomo, Maluleka & Ngulube, 2021).

Most government departments are hindered by the lack of succession plans where knowledge sharing and transfer of older workers is concerned. Succession planning links positively with knowledge management and can serve as an effective knowledge transfer strategy to ensure business continuity for companies (Durst & Wilhelm, 2012). The knowledge and wisdom of older experts and other key staff members in the organizations remains a key resource for ensuring a business competitive advantage. Their departure could therefore result in a lack of mission-critical know-how that is important for the success of their organizations, thus hampering their sustainability (Phaladi, 2021). The findings indicate that it takes longer to replace a person or skills in mission-critical competence areas in the state-owned organizations. The absence of succession planning strategies creates serious challenges for retiring experts to share their knowledge and experience to the younger generations of workers. The transfer of the incumbents' knowledge is problematic if the successors are not identified and mentored into the identified positions in advance (Phaladi, 2021).

Mutula and Jacobs (2010) studied the challenges faced by the higher institution knowledge systems in South Africa and found that these institutions have not assimilated knowledge management practices in their operations and strategic processes. Mutula and Jacobs (2010) mention the challenges posed by insufficient skills, a low morale, a high staff turnover and little incorporation of a knowledge sharing culture in institutions. In addition, top management made limited efforts to permeate institutions with a culture of knowledge sharing.

Chipeta (2018) notes that the biggest challenge for many organizations today is to encourage their staff to share knowledge. The importance of sharing knowledge has to be constantly communicated to employees. The majority of studies conducted in developing countries found that organizations have not documented or preserved the knowledge of trained and experienced employees (Chipeta, 2018). Notwithstanding the positive prospects of knowledge management practices as described in the relevant literature, little effort, if any, is made to develop knowledge sharing strategies in the organizations.

Chigada (2014) notes that several employees get a sense of power from hoarding knowledge. Their perception that “knowledge is power” becomes a serious hindrance to the sharing of knowledge with other employees. Some staff members feel that divulging knowledge and information on experience to their counterparts, leads to the erosion of individual power and therefore prefer to withhold knowledge. Chigada (2014) notes, that in most organizations there is a measure of unhealthy competition and rivalry between organizational departments. This competitive streak hinders the sharing of knowledge. Mistrust between employees is acknowledged as a critical factor impeding knowledge sharing in organizations (Chigada, 2014). Cong and Pandya (2003) mention that, to enhance awareness of the benefits of knowledge sharing, there has to be an atmosphere of trust inspiring employees to share their knowledge. Of the obstacles to knowledge sharing, a non-existence of trust has proven to be the most critical. Mistrust impedes inter- and intra-organizational knowledge sharing. Ramirez (2007), for instance, argues that some staff members are reluctant to be passed knowledge by colleagues for fear of being perceived as ignorant and depending on others. Therefore, such a sense of inferiority acts as a barrier to knowledge sharing.

A review of literature reveals that managing organizational knowledge is proving to be extremely difficult without first dealing effectively and efficiently with organizational climate issues (Phaladi, 2021). A lack of awareness about the knowledge sharing culture in South Africa’s public sector organizations hinge on organizational cultural issues underpinning knowledge management strategies or processes (Phaladi, 2021). The researchers opine that the reason for this lies in the way South African public sector organizations are run and in the absence of a clear definition of the political process required for the implementation of knowledge sharing practices. Contributing factors are insufficient resources and the lack of incentives to encourage a knowledge sharing culture. The culture of knowledge sharing has not been properly introduced and established in the organizations and therefore employees view it as something extra for which they feel they should be compensated.

Dewah (2011) established, that the lack of knowledge sharing in most organizations is due to the notion that employees are not free to exchange and share their knowledge because of various government regulations, prevalent to political contexts, mistrust and the non-existence of rewards for sharing knowledge. The absence of a culture of knowledge sharing in the organizations means that departments function in silos which negatively impacts on the opportunities for creating,

sharing and transferring significant knowledge among workers. Dikotla (2016) cited Gaffoor and Cloete (2010), who argue that, without knowledge sharing, staff members and other stake holders in organizations tend to remain stuck in silos, poorly cooperating, repeating mistakes, prone to duplication of duties and responsibilities, the wasting of resources, and an incapacity of strengths to harness good ideas.

A review of the literature showed that there are barriers to knowledge sharing. Barriers are factors that obstruct the sharing of implicit knowledge. The lack of motivation and compensation act as impediments to knowledge sharing. This makes employees not eager to share knowledge as they don't see how sharing information will benefit them as individuals. People won't share their knowledge without being inspired to do so, they will always offer it with apprehension, thinking of what they could achieve or lose by such an act. The lack of a reward system affects knowledge sharing because incentives play a major role for the employee who participates in knowledge sharing (Gururajan & Fink, 2010).

Jacobs and Roodt (2011) confirm that recognition in the form of praise and financial rewards, encourages the person who possesses knowledge to share it with colleagues (Gururajan & Fink, 2010). Organizational employees share knowledge for various reasons, including a desire to gain recognition, rewards and self-actualisation. However, workers who regard themselves as possessed of much expertise may prefer not to collaborate with their colleagues. According to Phaladi (2021), a lack of recognition and rewards systems, a lack of awareness and education on knowledge management have a huge effect on the status of knowledge sharing in the organizations. This reluctance is more decisive if no rewards are accrued to motivate staff members to be more cooperative. Lack of monetary resources and poor IT infrastructure to ensure efficient collaboration in knowledge management further endanger a culture of knowledge sharing.

Evidence shows, as Moahi, Rathapo and Sebina (2017) confirm, that in government there is internally as well as externally, a lack of collaborative working and knowledge sharing, while these are claimed to provide an impetus to the strategic implementation of knowledge management programmes in South African public sector organizations. Hence, to internalize knowledge sharing, Jacobs and Roodt (2011) recommend that an organization and its employees should build and maintain trust across the entire organization. The public sector organizations must emphasize the culture of sharing in order to capacitate their full development.

Phaladi (2021) conducted a study on the framework for integrating knowledge management and human resource management for the reduction of organizational knowledge loss in selected South African state-owned enterprises. The research findings conclusively revealed that several barriers existed in the state-owned enterprises that restricted effective knowledge sharing system. These barriers were: a silo mentality, organizational red tape, knowledge as source of power, a lack of rewards and recognition systems, a lack of awareness and education on knowledge management, human resource management practices, employment equity, fixed-term employment contracts, competing priorities for leadership, a lack of leadership, knowledge hoarding, and a lack of proper systems to support knowledge management. A lack of knowledge-oriented leadership was evident because knowledge management was not institutionalised in most of the state-owned enterprises. It is therefore equated that a lack of a culture of knowledge sharing hinders knowledge flow within the public sector. The results show that knowledge sharing in government meets with some unique

challenges, such as the fact that government agencies are typically hierarchical and bureaucratic organizations which makes the sharing of knowledge difficult.

Chipeta (2018) cited Dewah and Mutula (2014), mention that government-owned enterprises in sub-Saharan Africa - among these South African public sector government activities - experience many challenges in the establishment of a culture of knowledge sharing. The challenges include a limited understanding of knowledge management returns, a scarcity of skills, an absence of rewards to encourage the exchange of facts, information and skills, a scarcity of applicable technologies, an inadequate support from the executive, a dearth of necessary implementation strategies to study from, and an exodus of highly trained personnel.

CONCLUSION

Based on the literature review, it is evident that knowledge sharing is progressively seen as a valuable and even vital resource for organizational effectiveness and survival. The necessity of developing knowledge sharing in government departments is emphasized. Knowledge sharing among staff members or groups allows public sector organizations to exploit and capitalize on knowledge-based resources. Thus, knowledge sharing serves as an invaluable mechanism in public organizations, enabling them to respond to the dynamics of the current knowledge-based intensive economy in which knowledge sharing is progressively seen as critical to the success of organizations. Knowledge sharing plays an important role in the broader perspective of knowledge management and has been demonstrated as being positively related to a number of desirable organizational variables, including overall organizational performance. Logically therefore, it may be stated that knowledge sharing by employees has a significant impact on the performance of public sector organizations in South Africa. The current study identifies some challenges facing government departments concerning knowledge sharing. The study has established that knowledge sharing is a core process of dissemination and use of knowledge throughout organizations and helps in the creating of innovation and sustained competitive advantage.

Recommendations

The study recommends that there must be measures taken, procedures followed and mechanisms applied, for capturing significant information and experience gained, so that the public sector may implement knowledge sharing. This is of critical importance, because employees in the public sector organizations tend to be on the move, being transferred from one section or department to another, or leaving for early retirement or to profit from opportunities elsewhere. Therefore, the public sector needs to implement mechanisms that ensure the capturing and preservation of explicit knowledge.

To deal with the challenges of organizational tacit knowledge loss resulting from the ageing workers in the competence areas of the operations, it is equally important that the organizations devise strategies to retain their much-needed knowledge, expertise and skills. Potential successors need to be identified well in advance to ensure a smooth transfer of knowledge in the transition period. Knowledge transfer and retention should start five years prior to their leaving, to this end, employees should be contracted and be rewarded for their knowledge transfer and retention efforts (Phaladi, 2021).

It is clear that government departments need to share knowledge to increase the effectiveness and efficiency of their operations. Experience sharing networks should be set up holding regular meetings of executive officers and government ministries in order to brief and share experience and knowledge with each another.

Flexible organizational structures have to be created to enhance the distribution of knowledge and to establish a strong culture of knowledge sharing based on the values of openness, trustworthiness and sociability. Thus, knowledge sharing will flourish, and an information infrastructure will be developed to support the distribution of knowledge and the acquisition of essential competencies and skills to effectively implement knowledge sharing and ensure the sustainability of organizations.

Public sector organizations must pay urgent attention to the adoption of strategies to develop and implant knowledge-based sharing activities as the sharing of knowledge is the solution, recognized by organizations, as leading to a superior organizational performance and as providing competitive strength to survive in the current global business environment. It is up to public sector organizations to formulate clear processes, policies, and responsibilities that ensure knowledge is effectively identified, captured, managed, transferred and shared within the organizations.

The organizations must develop programmes for retiring knowledge workers to ensure that their knowledge, expertise and skills are retained and preserved.

The organizations must introduce expert forums whereby specialists are encouraged to take the lead in knowledge sharing activities in their expertise domain.

The organizations must create job rotations for employees to gain experience across corporate processes. This will ensure that tacit knowledge is spread, rooted and integrated across corporate process units.

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SEXUAL EXPERIENCES OF ADOLESCENT GIRLS RAISED IN STEP-PARENT HOUSEHOLDS. A CASE IN ONE VILLAGE IN THE EASTERN CAPE, SOUTH AFRICA

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ABSTRACT

Owing to emotional neglect from stepparent households, adolescent girls tend to resort to transactional sex with multiple sexual partners despite being susceptible to gender-based violence and sexually transmitted infections. In a qualitative study comprised of twelve, black, Grade 10 to 12 secondary school learners from one village in the Eastern Cape, South Africa, a purposive sampling was followed. The aim of the study was to determine how emotional neglect influences sexual behavior among adolescent girls raised by stepparents in villages. To safeguard confidentiality, privacy and informed consent of the participants prior data collection, the researcher warranted them pseudonyms. Debriefing, a structured voluntary discussion aimed at easing the discomfort after the interviews, was also administered. Open-ended questionnaires in the form of interview schedules, enabled the researcher to probe the participants as they were guided by Lincoln and Guba's principles for trustworthiness. During the focus group discussions, participants expressed to have endured insecure attachment and physical injuries, which, accounted for their poor academic performance. In line with Emmerson's social exchange theory and Bowlby's attachment theory, which guided the study, Tesch thematic analysis showed that being economically deprived and ill-treated by stepparents, contributed towards lacking morals and exchanging sex for money.

Keywords: abuse, adolescence, attachment, transactional sex, stepparent(s)

1. INTRODUCTION

In sub-Saharan Africa (SSA) countries such as Togo, Malawi and Kenya, stepfamilies have increased and research indicates that children reared in such families are likely to experience behavioural problems (Adjiwanou et al., 2021). According to UNICEF (2014) and United Nations (2015), adolescent girls, raised in step-parenting households are more susceptible to inappropriate sexual conduct such as sexual harassment, pornography viewing, fondling and vaginal penetration by adults. Stepfamilies vary considerably in term of family context, given that in blended families, both partners may have had children from previous relationships, and they may call each other stepbrother(s) or stepsister(s) (Adjiwanou et al., 2021). In most cases, in step-parenting households, the stepdaughters are being brought by biological mothers, and stepfathers seemed not to invest emotionally and financially in their step-children unlike the genetic fathers as McCarthy et al., (2017) in their book entitled: "*Making Families. Moral tales of parenting and step-parenting*", found that they are perceived to be unsupportive and impairing the adolescent - girls' psychological well-being. Stress-related model confirms that in such households' conflicts are inevitable as stepfathers might be abusive especially when they are the only source of financial support (Goldberg, 2013). For example, in Kenya were 18% of adolescent girls from step-

parenting households were less likely to complete their Grade 12 due to absenteeism and parental neglect as compared to their counterparts reared in nuclear families (Adjiwanou et al., 2021). From Sigmund Freud psychoanalytical perspective, such a neglect during pubertal stage could send adolescent girls to older men for emotional support since their stepfathers might also fail even to offer advice about their reproductive health as they develop breasts and start menstruating (Abott, 2021). Furthermore, in culturally entrenched societies such as in Nairobi, Kenya, research indicates that the aunts from the stepfathers' side may also be influential and controlling when the stepchildren should be cared for. In worst scenarios, incest tends to rise when the uncles would start visiting and end up preying on the adolescent girls of their sister-in-law (Adjiwanou et al., 2021). It is important to note that even stepmothers could be harsh to their stepdaughters. Goso et al., (2020) in a study that investigated the financial deficit as a cause for dependent sexual behaviour among female students at one university campus, Eastern Cape, South Africa, findings show that students who engaged in sexual activities for money were avoiding spending holidays with their stepmothers due to being treated with contempt.

South Africa is not exceptional to the countries mentioned above when it comes to stepfamilies. Large number of adolescent girls are being raped, impregnated and infected with sexually transmitted diseases including Human Immunodeficiency Syndrome (HIV) owing to cultural norms and poverty (Naidoo & Van Hout, 2022). However, there is dearth of research that has directly involved adolescent girls reared in step-parenting families to share about their sexual encounters due to lack of support from their stepfathers. It is against this background, therefore, that this reason this research intends to answer the following questions: (i) What are the factors that had led step-adolescent girls to engage in transactional sex in the Eastern Cape? (ii) How has growing up in step-parenting household shaped the step-adolescent girls' emotional well-being? (iii) What are the effects of transactional sex on the well-being of step-adolescent girls?

2. RESEARCH OBJECTIVES

The research objectives of this study are as follows:

- (i) To determine the factors that had led step-adolescent girls to engage in transactional sex in the Eastern Cape.
- (ii) To investigate how has growing up in step-parenting household shaped the step-adolescent girls' emotional well-being.
- (iii) To describe the effects of transactional sex on the well-being of step-adolescent girls?

3. REVIEW OF RELATED LITERATURE

In this section, the theoretical framework will be discussed and followed by factors and effects associated with transactional sex and attachment issues among step-adolescent girls. Lastly, to briefly explain the need for protective factors necessary to alleviate unhealthy sexual behaviour among the step-adolescent girls.

3.1 Theoretical Framework

John Bowlby's (1969) attachment theory serves a base to determine the trajectories of adolescent girls raised in step-parenting homes. According to Bowlby's theory, research indicates that when the relationship between stepparents and their stepdaughters is warm and characterized by

unconditional love, such daughters are likely to be assertive, delay early sexual- debut. Conversely, early traumatic experiences such as witnessing domestic violence and lack of financial support to meet their educational goals, could lead stepdaughters to experimentation with substance abuse and juvenile delinquency (Meinck et al., 2015). Scholars such as Bastaits, et al., (2018); Ntloko and Kheswa (2018), are concerned about the insecure attachment displayed by adolescent from divorced families or stepdaughters as compared to adolescent girls growing up within a nuclear families because they tend to cover their emotional inadequacies in older men and multiple sexual partners. In this context, Emmeron's (1976) social exchange theory complemented Bowlby's theory because when the love from parents is insufficient to enhance the adolescent girls' identity in relation to their peers, they are most likely to struggle for themselves to get a better life by engaging in sexual relationship characterized by money and gifts. Unfortunately, in such relationships, they may remain subservient, not negotiate safe sex and be susceptible to intimate partner violence and school dropout. Owing to lack of emotional support, they engage in substance abuse and eventually experience teenage parenthood and contract the Human Immunodeficiency Virus (HIV).

3.2 Poor communication between stepfather and stepdaughter

Positive relations between stepfathers and their stepdaughters have been found to be the building blocks of a positive self-esteem, assertiveness, well-being and self-love of the stepdaughters' psychological well-being (Gramaje et al., 2019). Conversely, in Indonesian qualitative research to determine the stepfather-stepdaughter relationship, findings revealed that poor communication and lack of trust in the family pushed the step-adolescent girls to unhealthy sexual practices including drugs and alcohol abuse (Utami & Lentati, 2022). South African National Council on Alcoholism and Drug Dependence (SANCA) (2016) has brought the abuse of alcohol and drugs to the attention of schools owing to the number of cases ranging from addiction, rape to sexually transmitted infections among adolescents. The adolescent girls in this study mentioned that their stepfathers would not care if they attended school regularly.

3.3 Risky sexual behaviour

With the legalization of the consensual sex law in countries such as Niger, Burkina Faso, Angola that children as young as 13 could consent to engage in sexual intercourse (Boakye, 2018). Kheswa (2017) remarks that the level of teenage pregnancy and transactional sex would escalate more among adolescent girls reared in step-parenting households. Steele et al., (2020) are concerned that the parents' behaviour of frequently changing the sexual partners prior remarried might be inclined to exposing their adolescent girls having more sexual partners especially if they were unemployed. Coupled with traditional customs, Udiodong (2018) found that in Malawi, Zambia, and Kenya, adolescent girls are urged to engage in unprotected sex (immediately once they have experienced their first menstruation) with professional sex workers or nominated future husbands to fulfil the traditional customs that are believed to give way to perfect wives. No wonder the World Health Organization (WHO) estimates that as many as 4.4 million abortions are sought by adolescent female each year with a large number coming from step parenting households (UNAIDS, 2014).

3.4 Protective factors

South African feminist scholars such as Gqola (2015) and Van Zyl (2017) are among the advocates who oppose the current practice in the court of law that when a girl has been raped that it might have been consensual even when there is enough evidence for the perpetrators to be sentenced. Protective factors such as church, adequate housing, nurturing, access to health care and social service should be advocated in order to ensure that adolescent girls reared in step-parenting households are free from poor parent-child relationship, exposure to alcohol outlets and violence (Price, 2021).

4. RESEARCH METHODOLOGY

In this study qualitative approach was considered more relevant to undertake this research as it allowed greater capacity to gain more depth and meaning based on the adolescent's experiences of being raised in step-parenting households. Twelve IsiXhosa speaking adolescent females whose age ranged between 15-18 years, in grade 10, 11 and 12 attending high school in one of the public schools situated in Middledrift in the Eastern Cape, were recruited by means of purposive sampling. In purposive sampling, the researcher selects participants who meets his criteria as suggested by Babbie (2015). The interview guide was formulated in line with the research objectives to attain trustworthiness, namely, credibility, confirmability, transferability and generalizability (Guba & Lincoln, 1985). The permission to conduct the study was approved by the school principal in 2019. To safeguard confidentiality, privacy and informed consent of the participants prior data collection, the researcher warranted them pseudonyms (P1, P2, P3...P12). The face-to-face interviews took place in one of the offices designated by LO. Educator, who only assisted with the names of learners with family challenges on the day the researcher went to deliver the psycho-educational programme to school as he is an expert in sexual behaviour of adolescent females. Debriefing, a structured voluntary discussion aimed at easing the discomfort after the interviews, was also administered. Data analysis was accomplished by applying axial, open and selective coding so that themes and categories could be identified (Creswell, 2013).

5. RESULTS

Biographical information

Twelve participants aged 15 to 18 represented the sample of the adolescent girls reared in step-parenting households in Eastern Cape. Only three participants had indicated to have children. There were 4 learners Grade10s, 4 Grade 11s and 4 Grade 12s, all -isiXhosa -speaking.

Categories and Themes

The categories with themes identified following Tesch's method of data analysis as helpful to transactional sex and emotional attachment among adolescent girls reared in step-parenting families (as reflected in Table 1) are poverty, sexual abuse, risk sexual behaviour and hopelessness and helplessness. Four major categories and 8 sub-themes emerged from the analysis

Table 1: Categories and Themes

| Categories | Sub-themes |
|-------------------------------|--|
| Poverty | Social learning Lack of supervision |
| Sexual Abuse | Statutory rape Transactional sex with older men |
| Risk sexual behaviour | Contraceptive use Sexual transmitted infections Abortion |
| Hopelessness and Helplessness | Impaired purpose |

Poverty

Most poor families live in cramped houses and lack in monitoring their children and being good role models, thus, it is easy for their early sexual debut. Thus, two sub-theme in this category, namely; social learning and lack of supervision.

Social learning

Living in cramped houses proves to be harmful especially where there is no privacy could ignite early sexual debut for step-adolescent girls.

“After my mother’s break-up with her boyfriend we both moved to another area and we living in a shack with her new boyfriend”, in that place there is no privacy I often see my mother and her boyfriend having sex especially when they are both drunk. Every time they are doing it (sex) I usually sneak out to my boyfriend’s place who’s our neighbor and have sex with him”[P4, aged 15]

Lack of supervision

Interviews with participants revealed that the lack of supervision appear to be common in step-parenting households. As a result, majority of the participants reported that they had sexual intercourse before the age of 18 years:

“I was fifteen years old the first time I had sexual intercourse.” ([P2, aged 18]

“The first time I had sex I was thirteen years old.” [P1, aged 17]

“When I was 15 years old I had a group of friends who were more experienced about sexual activities during lunch time at school we used to discuss about sexual related topics and I got curious and I had sex with my boyfriend’. [P5, aged 18]

Sexual abuse

This category encompasses sexual exploitation of step-adolescent girls by people who are older than 18years of age and some provide them with money in exchange for sex.

Statutory rape

It is clear that sexually active adolescent girls from step parenting- households have been long abused by their stepfathers

“When I was 13 years old my stepfather always used to call me to help him with ‘something’ but then always ended up touching me and doing things that I didn’t like. This went on for

five months, till my mother caught him touching me and was so furious that she kicked him out of her” house”. [P 9, aged 16].

Transactional sex with older men

When the respondents were asked to describe their present sexual partners, they mentioned older men. “I’m in a relationship with a guy who is also my transport driver he promised that as long as I’m with him I will always have money to buy lunch at school” [P10, aged 18].

“I’m in a relationship with a married man, he gives me money and gifts. He really loves me and always makes sure that I have enough money that will last me for the whole month as long as I keep him happy in bed” [P3, aged 17].

Risk sexual behaviour

This category emerged following the lack of consistency in using contraceptives, report of STIs and termination of pregnancy.

Contraceptive use

Being financially dependent on men as adolescent girls led to some of the participants practiced unsafe sex. “When I’m having sex I barely use condom especially when I’m under the influence of alcohol” [P12, aged 18]....*All the guys I have slept with they don’t want to use condom and I need the money so I no longer initiate it” [P11, aged18].*

However, one participant showed some maturity to avoid a second pregnancy. She cited: “After my first child I started using a prevention method (Injection) and I saw no need of using condom when engaging in sexual intercourse”. [P6, aged 16].

Sexual transmitted infections

Three participants reported that they had once experienced vagina discomforts but they did not seek any clinical interventions... “After having unprotected sex with my boyfriend, I experienced a burning sensation when urinating, but the pain disappeared within a week”. [P4, aged 15]

“I’m encountering itchiness in my private part, but I’m afraid to go to the clinic”. [P 11, aged18] “I have this strong smell that comes out of my vagina and I want to go to the clinic but I don’t want to be embarrassed by the nurses at the local hospital. Tjooo!! There are very mean and rude” (9, aged18)

Abortion

Two participants typically proved that they do not practise safe sex and may do anything to remain childless:

“Last year I was pregnant my boyfriend told me that we have to abort the child he is not ready to be a father. So we went to this old lady in King William’s Town who specialises with aborting pregnancies “(P9, aged 16)

“I tried to abort this pregnancy but the mixture that was recommended by my friend did not work so I’m still stuck with this thing in my stomach” (P2, aged 18)

Hopelessness and Helplessness

Impaired purpose in life

Majority of the participants have lost hope in achieving goals they had in life.

“I have repeated grade 10 two times and I have no hope of going to grade 11 next year”. [P 12, aged 18]. *“I’m currently pregnant, and I don’t think I will come back to school next year”* [P4, aged 15]

6. DISCUSSION

In this study, step-adolescent girls demonstrated risk sexual behaviour which is characterised by early sexual debut as a result of being reared by parents who are not supportive to such an extent that their peers influenced them to engage in premarital sex. A stepdaughter in this empirical study expressed to have been sexually abused from the age of 13 by her stepfather while others also indicated to be given money to fulfil their needs by married men and boyfriends in exchange for sex. It is a statutory rape because the participant they are still minors (i.e below age 18). This resonates with the study conducted in Jamaica, where sexual exploitation of adolescent girls has been perpetuated by family members including stepfathers (United States Department of State (2017). In terms of Section 18 of the Criminal Law (Sexual Offences and Related Matters) Amendment Act 32 of 2007 (Government of South Africa (2007), all children below 18 years of age should be protected against any form of molestation. The reason for this could be that while they were exposed to sexual abuse at a young age, the pain of trauma was paired with a positive reinforcement- money. In Zimbabwe, the practice of “*chiramu*” would be instituted to protect the married man if he had raped his wife’s sister or niece by paying the compensation to the victims’ family. If the man is still single and has raped a young girl, he is forced to marry that girl (Sande & Chirongoma, 2021). A critical question is whether such cultural practices are still upheld in other countries like South Africa. It makes sense why certain step-adolescent girls become sexually promiscuous and addicted to substance abuse. Sentiments such as these, call for the holistic approach because when the parents fail to create a loving and conducive environment for their adolescent children, they lose their purpose in life and languish. *“My step-father makes me feel as if I’m not part of the family , as a result I ended up hanging out with a group of bad friends and I became addicted to Dagga”*. (5, aged 18).... *“I used to complain to my boyfriend about how my step-mother annoys me and he told that smoking always calms his down. I also ended up also smoking weed”* (8, aged 17).

According to Simons and Steele (2020) step-adolescent females with a high level of self-control exhibit positive outcomes in the areas of sexual health (i.e. birth control methods) and assertiveness. In this study, lack of financial and emotional support from home indicates that a large number of vulnerable adolescent girls reared in stepparent households are prone to termination of pregnancy, contract STIs such as syphilis, gonorrhoea and HIV, have children out of wedlock and increase the statistics of economically unproductive group who illiterates. A striking trend in this study is that the younger the step-adolescent girls the higher the risk of STIs and abortions. Their fear to seek to go to the clinics for condoms and termination of pregnancy might imply that there is unprofessionalism from the nurses and they might be stigmatized since some have children already. It is with confidence to state that step-adolescent girls suffer

emotionally and do not know the ramifications of back-street abortions because Kheswa and Takatshana (2014) found that there are higher chances of infertility, haemorrhage (heavy bleeding) and death if the procedure goes wrong. Studies documented that it would not be the case if step-adolescent girls have a strong and secure attachment with their stepfathers (Ntloko & Kheswa, 2018). It is for this reason that Nzama and Ajani (2021) emphasize the need for stepparents to be good role models to their adolescent girls in order to avoid feeling hopelessness and helplessness.

7. CONCLUSION

Narratives of the adolescent girls reared in step-parenting households in the Eastern Cape, South Africa shed light on the challenges faced by orphans and those who live with single mothers considering that they are regarded as dysfunctional families. The effects of transactional sex are unbearable because some of the step-adolescent girls do not know their HIV status nor contemplated behaviour -change because they are influenced by their peers to have multiple sexual partners. As the findings revealed that adolescent girls reared in step-parenting families need love and emotional support from older men, it could be generalised that a cohort similar to this one may find itself in trouble experiencing unwanted pregnancies due to lack of condoms. However, the limitations of this study is that it focused on a small sample from one high school in the Eastern Cape.

8. RECOMMENDATION

Based on the findings, stepparents need to improve their communication skills and provide financial support towards their stepdaughters to avoid escalation of transactional sex would in the SSA. Protective factors such as educators, social workers, psychologists and community leaders should continue to provide guidance and teaching young adolescent girls about the dangers of engaging in transactional sex. Finally, emotional attachment and family values should be strengthened in families to enable adolescent girls to alert parents of any kind of abuse.

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Van Zyl, N. (2017). Sexual grooming of young girls: The promise and limits of law. *Agenda*, 31(2), 44-53.

SSIRC 2022-152**CONTINUOUS ASSESSMENT AS A MECHANISM FOR NURTURING COMPETENCES IN ZIMBABWEAN POLYTECHNIC STUDENTS: AN INTROSPECTION FROM A GOVERNANCE PERSPECTIVE****J. Zuva**

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ABSTRACT

The global trends advocating for learner –centred education and training have influenced Zimbabwe polytechnics to take on board competence based education and training as a guiding philosophy in their teaching and learning. This approach to teaching and learning has also transformed the polytechnics’ approach to students’ assessment to incorporate continuous assessment. It is in this context that this article sought to gain insight into from a governance perspective the effectiveness of continuous assessment as a mechanism of nurturing competences in polytechnic students. The paper employed the systematic review qualitative approach anchored on transformative paradigm which formed the lens through which the issue under investigation was viewed. In sourcing relevant data for the study, relevant literature and document analysis was employed to scrutinize the purposively selected documents using the systematic review which had an inclusive and exclusion criteria with the view to comprehend how continuous assessment activities were being implemented in polytechnics from a governance perspective. The selected journals were drawn from google scholar. Generated data was analysed in concurrence with emerging governance themes. Findings indicate the need to make continuous assessment learner-centred through giving stakeholders an opportunity to be heard and participant actively in the teaching-learning process in an accountable, transparent and responsible manner. The system has a fair share of challenges especially in meeting the resource requirement for successful implementation. The model is student centred that allows students to progress to higher levels after demonstrating mastery of concepts and skills. The model requires total inclusion of all stakeholders anchored on governance processes that guide operations. The current process lacks inclusivity by all stakeholders and this has seen a wide gap between the summative results and continuous assessment results, because of cheating and irregular practices as a result of copy and paste tendencies by internal assessors to satisfy thresholds. However, there is a need for improved management of continuous assessment that promote skills acquisition and learner feedback. This can be achieved through incorporating governance pillars that takes care of all stakeholders. Competency based education and training should be implemented with close regard to its founding values and principles. It’s a learner-centred approach that requires learner active participation while the tutors play a facilitatory role. There is a need for the incorporating governance processes that allows for the restoration of this learning-teaching model. This will create mechanisms for competency based education and training to be implemented allowing learners active participation through personal inputs and feedback.

Keywords: Continuous assessment; transform, governance pillars, competency-based education and training, learner-centred, transparency

INTRODUCTION

Education is a vehicle for economic and social change across the economic sectors the world over. It is therefore prudent to have a responsive curriculum that stimulate economic growth through skilled manpower. In this regard, Zimbabwe through its Higher and Tertiary Education ministry adopted a more purposeful strategy to achieve this goal. To achieve this, the ministry through its Quality Assurance and Standards Department introduced the Competence Based Education and Training Model in 2012 with a sole purpose of increasing skills acquisition. This was a move from the traditional knowledge based education and training which is lecturer based utilising rote learning techniques.

The model was introduced as a way to help students acquire competences in order to be relevant for industry. Furthermore, this was a way to bridge the gap between what was taught in institutions and the real world of work (industry). From a general view point competency based education and training is a student centred approach to teaching and learning that allows students to advance to higher levels of learning when they demonstrate mastery of skill, concepts regardless of time, place or pace (Marzano, Norford, Finn, & Finn 2017). In addition, Acquah, Frimpong, Borkloe, (2017) posit that Competency Based Education Training (CBET) is an industry and demand driven education and training programme based on well-defined industry generated standards in which skills, knowledge and attitudes are specified in order to define, steer and help to achieve competence standards, mostly within a kind of national qualifications framework. In addition, this model focuses on the testing acquisition of skills rather than focusing on time spent in the classroom. Acquah *et al*, (2017) reiterate that, focus is on the measure of the expected output of the trainee at the workplace as opposed to the theoretical knowledge acquired. In essence, CBET is a model that focuses on the three domains of learning namely the psychomotor, affective and cognitive domains. Thus, this model seeks to produce a product that is competent in task achievement (Orosz, 2020). In this regard, a competent person possesses a combination of skills, knowledge, attitudes and behaviours required for effective performance of the task or activity (O'Sullivan & Burce, 2014). Furthermore, this model is an innovative approach that organises academic content according to competencies, emphasising on what a student knows and can do, rather than following a more traditional knowledge based scheme.

The adoption of the model had its own fair share of challenges in terms of adoption by the user system. There was an attitude problem as most lecturers believed the system was bringing in more workloads. For the model to be effectively implemented new ways of doing business had to be introduced. This saw the introduction of qualification standards and skills proficiency schedules. In this regard, qualification standards are the minimum requirements that give level descriptors at which to perform work of a particular occupation successfully and safely. These minimum requirements may include specific job-related work experience, education, or physical standards, training and security (Obwoye (2016). On the other hand, skills proficiencies give the duties, tasks and steps that make up an occupation. Furthermore, the proficiency skills schedule also has proficiency indicators that act as testimony or proof of properly executed tasks. Consequently, the introduction of learner centred curriculum through CBET saw the introduction of continuous

assessment (CA) which is a process that ensures assessment is done throughout the learning process. According to Obi and Obineli, (2019) CA is a form of educational examination which evaluates the students’ progress or performance throughout the duration of a course. The two contend that, this is done as a mechanism of ensuring all domains of learning are evaluated and reduce over reliance on summative examinations. The duo further opine that, CA is a method of what the students gained during the learning activities in terms of knowledge, thinking and reasoning, character development and industry orientation.

2. METHODOLOGY

The paper employed a systematic qualitative review approach anchored on purposive sampling to select literature on CBET based on themed inclusion and exclusion criteria. Searching of related literature was obtained from Google Scholar. The search themes were mainly on governance, continuous assessment and CBET. Literature on these themes was drawn using the following key word searches; *competency based training AND continuous assessment AND governance in institutions AND competency based education and training AND governance in tertiary institutions AND governance*. The selection included three stages namely; the research question identification; screening; inclusion and exclusion/eligibility criteria. The diagram below illustrate the flow chart of the systematic review and qualitative synthesis. The empirical evidence came from relevant literature sources that included published peer reviewed journal articles and policy documents. Furthermore, the researcher was able to gain a deeper understanding of the problem in its natural setting by using a qualitative technique and a transformational paradigm in this analysis (Yanow & Schwartz-Shea, 2015; Ridder, 2017). This allowed for a comprehensive data generation and sense-making of what curriculum documents under CBET should roll out for both tutors and learners.

Table 1: Flow chart of systematic review and qualitative synthesis

| | |
|-----------------------|---|
| IDENTIFICATION | Records identified through data base searching n=50 |
| SCREENING | Records screened n=25 |
| ELIGIBILITY | Texts considered for eligibility n=25 |
| | Studies included for qualitative analysis n=20 |

3. FINDINGS AND DISCUSSION

Of the analysed twenty studies which were considered in this paper, 70% highlighted and acknowledged that CBET is the trending teaching and learning model which has been hugely embraced by most African countries lately. In this regard, 15% presented challenges associated with the implementation of CBET in terms of the resources required to cater for individual needs of students. This model promotes self-paced learning which is highly managed by the learner. In addition assessment is continuous and the learner has the flexibility of indicating preparedness to be examined. Another 15% raised the issue of governance as an important element of successful management and implementation of CBET. In total all the papers considered for analysis outlined CBET and how it is supposed to be implemented to nurture competencies in students. In addition the model requires resources that create an enabling environment to cater for individual differences in terms of mastery of concepts and skills. This also includes the assessment periods as students can be ready to be assessed at different times. In the findings Kenya (Isaboke *et al*, 2021) and Ghana (Acquah *et al*, 2017) presented challenges associated with the CBET model. The following discussion buttresses the outcomes of the findings.

The concept of CBET is anchored on learner centeredness and learning at one's pace in skills acquisition. This section outlines in brief of how CBET operates and subsequently draw comparatives of how Hexco has adopted and implemented it to date. Furthermore the research advances governance gaps that could help nurture relevance of the concept. According to Oroszi, (2020) competence-based education (CBET) is an educational innovation that has been introduced in various countries around the world and aims to improve the transition from the school environment to the workplace that students will encounter after graduation. The author further reiterate that, this was because students exhibited more knowledge but lacking skills and attitudes that allow students to function properly in a place of work. In addition, Zheng, Ward and Stanulis, (2020) posit that, the transition from a traditional lecture-based curriculum to a competency-based curriculum poses significant challenges to both students and tutors. In this regard, Mulenga and Kabombwe (2019) concur adding that, a curriculum that is competency-based, contains specific outcome of statements that show the competencies to be attained, expected behaviours or tasks, conditions for their performance, and acceptable standards shared with students. The conditions set by CBET calls for inclusion and adherence to governance pillars that include, transparency, accountability, fairness and responsibility. Hexco as a corporate board has to put governance systems in place that complement the principles of CBET to ensure activities that are done during CA are above board for all stakeholders.

Young (2010) postulate that, corporate governance is induced by internal and external factors, with internal factors being represented by effective governance systems, relationships among key role players in an organisation based on sound policies and procedures. Conversely, the external factors also regarded as external drivers of good corporate governance are laws, rules and institutions that provide a competitive playing field and discipline on the behaviour of insiders. It is against this background that Hexco as an examination board should embrace governance principles that takes care of the interests and expectations of all stakeholders before, during and after CA process.

3.1 The Continuous Assessment Process

The introduction of CBET saw the introduction of several measures by the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development through its Quality Assurance and Standards Department. The department is home to three sections namely Curriculum Research and Development (CRD), National Examinations (NE) and Industrial Training and Trade Testing Unit (ITTTU) which form the Hexco Secretariat. CRD is responsible for developing curriculum through the inclusion of experts from industry. These experts help in the development of occupational standards and skills proficiencies using the Develop a Curriculum (DACUM) method. The method starts from profiling occupations, developing occupational standards, skills proficiencies and the process ends content development spearheaded by lecturers. Furthermore, CRD is responsible for drawing up the regulations which regulate the implementation of the '*Cbetised*' (*combination of occupational qualification standards, skills proficiencies and content*) curriculum. The curriculum is then ratified by the Higher Examinations Council (Hexco).

Finally the ratified curriculum is dispatched to polytechnics for implementation. The underlying attribute of the assessment criteria is continuous and involves experts drawn from industry to ensure validity and reliability of the process (HEXCO General Regulations, 2018). The continuous

assessment (CA) constitutes sixty percent (60%) of the final assessment mark. This is composed of tests, practical work and assignments. The thrust is on skills development acquired with hindsight of the learning outcomes by students and examiners. Although the structures and operational parameters were put in place, it is the governance processes of the CA that has left yawning gaps that have seen an increase in the number of irregular practices. These gaps are envisaged to have manifested through the absence of governance principles that direct implementation of policies. It is on this trajectory that governance gaps are discussed and possible remedies given through improved governance systems.

The fundamental attributes of CBET model are that the model is learner centred or client focused. This implies that learners acquire skills at their own pace, as the learning outcomes are clearly laid out and open to both the learners and the instructors. In addition, learning resources, courses and assessment criteria are well aligned. This background of the major characteristics of CBET have not been considered in the current Hexco CA processes. From the onset the course materials like the curriculum content, standards and proficiencies are not clear to both learners and tutors. Furthermore, the tutors have not embraced the CA processes as given under the CBET model. Obtaining circumstances indicate that lecturers have pieces of content as curriculum without occupation standards and proficiencies. These documents are not presented to students and remain in the custody of tutors resulting in copying and pasting. This has compromised the ethos of CBET as students are not clear of the learning outcomes. The Hexco CA process is spear headed by subject matter experts drawn from industry and are inducted on the process of CA. The experts then carry out the CA under the watch of Hexco secretariat which monitors the process which culminates in the crafting of discipline reports. The reports are then presented to the regional board which advises the Discipline Coordinators on the suitability of the reports through probing for information that may have been left out. After the presentations the reports are then compiled into one report which is done by the Chief External Assessor. It must be indicated that the internal system will have done its part towards CA as the external assessment teams usually validate what will have been done by the internal systems. It is however, envisaged that with key governance pillars in place the CA process can be improved to align with the values of CBET. After the regional board meetings chaired by chief external assessors are completed the reports from regions are then moved to the national Hexco council for ratification of results. The skewedness of the composition of the regional boards has left a lot to be desired as the process is presided by principals who act as Hexco Regional Chairpersons. This state of affairs has led to a lot of gate keeping and sweeping irregular practices under the carpet compromising on transparency, fairness, accountability and responsibility.

3.2 Implications of incorporating the four pillars in polytechnic CA processes

The implementation of CA is envisaged to support the CBET model through applying governance processes that recognize the interests of all stakeholders. In this regard, this study is analysed through the stakeholder theory which has similar characteristics with the CBET model. According to Freeman, Dmytriiev and Phillips, (2021) the major thrust of stakeholder theory's distinctive strategy is emphasising the building and maintenance of sustainable stakeholder relationships as the key to firm performance. This is reinforced through the stakeholder governance principle which borders around the rules and regulations that measures the relationship that exists between the stakeholders and the firm. Furthermore, the stakeholder theory attempts to address the principle

of whom or what counts within an organisation, as it attempts to identify numerous factions within a society to whom an organisation may have some responsibility (Crowther & Aras, 2008; Wozniak, 2011). In this case it is the relationship that exists between Hexco as an Examination Board, students, industry, parents and institutions. Four key core governance pillars were discussed that could enhance the nurturing of CBET in students in Zimbabwean polytechnics. These are transparency, fairness, accountability and responsibility. The main aim of entrenching these principles of governance is to increase integrity and credibility among those charged with the governance of examination processes. In this regard corporate governance is viewed as, management of the principles of openness, honesty and responsibility of the management to the shareholders, employees, students, regulators, immediate surroundings and the environment (Musa, Musová & Debnárová, 2015). Each of the pillars is discussed in some detail to establish how this can enhance credibility of the Hexco CA process.

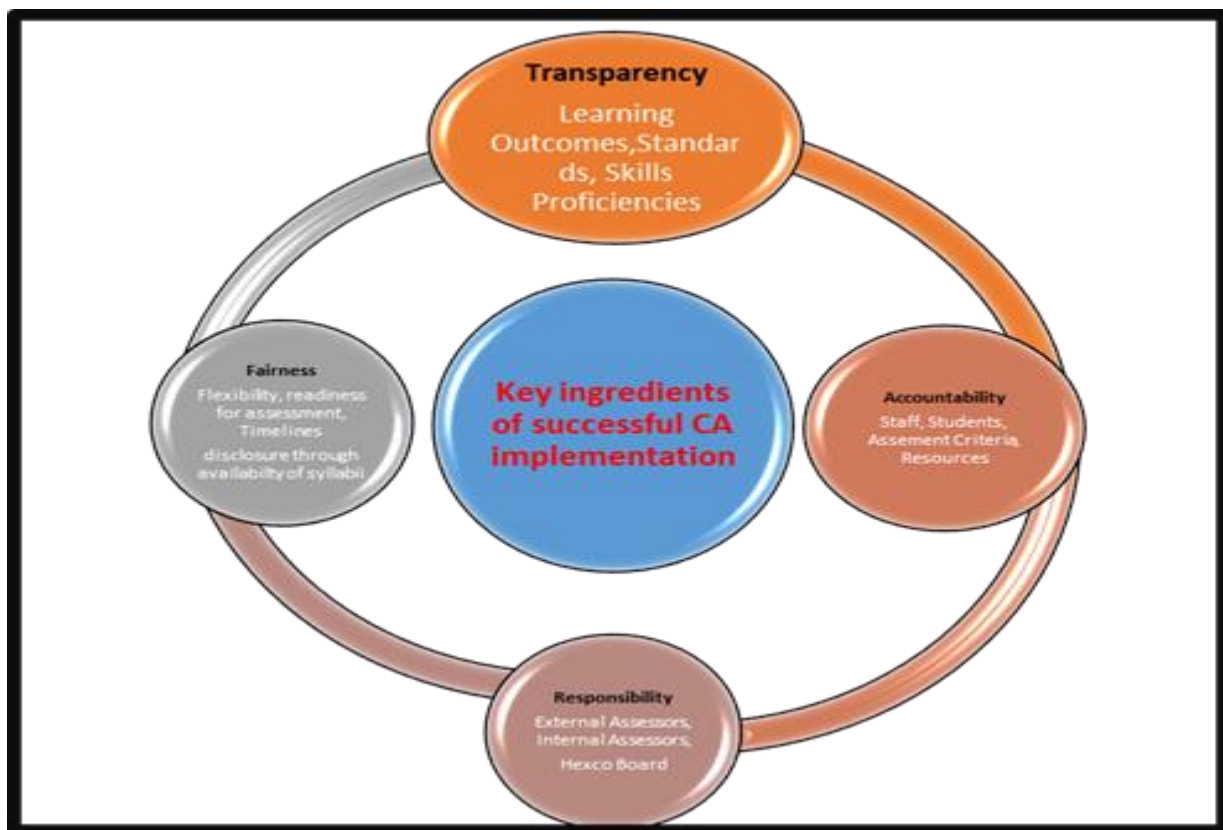


Figure 1. Conceptual model of successful implementation a governance inspired CA

Source: Author

The implications of utilising the outlined four pillars of governance brings integrity and credibility into the system of Hexco CA. A system inspired by these pillars of governance will draw confidence in the user system. In addition, the staff is inspired and motivated to do better and improve on performance. Inclusion of governance system into Hexco CA will have a cumulative effect on performance in terms of following well laid out principles that support and nurture the CBET values. The illustration in **Fig.1** is a proposed conceptual model for implementing a successful CA. It sums up the ingredients of successful hosting of a governance inspired Hexco CA. Each of the pillars of governance are interdependent on each other but not given in any specific order.

3.2.1 Transparency

Transparency is one of the key values in governance that has been embraced by the society to counter corruption, secrecy and underhand deals. In simplest terms, transparency means having nothing to hide. This means it allows its processes and transactions to be observable from outside and also makes necessary disclosures, through informing everyone affected about its decisions. In addition, transparency also builds a good reputation. Hexco CA has to embrace these values to get the trust and confidence of the user system. In this regard, Balls, (2009) posit that transparency reveals three metaphors; firstly, transparency as a public value embraced by society with potential to counter corruption, secondly it is synonymous with open decision making and thirdly as a tool of good governance in programmes, policies and organisations. In view of the attributes of transparency, this resonates with the need to marry these values with the CBET characteristic of openness on the learning outcomes of the CBET programmes offered in polytechnics. Balls, (2009) further reiterates that, in the first metaphor, transparency is subtly intertwined with accountability. In the second, transparency encourages openness, increasing concerns for secrecy and privacy. In the third, policymakers create transparency alongside accountability, efficiency, and effectiveness. In this context, learning materials that constitute CA should be made public to all stakeholders. In this case all key players in the CA should be presented to each other and programmes rolled out openly to all. In the context of Hexco CA it implies that internal assessors who are the lecturers should meet the external assessors, students, Hexco secretariat and the institution management where learning outcomes are unveiled. This will reveal the assessment criteria and the resultant learning outcomes. Such a mechanism removes secrecy which creates unnecessary information silos that leads to irregular practices through cheating. Such arrangements are bound to create a platform for information sharing based on standardized learning outcomes. The current situation has no platform where resources are shared. CBET advocates for transparency in the learning outcomes for students. They should be aware of the competencies that are tested when assessment time comes. In line with this argument, Isaboke *et al*, (2021) posit that, the curriculum had not been effectively implemented in some of the training institutions due to inadequate funding of the institutions, lack of infrastructure development and lack of policy guidelines in the institutions. This implies that Hexco as an examination board pursuing CBET should ensure that students like other stakeholders should be given the curriculum documents at the beginning of the term to ensure that they are clear of the standards and proficiencies expected of them come CA time. Internal assessment team should make clear indications of the duties and tasks to be assessed during the external assessment periods for all the terms. This puts away the uncertainty of assessment areas to be considered for each period. Oroszi, (2020) aptly highlights that, the CBET model is gaining popularity because it offers delineated learning outcomes and appeals to students because they receive credit for past experiences and knowledge.

3.2.2 Fairness

Fairness means treating people with equality. In addition, fairness is concerned with actions, processes, and consequences that are morally right, and equitable. In essence, the virtue of fairness establishes moral standards for decisions that affect others. Fair decisions are made in an appropriate manner based on appropriate criteria (Yua & Choi, 2014). In this regard, it entails avoiding of bias towards one or more entities as fairness is usually considered with various stakeholders of an organisation. Contextualising Hexco CA, fairness should be exercised on all

CA constituencies to avoid bias. Currently, there is more bias towards capacitating lecturers in the provision of instructional materials. For example, learning outcomes in the form of skills, competencies and knowledge are given to the latter constituency on time in the form of standards, skills proficiencies and content. On the other hand, students, who are the main consumers of the teaching and learning process are left out. This is because of taking into account the stakeholder's position on the power-interest matrix. CBET calls for equal treatment of all, stakeholders of an institution that include; students, lecturers, external assessors, industry and the community at large.

3.2.3 Accountability

Governance accountability, refers to obligation and responsibility to give an explanation or reason for actions and conduct taken within an organisation (Ribstein, 2005). It is also the capacity to be answerable, that is, take the blame when something goes wrong and/or when everything goes smoothly as expected. Consequently, accountability is about having ownership over one's actions whether the consequences of those actions are good or bad. Thus, accountability covers not only failings, but also accomplishments. It is in this context that, Hexco CA has on many occasions failed to take accountability of the discrepancy that exists between CA and summative assessment. This is because CBET incorporates all domains of learning composed of skills, competencies, knowledge and attitudes. All the components are given equal weighting as these are interdependent on each other. Currently, the situation obtaining is that there are massive irregular practices that are attributed to various reasons including cheating, inadequate information on the learning materials for the examination sessions. Hexco as the examination board should fully account for these discrepancies by ensuring that all quality assurance mechanisms are activated once the assessment process begins. One way of achieving this is to ensure that all processes that define CBET are adhered to in spirit and letter. In this context, all stakeholders should be clear of the learning outcomes that are expected to be accomplished. The CA process should be acknowledged by students who are key in the whole CA process. In addition, the students should be part of the process and be informed accordingly. The system should drop the sampling method and each student given equal treatment during assessment.

3.2.4 Responsibility

Hexco Board should take responsibility of the CA processes in total. The current situation sees the Hexco secretariat acting as Link Persons when the CA session begins. All CA settings are done through the internal system. This creates a surrogate assessment system which not wholly owned by the Hexco Board. CBET advocates for ownership of the assessment process where students have to consent to the assessment. Furthermore, CBET provides for students to be aware of the assessment terms and should be ready to participant in the assessment process. This implies that students like other stakeholders should be part of the assessment process from preparations to the time assessment takes place. The Link Persons who are given authority to act on behalf of Hexco Board should therefore accept full responsibility for the powers given to them by being active participants in the preparations and actual assessment. The Link Persons are responsible for overseeing the management of the CA, readiness of students, and monitoring the performance of the external assessors. However, the current scenario, of having the internal assessment system organise CA sessions on its own compromises the quality of assessment as the CA has time lines to meet. This removes the values of CBET which advocates for learning by students at own pace

(Curry & Docherty, 2017). Furthermore, neutral venues for assessment should be used to remove the fears associated with being assessed in the presence of internal assessment personnel. Furthermore, responsibility in this context means credibility created through ensuring standard operating procedures are adhered to, which include security of information from within and without the system.

4. CONCLUSION

The research established that to nurture successful CBET in Zimbabwean Polytechnics through CA, the tenets of CBET model should be sustained by well laid out governance practices. One key attribute of CBET is that it is learner centred and outcome based hence it allows students to progress to the next levels when they demonstrate mastery of concepts and skills. In this regard, the research further established that the curriculum development process is an inclusive process of several stakeholders. These include Hexco management and staff, industrialists, students, parents, employees and institutions. Transparency, as a key pillar of governance set the tone by being key to meaningful CA anchored on CBET principles. To begin with, transparency is a public value embraced by society to counter corruption, in addition it is synonymous with open decision making and is a tool of good governance in programmes and organisations. In view of the attributes of transparency, this resonates with the need to marry these values with the CBET characteristic of openness on the learning outcomes of the CBET programmes offered in polytechnics. In view of this, students should be empowered with enough information on the CA processes and their privileges as outlined in CBET. Another pillar, is fairness which is equal treatment of stakeholders without bias. In this regard, students should also be accorded the same treatment as any other group. All learning materials should be afforded to students and their feedback considered. The third pillar discussed had to do with accountability which is the capacity to be answerable to any occurrence whether positive or negative. The fourth pillar is that of responsibility which advocates for taking ownership and control, in this case of the assessment process. CBET is manifested through the learning outcome statements, competency frameworks, and task analysis. If properly organized, CBET provides a basis for flexible, authentic, learning and assessment activities. In the end, when learning goals and outcomes are clear and well organized, a conceptual scaffold is created for the work of teachers and learners. This means clear cut systems should be accessible to all stakeholders of the assessment process. Consequently, this needs the inclusion of the four pillars of governance namely; transparency, accountability, fairness, and responsibility. Further studies with can be pursued as this is not exhaustive.

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INFORMATION TECHNOLOGY GAP AND FOOD INSECURITY IN SOUTH AFRICA

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ABSTRACT

Achieving food security has always been a key target of any nation. Many developing countries including South Africa have continued to suffer from food insecurity as a result of a range of the following – food unavailability, food unaffordability, food inaccessibility and the non-utilisation of food. In the case of South Africa, the challenge is more on the demand side namely, food unavailability and the non-utilisation of food. Studies reveal that poor income and low cooking skills (food cooking) have been the major contributing factors to food insecurity in South Africa, especially at the household level. The technological gap in rural and peri-urban areas induces the limitations to information access required for income generation and cooking learning in the rural areas and peri-urban areas. This study examines the relationship between the gap in technology and food insecurity in South Africa. The study deploys a quantitative structural equation model (SEM) through pairwise correlation analysis to detect the existence of a relationship between the information technology gap and food insecurity in South Africa. The findings reveal a positive and significant relationship between the information technology gap and food insecurity in South Africa when measured in aggregation and disaggregation. The study concludes that investment in technology infrastructures in the rural and peri-urban areas will drive access to information required for income generation and cooking skills needed for adequate food consumption in South Africa.

Keywords: Information technological gap, food insecurity, structural equation model (SEM), South Africa

INTRODUCTION

A 2020 report by the Food and Agricultural Organisation (FAO) notes that the world is not on track to ending hunger, food insecurity and all forms of malnutrition by 2030. This report states categorically that the world will not achieve the Sustainable Development Goals on Hunger and Malnutrition by 2030. Before the COVID-19 pandemic, approximately 690 million people were still undernourished while approximately 2 million people (25.9 percent of the global population) still experienced hunger and were without sufficient access to nutritious or sufficient food (FAO, 2020). South Africa is no exception, with 6.8 million people experiencing hunger in 2017 (Stats SA, 2019). With the Covid-19 pandemic, food insecurity in South Africa increased significantly with approximately 9.34 million people experiencing high levels of acute food insecurity (IPC, 2020) Several studies analyze the determinants of food insecurity from a socio-economic or food access perspective (Mitiku et al, 2012; Grobler, 2015). These studies find a positive relationship between income, employment, education of the head of household and food security. A recent

report by the United Nations Conference on Trade and Development [UNCTAD], (2017) emphasizes the role of technology in global food security in terms of accessing and utilizing food.

South Africa can be considered as food secure at the national level from a supply side perspective, but it is food insecure from the household level or demand side. This means that not all households have access to adequate food, and approximately 20% of South African households did not have adequate access to food in 2017 (Stats SA, 2019). From the food access perspective, a recent study by Yalina *et al* (2020) on the role of technology on food security in Indonesia found that technology impacts significantly on food security. Other studies (Yekini et al, 2012;) show that Information and Communication Technology (ICT) leads to poverty reduction because of its positive role on income generation possibilities. With the high incidence of food insecurity in South Africa, the question arises: To what extent will access to technology increase food security in the country? This study thus examines the relationship between the technology gap and food insecurity in South Africa. The study uses a structural equation model (SEM) to show whether a relationship between a technology gap and food insecurity in South Africa exists for the 2019 period. The paper is organized as follows. The section to follow presents a literature review with a focus on recent empirical studies on the technology gap and food security. Thereafter, the study design and methodology is discussed and this is followed by an analysis of the findings. The final part of the paper presents its conclusion and recommendations.

LITERATURE REVIEW

According to the World Food Summit, ‘food security, at the individual, household, national, regional and global level is achieved when all people, at all times, have physical, and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’ (FAO, 1999). There are different dimensions of food security exist – food availability, food access and food utilization (USAID, 1992). Food may be available in a country but people may not have adequate access to food because of socio economic circumstances. Food security from the supply side is related to food availability, production and marketing. On the demand side, food security can be relatively compensated. On the other hand, food security from the demand side can be understood in terms of the importance of food accessibility, utilization and the stability that is achieved when produced foods are adequately consumed. To arrive at equilibrium price and quantities (food security), information and communication technology plays a role in ensuring that limited resources associated with food production and consumption are efficiently utilized especially in global South economies like South Africa. Gareau (2004) states that ‘food insecurity, and its extreme form, hunger, occur whenever the accessibility to an adequate supply of nutritional and safe foods becomes restricted or unpredictable’. Food security can be studied from the demand side as well as from the supply side. Food availability focuses on the supply side while food access and food utilization focus on the demand side. Salman, *et al* (2021) state that studies on household food security from the demand side do not receive adequate focus compared to studies which focus on the supply side of food security. On the demand side, several studies (Mitiku *et al*;2012; Bogale & Shimelis, 2009; Babatunde *et al*, 2007; Makombe *et al*, 2010) have examined the determinants of food insecurity and found a positive relationship between level of education, age of head of household, level of income and the level of household food security. In the recent literature, the role of technology in food security has become more prominent. The FAO (2012) indicates in this regard that ‘access to

the right information at the right time and in the right form helps us make informed decisions on critical issues. This is most important for resource-poor farmers and the poorest of the poor living in rural areas'. The FAO (2012) states further that 'information and communication technology (ICT) is now regarded as a major driver of economic growth'. Yalina *et al* (2020) explore two aspects of the impact of technology on food security. The first is the role of technology on agricultural production and the second is how ICT increases the level of income generation and accessibility of food. They used Structural Equation Modeling as a method of analyzing the role of ICT on food security. The current study will be based on the work of Yalina, *et al* (2020). The World Bank (2017) states that 'ICT represents a tremendous opportunity for rural populations to improve productivity, to enhance food and nutrition security, to access markets, and to find employment opportunities in a revitalized sector'.

Technology Gap and Agricultural Production

According to Gareau (2004), IT is a potential tool in the fight against food insecurity and hunger since its use and range of applications continue to grow at astonishing rates that have spill-over effects on food accessibility and availability from both the demand and supply sides. For their part, Yalina, *et al* (2020) found that technology development in agriculture increases agricultural production. Pan *et al* (2018) found in a study that information technology increases agricultural productivity among poor farmers, and thus improves food security. Chan *et al* (2020) highlight the following in their analysis – 'food security governance involvement, input resource management, output management, information sharing, income, and *technology*' (emphasis added). The study of Yalina, *et al* (2020) uses Structural Equation Modeling as a method to analyze the role of ICT on Food Security and found that there is a significant influence between technological progress and food security. Magrini & Vigani (2016), in a study using an Endogenous Switching Regression model, found that the adoption of technologies will impact positively on food availability. Sinyolo (2020), in a study using a sample of 415 maize producers in South Africa and using the propensity score matching method, found that technological innovations can play a significant role in increasing the levels of household food security in South Africa.

Technology Gap and Food Access

A recent study by Wang *et al* (2021) found that ICT plays a significant role in socio-economic development. Similarly, O'Hara and Toussaint (2021) found that with the COVID-19 pandemic, access to food by vulnerable communities in the US declined significantly. They argue that the ability to order groceries and home goods on mobile devices plays a significant role in food access and ultimately food security at the household level. O'Hara and Toussaint's study states that 'it also exposes the deep disadvantages of marginalized populations and the isolating nature of structural racism'. In this context, the marginalized group's ability to generate income is lower and the group experiences less food access and food security. Wantchekon and Riaz (2019), in a similar study, focused on the relationship between mobile technology and food access and found that mobile connectivity plays a significant role in ensuring food security. Mwalupaso *et al* (2020), using cross-sectional data collected from farm households in Zambia, found that the average consumption of food increased by two more foods weekly when mobile phones were adopted in contrast to non-adopting households. Haruna and Matin (2017), in a study using panel data and

regression analyses from smallholder farm households in Uganda, found that mobile phones significantly contribute to household income.

Methodology and models

Theoretical framework: The techno-ecology theory

Techno-ecologists (Berry & Cline 1979; Boserup 1965; Simon 1998) take a more optimistic approach, arguing that ominous scenarios for the planet are oversimplified. They believe that technology and human ingenuity are the greatest resources available and are not being threatened with scarcity. Thus, as has been the case in the past, future challenges confronting the world's capacity will be met. Techno-ecological perspectives are linked most closely with food availability and the importance of adapting agricultural methods to produce enough food. This was the whole philosophy behind the “Green Revolution” and the spread of new technology to LDCs where food is needed most. Fertilizer use and the intensification of agriculture, for example, are associated with human adaptation (Boserup 1965).

Modernization theory

The modernization theory claims that LDCs should “get modern” by following the path taken by industrialized societies to achieve economic and social well-being (Rostow 1962; Kerr 1969). Less-industrialized societies should boost their rate of savings and capital investment and establish modern institutional structures such as fair governments, modern military, expanded citizenship, urban centers and educational system that create a literate, technologically sophisticated population. Modernization is essential to food security in that it strongly predicts development. That is, “modern” societies are also the best fed, wealthiest and the most educated, industrialized and politically stable. Economic growth should undoubtedly contribute to a country's ability to feed itself, and the ability of a country to achieve modernization will lead to food security

Attaining food security rests on the adequate hunger management pillars and hunger depends largely on the poverty ratio of the country (FAO, 1999). Poverty plays an important role in food security since the more households go poor, the more they are food insecure due to lower incomes. In the development economics literature, poverty is linked with income though there are other factors such as education and health status. However, income capacity is key to poverty reduction and food security attainment. Furthermore, studies reveal that income capacity depends on the quality and speed of information consumption at the disposal of the household. This implies that a well-informed household is likely to earn better and feed better. The use of technology helps to close the information gap to make households live better.

In this study, food (in) security is examined from the demand side solely with the assumption that the supply side remains constant. The demand theory informs the conceptual links between food demand and (in)security in South Africa, average price of staple food, household income, taste (utility), market information. In this study, the variables of interest are food security, income and market information due to the strong links between them established in the literature while other factors such as price of staple food and taste are assumed constant. This study conceives of food (in)security from adult and child hunger perspectives, household income measures by salary income, business income and other income which includes earning from assets and market

information proxies by information and communication technology gap is measured by access to fixed telephones, cellular phones and the internet.

The structural link between food (in)security, income and information and communication technology gap in South Africa is represented in Figure 1 below.

Figure 1: Nexus between food (in)security, information technology and income

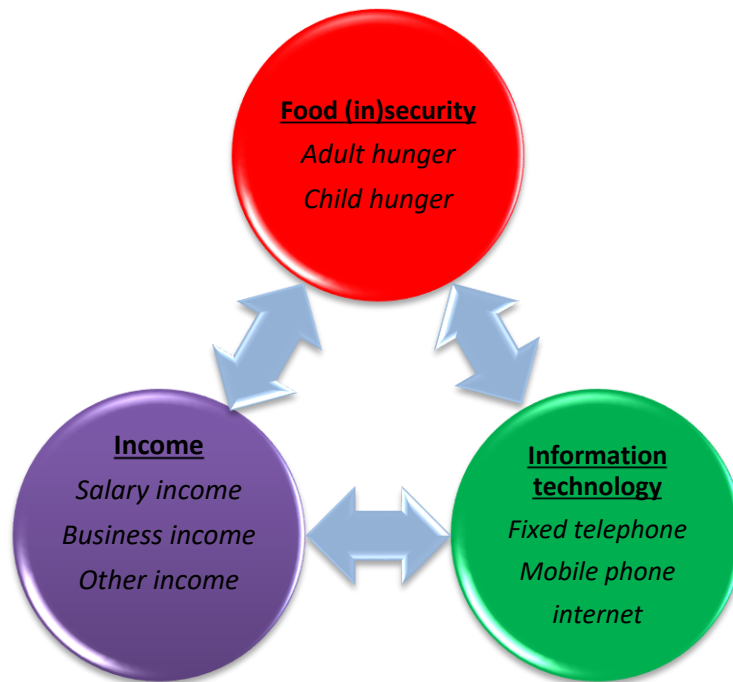


Figure 1: Nexus between food (in)security, information technology and income

Source: Author, 2022

Figure 1 depicts the mutual-feeding nexus between food (in)security, income and information technology. Food (in)security is measured by adults and children who are hungry, income is measured with three metrics – salary income, business income and income earned from other sources like assets and information – and communication technology is measured by diffusion of fixed telephone, mobile telephone and the internet. The theory establishes that information technology and income determine food (in)security (demand) which is a static demand theory and unidirectional nexus. However, in the dynamic demand model, demand is a determinant of price in the long-run and recognizes the relationship as bidirectional. This study mirrors the latter in which there are mutual-feeding connections between food (in)security (demand), income and information technology in South Africa. The connection between food (in)security (demand), income and information technology is further captured in structural model form as depicted by Figure 2.

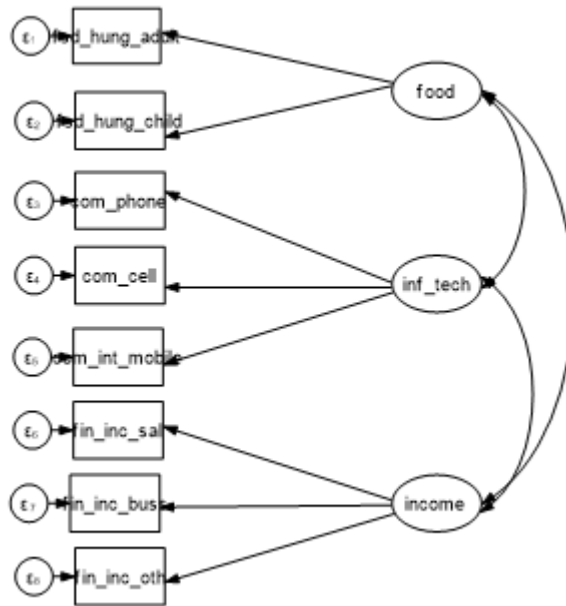


Figure 2: Structural model for food (in)security, information technology and income
Source: Authors, 2022

The correlation coefficients associated with the variables in Figures 1 and 2 are presented in Tables 1 and 2 for clarity.

Table 1: Modeling the relationship between the indices of food (in)security, information technology and income in South Africa

| | food (in)security (1) | information technology (2) | income (3) |
|----------------------------|-----------------------|----------------------------|------------|
| food (in)security (1) | 1 | | |
| information technology (2) | $\Pi_{2,1}$ | 1 | |
| income (3) | $\Pi_{3,1}$ | $\Pi_{3,2}$ | 1 |

Source: Authors, 2022

In Table 1, the reduced coefficients of correlation between the indices of food (in)security, information technology and income in South Africa are presented. The closer the coefficient value to one, the stronger the degree of connection between the specified variables. Since this study makes use of cross sectional data, the correlation coefficient is likely to be low. However, the significance level of the relation is deployed to validate the importance of each of the variables. The indices of food (in)security, information technology and income are derived using principal component analysis (PCA) and the following PCA models are used to predict the indices:

$$food_i = \beta_{1i}adult_hunger_i + \beta_{2i}child_hunger_i \dots\dots\dots (1)$$

$$in_fo_tech_i = \phi_{1i}fixed_line_telephone_i + \phi_{2i}mobile_telephone_i + \phi_{3i}in_ternet_access_i \dots\dots\dots (2)$$

$$income_i = \delta_{1i}salary_income_i + \delta_{2i}business_income_i + \delta_{3i}other_income_i \dots\dots\dots (3)$$

The model is depicted in structural form in Table 2 which shows the indices/metrics used to derive the reduced/index form of the variables.

Tables 2: Correlation matrix of structural determinants of food (in)security, information technology gap and income in South Africa

| | food (in)security | | information technology gap | | | income | | |
|--------------------------|-------------------|------------------|----------------------------|----------------------|---------------------|-------------------|---------------------|------------------|
| | adult hunger (1) | child hunger (2) | fixed line telephone (3) | mobile telephone (4) | internet access (5) | salary income (6) | business income (7) | other income (8) |
| adult hunger (1) | 1 | | | | | | | |
| child hunger (2) | $\alpha_{2,1}$ | 1 | | | | | | |
| fixed line telephone (3) | $\alpha_{3,1}$ | $\alpha_{3,2}$ | 1 | | | | | |
| mobile telephone (4) | $\alpha_{4,1}$ | $\alpha_{4,2}$ | $\alpha_{4,3}$ | 1 | | | | |
| internet access (5) | $\alpha_{5,1}$ | $\alpha_{5,2}$ | $\alpha_{5,3}$ | $\alpha_{5,4}$ | 1 | | | |
| salary income (6) | $\alpha_{6,1}$ | $\alpha_{6,2}$ | $\alpha_{6,3}$ | $\alpha_{6,4}$ | $\alpha_{6,5}$ | 1 | | |
| business income (7) | $\alpha_{7,1}$ | $\alpha_{7,2}$ | $\alpha_{7,3}$ | $\alpha_{7,4}$ | $\alpha_{7,5}$ | $\alpha_{7,6}$ | 1 | |
| other income (8) | $\alpha_{8,1}$ | $\alpha_{8,2}$ | $\alpha_{8,3}$ | $\alpha_{8,4}$ | $\alpha_{8,5}$ | $\alpha_{8,6}$ | $\alpha_{8,7}$ | 1 |

Source: Authors, 2022

The study deployed pairwise correlation analysis and the coefficients are $\alpha_{2,1} - \alpha_{8,7}$, though this is further decomposed to structural equation model in which the mutual-feedback nexus among all the variables is established. The diagonal coefficients of 1s depict the perfect correlation-covariance between the self-variable.

Data and variable measurement

The data for this study are quantitative in nature and are from General Household Survey data sourced from the Statistics South Africa (StatsSA) database. The survey was conducted in 2020.

ANALYSIS AND FINDINGS

Table 3: Reduced form model estimates

| | food (in)security (1) | information technology (2) | Income (3) |
|----------------------------|-----------------------|----------------------------|------------|
| food (in)security (1) | 1 | | |
| information technology (2) | 0.1968* (0.0000) | 1 | |
| Income (3) | -0.0536* (0.0000) | -0.0211* (0.0468) | 1 |

Note: * 5% significance level

Source: Authors computation, 2022.

The correlation coefficients between the indices of food (in)security, information technology and income in South Africa are shown in Table 1. The results reveal that there is a weak correlation between the indices of food (in)security, information technology gap and income in South Africa because the data set are cross sectional in nature, a fact which is also mentioned in section 3. However, the statistical significance of the relationship between the indices of food (in)security, information technology and income serves as the validation tool in this study.

The results reveal that food (in)security, information technology and income are statistically significant at 5 percent significance level in South Africa. While the relationship between food (in)security and information technology is positive, the index of income is negatively associated with that of food (in)security in South Africa. Also, income and information technology indices are inversely related in South Africa.

It is clear from these results that 20 percent of positive association exists between food (in)security and information technology gap in South Africa though the relationship is weak and this could be as a result of the cross sectional nature of the General Household Survey data. The correlation between the food (in)security and information technology gap is statistically significant which indicates that the information technology gap is one of the key determinants of food insecurity in South Africa. It is expected that the relationship between food (in)security and information technology gap should be positive due to adult and child hunger categorical variables used to formulate the index of food (in)security and the result converges with the a priori expectation. This indicates that the as information technology gap widens, food insecurity increases and income has a negative and significant relationship with food insecurity in South Africa. This implies that as the income increases, household food consumption increases and thereby reduces the food insecurity status of the members (children and adults) of the household. The relationship between food (in)security, information technology and income is further decomposed as presented in Table 4.

Table 4: Structural form model estimates

| | food (in)security | | information technology | | | income | | |
|-----------------------------|---------------------|----------------------|-----------------------------|-------------------------|------------------------|----------------------|------------------------|---------------------|
| | adult hunger (1) | child hunger (2) | fixed line telephone (3) | mobile telephone (4) | internet access (5) | salary income (6) | business income (7) | other income (8) |
| adult hunger (1) | 1 | | | | | | | |
| child hunger (2) | 0.1899* (0.0000) | 1 | | | | | | |
| fixed line telephone (3) | 0.1443* (0.0000) | 0.0026 (0.8032) | 1 | | | | | |
| mobile telephone (4) | 0.2001* (0.0000) | 0.0731* (0.0000) | 0.4380* (0.0000) | 1 | | | | |
| internet access (5) | 0.2082* (0.0000) | 0.0110 (0.2981) | 0.4526* (0.0000) | 0.5303* (0.0000) | 1 | | | |
| salary income (6) | 0.1064* (0.0000) | 0.0421* (0.0001) | 0.0072 (0.4969) | 0.0225* (0.0339) | 0.0846* (0.0000) | 1 | | |
| business income (7) | 0.0358* (0.0007) | 0.0161 (0.1288) | 0.0256* (0.0159) | 0.0138 (0.1928) | 0.0766* (0.0000) | -0.0794* (0.0000) | 1 | |
| other income (8) | 0.0064 (0.5443) | -0.0334* (0.0016) | 0.0201 (0.0576) | 0.0007 (0.9498) | 0.0239* (0.0244) | -0.0737* (0.0000) | 0.0148 (0.1621) | 1 |

Source: Authors computation, 2022

Note: * 5% significance level

In Table 4, food (in)security is disaggregated to adult and child hunger. The results reveal that adult hunger is directly associated with child hunger (19 percent), fixed line telephone (14 percent), mobile telephone (20 percent), internet access (21 percent), salary income (11 percent), business

income (4 percent) and other income (0.6 percent). It is evident that correlation is weak which conforms with the outcome of the index correlation analysis and which is due to the cross sectional nature of the data. The statistical significance of the relationships shows that child hunger, fixed line telephone, mobile telephone, internet access, salary income and business income are statistically significant at 5 percent significance level to adult hunger in South Africa. However, other income is statistically insignificant to adult hunger at 5 percent significance level in South Africa.

The results show that child hunger is directly associated with adult hunger and is directly associated with fixed line telephone (0.3 percent), mobile telephone (7 percent), internet access (1 percent), salary income (4 percent) and business income (2 percent) while other income (3 percent) is inversely related to child hunger. The statistical significance of the relationships reveals that fixed line telephone, mobile telephone, internet access, salary income and other income are statistically significant at 5 percent significance level to child hunger in South Africa while business income is statistically insignificant to child hunger at 5 percent significance level.

From these empirical results, it is evident that fixed line telephone, mobile telephone, internet access and salary income are statistically significant to both adult and child hunger in South Africa. Most households do see these variables (fixed line telephone, mobile telephone, internet access and salary income) as important to food insecurity as the correlation coefficient outcomes are positive and converge with the a priori expectations.

CONCLUSION AND POLICY RECOMMENDATIONS

The empirical findings reveal that the relationship between food (in)security, information technology gap and income is positive and statistically significant in South Africa if considered in aggregation. If disaggregated, the relationships between adult hunger (food insecurity), child hunger, fixed line telephone, mobile telephone, internet access, salary income and business income are statistically significant. That of child hunger follows the same direction except for the insignificant relationship with business income. Therefore, information technology gap indicators (fixed line telephone, mobile telephone, internet access) are very important to attain food security in South Africa if they are adequately used for economic activities that will enhance income generation and access information required for optimal food consumption. Since the finding reveals that the relationship between information technology gap and food insecurity in South Africa follow the a priori expectation, there is a high concern that there is technology divide (most especially internet access) in the poorest households due to poor network and the inability to afford internet subscriptions. Also, the income deviation is accounted for by the low total income of households due to high rates of unemployment.

To address the above-mentioned problems, this study recommends that there should be further investment in information technology infrastructures (internet) which will increase internet access density at cheaper prices or which will be offered free of charge. After access to internet, there should be programmes that educate people on how to access information for economic activities including where to get affordable food, healthy foods and how to cook in their own houses and homes. There should also be concerted effort in educating the people on how to generate income remotely using the internet. The income generated will enhance adequate consumption of food and reduce both adult and child hunger in the household.

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EXAMINING DARK TOURISM AS A NICHE TOURISM MARKET WITHIN THE AFRICAN CONTEXT

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ABSTRACT

Africa is no stranger to deaths due to natural disasters such as the Mt. Nyiragongo volcanic eruption (2002), horrific human acts; Sharpeville massacre (1960), Rwandan genocide (1994), Hutu massacre (1996–1997), British concentration camps of the Second Anglo Boer War (1899–1902) and conflicts such as the South African Border War (1966–1989). Death and tragedy are also commercialised for tourism such as the Egyptian Pyramids, South African Apartheid Museum and Cradle of Human Kind. Dark tourism serves as a way for people to reflect through exploration and education on dark historical occurrences. Dark tourism is a well-researched field globally, yet not much is written on it within an African tourism context. Investigation thereof could lay the foundation for it as a tool of reconciliation, mediation and healing within the broader context of Africa's bloody colonial and civil war past. Recommendations with regard to future research will be made. In an effort to determine the potential of dark tourism as a niche market in Africa, the author will analyse, through a conceptual research design, the available literature on dark tourism and provide African examples. The purpose of this literature paper is to determine what dark tourism entails, and in which form it is found in Africa.

Keywords: Niche tourism, heritage tourism, dark tourism

1. INTRODUCTION

The benefits that international tourism brings can be found in the form of foreign exchange earnings, contribution to government revenues, additional employment opportunities, generating income, inducement to inward investment and regional development (Verma & Jain, 2013; Jenkins, 2015; Sharpley & Telfer, 2015). The United Nation World Tourism Organization (2018) reported that Africa's international tourist arrivals increased from 18.7 million in 1995 to some 63 million in 2017, which accounts for 4.8 percent of global arrivals at the time. Additionally, the report stated that the 2017 arrivals contributed US\$33 billion to Africa. Based on the reported growth between 1995 and 2017, it is evident that tourism plays a major socio-economic role in Africa. The global Covid-19 pandemic and accompanying travel bans have conversely damaged the international tourism industry severely. Faujas (2021) reported that the expected loss for Africa alone would amount to some US\$170-253 billion by the end of 2021. It is expected that global travel will only return to some semblance of normalcy in 2023. It is evident that mass tourism due to travel restrictions and associated gatherings is not feasible. Niche tourism such as dark tourism, with its smaller footprint (Robinson & Novelli, 2005), could be a redeeming feature for the redevelopment of the tourism industry.

Dark tourism is a well-researched field under culture and heritage tourism and is categorised as an emerging niche form of tourism (Light, 2017; Martini & Buda, 2020; Proos & Hattingh, 2020; Bunghez, 2021). There is limited academic literature and research on dark tourism in Africa. In

order to address this limitation, the author will highlight African examples of dark tourism sites (attractions) that serve to attract dark tourism visitors. The state of dark tourism in Africa will be contextualised and its future speculated on. This will be done by making use of a conceptual research design. Hirschheim (2008) and Jaakkola (2020) describe the design as having the goal to create new knowledge by building on the carefully selected source of information, and assimilating and combining the evidence in the form of new concepts or theories. Jaakkola (2020) states that the role of each element in the paper needs to be specifically stated in order to ensure the logic of generating findings that are visible to the reader. Gilson and Goldberg (2015) argue that conceptual papers typically focus on proposing new links among constructs with the purpose of developing logical and complete arguments. Sources will include primary and secondary references from journals, books, proceedings, digital media and master’s dissertations on dark tourism. The ease with which readers follow the literature chain of evidence is pivotal to the success of the article. An ethical waiver was granted for the study (FREC/HS/15/10/2021/6.3.1) by the Human Sciences Faculty Research Ethics Committee of the Vaal University of Technology. In order to answer the two research questions: “What does dark tourism entail?” and “In what form is it practised in Africa?”, the author will define the keywords of the study within the larger scope of the tourism industry.

2. LITERATURE REVIEW

The following section will make use of literature to explore the background of each keyword of this study, namely niche tourism, dark tourism, dark tourism ethics, dark tourism motivation and visitor type, in order to frame their interrelationship, meanings and importance.

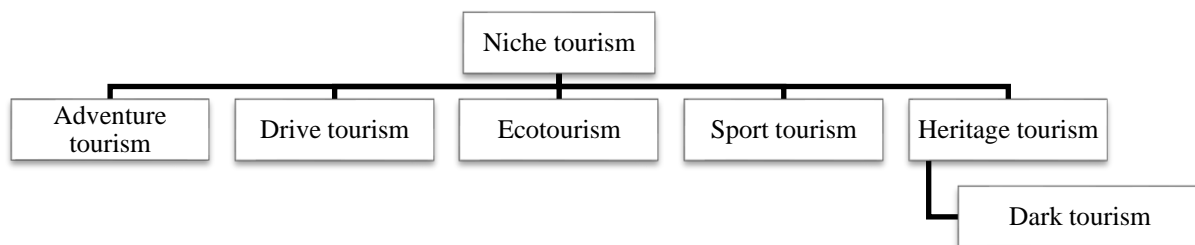


Figure 1: Examples of niche tourism

Source: Adapted from Chhabra *et al.* (2003), Daun (2008), Venter (2017), Stainton (2021a), author’s own compilation.

2.1 Niche tourism

According to Stainton (2021b), a niche refers to something that is suitable for a small group of people such as products, services and interests. When applying this definition within the context of tourism, it refers to tourism interests that are limited to a small percentage of individuals. Stainton (2021b) views these interests as a specialised segment in the tourism industry and explains that the term niche encompasses several types of tourism (Figure 1).

What started as an elitist form of tourism, targeting refined travellers, has evolved into a tourism form now readably accessible to the public (Bunghez, 2021). Where mass tourism refers to the large-scale targeting and catering of tourists at a destination during peak holiday times, niche tourism is characterised by small numbers of tourists throughout the year (Bunghez, 2021; Stainton, 2021b). Niche tourism is motivated by what a tourist does, whereas mass tourism is concerned with how many do something. According to Bunghez (2021), the transition from mass

tourism (the 1950s and 1960s) to niche tourism has been a cumbersome process that necessitated specialised skills, human resources and infrastructure. Niche tourism, due to its smaller size, has a much less negative impact on the environment, local infrastructure and society. Therefore, niche tourism can be seen as the antithesis of mass tourism, over-tourism and all-inclusive holiday resorts (Stainton, 2021b), as it has a smaller carbon footprint.

Whereas mass tourism caters for tourists’ general needs at large, niche tourism specialises in more limited, unique and distinctive services (Bunghez, 2021). Stainton (2021b) attributes the rising need for niche tourism experiences to individuals becoming more sophisticated about their personal needs and wants (educated, culture and adventure). Verma and Jain (2013) attributed this to the pursuit of a more intellectualised form of leisure travel linked to learning and discovery. According to Paapathanassis (2011), niche tourism is built on continuous social trends, namely sustainability, experience-economy, self-development and individuality, hedonism and voyeurism, consumerism and conscious living. Niche tourism does have potential advantages and disadvantages (Table 1).

Table 1: Potential advantages and disadvantages of niche tourism (Stainton, 2021b)

| ADVANTAGES | DISADVANTAGES |
|---|--|
| Less taxing on the environment | A lack of another source of income |
| Smaller tourist numbers | Might exceed area carrying capacity |
| Deeper tourism experience in the local area | Niche businesses drive specialisation at the cost of diversity |
| Higher spending visitor | Not all niches are environmentally friendly |
| More courteous and respectful tourists | Small tourist numbers mean fewer economic benefits |
| | Market niche tourism interest might fade in popularity |

Bunghez (2021) points out that if economic growth is sought, niche tourism provides the best opportunity to attract tourists who spend money. Due to its general small-scale operations, small impact, and higher profit margin per visitors, niche tourism might just be the answer the tourism industry needs to recover from Covid-19.

2.2 Dark tourism

The term dark tourism was first introduced by Lennon and Foley (1996). They explained that dark tourism arose because of post-modernity, which encompasses the larger anxieties about industrial, scientific and political progress. Dark tourism is also known as black tourism, blood tourism, thanatourism and morbid tourism (Biran & Hyde, 2013; Farmaki, 2013; Verma & Jain, 2013; Stainton, 2021a). It encompasses travel to places and institutions that stand as a legacy to painful periods in human history, which include death, tragedy, disaster and depravity (Magee & Gilmore, 2015; Stainton, 2021a), where visitors experience feelings of danger, fear, horror, sadness, depression, empathy, sympathy and revenge (Sharpley & Stone, 2009; Kang *et al.*, 2012). Verma and Jain (2013:10) argue that humans have always had a fascination with death, whether through a combination of respect, revenge, curiosity and/or superstition. Stainton (2021a) is of the opinion that some of the reasons individuals visit dark tourism attractions are a need to pay their respects and/or have a close encounter with death. Dark heritage, by its definition, is not necessarily dark, but there is a strong rapport between death and anguish (Nagib *et al.*, 2021:29). The author is of the view that dark tourism can be defined as the travel to, exploration of or participation at a dark

tourism site or event for personal historical meaning, resonance or interest, which does not involve remuneration.

Hartmann *et al.* (2018) explained this phenomenon of visiting dark sites as a way to visualise the hazardous costs of new technologies and ideas, which, according to Verma and Jain (2013), seems to be driven by Western society's apparent fascination with death, real or fictional, media-inspired or otherwise. Stainton (2021a) affirms this view when stating that dark tourism as a form of tourism gained attention in the early 1990s, but has only recently caught the attention of popular media and the general public. Verma and Jain (2013) note that before the commercialisation of dark tourism for travel, it was preceded by other forms of tourism supply, such as religious and pilgrimage purposes. They are of the opinion that the earliest mass form of dark tourism is most probably the Roman gladiatorial games, from 105 BCE to 404 CE (Catwright, 2018).

Verma and Jain (2013) concluded that dark tourism, with its associated themes of deaths, disasters, carnage and atrocities, is increasingly being packaged in touristic form and becoming a more popular form of tourism. They argue that this is due to a need by some to experience a potential spiritual journey to gaze upon real and recreated death. Jacobsen (2016) highlights that death as a constant is commercialised through dark tourism, which Stone (2018) argues follows the same supply and demand norms of any tourism offering. This inevitably brings about the question of the ethics of dark tourism.

2.3 Dark tourism ethics

Jacobsen (2017) points out that death is a human constant, the meaning of which changes over time. According to Wheretheroadforks.com (2022), the question of dark tourism ethicality is a philosophical one that comes down to a person's ethics, culture, upbringing and past experience. For some, dark tourism is disrespectful, voyeuristic, exploiting and inappropriate, while others do not see any issue with it at all or simply do not care. Some of the biggest criticisms of dark tourism include: exploiting human suffering, spreading misinformation, visiting with the wrong intention, inappropriate conduct at the site, taking selfies, becoming an attraction too soon after a disaster, supporting the wrong people, desecration of a site, being voyeuristic and the element of danger. Stone (2018) views dark tourism as a tool that has helped usher in a contemporary mentality of death in secular societies where its meaning is not extravagant and consumed as a mediated tourist experience. Furthermore, he points out that the current trends in Western societies about death, dying and mourning have become spectacles for tourist consumption. Stone (2018) is of the opinion that dark tourism acts as a mediated institution of morality with a paradoxical tendency of making death linger between market and heritage autonomy and control. Lastly, he points out that dark tourism is an institution of contemporary societal morality that mediates and visualises death that serves to provoke, impact, educate and/or entertain. Stainton (2021a) cautions that while dark tourism can be a great way to learn about past events and histories, it is essential that dark tourists be responsible. Magee and Gilmore (2015) think that dark tourism sites' (and events) primary purposes should be to reinforce each person's responsibility for a more humane and caring world, through learning about these dark events, remembrance, reflection and self-introspection.

2.4 Dark tourism motivation and visitor type

Not until recently was a comprehensive empirical analysis undertaken of dark tourism by Lewis *et al.* (2021). They created a new theoretical research model that merged the theory of planned behaviour (TPB) and dark tourism constructs (*attitudes, subjective norms, perceived behavioural control*) and the four dark tourism dimensions (*dark experience, engaging entertainment, unique learning experience and casual interest*). They found that there is a relationship between TPB constructs and dark tourism. According to Zhang *et al.* (2016), previous research mainly consisted of conceptual frameworks and arguments with little empirical data and only a few investigated visitor intent (motivation).

It is the author's opinion that a very useful tool to describe the motives of visitors in dark tourism can be borrowed from military heritage tourism. Proposed by Raine (2013), it grouped an individual's motivation to visit a place into four categories, namely *factual-specific, mythical-specific, factual-social context* and *ethnic-social context*. For clarity, the author will be articulating them to dark tourism. *Factual-specific* visitors visit dark tourism sites to gain an objective and factual view thereof. The majority of these are either scholars or historians who seek as much information as possible. *Mythic-specific* describes visitors who visit based on blurred factual interpretation of the events that have become so ingrained in the popular belief that it has taken on a mythical element, which is twisted from reality. Mythic-specific visitors base their motivation on acts of heroism, patriotism or a noble death. *Factual-social context* is based on the academic interpretation of happenings, which accommodates most views. It is highly influenced by what is a popular belief at the time based on interpretation and usage. *Ethnic-social context* is the upholding of a mythic perception to sustain a socially justified status quo or cause. In other words, the occurrence has an important meaning to a nation or group's beliefs.

Magee and Gilmore (2015) proposed three visitor types for heritage tourism. The first are *personal experience seekers* who have personal (emotional) relations to the site, which generate a feeling of belonging along their personal heritage (Biran *et al.*, 2011) and do not view their visit as leisure-based. Secondly are *knowledge seekers* with no personal connection to the dark tourism site, who view the visit as a leisure-based activity (Muzaini *et al.*, 2007), to gain knowledge of the place (Venter, 2017). Lastly are *ambivalent truth seekers* who want to see it to believe it (Biran *et al.*, 2011).

Lewis *et al.* (2021) found that tourists are curious, interested and intrigued by dark experiences with paranormal activity. Their travel choices are based on personal views and preferences, with limited outside influence. They determined that *dark experience* had the most influence on the dark tourism constructs tested in relation to attitudes and subjective norms measured.

3. DARK TOURISM SITES

The author is of the opinion a comprehensive list can be created in which dark tourism sites are categorised according to type (pillars) (Figure 2). These pillars support dark tourism and make it possible as a niche. Venter (2017) created such pillars for military heritage tourism. Given the overlap between dark and military heritage tourism with regard to death, suffering, fright and terror, the pillars of military heritage tourism can be adapted for dark tourism.

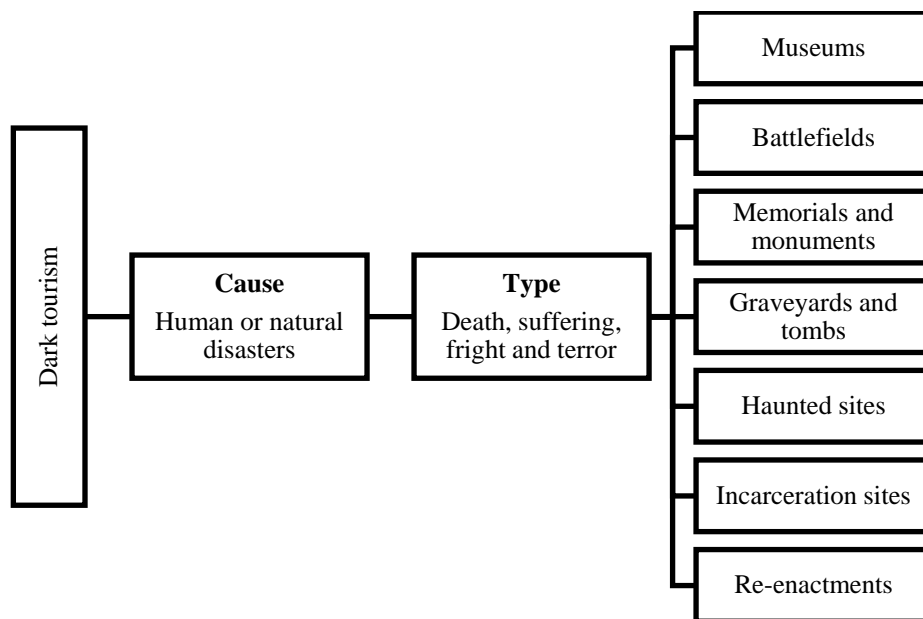


Figure 2: Proposed pillars of dark tourism

Source: Adapted from Venter (2017) and Fonseca *et al.* (2015), author’s own compilation.

It can be argued that places of death, suffering, fright and terror are the most prominent themes in dark tourism and are caused by human acts or natural disasters. The pillars of dark tourism that cater to the aforementioned themes include museums, battlefields, memorials and monuments, graveyards and tombs, haunted sites, incarceration sites and reactors that form the quintessential pillars of dark tourism. Importantly, dark tourism sites might consist of or represent more than one pillar at a time. It is worth noting that a dark tourism site consists of a primary pillar with a secondary pillar representation.

3.1 Museums

The word museum originates from the Latin *museum*, which was a building devoted to learning or the arts known and regarded as a sacred place to the Muses (Dictionary.com, 2022a). A *muse* was one of the nine goddesses believed to give encouragement in different areas of literature, art, and music in ancient Greek and Roman stories (Cambridge Dictionary, 2022).

According to Brown and Mairesse (2018:525), the definition of a museum is constantly evolving. They acknowledge that a museum differs significantly and/or completely between institution, culture, country and language. The International Council of Museums’ (2017) adoption of a multinational definition states: “*A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment*”. Several prominent African dark tourism examples include the Apartheid Museum, Laingsburg Flood Museum and the “Red Terror” Martyrs’ Memorial Museum.

The focus of the Apartheid Museum in South Africa, which opened its doors in 2001, is on the struggle against Apartheid (1948-1990) (Venter, 2021a), in which every facet of black South African life was restricted and dictated by the white-only government that was brutally enforced

(Shackleton & Gwedla, 2021). The struggle for freedom is displayed through 22 exhibits (Venter, 2021a), and represents the death and suffering experienced.

On 25 January 1981, the small town of Laingsburg experienced the most dramatic natural disaster ever to have happened in South Africa (SA-Venues, 2022). Taylor (2021) states that the flood annihilated the entire town, of which only 21 of the original 184 houses remained.

The “Red Terror” Martyrs’ Memorial Museum in Addis Ababa Ethiopia was established in 2010 and displays the instruments of torture, skulls and bones, coffins, bloody clothes and photographs of victims who died (MOMAA, 2019) during the genocide. BBC News (1999) reported that Amnesty International estimated some 500 000 people died during the violent political repression between 1976 and 1978.

3.2 Battlefields

The origin of the word battlefield consists of two parts, i.e. ‘battle’ and ‘field’ (Online Etymology Dictionary, 2022a). They define the former as a derivative from the Late Latin *battualia*, which referred to the exercise of soldiers and gladiators in fighting and fencing. The latter comes from the Old English *feld*, which refers to a plain, pasture or open land. Venter (2020) states that some battlefields may be less celebrated than others, while still having a deep sentimental value to military veterans who would seek to revisit them as tourists for personal or collective catharsis.

The battlefields in North Africa (Egypt, Tunisia, Libya, Algeria & Morocco) are the product of the Italian invasion of Egypt via Libya in June 1940, which at the time was still part of the British Empire. Swanston and Swanston (2007) explain that in January 1941, a German military force was sent to aid the Italians, which resulted in several swift victories against the British forces. By September of 1941, the Germans (Axis) were knocking on Egypt’s door. Subsequent battles saw the Axis forces on the back foot as they were driven back to Libya after the Battle of El Alamein (1942). The final Axis force in North Africa surrendered on 12 May 1943 (New Zealand History, 2021). The region is dotted with major battlefield sites such as found at Tobruk (1941), El Alamein (1942) and Kasserine Pass (1943).

Venter (2021b) describes the Battle of Cuito Cuanavale (Angola) as the largest clash of armed forces on the African continent since WW2. The political ramifications made the battle significant as its aftermath saw the Tripartite Accord, which put an end to the South African Border War (1966-1989), the withdrawal of South African and Cuban forces from Angola and the independence of South West Africa, which officially became Namibia on 21 March 1990 (Steenkamp, 2016). Cuito Cuanavale has become the focal point of South African military veterans’ visits to Angola in the last decade as part of battlefield tours of the country (Baxter 2018; Venter, 2020). In 2017, the Angolan government opened the Memorial of the Battle of Cuito Cuanavale as a great tribute to the ex-FAPLA fighters who lie in the area (Angola Press, 2017).

3.3 Memorials and monuments

The word memorial sprouts from the Middle English / Late Latin *memoriāle* – a reminder, neuter of *memoriālis* belonging to remembrance (Dictionary.com, 2022b). Monuments’ origin is found in the Middle English’s (Latin) *monumentum*. The ‘mon’ stems from *monēre*, meaning to remind

or warn (Dictionary.com, 2022c). Venter (2017) concluded that memorials and monuments have the same purpose, which is to serve as dedications to events of death.

Donà (2018) explains that between 7 April and 18 July 1994, Hutu extremists murdered nearly one million Tutsis in Rwanda. The *Kigali Genocide Memorial* was inaugurated in 2004 and is home to some 250 000 victims of the genocide (Visit Rwanda, 2022). The memorial serves to educate visitors on how the genocide took shape and examines genocide in the 20th century.

On 21 March 1960, 69 people were killed and 180 wounded by police while protesting against the Apartheid Pass Law Act of 1952 (Buthelezi, 2016). The Sharpeville Memorial and Exhibition Centre in South Africa consists of white triangular pillars that pay homage to victims who were massacred by police as they ran away. The memorial manager explained that the purpose of the site is to educate visitors through photo exhibitions and guided tours of the massacre (Buthelezi, 2016).

3.4 Graves and tombs

The Online Etymology Dictionary (2022b) describes the origin of *grave* from the Proto-Germanic *grafa-/graba*. The word *tomb* originates from the Late Latin *tumba* and Greek *tymbos*, which describes a burial mound (Online Etymology Dictionary, 2022c). A tomb can be a house, chamber or vault to provide the dead with what they need in the afterlife, and ultimately went out of fashion around the Renaissance, being replaced by graves (History.com, 2019). Verma (2021) explains that most graves and tombs visited in dark tourism belong to famous people (presidents, royalty and movie stars).

Nelson Mandela was South Africa's icon during the liberation movement against the Apartheid system, recipient of Nobel Peace Prize (1993) and the country's first democratically elected president (1994-1999) (South Africa.net, 2022a). After Mandela's death in 2012, he was buried at his ancestral home in Qunu with a state funeral. His grave was opened to visitors to pay their respects, with the hope of boosting tourism in the region (NDTV.com, 2017).

Hattingh (2018) explains that the Great Pyramids of Giza were built 4 500 years ago as the final resting place of the Egyptian pharaohs. The most famous are the three tombs built during the Fourth Dynasty (c. 2575-2465 B.C.) for the pharaohs Khufu, Khafre and Menkaure (History.com, 2019). Elnagar and Debali (2020) report that in 2018, Egypt received some 11.3 million visitors with some 17.8% of those visiting the Great Pyramids of Giza.

3.5 Haunted sites

The association between haunting and ghosts is said to have its origin in Proto-Germanic, later revived in 1590 as *hantise*, which implies "obsession, obsessive fear" (Online Etymology Dictionary, 2022d). Ghost walks are conducted by local historians, paranormal 'experts', or actors, which can be scripted or improvised (Weston *et al.*, 2019). Walks may involve theatrical acting, tour group participation, props, costumes or be scholarly in nature. Therefore, ghost walks take place where people believe a ghost, spirit, phantom or apparition resides.

There are reportedly 158 haunted buildings in Kimberley (Kimberley City Portal, 2022). Kimberley offers several ghost tours to various historic buildings (Rudd House, the African Library, the William McGregor Museum, and the old De Beers boardroom) and monuments (Honoured Dead Memorial) as well as the Anglo-Boer War battlefield, which is said to be home

to the lonely Scottish piper phantom who plays on moonlit nights (South Africa.net, 2022b). Tours are often done in the evenings with an accompanying tour guide.

3.6 Incarceration sites

Incarceration originates from the mid-16th century Middle English and Medieval Latin *incarcerat*, which means ‘imprisoned’. Fonseca *et al.* (2015) report that during the last decade, several old prisons were turned into tourist attractions such as museums, accommodation or ghost tours such as Robben Island. Literature searches reveal no other significant incarceration sites in Africa where academic dark tourism research was done.

Viljoen (2018) describes Robben Island as a small island 14km from the harbour of Cape Town. The island has been used as a place of isolation and detention, hospital, mental institution, leper colony and a military base. It was declared a World Heritage Site in 1999. It is, however, best known for its prison, which held a number of South African political activists during the apartheid era, including Nelson Mandela. Tours to the island include a visit the maximum security prison, Nelson Mandela’s prison cell and a 45-minute bus tour around the island. The annual visitor numbers for 2018/2019 were 318 414 (Robben Island Museum, 2019).

3.7 Re-enactments

According to Venter (2017), re-enactments bring to life famous deaths. The most notable South African example of re-enactors who preserve such heritage is the Dundee Diehards, who re-enact Anglo-Zulu/Boer Wars.

4. LIMITATIONS

Although literature revealed hundreds of studies on dark tourism across the globe, it became evident that research and statistics in Africa are lacking, with either no or very old statistics available. It was also challenging to find many dark tourist pillar examples in Africa. Based on the above constraint, the author’s hypothesis is that such pillars are poorly developed, lack tourist interest or there exists a general lack of academic research interest in Africa.

5. CONCLUSION

The purpose of this paper was to determine what dark tourism entails and in which form it is found in Africa. This required an examination of literature, which revealed that Covid-19 has had a devastating effect on the tourism industry globally. Niche tourism, which dark tourism is part of, shows high growth potential that, when combined with its low inset cost and high-profit margin, seems to be the natural choice to rejuvenate the tourism industry’s growth. Dark tourism was examined and a definition was proposed. With regard to the ethics of dark tourism, it was revealed that society’s relationship with death has changed over time, which has directly contributed to its growth globally (Jacobsen, 2017; Stone, 2018), especially in Europe. Looking at travel motives, Zhang *et al.* (2016) pointed out that visitor intent requires further empirical data. To aid in this call, the author found the tourist motivation theory and research by Raine (2013), Magee and Gilmore (2015) and Lewis *et al.* (2021) as potential templates for further development and testing in dark tourism. With the aforementioned complete, the author identified several pillars that support dark tourism, which include museums, battlefields, memorials and monuments,

graveyards and tombs, haunted sites, incarceration sites and re-enactments. African examples of each were provided to contextualise their link to dark tourism as a whole. With reference to the limitations mentioned, the opportunity exists for an African research undertaking by African academia to conduct the fundamentally important research required to understand dark tourism within the African context, thereby supporting the tourism industry in its growth. Priority should be given to developing a standardised questionnaire to make comparative analysis possible, which measures, among others, market segmentation analysis, developmental impact, travel motivation, life domain effect, quality of life and brand loyalty, to name a few. Such studies will lay the foundation for an understanding of dark tourism in Africa.

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AUDITING OF INDIVIDUAL DEVELOPMENT PLAN (IDP) USED IN ASSESSING AND ADDRESSING THE NEEDS OF THE SURVIVORS OF DOMESTIC VIOLENCE IN SHELTERS: GAUTENG PROVINCE, SOUTH AFRICA

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ABSTRACT

The reality is that after being accommodated and participated in psychosocial support services and skills development programmes (SDPs) in shelters, survivors of domestic violence often go back to their environment of victimisation. This may suggest that the services provided by the shelters, particularly SDPs, are not tailor-made to suit their needs. It is possible that among the contributory factors to this are assessment tools. In responding to this situation, the researcher considered reviewing the effectiveness of assessment tools used in the shelters. The individual development plan (IDP) as one of the assessment tools that guides how comprehensive services should be rendered to survivors of domestic violence was examined to verify its validity. The study was guided by the stage of change model (Trans-theoretical model) and seeks to highlight the findings of a qualitative study conducted to review the IDP tool used to assess and address the needs of the survivors of domestic violence from the shelters in Gauteng Province, Tshwane Region. The study checked if the IDP tool is assessed, real and trustworthy to empower the survivors to be financially self-reliant. Managers of six shelters in the province as well as the survivors were purposively selected to take part in the study. Two focus group sessions were conducted to triangulate the findings. Semi-structured interviews were used to collect data, which was analysed thematically.

Key findings indicate that generally, not all assessment tools were updated. Some could not be revised for various reasons. It was also established that shelters were revising their assessment tools at different times. One shelter revised their assessment tools at the beginning of every year, and others were guided by the needs of the survivors. Despite the fact that for undisclosed reasons, some tools were not audited, the researcher decided to audit the IDP as one of the tools used to assess and address the needs of the survivors in the shelters. The IDPs for the two shelters, which submitted their tools, were gauged.

Keywords: Auditing, individual development plan, survivors of domestic violence

1. INTRODUCTION

Domestic violence is a global challenge and is defined by the Tshwaranang Legal Centre (2012) as the most common form of gender-based violence (GBV) among partners. South Africa as a country is not immune to this social issue, which has been declared by the President of the Republic of South Africa as the second pandemic. Women and children are the most affected group that suffers from this social issue. In trying to curb the scourge of GBV and specifically domestic violence, some shelters provide survivors of domestic violence with temporary accommodation for their safety. In these shelters, the survivors are assessed and receive psychosocial support

services, including the SDP for their empowerment and self-reliance. Assessment refers to the identification of client needs and issues, strengths and resources, and the prioritisation of desired outcomes (Hepworth, Rooney, Rooney & Strom-Gottfried, 2013; Berg-Weger, 2013). Despite this, survivors of domestic violence go back to their poverty and abusive partners for financial survival. It is unfortunate that the researcher has established that the survivors continue to be victimised. The researcher wondered if the SDPs rendered at the shelters are unable to help them become financially self-reliant. As comprehensive services consisting of psychosocial and SDPs are rendered to the survivors, one questions the tools used to address their needs. Audit of the IDPs were conducted by the researcher to identify causal factors relating to failure to assist the survivors. According to Rathod (2013), an IDP is a formal document that specifies the individual's developmental goals and how he or she plans to accomplish them. Rathod (2013) further views it as a tool used to promote self-development. The researcher interprets the purpose of the assessment to be to engage the survivor to understand and get a comprehensive picture of her needs and goals and be able to come up with a plan of action (IDP) to achieve these goals. The researcher acknowledges that the needs of the survivors are different, and therefore, the IDP as a tool comes in handy to give direction based on the assessment. The IDP was specifically identified and audited by the researcher because it guides the needs of the survivors (strengths, weak points, resources), and links the psychosocial support services with the SDP. The IDPs from the two shelters that submitted their assessment tools were scrutinised by the researcher. However, the researcher was of the view that even though the tools performed the same function, they were not the same and therefore not standardised.

2. THEORETICAL FRAMEWORK

The Stages of Change Model (Trans theoretical Model), which is informed by Theories of Reasoned Action, guided the study. The model assumes that humans are rational beings who make systematic use of the information available to them to engage in specific behaviors (Ausker & Rothman, 2015; Nhlabathi, 2016). The researcher's understanding of this statement is that human beings are not just passive and objective beings who are only informed on what to do, but they can engage and decide on what is important to them. The researcher further calls this engagement and decision-making process self-determination. According to Snell and Brown (2014) as well as Ginneh and Akbar (2019), self-determination is about self-realisation, self-regulation, psychological empowerment and autonomous actions. The Stages of Change Model progresses through six stages: pre-contemplation, contemplation, preparation/commitment, action, maintenance, and relapse (Guest & Namey, 2015; Bauer & Liou, 2016).

In the context of this study, the first stage, pre-contemplation, takes place when survivors are not yet aware of the psychosocial support services and the SDP that can assist them in the future when they exit the shelters. Lindsay (2013) defines psychosocial support as an ongoing process of meeting the physical, emotional, social, mental and spiritual needs of individuals, all of which are meaningful and positive developments.

Psychosocial support services are provided to empower victims to be able to develop resilience and approach situations differently (Lindsay, 2013). During contemplation, the survivors get to know about the services in the shelters inclusive of the SDP and begin to understand how they will benefit besides being given accommodation. In other words, this stage

is a thought-provoking activity. The preparation and commitment stage takes place when survivors start making sense of the SDP and implement it on a pilot basis. The action stage is about the full implementation of the SDP. The implementation stage only functions at the maintenance stage when the survivors are capable of fending for themselves and can practice learnt skills independently without any challenges. The relapse stage is when the survivors are going back to poverty-related situations, their abusive partners and are unable to be financially self-reliant (Perrin 2015; Bauer & Liou, 2016). In the context of this research, the researcher doomed the Model to be suitable in that individuals' sense of independence after exposure to the programme is marked against the stages of development contemplated in this model.

3. PURPOSE

The purpose of this paper is to examine the reliability of assessment tools in addressing and assessing the needs of the survivors of domestic violence in the shelters, Gauteng Province.

3.1 Objective

The objective of the study is to audit an IDP as one of the assessment tools in assessing and addressing the needs of the survivors.

4. METHODOLOGY

4.1 Research design

This study was empirical and evaluative in nature, followed the qualitative approach and was guided by the case study design. A qualitative case study facilitates the exploration of a phenomenon within its context using a variety of data sources (Mohajan, 2018).

4.2 Sampling and sampling methods

Purposive sampling was adopted in this study because both the managers of the shelters and the survivors of domestic violence were conversant in the subject for discussion. During this research, Gauteng Province had twenty-four shelters that were funded by the Department of Social Development to render psychosocial support services and the SDPs. Only six of these shelters rendered psychosocial support and SDPs in Pretoria, which is also known as Tshwane Region. The researchers purposively sampled the six shelters. Five of the six managers sampled participated voluntarily. The inclusion criteria for the managers was that their shelters should render both of the above-mentioned services. The managers of the shelters as well as the survivors of domestic violence who were once admitted to these shelters were sampled. The exclusion criteria for the managers were that shelters that were neither funded nor rendered the two services did not qualify. The inclusion criteria for the survivors were that they should have been accommodated in those shelters between 2014 and 2016. The shelters had lists of previous survivors of domestic violence. Sampling was based on those lists. The inclusion criteria were that the survivors who were available on the phone when called and were willing to voluntarily participate in the study were interviewed. Purposive sampling came in handy as the participants were familiar with the topic at hand due to their previous involvement.

4.3 Participants.

The participants of this study consisted of two sets of managers and survivors. Five managers of funded shelters and five survivors of domestic violence voluntarily participated in the study. The exclusion criteria were that if the survivors did not attend the above-mentioned services (psychosocial support services and SDP), they did not qualify. The identities of both survivors and managers were protected through pseudonyms (Saunders, Kitzinger & Kitzinger, 2015).

5. DATA COLLECTION

Semi-structured interviews were adopted to collect data. Doyle (2022) states that these types of interviews provided the researcher with an opportunity to be flexible and to explore areas of concern accordingly. Two focus group discussions consisting of four survivors of domestic violence also triangulated the responses from the interviews. The focus group comprised four participants because the fifth one decided not to be part of the group and disappeared. The ethic of voluntary participation was applied, and the researcher let her go without any form of persuasion. Note taking and cellphone were used to record the information during the interviews with permission from participants. IDPs used in the shelters were also studied. In other words, data was not only collected through interviews, but by scrutinising the IDPs.

6. DATA ANALYSIS

In this study, data analysis was done thematically following Braun and Clarke's (2012) framework. According to Maguire and Delahunt (2017), thematic analysis is the process of identifying themes within qualitative data. The framework consisted of six phases.

6.1 Phase 1: Familiarising yourselves with the data

The researcher followed this framework simply because despite the fact that the study was qualitative in nature, its flexibility contributed positively. Flexibility for the researcher in this regard meant that even though this phase is known to be the first step away from the research sites, it could not be separated from the analysis that started during the data collection process. Maguire and Delahunt (2017) point out that during this initial phase, the critical thing to do is to read and re-read the transcripts, and to listen to recorded audios to familiarise herself with the collected data. The researcher made notes as she was reading and re-reading the transcripts in order to make sense of the collected data. Ultimately, the researcher's aim was to understand the participants' frame of references, which she read actively, analytically and critically.

6.2 Phase 2: Generating initial codes

Taking into consideration the data, which was read and re-read from the first phase, the initial code means that it (data) should be broken into smaller portions to categorise in terms of its meanings and similarities. In that way, Braun and Clarke (2012) point out that a conceptual interpretation of the content is made. As the researcher was reading and re-reading the transcripts and listened to the audio recordings, she interpreted and classified the collected data according to its meaning. The collected data was then systematically labelled and linked to the participants who provided them (Maguire & Delahunt, 2017).

6.3 Phase 3: Searching for themes

The researcher's interpretation of the above-mentioned phase is that a theme puts together critical information linked to the research question. Maguire and Delahunt (2017) emphasise that as the coding process progresses, themes are creatively searched. De Vos, Strydom, Fouché and Delpont (2011) acknowledge that the phases cannot be dealt with in isolation because they are interlinked. The researcher also examined the relationship between the themes as well as how they overlapped.

6.4 Phase 4: Reviewing potential themes

This phase is about checking the identified themes against the collated extracts of data and exploring whether the theme works in relation to the data (Braun & Clarke, 2012). As per the above-mentioned authors, the researcher reviewed and quality-checked the identified themes.

6.5 Phase 5: Defining and naming themes

Maguire and Delahunt (2017) highlight that this phase is about identifying the essence of what each theme is about. In addition, Braun and Clarke (2012) hold the view that a high-quality thematic analysis will have themes that do not try to do too much but have a singular focus on one or two primary aspects. The researcher made use of her analytical skills to confirm, fine-tune and name the identified themes.

6.6 Phase 6: Producing the report

As a professional social worker, the researcher was of the opinion that after every activity such as research, a report should be written. Braun and Clarke (2012) as well as Sutton and Austin (2015) indicate that report writing is about formalising the informal research process undertaken. The researcher produced a coherent report.

7. DISCUSSION AND FINDINGS OF THE STUDY

7.1 Auditing of assessment tools used in the shelters to identify and address the needs of survivors of domestic violence

It is important to indicate that the researcher was not only interested in checking if the tools are generally audited. She also checked the times as well as the tools that were audited. This is how the managers responded:

“At the beginning of every year, the staff sit together and go through each and every assessment tool and revise them. There are also funders from overseas who assist the organisation in reviewing the tools”. C

The researcher's understanding of the time mentioned by this manager was that compulsory sitting of staff at the beginning of every year compromises the auditing process. She (the researcher) argued that the review was done for the sake of impressing the funders. Furthermore, the researcher was of the view that funders are not only funding the programmes or projects, but they do have a say in how things should be done. At the same time, the researcher's position in this situation was in line with Madhusudanan and Nalini (2015), and Ginneh and Akbar (2019), that the auditing of assessment tools should be guided by the needs of the survivors of domestic violence. This is referred to as self-determination which, for Scalfano (2013), means that survivors know what is

best for them, and therefore, have a choice on whether to agree or not. The researcher suspected that auditing was done to ensure compliance with the funders. The researcher also checked if the funders were social workers. But this was not clear from the managers. The researcher could not make sense of the involvement of the funders in reviewing assessment tools as well as the time in which the tools were audited. Other managers gave different views. This is how they put it:

“The shelter reviews their assessment tools but that is guided by an individual victim.” Mary

“The shelter does not have a specific time to review their assessment tools, they are reviewed as they are used. It also depends on the individual victim as people are not the same”. Lerato

“For me, the review comes in only when there is a need. For an example, when feeling stuck, you revise and check what can assist the situation. It is also important to note that the needs of the individuals are not the same”. Simphiwe

“I want to also indicate that auditing of the assessment tools depends on the situation. Individuals are not the same and therefore a social worker needs to be creative. Waiting for auditing time might take long and that might have a negative impact on service delivery”. Dorah

The findings revealed that the other shelters voiced similar opinions concerning the reviewing of assessment tools. The responses from the managers indicated to the researcher that the tools are revised based on the need. The shelters also acknowledged the uniqueness of the survivors, and revised their tools as the need arose. This is aligned with Joshi’s (2017) recommendation that social work services should be continuously improved. The researcher also checked with the survivors of domestic violence if they are familiar with the tools used to help and change their lives. This is how they responded:

“I am not sure about assessment tools, and I thought it is the social workers’ responsibility to know them”. Lerato B

“I do not mind about assessment tools, but the most important thing is the good service from the social worker. You become a different person after being seen by a social worker”. Nthabiseng

“As a client, I do not know what tools the social worker is using but what I appreciate is the counselling services which she is providing. It is therapeutic and it can make you to be independent”. Thabitha

“Yes, you come into the shelter broken and destroyed. For the mere fact that I was so discouraged, I could not really see my way out. It was a new start. I discovered a new me. The involvement in the shelter with the social worker and day to day communication was very helpful. The involvement with the social worker teaches you to be independent, to see the positives out of the negatives. The shelter is called Victim Empowerment Centre but for me, it should be called a home away from home. It is really a home away from home because most women when they get there they are broken. They do have emotional, physical, and psychological bruises. The shelter takes you through those emotions and bruises and you start seeing a new person out of the destroyed one. As a client, I do not know what the social workers are using to counsel me but what I like is that I became a new person”. Shalleen.

The researcher learned that the survivors of domestic violence did not know or bothered themselves to think about the tools. The only important thing for them was to appreciate the services of the social workers. They were of the view that the social workers were doing a good work. The response from Shalleen confirmed the argument by Watson and Lopes (2017) and Bhana, Vetten, Makhunga and Massawe (2017) that survivors of abuse arrive at shelters traumatised. Others are completely disorientated, confused, heartbroken, angry and discouraged. Social workers in the shelters render psychosocial support services to empower clients to see their world from another approach (Bhana et al., 2017; Ojha, 2019). Ojha (2019) emphasises that psychosocial support services to survivors in the shelters is yielding positive results.

The researcher's understanding of the above-mentioned submission from survivors was that they focused more on the impact that social workers had on their lives through those assessment tools and procedures, but not the tools themselves. The observation by the researcher was that the survivors were not familiar with assessment tools and processes. The researcher was of the view that survivors of domestic violence are stakeholders in the shelters. It is therefore appropriate that they are guided through these tools (orientated) even though this is done on a lighter note. It will be good for them to have an idea of these tools. Smith (2013) and Sithole (2018) recommend that social workers should work in partnership with the people they are supporting. In this regard, the researcher concludes that they are experts in their psychosocial support field.

A follow-up issue was to check if the tools themselves were reliable in assessing and addressing the needs of the survivors.

7.2 The incompleteness of the IDP in assessing and addressing the needs of the survivors of domestic violence

As the researcher audited the two IDPs, the following challenges were identified. Both the tools were on Microsoft Word documents. The researcher wondered if these tools were still on work in progress or if they have been finalised. One tool had the organisation's logo but had no details such as the address, contacts and the non-profit organisation number. The other one did not have a logo or any related information such as contacts or address of the shelter. The tool that had a logo also had a number that the researcher believed was used to identify the form/tool. In the same breath, the tool with the logo did not have biographical information about the survivor, only name and age. There was also nothing on education or the review of progress as the survivors were receiving psychosocial support services. Van Hook (2014) emphasises that survivors and their needs are developing through this process of IDP. If the IDP is not comprehensive, the service is incomplete. Psychosocial support services contribute to healing (Borkowski, 2016). There is also no mention of aftercare services and how the survivor will be supported after discharge. The researcher wondered how the social workers determined if they have achieved the survivors' planning. The tool also had a vision for individuals/families but no priorities. In other words, what should be achieved first and what would follow. Several issues are highlighted under topics to cover. These issues cover schools, colleges, courses, sufficient income, literacy, career interests, dealing with unemployment, dreams, hopes and challenges. As much as they are highlighted as part of the IDP, they are not specific. For example, despite the fact that the schools or colleges were mentioned, there is nothing about the achievements, accredited certificates, skills, diplomas and other related issues. Rathod (2013) further advocates that the IDP specifies activities that

improve awareness, identity and development of talents. There is also no mention of skills to go through towards addressing unemployment (if any). This is not in line with Patel's (2013) assertion that the goals of skills development interventions are to deliver job competence, succession planning and broad-based black economic empowerment.

The researcher was of the view that this tool provides an ideal platform for specific information about the services rendered in the shelters, specifically SDP as well as how one pursues it from the shelter's perspective. The researcher was also of the opinion that if there were external service providers such as the Community Oriented Substance Use Programme (COSUP), which can help the survivors to achieve their economic empowerment, they should be highlighted on the tool as part of the resources. The researcher also discovered that these two tools were completely different. On the tool with a plain white paper but without a letterhead, it was discovered that the details of the survivors include the name, surname, date of birth as well as the details of the case manager. There is nothing about the survivor's qualifications. This observation confirmed Mlatsheni and Ranchhod's (2017) assertion that in South Africa, the majority of women who are accommodated in the shelters have very low levels of education and do not have qualifications, hence nothing is recorded under qualifications. There was a question about the independence status of the survivor (Have you ever lived on your own?). The researcher felt that this is more of a general question because there is nothing about physical, financial and psychological situations. The unavailability of the above-mentioned information (physical, financial and psychological care) does not correlate with Rathod's (2013) as well as Herman and Reinke's (2015) assertions, that the IDP specifies one's development goals and how he or she plans to accomplish them. There is also the question about the support structures that focus on social, rather than, the financial status. There was also a question about how do you care for your parents. As much as this question is important, the researcher felt that the care for the self (survivor) is not addressed. This means that other people get priority over survivors.

The researcher was of the opinion that the survivors should be informed about aftercare services as part of the support outside the shelters. An aftercare service is understood by the researcher to be a follow-up session after the survivors have been released from the shelter to ascertain how they are coping and surviving. Häggman-Laitila, Saloekkilä and Karki (2018) confirm that aftercare services are critical for the survival of the survivor when discharged. Shaleen and Thabitha (survivors) highlighted the concern of not being contacted after exiting the shelters. They mentioned that it was critical to assess coping mechanisms of the survivor. This would have come in handy to the last question about the expectations of the survivor after leaving the shelter. Throughout all the checking of the IDP as a tool for assessing and addressing the needs of the survivors of domestic violence, none of these tools linked them to the SDP. Also, none of them touched on the SDP as part of the IDP, including how it can benefit the survivors later on. The researcher wondered how the IDP would perform without highlighting the skills that would make the survivors develop and become self-reliant. A critical question here thus becomes: can the maintenance stage be achieved through this incomplete document, which cannot even tailor-make, link or guide the needs of the survivors to the IDP? The answer is obviously no.

8. CONCLUSION

The study found that most of the tools in the shelters were going through a review process, but other tools such as IDPs were characterised by several gaps, despite the assessment process. Both survivors of domestic violence and social workers can only achieve comprehensive services in the shelters through a complete IDP that should be continuously reviewed. The researcher was of the view that social work tools cannot be reviewed at a specific time because this sacrifices service delivery and the uniqueness of the survivors. Any tool used in the shelter inclusive of IDP should be finalised and not be on a Microsoft Word document because the researcher was uncertain if the tools were complete or still work in progress. The tools were not on letterheads; hence the researcher began to question their validity and credibility.

9. RECOMMENDATIONS

Based on the findings of this study,

- It is recommended that the IDP be on letterheads and be standardised across all the shelters;
- It must also be a finalised, and not a Microsoft word, document;
- Survivors of domestic violence should also be informed of the tools as they are also stakeholders in the shelters;
- There must be a review section on the tools to check if the social workers and the survivors are making progress; and
- The IDP should also highlight aftercare services and its intention/aim for when the survivors are discharged from the shelters.

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FACTORS INFLUENCING AGRICULTURAL LOAN REPAYMENTS: THE CASE OF MAFISA-FUNDED FARMERS IN UMKANYAKUDE DISTRICT MUNICIPALITY

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ABSTRACT

This study examined loan factors that influence loan repayment of MAFISA-funded farmers in umKanyakude district municipality. Using data from 191 selected loans granted by Peulwana Agricultural Financial Services (PAFS), the study employed a logit model to identify the factors influencing loan default. The study found that loan amount, loan cycle, and land size significantly influenced loan repayments. The results of the empirical analysis have three main policy implications for the government and the microfinance institutions. Firstly, smallholder farmers should initially be granted smaller loan amounts, which might lead to better repayments. Secondly, microfinance institutions could consider providing more loans to lenders on a second cycle, or even on more. Thirdly, smallholder farmers should be supported to increase their ownership of land size to plant more crops and increase their income, enabling them to improve their repayment rates.

Keywords: Smallholder producer, rural credit market, market failure, rural finance, agricultural finance, MAFISA

1. INTRODUCTION

South Africa's agricultural sector plays a vital role in the country's economy (South African Government, 2021). Although it contributes a small percentage to the Gross Domestic Product (GDP), the sector provides food security, supplies raw materials to other sectors and – most importantly – employed 5.28 percent of South Africa's labour force in 2019 (DAFF, 2015; O'Neill, 2022). The South African agricultural sector consists of large-scale commercial producers and smallholder farmers. The latter has been identified to support rural development and reduce poverty (Pienaar & Traub, 2015; Zantsi *et al.*, 2019). However, smallholder farmers struggle to access agricultural loans (Makhura, 2013).

To address this need, the government established the Micro Agricultural Financial Institutions of South Africa (MAFISA) in 2005 to offer agricultural loans to smallholder farmers in South Africa (DAFF, 2015; Agriculture, Land Reform and Rural Development, 2019). According to the DAFF (2010), MAFISA is "a financial scheme to address financial services needs of the smallholder farmers and agribusinesses. MAFISA provides capital (loans) to enhance agricultural activities". One of MAFISA's objectives is to fill the financing space that formal providers of agricultural finance – such as commercial banks – appear hesitant to fill. The financiers do not want to offer credit to smallholder farmers due to a high non-payment risk because of, among other things, lack

of collateral, inconsistent income and lower literacy levels (Nawai & Shariff, 2010; Chisasa & Makina, 2012; Mukasa *et al.*, 2017). The South African government funded MAFISA with a once-off allocation of capital. The expectation was that it would be self-sustaining because of: 1) interest-bearing investments of the non-allocated funds, 2) earning interest on recovered loans, and 3) loan instalments from beneficiaries.

Although the government established the scheme, it is not involved in the loan application process. Nine retail intermediaries were appointed to accept and grant loans directly to the smallholder farmers. The loan amounts vary between R10 000 and R500 000 and can be used to fund production expenses and small equipment (DAFF, 2015). MAFISA is a revolving fund, thus when beneficiaries fail to settle their loans, there are not sufficient funds to grant other farmers loans in the future. Loan defaults could also lead to the scheme's closure due to a lack of capital. Should the latter occur, smallholder farmers will struggle to obtain credit to cultivate their agricultural produce, as the South African government will no longer be able to assist. This will ultimately hinder its initiatives to create employment, revitalise rural development and provide food security. Moreover, smallholder farmers could also struggle to continue agricultural production, thereby compromising their income.

This research aimed to determine the loan factors that affected MAFISA loan repayments in uMkanyakude, KwaZulu-Natal province. The following hypotheses were tested:

H₁: The loan amount does not significantly affect MAFISA loan repayments.

H₂: The loan cycle does not significantly affect MAFISA loan repayments.

H₃: The land size does not significantly affect MAFISA loan repayments.

2. LITERATURE REVIEW

Various authors conducted empirical research on loan repayments. Primary themes around the characteristics of borrowers, lenders/financial institutions and loans were identified by Roslan and Karim (2009) and Nanayakkara and Stewart (2015). On the other hand, Isitor *et al.* (2016) separated the empirical evidence on loan repayments into socio-economic-, business- and loan characteristics. This paper will only consider loan characteristics. Table 1 chronologically summarises the literature on loan repayments by indicating the authors, the year of publication, the topic, the country in which the study was conducted and the method used to collect empirical evidence.

Table 1: Summary of literature on loan repayments

| Authors | Topic | Country | Methods |
|------------------------------------|---|------------|------------------------------|
| Godquin (2004) | Microfinance repayment performance | Bangladesh | Probit model |
| Haileselassie Weldwselassie (2008) | Loan factors affecting loan repayments (members of cooperatives of Kilteawulalo) | Ethiopia | Logit model |
| Oladeebo & Oladeebo (2008) | Loan factors influencing loan repayments (Ogbomosho Agricultural Zone in Oyo State) | Nigeria | Multiple regression analysis |
| Roslan & Karim (2009) | Determinants of loan repayments among microcredit (Agrobank) | Malaysia | Probit and logit models |

| Authors | Topic | Country | Methods |
|---------------------------------|--|-------------------------|------------------------------|
| Onyeagocha <i>et al.</i> (2012) | Loan factors affecting repayment rate of MFIs | Nigeria | Multiple regression analysis |
| Baklouti (2013) | Determinants of microcredit loan repayments (Tunisian Microfinance Bank) | Tunisia | Logistic regression |
| Kiliswa & Bayat (2014) | Determinants of loan repayments (Kariobangi Division, Nairobi) | Kenya | Descriptive statistics |
| Nanayakkara & Stewart (2015) | Repayment probability of micro-financing loans | Indonesia and Sri Lanka | Logistic regression |
| Nam & Duy (2016) | Loan repayments in group schemes (Mekong Delta) | Vietnam | Probit model |

From Table 1 it is evident that numerous studies were conducted on the determinants or factors affecting loan repayments, especially regarding microfinancing loans. These studies showed that the loan amount significantly influenced loan repayment, and the repayment period affected the probability of repayment of loans (Roslan & Karim, 2009; Onyeagocha *et al.*, 2012; Baklouti, 2013; Kiliswa & Bayat, 2014). Godquin (2004) found that the loan amount's size negatively impacted the loan repayment. Interestingly, Nam and Duy's (2016) study on group lending schemes compared to independent borrowers indicated that group schemes were negatively affected by the loan amount, as opposed to individual borrowers' repayments being positively affected by the loan amount. Other findings include an inverse relationship between interest rate and loan repayment (Kiliswa & Bayat, 2014), while Haileselassie Weldwselessie (2008) found the majority of the population (57%) did not agree with the loan repayment period.

Nanayakkara and Stewart's (2015) study in Indonesia and Sri Lanka resulted in a prediction model of the repayment probability of micro-financing loans. They analysed 1 109 loan records, using logistics regression. The following factors were found as significant in predicting loan repayments in Sri Lanka: time to approve and disburse the loan, the loan cycle, the purpose of the loan, and the frequency of visits by the loan officer. In Indonesia, three factors were identified as significant: 1) time to approve the loan, 2) time to disburse the loan, and 3) the interest payment frequency.

2.1 Theoretical framework

As proposed by Hoff and Stiglitz (1993), the theory of the rural credit market is relevant to the loan repayments by smallholder farmers. They refer to three theories: 1) traditional monopoly theory, 2) perfect market theory, and 3) imperfect market theory.

The traditional monopoly theory argues that financiers charge exorbitant interest rates in the informal market as they have no competition, i.e. they are monopolists. However, this theory does not clarify why the informal and formal markets operate alongside each other while the formal market charges lower interest rates.

The perfect market theory contends that a market-clearing equilibrium exists in the rural credit market, as it is perfectly competitive. According to Chisasa (2014), the higher interest rates charged by financiers reflect the increased risk to them. However, there is a lack of empirical evidence to support this theory due to the concept of credit rationing. The latter refers to a financier rejecting credit to prospective borrowers due to asymmetric information and moral hazard, and not because funds are unavailable (Robinson, 2001). Asymmetric information results from the

difficulty of the lender in obtaining information about the creditworthiness of the borrower (Nanayakkara & Stewart, 2015). Moral hazard is when borrowers do not attempt to use the loan productively, or they use it for other purposes (Nanayakkara & Stewart, 2015). Stiglitz and Weiss (1981) found that identical loan applicants will not all be successful in their loan applications, even if they are prepared to pay a higher interest rate.

The imperfect market theory argues that the informal credit market is associated with uncertainty, high transaction costs and information asymmetry, resulting in moral hazard and adverse selection. Robinson (2001) contends that adverse selection and moral hazard increase loan defaults. Rao (2003) also identified asymmetric information and high transaction costs as contributing to the imperfect market.

In line with a similar study by Nanayakkara and Stewart (2015) on the determinants of loan repayments of micro-financing loans, the empirical study was designed to determine the loan factors influencing loan repayments of MAFISA-funded smallholder farmers, considering the loan characteristics.

3. METHODOLOGY

3.1 Research design

This research followed a descriptive and correlational quantitative design.

3.2 Population and Sampling method

The population comprised the beneficiaries (farmers) of MAFISA loans in South Africa who were in the MAFISA loan book from 2010 to 2017. Using MAFISA's internal records, a stratified random sample was chosen due to time and budget constraints. The farmers were grouped into distinct strata – firstly by province and secondly by the district. One province (KwaZulu-Natal) was selected, and within this province, one district was randomly sampled (uMkanyakude district). The total number of farmers who were beneficiaries of the MAFISA loan scheme in this district was identified. Due to time and budget constraints, one MAFISA intermediary – Peulwana Agricultural Financial Services – was selected for obtaining data.

The appropriate sample size was determined, using two methods. Firstly, an online sample calculator, Raosoft, was used. The online sample calculator suggested a sample of 169. Secondly, Israel's (1992) formulas and proposals for sample size determination were utilised to establish a sample size. Israel (1992) proposed a sample of 172 at the 5% significance level. Since Peulwana Agricultural Financial Services had 191 MAFISA-funded farmers in the uMkanyakude district, it was decided to use the data of the total 191 beneficiaries, as this number was higher than the sample size of 172 proposed by Israel (1992).

3.3 Data collection

Existing reports from the MAFISA intermediary, Peulwana Agricultural Financial Services, were used. The data was populated in a Microsoft Excel spreadsheet and exported to the Statistical Package for the Social Sciences (SPSS) version 25 software for data analysis. The quantitative data included information on beneficiaries, namely age, gender, education level, loan amount, loan cycle, and size of the land. The data on the latter was sourced from the South African Department

of Agriculture, Forestry and Fisheries around the number of hectares of each farmer. The data covered the period 2010 to 2017 for the sample.

3.4 Data analysis

Descriptive statistics (mean, mode, median and standard deviation) were calculated to compare central tendency and dispersion in the dataset. Similar to Roslan and Karim's (2009) and Mokhtar's (2011) studies, the main form of statistical inferencing was logistic regression modelling. The latter was used to determine the influence that each loan factor had on the level of repayment of loans managed by Peulwana Agricultural Financial Services in the uMkanyakude district of the KwaZulu-Natal province.

3.4.1 Regression equation and estimation techniques

The study employed the multiple regression model to investigate the factors influencing agricultural loan repayments, as displayed in this formula:

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

y = The loan repayment status

α = The constant

X_1 = Loan amount

X_2 = Loan cycle

X_3 = size of the land of the borrower

ε = The error term

$\beta_1 - \beta_3$ = The coefficients/strength of impact of factor $X_1 - X_3$

The formula contains dependent and independent variables. The dependent variable (y) was specified as the loan repayment status, i.e. whether the loan was repaid or not at the time of the study. If the loan was repaid, it was coded with '0', while if it was not yet repaid, a '1' was assigned. The independent variables were the loan factors under investigation, namely loan amount (X_1), loan cycle (X_2) and land size of the borrower (X_3). Each one of these independent variables is discussed below.

3.4.2 Loan amount (X_1)

The loan amount is a continuous variable and is measured in South African Rands. According to Haileselassie Weldwselassie (2008), when the loan amount meets the farmer's demand, the funds can be used to apply the recommended rate of farming input. It can be anticipated that the farmers receiving the demanded amount will have the ability to adequately produce and even increase production, which will increase their sales. Their income should also increase, enabling them to make a timely loan repayment. Therefore, this independent variable is expected to positively influence loan repayments translating to the hypothesis H_1 .

3.4.3 Loan cycle (X₂)

The loan cycle refers to the number of times a borrower has applied for a loan from the lender (Nanayakkara & Stewart, 2015). It is, therefore, hypothesised (H₂) that the loan cycle should be positively related to the farmer's loan repayment. This is a continuous independent variable.

3.4.4 Size of the land of the borrower (X₃)

The size of the borrower's land is measured in hectares (ha) and viewed as an independent, continuous variable. It is hypothesised (H₃) that it should be positively related to the farmer's loan repayment. There is an expectation that the more land a farmer has, the better the repayment will be compared to that of a farmer with fewer hectares. According to Haileselassie Weldwselessie (2008), a larger farm will yield more produce and a higher income, enabling the farmer to repay the loan. Table 2 summarises the dependent and independent variables' definitions and measurements.

Table 2: Definitions of variables and measurements

| Variable | Measurement | Scale |
|-----------------------|------------------------------------|---------|
| Loan repayment status | 1 – default, 0 – not in default | Nominal |
| Loan amount | R-amount of loan | Ratio |
| Loan cycle | Number of loans previously granted | Ratio |
| Size of land | Number of hectares (ha) | Ratio |

4. RESULTS AND DISCUSSION

4.1 Regression Results

The regression results are presented in Table 3. The three independent variables of the loan amount, loan cycle and size of the borrower's land, tested for their influence on the agricultural loan repayments of MAFISA-funded smallholder farmers in the umKanyakude district, were found to be statistically significant.

Table 3: Logit estimates for factors influencing loan repayment behaviour

| Independent variable | Estimated beta coefficient | Odds ratio |
|-------------------------|----------------------------|------------|
| Loan amount | 1.243 | 3.467* |
| Loan cycle | -0.518 | 0.596* |
| Size of land | -0.013 | 0.987** |
| Constant | -1.584** | |
| Nagelkerke R-Squared | 0.499 | |
| Hosmer-Lemeshow test | 0.847 | |
| Lo likelihood | 168.124 | |
| Degrees of freedom | | |
| Total observations | 191 | |
| Prediction accuracy (%) | 71.5% | |

Notes: * Beta coefficients and odds are significant at the 5% level

** Beta coefficients and odds are significant at the 1% level

The estimated beta coefficient of the loan amount is positive and significantly related to the likelihood of a default in loan repayment. A more considerable loan amount can therefore increase the likelihood of loan default. The estimated odds ratio of 3.467 indicates a very strong association between loan size and loan default. Therefore, a borrower with a larger MAFISA loan is expected to find it more challenging to repay the loan. This finding is in contradiction to the results of Roslan and Karim (2009), Baklouti (2013) and Mokhtar (2011), who found a significant positive

relationship between the loan amount and loan repayment. The strong association of this study may be interpreted that, as the loan amount increases, the possibility of moral hazard increases – leading to a possibility of loan default.

The loan cycle's estimated beta coefficient is negative and significantly related to the likelihood of loan default. This supports the notion that the higher the loan cycle, the lower the likelihood of loan default. The estimated odds ratio of 0.596 suggests a weak relationship between loan cycle and loan default. Therefore it can be deduced that MAFISA farmers with higher loan cycles are expected to be better at servicing their loans. The farmers with a steady repayment record on their first loans obtained larger loans in their follow-up loan applications. This finding corroborates the results of Kuhn and Darroch (1997), Nanayakkara and Stewart (2015) and Onyeagocha *et al.* (2012). Limsombuchai *et al.* (2005) argued that the relationship between a client and the financier improves with every loan cycle, reducing the information asymmetry problem and improving loan repayment.

The estimated beta coefficient of the size of farmland factor is negative at -0.013 and significantly associated with the likelihood of loan default. This suggests that the larger the size of the farmland, the lower the likelihood of loan default. The estimated odds ratio of 0.987 indicates that the relationship between land size and loan default is not very strong. A farmer with more agricultural land is expected to repay their loan better, because a larger farm may provide higher production and, in turn, higher income – enabling the farmer to repay the loan (Haileselassie Weldwselassie, 2008). However, the contrary could also be true, as a larger farm lacking farm efficiency may produce a lower output than a smaller, easier-to-manage farm. The finding that land size has a significant positive impact on loan repayment was supported by Haileselassie Weldwselassie (2008) and Baklouti (2013).

Overall, the multiple regression model found that the independent variables successfully predict 71.5% of the loan repayment problem. The Nagelkerke R-squared of 0,499 – representing the proportion of the variation in the dependent variable (loan repayment status) that the predictors can explain in the model (loan amount, loan cycle and size of land) – suggests that the model has predictive power (Peng *et al.*, 2002). Finally, testing the goodness-of-fit was the Hosmer-Lemeshow test (Peng *et al.*, 2002), with the result of 0,847 showing a good fit.

5. CONCLUSION AND RECOMMENDATIONS

The study found that the loan amount, loan cycle and land size significantly influenced loan repayments of MAFISA farmers in the umKanyakude district, with a prediction accuracy of 71.5%. The loan factors conformed to previous findings by authors such as Kuhn and Darroch (1997), Nanayakkara and Stewart (2015) and Onyeagocha *et al.* (2012). An analysis of the Nagelkerke R-Squared and Hosmer-Lemeshow test showed that the model could adequately predict loan repayments.

The empirical results have three main policy implications for the government and microfinance institutions like MAFISA. Firstly, microfinance institutions should initially grant small loan amounts to farmers, leading to good repayment practices. It will also assist in improving the MAFISA scheme's loan book.

Secondly, microfinance institutions should increase the loan amount to beneficiaries on a second or even more loan cycles, leading to better repayment. This could enhance the institution's sustainability, as it could lead to an improved loan book.

Thirdly, the government should assist smallholder farmers to access more hectares of land to increase production, leading to a higher income. The latter could result in an improved loan repayment rate.

The limitations of the research include that it was focused on only one district municipality and limited to three independent variables. Future areas for research may focus on expanding the study to other district municipalities and other variables. These variables could include credit borrowed from other sources, crops cultivated, production loans vs loans for infrastructure, frequency of capital and interest repayments, farming practices, as well as visiting frequency by loan officers. Other factors that may affect loan repayment are the location to market and the borrower's attitude regarding loan repayment.

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TALENT MANAGEMENT DECLASSIFIED: TOWARDS NEW THOUGHTS, TRENDS AND TYPOLOGIES

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ABSTRACT

Talent management is attracting a lot of attention in management and practitioner literature. According to proponents of talent management, talented people are the custodians of competitive advantage and sustainability. Nonetheless, the discipline of talent management is still limited in its ability to add value to the organisation owing to blurred workplace concepts, purpose, and practice. The primary goal of this paper is to present a critical analysis of the current body of knowledge in talent management, identify gaps, and propose new avenues for advancing the field and its practice. This paper involves an in-depth theoretical analysis of the available empirical research on talent management. According to the preliminary findings, there is a lack of a fit-for-purpose definition of workplace talent. The lack of theoretical underpinnings for workplace talent further limits the identification and effective placement of talented employees within the workplace. Most talent management definitions are quite limited, focusing solely on attracting, developing, and retaining key employees. The findings emphasise the importance of developing a solid theoretical foundation to understand workplace talent management better. Organisations should move away from traditional people management practices and toward more dynamic work environments to maximise employee talent and achieve long-term competitiveness.

Keywords: Hybrid work environments; retention; talent, talent management, talent strategy

INTRODUCTION

The ongoing Covid-19 pandemic has drawn attention to how organisations can become more people-centric (de Lucas Ancillo, del Val Núñez, & Gavrilá, 2021). In particular, organisations must rethink how they can best optimise the performance of their most valuable assets, namely, talent, to remain sustainable in the new world of work (Aguinis & Burgi-Tian, 2021). Consequently, a great deal of emphasis is placed on creating a workplace ecosystem supported by sound talent management practices to empower talented employees in a rapidly changing world (Fernandes, Veiga, Lobo, & Raposa, 2022).

Yet, there are numerous pressure points and misunderstandings regarding talent and talent management conceptualisations. When it comes to defining talent in the workplace, Thunnissen (2016, pp. 57–58) identifies at least four problematic areas: (1) a lack of theoretical underpinning, (2) a lack of empirical evidence for conceptual talent management models, (3) narrow and biased views on talent, and (4) inclusive versus excluded talent. Meyers, van Woerkom, and Dries (2013) also mention conflicting views on whether talent is “acquired” or “inborn.” In contrast, Jooss, McDonnell, Burbach, and Vaiman (2019) distinguish between talent as a subject (i.e. the person themselves) and talent as an object (i.e. characteristics of people). Wiblen and McDonnell (2020) recently added that we should consider the context of talent in the workplace when attributing “meaning” to talent. In this paper, I will further highlight the lack of validated talent management

practice measurements to monitor and evaluate the effectiveness of talent management interventions and hence retain key skills and competencies. Moreover, current legislative frameworks need to be adapted to cater for the new hybrid post-Covid world of work.

The primary objective of this paper is to present a critical analysis of the current body of knowledge in talent management, identify gaps, and propose new avenues for advancing the field and practice thereof. The focus of this research is not to debate the flaws of talent and talent management literature but rather to present a typology for both constructs. This paper takes a multidisciplinary approach to talent and talent management, considering the private and public sectors in constructing the typology. In addition, this paper will make recommendations for further research avenues to be explored to advance the field of talent management.

LITERATURE REVIEW

The talent and talent management conundrum

Deconstructing talent

The vast majority of talent definitions revolve around a person's knowledge, skills, and abilities to perform in a specific situation (see Ansar & Baloch, 2018; Bolander et al., 2017; Thunnissen, Boselie, & Fruytier, 2013). For example, Meyers et al. (2013) classified talent into distinct abilities, strengths, meta-competencies, high potential, and performance. According to Visser, Barkhuizen, and Schutte (2017), talent is a combination of talent intelligence competencies used to acquire and maintain core employability skills. According to Barkhuizen and Gumede (2021), "talent is born with unique gifts that should be uncovered and cultivated for individuals to be recognised as a talent in the workplace and enable them to make a valuable and distinctive contribution towards achieving organisational goals" (p. 1). For this paper, *workplace talent* is defined as those individuals who possess talent intelligence acumen who can be of value for sustainable organisational competitiveness. This definition can be used to address the talent needs of private and public sector institutions. The section that follows deconstructs the various components of the proposed talent definition and typology.

Talent Intelligences

Visser et al. (2017) identified at least five talent intelligence skills that future talented employees should possess to be attractive hires: *emotional intelligence* (EQ), *business intelligence* (BQ), *cultural intelligence* (CQ), *social intelligence* (SQ), and *digital intelligence* (DQ).

EQ refers to the ability or knowledge to deal with emotions (Pekaar, van der Linden, Bakker, & Born, 2017). Emotional intelligence is essential for talented employees because it promotes career success throughout the entire career life cycle (Urquijo, Extremera, & Azanza, 2019). In addition, Al-Azzam et al. (2018) discovered evidence for emotional intelligence acting as a mediator between talent management and job performance.

There are two approaches to BQ for talent. The first approach entails using technology systems to collect and analyse talent metrics to make talent-informed decisions (Snell, 2011). The second approach entails understanding the business's operational and strategic operations. Business acumen and hard business knowledge and skills are required for talented employees to remain employable (Andrews & Higson, 2008; Ntsizwane, Swanepoel, & Barkhuizen, 2013).

CQ is a concept that is relevant to global talent management because it improves and enhances a company's global activities (Bücker, 2014). CQ is defined by Thomas and Inkson (2013) as a skill that requires an understanding of a culture and a subsequent adjustment of thinking and behavioural orientation to interact effectively with individuals from that culture. CQ promotes innovative behaviour by facilitating knowledge sharing (Fan et al., 2020) and impacting organisational effectiveness (Miller-Bey, 2018).

Individuals' SQ refers to their abilities and skills in managing and maintaining social situations and relationships (Lau, 2016). Based on the principles of social identity theory, SQ can help talent management in at least three ways. First, there is a growing need for talent management to emphasise talented employees as a group (i.e. workgroups or teams). Teamwork is essential because it improves individual, group, and organisational performance (Berber, Slavić, & Aleksić, 2020). Second, there is a significant gap in the talent management literature regarding talent's contribution to social justice (see Thunnissen et al., 2013). According to Paruzel, Danel, and Maier (2020), social identity can improve employees' corporate social responsibility behaviours. Third, SQ can improve workplace relationships between different workforce generations (Eshghi, Arofzad, & Hosaini, 2013) and foster cultures that increase employee motivation (Njoroge & Yazdanifard, 2014).

Industry 4.0 necessitates digital talent with IT-related knowledge, skills, and abilities (DQ) to digitalise organisations' products, services, and processes (Gilch & Sieweke, 2020). As a result, talented individuals with a "digital mindset" are required for any organisation to implement a digital transformation. Therefore, a digitally intelligent person should thrive in artificially intelligent and robotised workplace settings (Rant, 2018).

Talent Acumen

For this paper, *acumen* is defined as the competencies (knowledge, attitude, and skills) that a gifted individual should have. Talent, from a human capital trait perspective, are perceived to have "hard skills" such as knowledge, experience, qualifications, skills, reputation, and innate abilities, as well as "softer skills" such as attitudes, behaviours, and personal energy (see Armstrong, 2001). According to human capital theory, talent, as knowledge workers, are valuable assets worth investing in to ensure competitive sustainability (Wuttaphan, 2017). A combination of smart global talent skills (including cognitive, affective, and physical abilities) and global knowledge management can contribute to organisational success and competitiveness (Vance, Vaiman, Cosic, Abedi, & Sena, 2014).

Talent as value to the organisation

Talented individuals are viewed as creators of high value for organisations (Ganaie & Haque, 2017). For this paper the value of talent can be distinguished as quantitative and qualitative value. Quantitative value creation stems from management and economic theories in which talent is regarded as individuals worth their salary and expected to contribute to an organisation's bottom line (Lawler, 2018). This represents a more hard-core business-oriented view of talent's worth. To define qualitative talent value, we rely on the foundations of organisational behaviour and social exchange theories. Individual employee and work interactions with talent stakeholders (i.e. management, co-workers, and clients) define the value they add. Talent is vital for timely,

responsible, empathetic, and reliable service delivery in various public sector contexts (see Chiloane, 2017; Mogwere, 2015).

Talent for organisational sustainability

The final aspect of my talent definition focuses on competitiveness and sustainability as key talent deliverables. Context is critical in determining the expected performance outcomes for talent (Wiblen & McDonnell, 2020). Talent approaches designed for the private sector do not always meet the needs of the public sector (Thunnissen & Buttiens, 2017). From an economic standpoint, talent is essential for private-sector institutions in competitive advantage and bottom-line results (Van Zyl, Mathafena, & Ras, 2017). According to the resource-based perspective, companies can maintain a competitive edge when their talent cannot be replicated or substituted by competitors in the market (Bowman & Hird, 2013). Therefore, talented individuals are strategic assets of competitive advantage for businesses (Al Aina & Atan, 2020). Mujtaba and Mubarik (2021) found that employees’ sustainability behaviours are essential catalysts for achieving economic, social and environmental sustainability goals. According to Chandrasekar and Zhao (2015), talented individuals contribute to sustainability when they take responsibility and initiative for their growth and development needs. The framework in Figure 1 presents an overview of the interconnectedness between talent intelligence, acumen, and value-add of talented employees and their contribution to sustainable competitiveness.

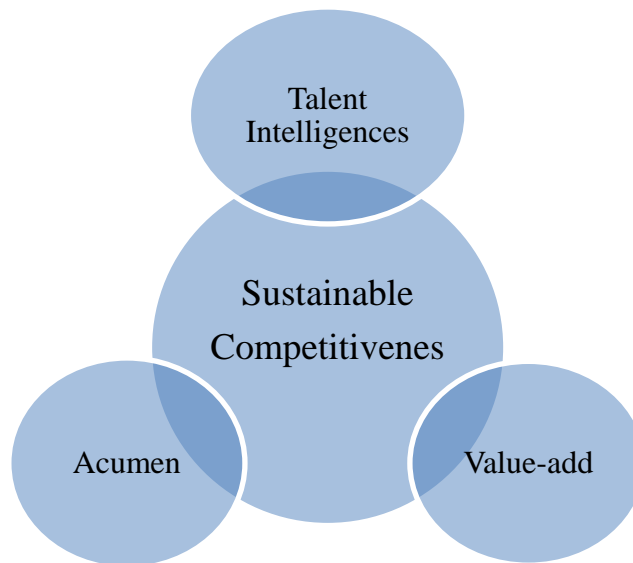


Figure 1: A workplace talent typology

Source: Author’s own

Demystifying talent management and talent management approaches

The vast majority of talent management definitions focus on narrow and fundamental aspects of human resource management, such as the attraction, development, and retention of core skills (Ansar & Baloch, 2018). Thunnissen et al. (2013) advocate for a more multilevel approach that creates talent value at the individual, organisational, and societal levels. As a result, a more strategic approach to talent management incorporates elements such as integrated systems and processes, corporate strategy, achievement of business goals, competitive advantage, and sustainability (see Sparrow, Hird, & Cooper, 2015). Overall, talent management is a strategic

process in which talented individuals can play critical roles in organisations' competitive advantage and sustainability (Rabbi, Ahad, Kousar, & Ali, 2015). Abiwu (2021) found that talent management predicted a sustainable competitive advantage for higher education institutions. Lately, *sustainable talent management* has also been introduced to denote a combination of talent attraction, knowledge sharing, employee training, and career developments to achieve quality, equity, and long-term evolution during times of uncertainty and crises (Saleh & Atan, 2021). This approach is ideally suited to considering the ongoing Covid-19 pandemic and the subsequent adjustment of talented workplace practices to accommodate the new world of work (Aguinis & Burgi-Tian, 2021).

Talent management approaches

The talent management process entails aligning talent with critical business opportunities and challenges (Järvi & Khoreva, 2020). Currently, there are two approaches to talent management in the workplace: exclusivity and inclusivity. *Exclusive* (or *elitist*) talent management refers to strategies that focus on the personal and professional development of a small group of employees for as long as they remain in the talent pool (Swales, Downs, & Orr, 2014). This approach considers talent management accessible to approximately 1%–15% of the organisation's workforce, who have more opportunities for development and promotion, higher salaries, and better fringe benefits than other employees (Meyers, 2016). According to Savaneviiien and Viliauskait (2017), exclusive talent management strategies focus on attracting candidates who are in short supply in the labour market and are critical to the organisation's success. As a result, employees who are part of an exclusive strategy play a significant role in determining their organisation's current and future achievements (Mousa & Ayoubi, 2019).

The *inclusive* talent management approach regards all employees as having strengths that can add value to the organisation (Iles et al., 2010) and makes no distinction between employee groups (Lewis & Heckman, 2006). According to Swales et al. (2014), this approach also advocates for inclusive talent to be deployed in a position that best matches those strengths. When talented employees fail to meet predetermined standards, organisations should focus on relocating these employees.

Meyers (2016) emphasises several advantages of taking an inclusive talent management approach. During times of general talent scarcity, an inclusive talent approach can help organisations make the best use of available talent. In addition, employees may feel a sense of “belonging” to the workplace, improving diversity management initiatives. As a result, organisations can benefit from a more proactive approach to talent management, combining inclusive and elitist talent methodologies to ensure that talent potential is reasonably identified and recognised in the workplace (Meyers, 2020).

For this paper, talent management is considered a combination of inclusive and exclusive talent approaches, whereby individuals are strategically positioned to deliver value-adding services while achieving individual, group and institutional goals.

NEW AVENUES FOR TALENT MANAGEMENT RESEARCH AND PRACTICE

Validated talent management assessment

The available research shows that validated talent assessments that take into account the entire talent management process are virtually lacking. The majority of measurements focus on selected areas of talent management. For example, Welby-Cooke (2011) validated the Human Capital Index for the South African aviation industry. The instrument was found to support three constructs: talent strategies, talent acquisition and retention, and management commitment. However, as evidenced in the study, the scope of the instrument was somewhat limited and did not consider other essential talent management practices such as talent development and talent performance management.

Theron, Barkhuizen, and Du Plessis (2014) validated a talent retention diagnostic tool for academic staff. The questionnaire specified management commitment towards talent and compensation and recognition as the main factors that encourage talented employees to stay within the organisation. A section was included to assess the job-search factors that could encourage employees to leave the organisation. The measurement tool also assessed employee satisfaction relating to general institutional and human resource practice. The tool is promising in its utility to assess talent retention, and it showed good to excellent reliabilities, ranging between $\alpha = .783$ to $.934$. Again, the measuring instrument is limited to measuring only talent retention and voluntary turnover intention factors.

Mokgojwa (2019) developed a talent risk management tool that assessed talent culture and occupational talent culture risks. The talent culture risks evolved around institutional strategy, management support, diversity management practices, physical infrastructure, and work environment. The occupational talent risks included talent attraction, talent performance management, talent development, compensation, and talent attraction and talent retention. Both measuring instruments showed acceptable reliabilities, ranging between $\alpha = .783$ to $.934$. Mokgojwa's (2019) measuring instrument provides a more comprehensive overview of different talent management practices and conducive institutional talent culture practices to optimise talent performance.

Frameworks for talent management

As mentioned earlier in the article, talented individuals are appointed for sustainable competitive advantage. As organisations move towards more “humane” work settings, aspects such as work meaningfulness and employee happiness are becoming more common. However, a fundamental question remains as to how talent can be kept happy and maintain their performance, based on the organisation's performance culture. I present a talent–performance–happiness framework to determine how best talent can be optimised in the workplace. The framework is presented in Figure 2.



Figure 2: The talent–performance–performance model

Source: Author’s own

Bottom-left quadrant: Low employee happiness, low employee performance, low-performance organisation

This is typically a situation of a talented employee trapped in a low-performance organisation that does not allow them to be creative or innovative in the workplace or make a meaningful contribution. As a result, the person might not have the personal coping resources, resilience or support to continue like this, and their level of performance declines. This is a devastating situation for a person who is a top performer but finds themselves in a workplace that is not conducive to or welcoming of high performers. As a result, such individuals might end up experiencing high levels of physical and psychological ill health and eventually leave the organisation.

Bottom-right quadrant: High employee happiness, low employee performance, high-performance organisation

This is a typical example of “dead wood” in the organisation – an employee who does not care about performing. This employee will do the minimum and be happy as long as no one is looking over their shoulder. Dead-wood employees were once productive but have begun working less and generally find reasons not to complete assigned tasks (Gallup, 2018). They are also de-energisers who can bring down the morale of those around them. Talent leaders therefore need to seek interventions to address the causes of poor performance for these individuals, as they might still be able to contribute to the organisation.

Top-left quadrant: Low employee happiness, high employee performance, low-performance organisation

This is a situation in which a lot of talented employees find themselves. This person has the value system or DNA to deliver their best performance or even go the extra mile, even though the

organisation makes it difficult for them to perform. In addition, these employees are extremely loyal and committed to their organisation.

Top-right quadrant: High employee happiness, high employee performance, high-performance organisation

This situation is ideal for talent management. Talented individuals flourish in a high performing culture. However, it also comes with a risk. The question remains: How long is this talent performance sustainable? This quadrant can include workaholics who thrive on performance and cannot maintain a healthy work–life balance.

The legal side of talent: Talent labour regulations after Covid-19

The South African workplace is regulated by various legislative frameworks such as the Basic Condition of Employment Act and amendments (South Africa, 1997), the Labour Relations Act and amendments (South Africa, 1995), Employment Equity Act and amendments (South Africa, 1998) and Skills Development Act and amendments (South Africa, 1998). However, in light of organisations’ moving towards a more hybrid work environment, legislative frameworks need to be adjusted to accommodate a “work-from-everywhere” workplace (International Labour Organization, 2020). In addition, the European Union are also exploring new legislative avenues for ensure a healthier work-life balance for employees. Labelled as the “right to disconnect law” this proposed legislation provides for a worker’s right to disengage from work during non-work hours without being penalised (Lerouge & Pons, 2022).

CONCLUSIONS

This paper highlights the importance of sound and sustainable talent management practices for organisational survival and competitiveness. A talent typology is presented to assist organisations in identifying talented individuals more effectively in the workplace. In addition, a definition for talent management is presented, considering both inclusive and exclusive talent management approaches. Finally, this paper concludes with essential avenues and recommendations to advance talent management scholarship and practice in the new world of work.

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THE IMPACT OF SAVINGS AND INVESTMENTS ON ECONOMIC GROWTH IN SOUTH AFRICA. AN EMPIRICAL ANALYSIS USING ARDL TECHNIQUE

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ABSTRACT

The South African economy has been experiencing problems due to retarded economic growth, insufficient domestic savings, and foreign direct investments (FDIs), which lead to lower economic performance. Hence, the study aims at investigating the impact of savings and FDIs on economic growth in South Africa from 1971 to 2019. The study used the Autoregressive Distribution Lag bounds test on time series data to determine the existence of a cointegration between the variables, both in a short and long run relationship. The findings showed a steady state long run relationship between gross domestic product, FDIs, gross domestic savings (GDSs), and exports. Furthermore, exports as a control variable indicate a favorable influence on economic growth in the short and long run. The speed of adjustment of -0.0616 (-6.16%) suggests that the model converges to an equilibrium at the rate of 6.16% annually. The diagnostic tests indicated no presence of serial correlation and heteroscedasticity, and the normality test showed that the residuals are normally distributed and most importantly, there is stability in the model. Therefore, GDSs and FDIs stimulate economic growth in South Africa.

Keywords: Gross domestic savings; foreign direct investment inflows; economic growth, National Development Plan

1. INTRODUCTION

Achieving stable and inclusive economic growth is crucial for the success of every country in the world (Najarzadeh, Reed & Tasan, 2014). There are, however, numerous factors that affect growth for different countries. As such, an analysis of the interaction between economic growth and other macroeconomic variables is significant because it helps to guide policy making. Accordingly, this study assesses the impact of domestic savings and FDI on growth in South Africa. Researchers indicated that total savings of an economy are essential for uplifting investment funds, leading to economic growth. For instance, Hishongwa (2015) maintains that GDSs play a crucial role in delivering the national capacity for investments and production, which in turn affect economic growth positively. Moreover, domestic savings are crucial for an emergent nation like South Africa. In a perfect environment, domestic savings contribute to investment that in turn assists the economy to grow, generate additional income and savings. In an economy like South Africa, higher levels of growth attract foreign savings in the form of FDIs, contributing to a favorable outcome of domestic savings and growth (Lawler, 2018).

Even though it has been over 28 years since the new dawn of democracy, increasing unemployment rate, lower levels of economic growth, worsening poverty, and inequality remains the most fundamental problems being faced by South Africa. Regardless of the measures employed to curb these economic problems, the triple challenge emanating from the protracted growth of unemployment. According to World Bank (2020), South Africa has been in recession since 2013, but this worsened from 2016 when the minister of finance back then, Pravin Gordhan, announced that the economy was struggling with shrinking growth, 25% unemployment rate and widespread poverty – his speech also resulted in the depreciation of the rand (South African currency). The GDP fell by 16.4% between the first quarter and second quarter of 2020, resulting in an annualized growth rate of -51% (World Bank, 2020). Initially, this problem had nothing to do with the COVID-19 pandemic because South Africa was already in a technical recession but later on, when the pandemic hit the economy hard in April, May, and June; it had a negative impact on economic growth, worsening the country's economic position (World Bank, 2020). South Africa has not been a good destination for foreign investments due to xenophobic attacks, high levels of crime rate, corruption, increasing social unrest (strikes and demonstrations), issues in electricity supply and logistics (World Bank, 2020).

According to SARB (2017), South Africa is not a saving nation and insufficient savings have become a problem for this nation. Consequently, a low level of domestic savings could limit the country's rate of investment; restrain the rate of economic growth and declining employment rate, with lower incomes which leads to further dissaving. Policies such as Growth, Employment and Redistribution (GEAR), Accelerated and Shared Growth Initiative for South Africa (AsgiSA), and the National Development Plan (NDP), were introduced to address these challenges and some policies managed to achieve some of the intended goals. According to the NDP (2020), the average annual GDP growth should be 5.4%. From the World Bank data (2020), the average economic growth rate is 2.3% for the years 1971 up until 2019. This average growth rate is less than the NDP targeted growth rate of 5.4%; hence, average economic growth fared below the expected threshold. Given the stagnating or slow economic development of the economy, the study at hand focuses on domestic savings and FDI as major determinants of growth.

Against the foregoing backdrop, the aim of the study is to investigate the impact of savings and investments on economic growth in South Africa. To realise the aim of the study, the objectives of the study are to: analyse the relationship between economic growth and GDSs; examine the interaction between economic growth and FDI inflow and inspect the effects of economic growth and exports. In the process, the study tests the hypothesis that domestic savings and FDI had a positive and significant impact on economic growth in South Africa during 1971-2019.

2. LITERATURE REVIEW

According to the Solow-Swan model, the key to growth depends on the augmentation of the labour force and technological progress (Solow & Swan, 1956). Solow and Swan (1956) stress that the savings rate yields growth only in the short term, but it depends on the technological advancement in the long run. The theory argues that technological change has a major influence on the economy and economic growth cannot continue without technological advancement (Chand, 2000).

Based on Harrod's (1939) and Domar's (1946) models, the most important factor to attain growth is to save and invest. This means that a nation can only attain growth by increasing the level of

national saving or expand the level of investment in terms of fixed capital. The theory was criticised for three reasons, a) it centres on the assumption of exogeneity for key parameters, b) it ignores the impact of technical change and, c) it does not allow diminishing returns when one factor expands relative to another (Goodman, 2016).

The endogenous growth theory argues that economic growth is developed from within a system as a direct result of internal processes (Liberto, 2019). The Solow-Swan theory elucidates the long-run economic growth by looking at capital accumulation, labour and increase in productivity, while the Harrod-Domar theory and endogenous growth theory explain economic growth taking into consideration the level of savings and capital, and that investment in human capital, innovation and knowledge are crucial for the enhancement of economic growth, respectively.

2.1. GDSs and economic growth

Using the 16 Sub-Saharan countries, Karim, and Abu (2016) verified the nexus between FDI, GDSs, and economic development from 1981 to 2011. The results found by employing the VAR estimation and Granger causality depicted the existence of a one-way direction causality from FDI to growth and a two-way directional causality between savings and growth (Karim & Abu, 2016). GDSs are crucial in explaining FDIs and GDP (Karim & Abu, 2016). The impulse response exhibited a positive one-way directional causality from FDI to growth and from savings to growth and a positive two-way directional causality between savings and investment in the short run.

Nguyen and Nguyen (2017) examined the association between domestic savings on economic development in Vietnam for the period of 1986 to 2015 by using the ARDL bounds test, and the employment of the time series data. It was found that GDS, gross domestic investment (GDI), and dependency ratio do not affect economic development in the short run. In the long term, GDS and GDI were positively and significantly related to economic growth, whilst the dependency ratio established a significantly negative association with economic growth.

Ribaj and Mexhuani (2021) conducted a study on the effects of domestic saving on economic enhancement in a developing country, i.e., Kosovo, utilising the Augmented Dickey-Fuller test, Johansen cointegration tests and Granger causality tests, looking at the data from 2010 to 2017. The study discovered that GDS had a striking effect, which determines how the economy of Kosovo grows. Savings resulted in boosting investment, production, and employment, leading to more suitable growth. On the other hand, loans and remittances assist to boost the economic growth of Kosovo.

Looking at BRICS countries, for the period of 2000 to 2018, Iqbal, Tang and Rasool (2022) investigated the impact of carbon emissions, energy consumption, FDIs, and exports on economic development using different econometric techniques like ARDL, and panel causality tests. The results indicated that carbon emissions, energy consumption, exports, FDIs and domestic savings promotes economic development in the long term, whilst interest rates and trade openness hinder economic growth. These findings are in line with what Nguyen and Nguyen (2017) as well as Ribaj and Mexhuani (2021) established that GDS positively affects GDP and are crucial for development.

2.2. FDI (inflows) and economic growth

Mawugnon and Qiang (2015) analysed the causal relationship between FDI inflows and economic enhancement in Togo using time series data for the period of 1991-2009. In this study, the Granger causality test was employed to establish the causal relationship between the two economic variables. The results revealed that the existence of a one-way direction relationship between FDIs and economic growth and causation goes from FDI to GDP. In conclusion, FDI inflows cause GDP, a proxy of economic growth.

Using the Autoregressive Distributed Lag Error Correction Model (ARDL-ECM) technique, Javaid (2016) employed the time series data to establish the influence of FDI on GDP and to determine the long and short run effects of FDI on GDP in Pakistan for the period of 1996 until 2014. FDI inflows had a positively significant influence on GDP in the short and long run. Furthermore, FDI inflows brings technological advancement and investments, boosting the nation's economy. Other variables such as inflation and population showed a positive impact on GDP in the long run. Trade and gross capital formation had an insignificant effect on GDP. However, Samantha and Haiyun (2017) conducted a study to examine the effects of economic policies in South Asia from 1978 to 2018 using the Autoregressive Distributed Lag approach. The results that were obtained by Javaid (2016) are in line with the results that were obtained by Samantha and Haiyun (2017). The results showed a positive long run link between FDIs and GDP in Sri Lanka. Inflation and population had a vital impact on GDP.

The association between FDIs and economic growth in developing countries for the period 2000 until 2014 was investigated by Vo, Vo, and Nguyen (2019) utilising panel data and other econometric methods such as Johansen co-integration test and fully modified OLS (FMOLS). The findings showed that FDIs encourage economic enhancement in the long term, although it had an adverse effect in the short run. Other factors such as money supply, human capital, and gross domestic investments (GDIs) had a positive effect on economic growth, but domestic credit had an adverse influence in the short run. In conclusion, FDIs are very crucial for economic development in the long term, especially for emerging and developing countries.

2.3. Exports and economic growth

Research conducted by Akalpler and Shamadeen (2017) analysed the purpose of exports (EXP) on economic growth in a developed country (USA) for the period of 1970 first quarter to 2015 fourth quarter utilising the Vector Error Correction Model (VECM.). The results established that in the long run, there is a positive and significant link between the two variables in USA. It was established that imports and unemployment were negatively associated with economic growth. In another study, the Johansen approach, conventional VECM and Granger causality were utilised to inspect the nexus of exports (EXP) and economic growth in Ethiopia for the period of 1980 to 2017 (Gizaw, Abafita & Merra, 2022). The findings showed that exports affect economic development insignificantly in the short run, but in the long term, there was a positive significant effect between the two variables. Hence, these results are in line with what Akalpler and Shamadeen (2017) established. The results from causality exerted a bidirectional relationship of the two variables.

The study by Balawi (2022) investigated the impact of exports and imports on economic development in Palestine for the period of 2007 until 2020 using the OLS and Engel-Granger cointegration and causality tests. The findings established no relationship between the variables; however, exports were significant, positively related to economic growth in Palestine.

Furthermore, in the case of Indonesia, a study by Annisa, Nairobi, and Taher (2022) analysed the effects of foreign debt, labour force, and exports on economic growth using time-series data for the period 1986 to 2020. The quantitative descriptive technique was used, and the findings showed that foreign debt had a negatively significant impact on economic growth, whilst labour force and exports are positively and significantly associated with economic growth in Indonesia. Hence, what Balawi (2022) found in Palestine was in accord with the results of Annisa et al. (2022).

3. METHODOLOGY

This section discusses the research methodology, how the data were examined, including the sources, model specification and estimation technique.

3.1. Data

The study utilised yearly time series data covering the period of 1970 to 2019, and data sets were collected from World Bank database. The GDP and exports of goods and services (EXP) were measured in millions of dollars, while GDS and FDIs were measured as a percentage of real GDP.

3.2. Model specification

The model is meant to assess the nexus between domestic savings, FDI inflows, and economic growth in South Africa. The production function was constructed, where GDP is the function of GDS, FDI and EXP.

The model is expressed as follow:

$$GDP = F(FDI, GDS, EXP) \dots \dots \dots (1)$$

GDP is the dependent variable whilst FDI and GDS are independent variables and EXP is a control variable.

Equation (1) above can be expressed in a linear equation as follows:

$$GDP_t = \beta_0 + \beta_1 FDI_t + \beta_2 GDS_t + \beta_3 EXP_t + \mu_t \dots \dots \dots (2)$$

Since GDP and EXP are logarised, equation (2) becomes:

$$LGDP_t = \beta_0 + \beta_1 FDI_t + \beta_2 GDS_t + \beta_3 LEXP_t + \mu_t \dots \dots \dots (3)$$

The equation above was a complete GDP model for this study. LGDP and LEXP are logarised whilst FDI and GDS are not logarised, β_0 is a constant and μ_t is an error term, which is used to cater for omitted variables and to exclude the determinants of error terms.

3.3. Estimation techniques

Most economic variables contain unit root; hence, this study used the Augmented Dickey-Fuller (ADF) and Phillip Peron (PP) statistic tests in testing for stationarity. The Autoregressive

Distribution Lag depicts the short and long term between variables that are cointegrated at different orders.

3.4. Stationarity/unit root test

When time series data is employed, it is important to conduct a unit root test first because of the issue of stationarity. Before regressing time series data, analysts must overcome the problem of stationarity (Mutyba, 2013). If time series data is stationary, the regression will cause a factitious outcome and to eliminate unit root, variables should be differenced. If the variables are not stationary at level, further differencing will be conducted. (Gujarati & Porter, 2009). The study employed the Augmented Dickey-Fuller (ADF) and the Phillips Perron test (PP) to test for stationarity.

a. The ARDL cointegration test

Due to its ability of performing better for a small and finite sample size of data, the study employed the Autoregressive Distributed Lag (ARDL) bounds test to examine the relationship between variables (Pesaran, Shin & Smith, 2001). Some advantages of using ARDL are that variables need not be integrated of the same order, it needs no apriori knowledge about the integration properties of the variables, and it obtains unbiased estimates of the long run model (Belloumi, 2014).

The ARDL bounds test shows the lower bound critical value and the upper bound critical value. When the F-statistics is above the upper critical bounds test, the null hypothesis should be rejected; hence, showing the existence of cointegration (Ncanywa & Lestoalo, 2018). To find out the short run and long run relationship, equation (3) can be changed into equation (4)

$$\begin{aligned} \Delta LGDP_t &= \beta_0 + \sum_{i=1}^p \beta_{1i} \Delta LGDP_{t-i} + \sum_{i=1}^p \beta_{2i} \Delta FDI_{t-i} + \sum_{i=1}^p \beta_{3i} \Delta GDS_{t-i} + \sum_{i=1}^p \beta_{4i} \Delta LEXP_{t-i} \\ &+ \delta_1 LGDP_{t-1} + \delta_2 FDI_{t-1} + \delta_3 GDS_{t-1} + \delta_4 LEXP_{t-1} \\ &+ \mu_t \dots \dots \dots 4 \end{aligned}$$

Δ denotes the first difference operator, β_0 indicates a constant and μ_t represents an error term. The long run and short run relationship are indicated by $\delta_1 - \delta_5$ coefficients and $\beta_1 - \beta_5$ coefficients, respectively (Ncanywa & Lestoalo, 2018). When $LGDP_t$ is the dependent variable the null hypothesis and alternative hypothesis are:

- $H_0 : \beta = 0$, long run relationship does not exist
- $H_1 : \beta \neq 0$, long run relationship exists

3.5. Diagnostic test

On diagnostic tests, the Breusch Godfrey serial correlation LM test, Jarque-Bera normality test and heteroscedasticity test were used to determine if the model is dependable and coherent (Gujarati & Porter, 2009). Time series model must meet the assumption of the classical linear regression model to ensure that the assumptions are not violated (Ncanywa & Lestoalo, 2018).

4. EMPIRICAL RESULTS AND DISCUSSIONS

4.1. Unit root test results

To elect an appropriate technique, a unit root test should be conducted. Table 1 shows the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root test results. The study chose the estimator of the probability value (p value) to test the null hypothesis of unit root test. The results of the ADF and PP test for unit root test confirms that LGDP, GDS and LEXP are stationary at 1st difference I (1), besides FDI, which is stationary at both level and 1st difference. When the results of ADF differ from PP, the results that are most preferable are the ADF test results because they are more reliable. Therefore, the hypothesis that LGDP, FDI, GDS and LEXP contain unit root can be rejected. This means that there is no unit root, which leads to variables being stationary.

Table 1: Unit root tests

| Variable | Augmented Dickey Fuller (ADF) | | | Phillips-Perron (PP) | | | Decision |
|------------------------------|-------------------------------|-------------------|--------|----------------------|-------------------|--------|----------|
| | intercept | Trend & intercept | none | intercept | Trend & intercept | none | |
| LGDP at level | 0.8495 | 0.5875 | 0.9996 | 0.7976 | 0.7175 | 1.0000 | I (0) |
| LGDP at 1 st diff | 0.0003 | 0.0022 | 0.0029 | 0.0005 | 0.0032 | 0.0044 | I (1) |
| FDI at level | 0.5175 | 0.0001 | 0.2900 | 0.0001 | 0.0001 | 0.0004 | I (0) |
| FDI at 1 st diff | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0004 | I (1) |
| GDS at level | 0.6511 | 0.66873 | 0.2247 | 0.6730 | 0.7199 | 0.1726 | I (0) |
| GDS at 1 st diff | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | I (1) |
| LEXP at level | 0.9513 | 0.5290 | 0.9992 | 0.9468 | 0.4914 | 0.9988 | I (0) |
| LEXP at 1 st diff | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | I (1) |

Source: Author's estimations

4.2. ARDL results

Initially, the ARDL bounds test was used to select lags (Ncanywa & Letsoalo, 2018). Table 2 shows the results of the bounds test. There are three explanatory variables in the model: therefore, k=3. The results of bounds co-integration test reveal that the null hypothesis of no existence of long run is rejected at 1% level of significance. The F-statistic value of 16.66 is greater than the lower and upper critical values of 3.65 and 4.66, respectively. Hence, the existence of a steady state long run association between logged GDP, FDIs, GDS, and logged exports exists (Zhanje & Nyamwena, 2017).

Table 2: ARDL bounds test

| Model: $LGDP = F(FDI, GDS, LEXP)$ | | |
|-----------------------------------|--------------------|--------------------|
| Test statistic | Value | K |
| F-statistic | 16.66 | 3 |
| Critical value bounds | | |
| Significance | Lower bounds I (i) | Upper bounds I (1) |
| 10% | 2.37 | 3.2 |
| 5% | 2.79 | 3.67 |
| 2.5% | 3.15 | 4.08 |
| 1% | 3.65 | 4.66 |

Source: Author's estimations

The estimated coefficients obtained from the long run relationship between LGDP, FDI, GDS and LEXP in table 2 are represented in equation (5)

$$LGDP = -(-0.01 FDI - 0.01 GDS - 1.02 LEXP + 0.10) \dots \dots \dots (5)$$

Making LGDP the subject of the formula, equation 1 becomes:

$$LGDP = 0.01 FDI + 0.01 GDS + 1.02 LEXP - 0.10 \dots \dots \dots (6)$$

Equation 6 and table 3 above show that FDI inflows have a positive influence on LGDP. An elasticity coefficient of 0.01 between FDIs and logged gross domestic product (LGDP) imply that a 1% increase in FDI inflows lead to a 0.01% increase in LGDP. Hence, the nexus between LGDP and FDI inflows is inelastic and positive, showing that the variation in LGDP is less responsive to changes in FDI inflows (Zhanje & Nyamwena, 2017). However, the probability value of 0.02 shows that the relationship between the two variables is significant at 5% level of significance (Ncanywa & Letsoalo, 2018). GDS has a positive link with LGDP.

LGDP and GDS are inelastic and positive, meaning that a 1% increase in GDS leads to a 0.01% increase in LGDP and this indicates that the variation in LGDP is less responsive to the changes in GDS. The probability value of 0.04 show that the model is statistically significant at 5% level of significance. Logged exports has a positive effect on LGDP. The relationship between exports and economic growth is elastic and positive, meaning that 1% increment in LEXP leads to a 1.02% increase in economic growth (LGDP). This means that the variation in LGDP is more responsive to the changes in LEXP. The probability value of 0.00 show that the model is statistically significant at all levels of significance.

Table 3: Long run relationship

| Variable | Coefficient | P-value |
|----------------|-------------|---------|
| FDI | 0.01 | 0.02 |
| GDSs | 0.01 | 0.04 |
| Logged exports | 1.02 | 0.00 |

Source: Author’s estimations

GDS coefficient is 0.0007 with a probability value of 0.27, showing a positive and insignificant short run relationship with economic growth. With LEXP, the coefficient is 0.23 and the associated probability value is 0.00, showing a significant and positive short run relationship with LGDP (Ncanywa & Letsoalo, 2018). The error correction term model (speed of adjustment) reads the value of -0.06, which has an anticipated sign and is statistically significant at 5% and the system must converge and reach equilibrium. The speed of adjustment implies that 6.16% of the disequilibrium of the preceding year is adjusted towards the long run equilibrium in the upcoming year (Zhanje, 2017). The speed of adjustment varies due to geographical factors and choice of variables.

Table 4: Short-run results

| Variable | Coefficient | P-value |
|-----------------------|-------------|---------|
| FDI | 0.0007 | 0.44 |
| DGDS | 0.00 | 0.27 |
| D (GDS (-1)) | 0.00 | 0.00 |
| D (LEXP) | 0.23 | 0.00 |
| Error Correction Term | -0.0616 | 0.00 |

Source: Author’s estimations

4.4. Diagnostic test results

When testing the null hypothesis where residuals are normally distributed as shown in table 5 using the Jarque Bera Normality test, the computed results revealed that the probability value of 0.95 is statistically insignificant and is greater than the level of significance 5%, signaling that the null

hypothesis is not be rejected at 10% level of significance, indicating that the residuals are normally distributed (Zhanje, 2017). Figure 1 shows the Jarque-Bera normality test. Kurtosis must read a value that is 3 and or approximately 3 and, in this case, Kurtosis reads 3.1 which is approximately equivalent to 3; hence, Kurtosis confirms that the residuals are normally distributed.

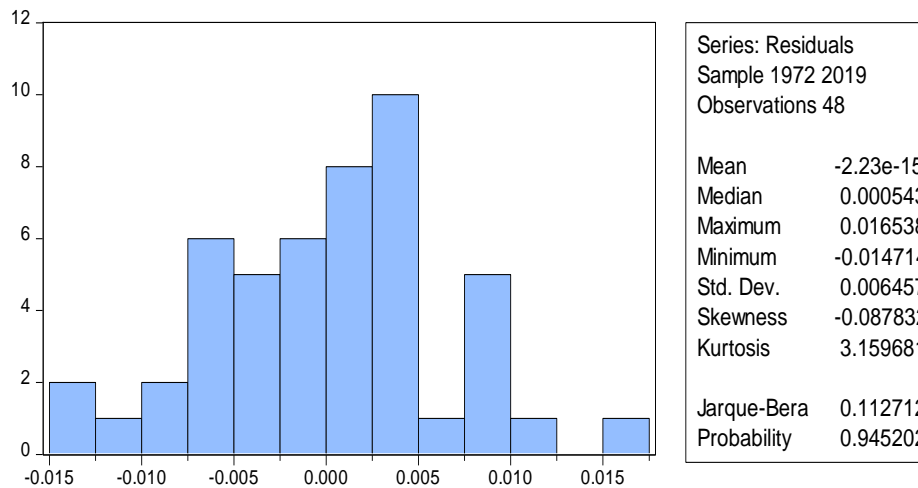


Figure 1: Jarque-Bera Normality test

The Breusch-Godfrey Lagrange Multiplier test was conducted to test the null hypothesis of no serial correlation in the model. The results entailed that the null hypothesis should not be rejected since the probability value 0.97 is more than the 5% level of significance. This shows that the model is free from serial correlation (Zhanje, 2017).

The Breusch-Pagan-Godfrey test and ARCH test were applied to test for the presence of heteroscedasticity in the model and the respective tests yielded the probability values of 0.0735 and 0.2778, respectively, which are all greater than the 5%. The results show statistical insignificance; hence, the null hypothesis of the presence of heteroscedasticity is not rejected at 5% level of significance, implying that there is no heteroscedasticity in the model.

Table 5: Summary of diagnostic test results

| Testing procedure | Null hypothesis | t- statistic | p-value | Conclusion |
|---|------------------------------------|--------------|---------|---|
| Jarque-Bera normality test | Residuals are normally distributed | 0.1127 | 0.9452 | Do not reject the null hypothesis given that PV (0.9452) > L.O.S (0.05) implies that the residuals are normally distributed. |
| Breusch-Godfrey: serial correlation LM test | No serial correction | 0.0549 | 0.9729 | Do not reject the null hypothesis given that PV (0.9729) > L.O.S (0.05). This shows that there is no serial correlation in the model. |
| Breusch-Pagan Godfrey heteroscedasticity test | No heteroscedasticity | 12.9415 | 0.0735 | Do not reject the null hypothesis given that PV (0.0735) > L.O.S (0.05), denoting that there is no heteroscedasticity in the model. |
| ARCH test | No heteroscedasticity | 1.1785 | 0.2778 | Do not reject the null hypothesis given that PV (0.2777) > L.O.S (0.05) showing that there is no heteroscedasticity in the model. |

Source: Author’s construction

5 STABILITY TEST RESULTS

Figure 2 of panel A shows the results of the CUSUM test, and the results revealed that there is a parameter or variance stability over the sample period examined, since the cumulative sum remains within the two 5% critical lines. This simply means that the model is stable (Ali, Ahmad & Khalid, 2010).

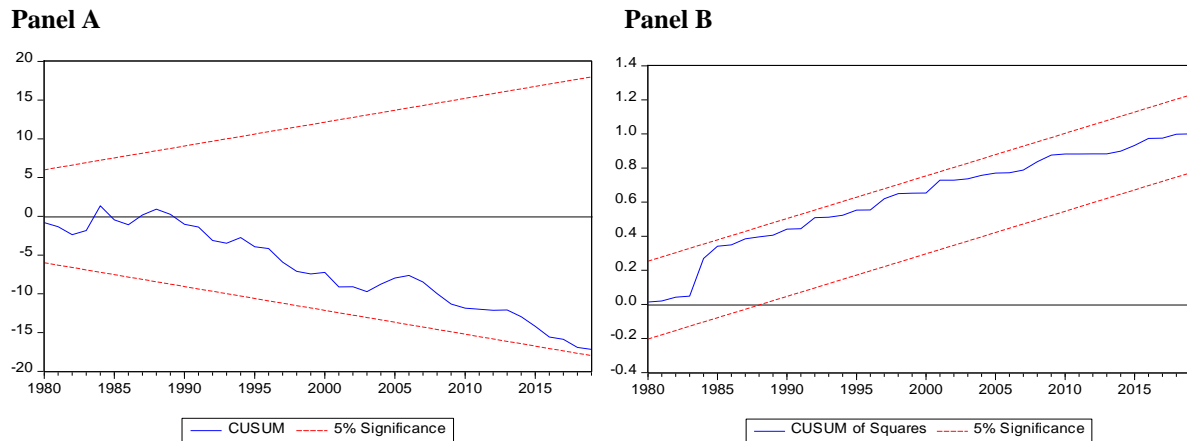


Figure 2: Cusum and Cusum of square test results

Source: Author's construction

In figure 2 of panel B, the CUSUM of Squares test results showed that the cumulative sum of squares is within the 5% critical lines meaning that the model is stable.

CONCLUSION

The study aimed at analysing the impact of savings and investments on economic growth in South Africa for the period of 1971 to 2019. The Augmented Dickey Fuller and Phillips Perron unit root test results revealed that economic growth, GDS, and exports are of I (1) variables, integrated at order (1). Hence, these variables become stationary after being differenced once, while FDI is I (0) variable, it is stationary at level. The Autoregressive Distributed Lag (ARDL) Bounds test results showed that there is a steady long run relationship between economic growth, FDIs, GDS, and exports. The diagnostic tests indicated that the model does not have any problems of heteroscedasticity and serial correlation. The normality test showed that the residuals are normally distributed, and the stability test verifies that the ARDL model is stable.

From the analysis, the results of the study show that FDI inflows, exports and GDS have a positive impact on economic growth. Therefore, for the economy to grow, measures to enhance FDSs and domestic savings should be implemented. The government should encourage every citizen to set an emergency fund goal. This is where every citizen is required to save money monthly in case of an emergency. The government should also intensify their strategies of fighting and ending corruption, xenophobia, and political instability, as these can prevent foreign investors to invest in South Africa. Hence, the government should strive to create a favourable and convenient environment for the inflow of FDIs. There is an important need to attract more foreign investors to invest in South Africa but attracting FDI inflows alone is not adequate to realise sustainable economic growth, economic development, job creation and reduction poverty. Hence, there is also a need to improve and invest more in infrastructure, which is of utmost importance for economic growth and development.

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ANTECEDENTS TO FEMALE ACADEMICS FLOURISHING DURING THE INITIAL STAGES OF NATIONAL LOCKDOWN IN SOUTH AFRICA

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ABSTRACT

COVID-19 changed the landscape of the South African higher education sector from its onset. Face-to-face interaction suddenly became obsolete at many higher education institutions. Balancing work and family commitments became an everyday reality with an undefined timeline. The consequences of level 5 lockdown, especially for female academics' sense of workplace flourishing, beckoned to be voiced. Purposive snowball sampling enabled the accumulation of an exhaustive sampling frame. University of technology-affiliated female academics partook in an interpretative phenomenological study. Social distancing laws underscored the use of Microsoft Teams as a virtual setting for 11 one-on-one researcher-participant engagements. Participants' first-person accounts of flourishing within the demarcated context engendered data saturation. Initial in-vivo coding was followed by repetitive template and thematic data analysis cycles. MAXQDA facilitated insights into the 'essence' of participants' accounts. "Reframing how and where I work" developed as the central theme. Sub-themes included: languishing limbo, the paradox of expectations, a sense of disconnect, and employee resourcefulness. Employee flourishing was adversely affected by extreme environmental change during the period under review. Despite this, participants reaffirmed a commitment to their chosen profession whilst acknowledging the enabling properties of technology going forward. Flourishing does not imply the absence of languishing. Instead, it alludes to an opportunity to learn from the unknown, plan for the future and embrace the resourcefulness of human nature. Although COVID-19 "*locked us in*", the sector should embrace an essence of hope for a post-COVID work context where "*lockdown didn't lock us down*".

Keywords: COVID-19, work-life balance, gender, flourishing, digital learning platforms, qualitative research

1. INTRODUCTION

Officially declared a pandemic on 11 March 2020, the novel coronavirus SARS-CoV2 (COVID-19) resulted in millions of people becoming ill and over six million deaths globally (World Health Organisation, 2022). In addition, the 'lockdown' of large geographical areas and, in some cases, entire countries became the approach to combatting the spread of a highly contagious virus. South Africa also went into lockdown from midnight on 26 March 2020 (Ramaphosa, 2020a, 2020b).

The *COVID-19 lockdown* disrupted all sectors of the South African economy, with the country in a forced state of a standstill. Universities had to change their modus operandi profoundly—from the traditional on-campus, face-to-face teaching method to a fully online approach (Nzimande, 2020). The strict lockdown regulations and working from home brought a new dimension to working in academia. COVID-19 also served as a harsh 'wake-up call' for academia that accentuated the need to change teaching and to learn to be fit for purpose (Setlhako, 2020), which

undoubtedly accelerated the digital transformation in the South African higher education sector to date.

Jamal, Anwar, Khan and Saleem (2021) cautioned that remote work arrangements require the concurrence of activities and can also add to the workload, the sense of isolation and family–work–life imbalances. In contrast, Avgoustaki and Frankort (2019) argue that a remote working context that is “employee-centric” can add to an employee’s experience of well-being. Rothmann, Van Zyl and Rautenbach (2019) describe these “patterns of positive feelings and functioning” as workplace flourishing.

1.1 Flourishing in context

Keyes (2002) describes flourishing and languishing as divergent states of eunoia. Admittedly both flourishing and languishing is a reality within any work context. In addition, flourishing is not a static concept but rather a shift along a continuum of positive and negative experiences (Redelinguys & Rothmann, 2020). Flourishing individuals can be seen as energetic and function well in different domains of their lives (Keyes & Haidt, 2003). Scholars describe emotional, psychological and social well-being as dimensional characteristics of flourishing at work (Keyes, 2013; Keyes & Annas, 2009; Marais-Opperman, Rothmann & Van Eden, 2021; Rothmann et al., 2019). Languishing, in contrast, is characterised by feelings of helplessness fuelled by a lack of control of the outcomes in a given context. Languishing individuals do not have diagnosable mental disorders but report stagnation, emptiness and despair (Keyes et al., 2020).

Before the onset of COVID-19, South African studies on flourishing at work confirmed a positive association with the person-environment fit (Redelinguys, Rothman & Botha, 2019) and advancement as a job resource (Rothmann et al., 2019), as well as self-reported performance (Redelinguys et al., 2019). Only one South African study on flourishing-at-work in an education setup during COVID-19 was noted. Teachers' results showed that flourishing at work was positively associated with perceived positive stress. Both organisations and employees could be susceptible to the consequences of the pandemic (Kniffin et al., 2021).

Admittedly, the need remains to reckon with the logistical costs of working from home during the COVID-19 pandemic (Abhijeet, 2021). Global COVID-19-related scholarship, however, has indicated that this pandemic had significant negative impacts on the overall well-being of individuals in the work context. These negative consequences are linked to reported workload pressure, task interdependence and family interference (Jamal et al., 2021). The perceived breach in the pre-existing psychological contract (Karani et al., 2021) was amplified by feelings of lonesomeness and monotony (Banerjee & Rai, 2020), distress and worry (Sasaki et al., 2020), as well as burnout (Gewin, 2021) during the lockdown. The lockdown period admittedly resulted in increased stress and depression, undesired weight changes, disturbed sleeping patterns and changes in parental obligation to care for children who are also still home for remote learning (American Psychological Association, 2021).

Scholars produced various studies and articles on the concept of flourishing in everyday life. However, limited evidence regarding flourishing in the work and organisational environments is available. Therefore, more research is needed on flourishing-at-work as an encompassing well-being concept, especially in this COVID-19 pandemic. The researcher investigated if positive

elements of flourishing are evident in the academic working environment, even in difficult times such as the COVID-19 context. The research question is: “What are female academics’ lived realities of flourishing versus languishing during the initial stages of national lockdown in South Africa?”

2. METHOD

2.1 Research design

The study is situated within the interpretivist paradigm and employed a post-positivist phenomenological research design (Creswell & Poth, 2018) to develop an in-depth shared meaning (Gaudet & Robert, 2018) of employee flourishing within the demarcated context. Van Manen (2016) labels phenomenology as the “study of the essence”, thus alluding to a systematic process of “uncovering and describing” the detonated architecture of lived experiences. King et al. (2019, p. 11) contend that this approach enables access to “indeterminate lifeworlds” where people participate in assigning meaning to facts and events. In addition, this approach further sanctioned the need for a gender-focused exploration of flourishing as advocated by previous research (De la Fuente et al., 2020; Verma & Tiwari, 2017).

2.2 Participants and setting

The phenomena under investigation exist within a specific social environment. Malterud, Siersma, and Guassora (2016, pp. 1753-1759) emphasise the need to source participants with “information power” instead of solely being guided by the notion of data saturation. Purposive snowball sampling, as a “network sampling” method (Bernard, Wutich, & Ryan, 2017, p. 53), enables the accumulation of an exhaustive sampling frame (Saldanã & Omasta, 2018). A university of technology in southern Gauteng, South Africa, where the face-to-face teaching mode characterises academic interaction, constitutes the demarcated study area. Eleven female academics aged 32 to 58 years took part in the study. All participants had more than five years of service at the demarcated organisation, with 63 percent indicating an employment relationship above 10 years. Except for one (contract employee), the participants noted their employment status as permanent.

2.3 Procedure

Participant interaction occurred during the COVID-19 level five national lockdown in South Africa. Ethical clearance to conduct the research (FRECMS-17062020-037 500128) was obtained. Initially, an information leaflet was e-mailed (Lobe et al., 2020) to prospective participants to establish contact, frame the research question and elicit interest in the study (King et al., 2019). Participants’ autonomous choice to participate (Poland & Birt, 2018) indicated their informed consent at the onset of each interview (Flick, 2018).

2.4 Data generation

Adhering to the legislated need for social distancing during national lockdown, Microsoft Teams, an online communication software platform, expedited the one-on-one researcher-participant engagement in a virtual setting. Access to the recorded data was restricted to the researcher and password protected. This time-saving approach enhanced accessibility, aided data management efforts and complemented data security (Gray et al., 2020). A flexible, semi-directive interview

guide (Gaudet & Robert, 2018; Roller, 2020) paved the way for a probing line of questioning centred around participants' flourishing experiences within their academic work context during the COVID-19-related national lockdown. The ninth interview signalled data saturation (Bernard et al., 2017). An additional two interviews followed, which confirmed this notion. Examining the research focus, protracted participant engagement, confirmed data saturation and findings that flowed from the data enhance trustworthiness and promote understanding of the specific phenomenon (Braun & Clarke, 2021) in the demarcated context.

2.5 Data analysis

The anonymised transcriptions were read and re-read in conjunction with the audio recordings. The works of Keyes (2002, 2005, 2011, 2013), Keyes and Annas (2009) and Rothmann (2013) informed the further template analysis of data. Template analysis allows identifying some themes in advance with a particular theoretical concern that needs assimilation into the study (Brooks et al., 2015; Tabari, King & Egan, 2020). The researcher used MAXQDA 2020 Plus to code and categorise data segments. The initial analysis was followed by further rounds of thematic analysis, which gave prominence to the shared meaning of each conversation.

3. FINDINGS AND DISCUSSION

“Reframing how and where I work” emerged as the overarching theme of participants' workplace flourishing experiences during the national lockdown. Languishing limbo, the paradox of expectations, a sense of disconnect and employee resourcefulness constitute the identified sub-themes.

3.1 Reframing how and where I work

Participants continuously compared their experiences of workplace flourishing before lockdown to those of lockdown and even speculated about the unknown of a post-Covid work context. Participants were de-identified by assigning pseudonyms to the various direct quotes. Shared experiences voiced the need to do an about-turn as participants came to terms with their changed work context amidst a global pandemic. These aspects are reasoned next.

3.1.1 Languishing limbo

The higher education work context changed overnight – from everyday face-to-face interactions to an “*unplanned and unorganised*” fully remote mode of work (Samantha). Initially thought of as “*a self-imposed holiday*” (Samantha), the realities enclosed in a national lockdown soon became apparent to participants. Participant accounts varied from labelling their transition to the ‘*new normal*’ as “*no problem*” (Kaitlyn) to “*Yeah, you just had to swim and make sure that you don't drown*” (Thando). While acknowledging the sudden onset of lockdown restrictions, COVID-19 caught participants off guard.

Burdorf, Porru, and Rugulies (2021) acknowledge that a non-work-friendly home could counter the benefits of increased flexibility and remote work control. The sequelae of the lockdown period compounded the personal challenges participants faced at this time. Challenges faced by participants included setting up a dedicated workspace at the home office, inadequate access to mobile data or WiFi, limited resources and family commitments. Samantha, an extrovert, noted

that the loneliness of remote work drained her energy levels at the onset of lockdown. In addition, the lines between the start of a workday and the end thereof became blurred. Participants attributed their frustration to the unplanned manner in which numerous tasks accumulated at the onset of lockdown. Forsooth, lockdown caught all off guard without a contingency plan.

Confronted with an uncertain future, participants expressed their fear of potential job losses within the higher education sector. Participant accounts voiced their increased efforts during lockdown to enhance their aura of job security (Sylvia). Samantha was relieved that she could remain confident in her employment status despite the many job losses around her. The sector's ability to facilitate remote working arrangements limited job losses (Eurofound, 2021). In addition, Timming, French and Mortensen (2021) describe the transitional nature of job loss anxiety attributed to the pandemic as time-sensitive.

Participants expressed conflicting emotions at being obligated to work while facing the harsh realities of the pandemic. The death of those around them and their fear of contracting COVID-19 justified their dissonance. The death of a colleague awakened the collective desire to assist the departed colleague's family financially in some instances.

3.1.2 A paradox of expectations and sense of disconnect

Participants voiced their desire for institutional support during the lockdown period, but their accounts reveal a stark reality. Rothmann (2014) advocates the value of positive institutional communication in obtaining buy-in from a broad audience to effect change. Participants, however, underscored that institutional communication during lockdown was directed mainly at students while disregarding staff needs. Although undefined, the slogan 'no student must be left behind', was affirmed as the operational domain at educational institutions during the lockdown. The directive of "*carry on as usual*" caused an apparent disconnect between participants and management—their inner feelings of despair grew from the inadequateness of institutional support they experienced. Participant accounts bore evidence of feeling excluded and unnurtured (Thando) and, in some cases, even as an overlooked "*non-entity*" (Sofia).

The absence of clear-cut communication implied that participants had to "*figure it out*" (Sofia) for themselves. Participants labelled the communication they received as mainly "*task-oriented*" (Kaitlyn). Olivia adamantly labelled the communication she received as "*inhumane*" – callous towards employee feelings at that lockdown stage. Maletsatsi voiced her dismay at the lack of communication directed at staff by saying, "*I suppose because we are lecturers everyone assumes we're fine ... while we are actually drowning and they just don't know*".

The fluidity of the academic calendar during the initial stages of lockdown rendered participants disenfranchised in their attempts to plan – a direct consequence of the messages received during lockdown that was devoid of insight into the way forward. This inability to plan transcended other spheres of participants' lives to such an extent that some confessed to an inability to cope during these "*hectic*" times (Tandi).

The perceived prioritisation of student needs and their expectations of a 24/7-lecturer-availability overwhelmed participants. A general sense of confusion, attributed mainly to not understanding the rationale behind many of the instructions they received during the lockdown, gave rise to the phenomenon of repeatedly having to do and re-do tasks. Reddy (2020) proclaimed that COVID-

19, as a social phenomenon, ebbed individuals away from their everyday social environment. Voiced feelings of loneliness and disconnection were attributed to an isolated work context “*me and my computer*” (Tandi).

Rothmann (2014) attests to the value of collegial interactions in creating social identity and belonging. Participants described their departmental membership as more targetable than their institutional membership. The pre-COVID collegiality in departments was an enabling force during COVID—a mutual willingness to assist one another (Sophia). In addition, both Tandi and Ayania labelled the support they received within their department as almost familial. Inter-departmental teams also facilitated work-related contact with colleagues during the lockdown.

Brough and O'Driscoll (2015) propose the need to reassess meaning as an active coping strategy when faced with changing circumstances, resources and attitudes. In addition, Potgieter and Botha (2014) describe the role of flexibility while contending with challenges as beneficial when expressing or suppressing emotions through self-regulation. To this end, some participants used physical exercise (Sylvia), while others had a constant craving for food (Ayania). Teaching remotely left participants mentally exhausted, feeling overworked and suffering body aches. The adoption of a ‘one-day-at-a-time’ approach aided attempts to cope (Maletsatsi), while others viewed their emotions as private and refrained from sharing them with others (Maabo).

COVID-19 echoed a global need to embrace the ethos of the Fourth Industrial Revolution and its empowering application value as an educational tool. Despite an institutional culture of continuous professional development before the onset of COVID-19 lockdown, participants professed not to have implemented their online teaching skills attained in the past. Admittedly, a growing sense of uncertainty accompanying COVID-19 precipitated a layered responsibility for and above the traditional face-to-face modus operandi, which compelled the adaptive use of remote online teaching platforms (Levine et al., 2021). In addition, Levine et al. (2021) infer that the onus is on academic institutions not to assume equal access to resources (computers, printers, data, dedicated workspace) by all faculty members during COVID-19.

Kaitlyn admonished that the South African higher education context is still characterised by a shortage of access to data and laptops. Participant accounts demonstrated two distinct fragments in this regard— *‘the haves and the have-nots’*. Before lockdown, only two participants reported access to an existing WiFi connection at home. The remaining participants vividly voiced their dismay with the time frame it took to create an enabling remote work context and the resultant additional and unplanned cost they incurred in this regard. The implications of not having access to resources at home were compounded further by the strict lockdown restrictions, which prohibited access to campus or individual offices. Participants took exception to the message being circulated that “*you guys are saving money to travel to the varsity, use that money for WiFi*”. Labelled as unfair, the resulting inferences linked to this statement beckoned the question of to what extent staff should carry the cost of doing their jobs on behalf of the institution (Olivia). Olivia also viewed mobile data allocation mid-lockdown as a “*helpful gesture*”.

3.1.3 Employee resourcefulness

The anticipated ‘*new normal*’ implied the need for a ‘*mind-shift*’ – a willingness to venture into the unknown. Despite the perceived uncertainties, participants articulated their continued commitment to their chosen profession and those they serve. Their empathetic approach towards

teaching during this time, however, exponentially added to their feelings of being overwhelmed at times. Participants noted that they felt drained due to being “... *bombarded by tasks and challenges* ...” and a resultant overall sense of urgency, which culminated in a regime of working 24/7. Work overload in this context admittedly embodied the extent of significant stressors attributed partly to the changed work context and nature of managerial practices during lockdown (Du Plessis, 2020; Jamal et al., 2021). Participants described how the haphazard nature of the organisation during the initial stages of lockdown led to unscheduled meetings popping up, repeatedly having to re-do tasks without a clear rationale and a compounded notion of bottlenecks. Kaitlyn described the bottleneck of tasks she had to perform during the lockdown as “*soul-destroying*”, while Sofia concluded with “... *we just had to soldier on*”.

The notion of “work intensification” — fulfilling a growing number of tasks during the workday — is a vital characteristic of the modern-day workplace (Kubicek & Korunka, 2017). This sentiment, it is argued, should not be equated to an atypical work context brought about by a pandemic. The onset of lockdown leads to a concurrent coalescence of family and work responsibilities. Indicative of time spent reflecting on the interplay between life and work, participants described the composition of their family and, in some cases, extended families, for which they assume responsibility while yearning for a more equitable work–life balance during the lockdown. Notwithstanding the need to find a suitable medium, participants faced an internal Hobson’s choice in their attempts to balance home and work responsibilities.

The notion of work–life balance became an elusive goal to many participants during these initial stages of lockdown. Not only did responsibilities associated with motherhood become challenging for participants during this time, but also the added responsibilities of caring for ageing parents. Tandi openly admitted that she was not coping with the demands of family life, domestic tasks and work obligations positioned so close together. Thando admitted to feeling embarrassed to say “... *people, I’m not cracking it* ...” while claiming she “... *just had to swim and make sure you don’t drown*.” Admittedly she missed “... *those corridor chats* ...” while alone at home (Thando). Her sense of loneliness even gave rise to her thinking, “... *maybe you’re the only one who has challenges*.”

According to participant accounts, the notion of the time faded away at the onset of lockdown due to the unstructured nature of working, eating, sleeping and lacking social contact, culminating in a speculative envisioning of an unsure future. Participants articulated how their attempts to regain control of their circumstances during the pandemic related to their need for effective time management. These actions included working strictly according to a pre-COVID timetable (Maletsatsi), diligently following an existing exercise regime (Sylvia) and acknowledging the uniqueness of co-workers as they met each other halfway during this time (Sylvia). In contrast, the flexible working hours suited both the “*morning person*” (Olivia) and the “*night owl*” (Samantha), who were able to work according to their personal preferences; devising realistic timeframes, creating structured work engagements, prioritising tasks and allowing time to rest aided the notion of mindful work engagement amongst participants. Their appreciation of that which they still have amidst the pandemic nurtured a positive effect (Pillay, 2020).

4. IMPLICATIONS OF THE STUDY

The study outcomes add to the existing literature on aspects of flourishing at work. The environmental change brought about by COVID-19 impaired the flourishing of academia due to work- and personal life challenges. Many academics felt disconnected and were overwhelmed with work responsibilities and digital technology during the lockdown. Consequently, this brought about the realisation that academia was not fully prepared for the Fourth Industrial Revolution. It made lecturers more aware of their students' limitations in accessing and using technological resources.

The spiralling effect of decisions taken by top management also became evident as the importance of effective and efficient leadership during periods of crisis. Fortunately, participants still affirmed their continued commitment to sectoral professionalism, which is a step in the desired direction for flourishing in the work environment.

5. LIMITATIONS OF THE STUDY

First, all data gathering occurred in the higher education sector, which may constrain the study results from generalising to alternative settings. Secondly, the information was collected from a female population, and gender differences were not considered. Thirdly, the research time frame was specific to the national lockdown period in South Africa. Longitudinal studies in different time frames are, therefore, recommended. Lastly, this study examined the outcomes of flourishing at the individual level. Future studies may also check the influence of flourishing, such as organisational innovation and performance (organisational level) and team effectiveness (team level).

6. CONCLUSION

The present study shows that the flourishing of female academia was adversely affected by extreme environmental change (such as a national lockdown). Workplace flourishing emanates from the need for employees to feel good and function well within that their work context (Hart, Cotton, & Scollay, 2015). Flourishing does not imply the absence of languishing. Instead, it alludes to an opportunity to learn from the unknown, plan for the future and embrace the resourcefulness of human nature. Therefore, the study suggests that higher education institutions should create a supportive environment for their employees to enhance work engagement and create a flourishing culture, even in times of crisis. Although COVID-19 “*locked us in*”, the sector should embrace an essence of hope for a post-COVID work context where “*lockdown didn't lock us down*” (Olivia).

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INVESTIGATING THE LINKS BETWEEN STRUCTURAL EMPOWERMENT, PERCEIVED TRUST IN MANAGEMENT, CORE SELF-EVALUATION AND EMPLOYEE WORK ATTITUDES IN THE PUBLIC SECTOR CONTEXT.

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ABSTRACT

In today's highly competitive work environment, organisations have a greater need for competitive and assertive individuals to adapt to the fast-paced change in organisations. Within public sector organisations, in particular, the customer service expectations from the general public require employees to display particular attitudes and behaviours towards their jobs. These attitudes are generally influenced by the perception employees conceive about the prevalence of organisational factors that exist within their work environment. The perceived organisational factors, such as structural empowerment, influence the kind of attitude employees will develop towards their jobs, subsequently influencing the quality of their service to stakeholders. Utilising a quantitative approach, a cross-sectional time horizon and a correlational design, the data were derived from the convenience sample of 290 public sector employees from Lesotho governmental ministries. The statistical analysis for this study included descriptive statistics, reliability and correlation statistics and a simple mediation model analysis. Pearson's correlation analysis was conducted to determine the type and nature of relationships between the constructs. The conditional process analysis was conducted to test the moderated mediation model. This study aimed to determine the mediating role of managerial trust and the moderating role of core self-evaluation in the relationship between structural empowerment and employee attitudes. The findings suggest that all scales used in the study are reliable. Structural empowerment is positively related to managerial trust, affective commitment, subjective performance, and job satisfaction and is negatively associated with employee intentions to quit. Trust mediates the relationship between structural empowerment and employee attitudes (affective commitment, subjective performance, job satisfaction and intentions to quit). In addition, core self-evaluation only moderates the relationship between managerial trust and affective commitment. This study adds to the dearth of literature about the influence of organisational factors on employee work attitudes in developing countries, specifically in the Lesotho public sector context. The findings of the study equip managers in the public sector with the knowledge of the organisational factors and employee dispositional characteristics to provide a conducive work environment that can yield desired work attitudes from the employees.

Keywords: Structural empowerment, trust in management, employee work attitudes, core self-evaluation, public sector.

1. INTRODUCTION

Workforce sustainability, in general, has become crucial to organisations. As much as technological advancement may threaten human capital, organisations still value the critical importance of employees and their well-being. The public sector is one of the sectors with employees having a significantly demanding work environment where proper interventions are needed to ensure that the human capital remains actively productive despite some high demands, given the limited resources. These organisations often function in a highly complex environment characterised by governmental checks and balances, serving different stakeholders, and a volatile political climate. They also have to meet the expected level of service delivery to society. These demands put enormous pressure on public sector employee performance and well-being. Hence this situation poses challenges for public sector organisations (Van der Voet, Kuipers, & Groeneveld, 2015). Mafini (2014) emphasises that, due to its importance to organisations, employee well-being merits continued empirical research to obtain new information in specific contexts and update what is already known about the subject.

Even though most organisations are increasingly using different strategies as management techniques to promote employee and organisational outcomes, the public sector literature has limited evidence relating to understanding the mechanisms that help nurture and sustain the desirable employees' attitudinal outcomes in the workplace. Therefore this study contributes to the extant body of knowledge by developing a better understanding of the organisational factors, inter-relational characteristics, individual differences and work-related attitudinal outcomes critical for the public sector environment. The study sought to address three objectives. Firstly, utilising the JD-R model and conservation of resource theory as the theoretical frameworks, the study examined the relationships between structural empowerment and employee work attitudes. Secondly, we tested the mediating role of trust in management in the link between structural empowerment and employee work attitudes. Finally, the study examined the moderating role of core self-evaluation in the mentioned relationships.

2. LITERATURE REVIEW

The next section focuses on the theoretical backdrop underpinning the study and draws on prior empirical research to establish the conceptualisation of the constructs considered in the study. This is followed by the methodological section depicting the research approach and strategy adopted in the study. Next, we present the results and discussions. The last section presents the practical implications, recommendations for future research, study limitations and conclusion.

a. Theoretical framework

The Job Demands-Resource Theory and Conservation of Resource Theory

Using the job demands-resource (JD-R) framework and conservation of resources theory (COR) as the theoretical underpinnings, the study developed and tested a moderation mediation model to explain how the job resources (structural empowerment) relate to employee work attitudes (job satisfaction, affective organisational commitment, and turnover intentions). The study further determined the mediating mechanism of trust in management and moderating role of core self-evaluation in established relationships. Firstly, the study employs the job demands-resource theory to explain the possible links between structural empowerment and employee attitudes (job

satisfaction, affective commitment, subjective performance, and turnover intentions). JD-R theory posits that all working conditions or job characteristics can be clustered into job demands that induce negative results of the health impairment process and job resources that evoke a motivational process resulting in positive work outcomes. Subsequently, how organisations design these job demands and job resources will influence how the employees might flourish or experience strain after being exposed to those work environments (Bakker & Demerouti, 2017). Adopting a JD-R motivational process, the perceived structural empowerment is considered a crucial job resource. The availability of this job resource in the workplace is expected to activate the intrinsic and extrinsic motivational faculties among employees, which stimulate positive work-related attitudinal outcomes. Therefore, public sector employees are expected to possess more positive work attitudes and minimise negative ones when their work environment depicts the presence of job resources (structural empowerment).

Secondly, the conservation of resource theory is utilised as a theoretical underpinning to explain the link or the mechanism through which the job resource (structural empowerment) influences the work-related attitudinal outcomes, namely job satisfaction, affective commitment, and turnover intentions. In line with the theory, this study considers the perceived trust in management as the “condition resource” mediating the relationship between structural empowerment and employee work attitudes. According to the COR theory (Hobfoll & Wells, 1998), people have an innate motivation to obtain, retain, and protect what they value. Therefore, the things people value can be called resources. The theory delineates four basic categories of resources: objects, conditions, personal characteristics, and energies. When applied to employee-organisation relationships, the COR theory suggests that people seek to build resource reservoirs in the absence of stressful circumstances (Hobfoll & Shirom, 2000). According to the fourth tenet of the COR theory (Hobfoll & Schumm, 2009), individuals who possess strong resource pools are more likely to accept or seek opportunities to obtain resource gain, while those who lack resources are likely to develop a defensive posture that limits the possibility of further resource loss but also prohibits the opportunities for resource gain. Therefore, ultimately, trust is a condition-oriented resource that can result from the work environment. This implies that resources will spiral if employees display the psychological state of trusting management in their organisation. Therefore, those who possess this condition as a resource will be able to utilise other resources. Subsequently, trust in management is expected to mediate the relationship between structural empowerment and employee work attitudes.

Lastly, the conservation of resource theory was also used to elucidate the role of core self-evaluation as the moderator in the relationships between structural empowerment and work-related attitudinal outcomes of job satisfaction, affective commitment, subjective performance and turnover intentions. This study suggests that core self-evaluation is regarded as a personal resource that an individual possesses at different levels. Personal characteristics are inherent to the individual and refer to those individual features that help individuals resist, control a loss of resources, or activate resource gain (Hobfoll, Halbesleben, Neveu, & Westman, 2018).

Therefore, the availability of personal resources is viewed as a source of motivation that strengthens the relationship between structural empowerment and employee work attitudes in such a way that the strength of the relationship between structural empowerment and employee work attitudes is likely to be influenced by the personality trait of CSE. The theory further postulates

that resources spiral; therefore, those who possess higher levels of this resource (CSE) should cope better than those who lack resources. Having one resource should also increase the benefits they obtain from other resources. In this study, it is expected that CSE might play a moderating role in increasing or decreasing the influence of structural empowerment in relation to employee work attitudes through trust in the leader, the mediator in the model.

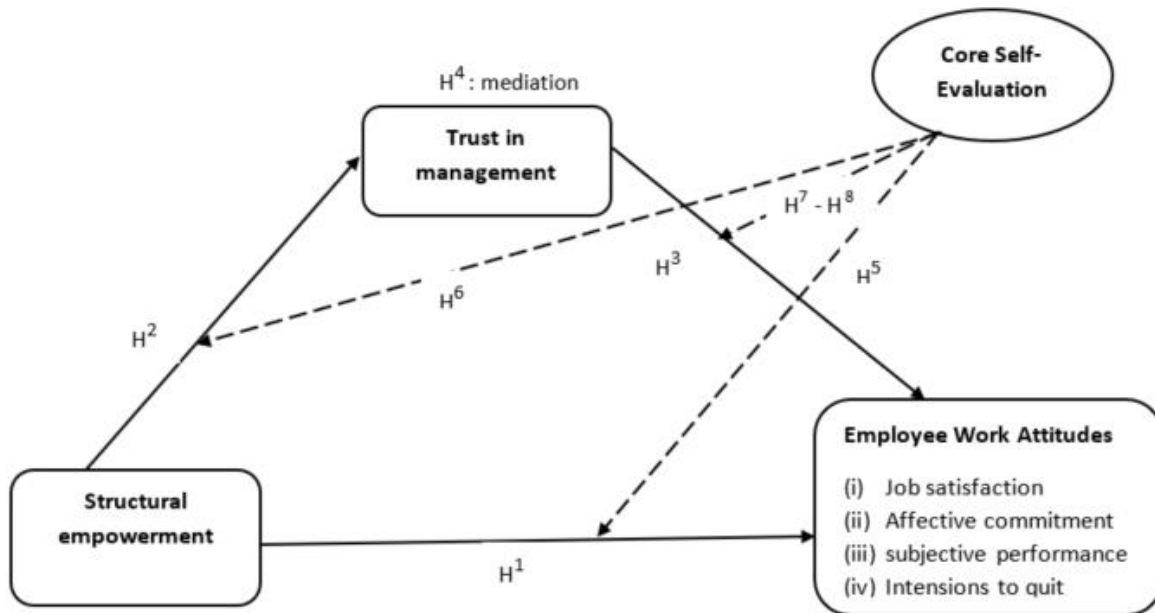


Figure1: Proposed study

b. The relationships between Structural empowerment and employee work attitudes

Employee empowerment has been a critical internal organisational factor influencing how employees perceive their jobs and how they behave. Access to empowering resources in the work environment enables employees to undertake their work successfully. Structural empowerment refers to the employees' access to organisational structures needed to accomplish their work (Bowen & Lawler, 2006; Kanter, 2008). Laschinger & Read (2017) posit that employees are empowered when their work environment is structured in such a way that they have access to the resources, information, support, opportunities, and relative power needed to do their job effectively. These structural tools depend on the work environment's formal and informal systems. The structural empowerment tools prevalent in organisations are categorised into employees' access to; *resources*, *information*, *opportunities*, *support* and *power*. Employees' access to *resources* refers to organisations' ability to avail tools necessary for executing the job, such as equipment, materials, rewards, or other needed resources. Access to *information* relates to the prospect of knowing about organisations' procedures, policies, and organisational decisions. Access to *opportunities* refers to liberty for attaining growth, skills, and knowledge development. Affording *support* relates to allowance for encouragement, constructive feedback, and innovative risk-taking activities. Access to *formal power* stems from allowing freedom to use one's discretion to make decisions relevant to organisational goals. *Informal power* relates to access to the prospect of being able to form and benefit from relationships and alliances with people in the organisation, such as peers, stakeholders, and subordinates (Kanter, 2008; Laschinger & Havens, 1997).

In addition to the above theory-building needed for understanding the relevance of structural empowerment as an organisational resource, attention must also be given to conceptualising the work-related outcome variables. The study suggests that utilising a combination of work-related attitudinal outcomes may represent an effective approach to understanding and testing the relationship between organisational resources and work outcomes. An attitude is a person's evaluation of an object or target, such as a person, event, situation or abstract idea on a favourable or unfavourable continuum (Albarracin & Shavitt, 2018). Attitudes can be specific, or they can be generalised across objects, with people having attitudes that are either generally positive or negative. Subsequently, some people tend to like some things while others dislike similar things (Hepler & Albarracin, 2013). From the humanist point of view, job attitudes result when each individual's needs for growth, meaning and development are met by work conditions (Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017). The four work-related attitudes selected for this study are job satisfaction, affective commitment, performance and turnover intentions.

Job satisfaction refers to an individual's positive or negative evaluative judgement about his/her job or job situation (Weiss, 2002). The concept can also be viewed as the assessment of the emotional favourability of a job depicted along a continuum ranging from positive to negative (Judge et al., 2017). Research has revealed that positive aspects of the quality of work-life contribute to job satisfaction, while an uncondusive work environment results in job dissatisfaction (Dhamija, Gupta, & Bag, 2019). *Affective commitment* relates to the employee's emotional vigour inducing personal attachment to the organisation. Employees with strong affective commitment stay with the organisation voluntarily because they desire, and *want to*, do so (Meyer, Stanley & Parfyonova, 2012). High levels of affective organisational commitment protect employees from being negatively affected by potentially aggravating factors in the workplace. Therefore, an affectionate feeling toward the organisation buffers a positive view of the work environment. The concept of organisational commitment can take various forms, namely *normative*, *continuance*, and *affective* (Allen, 2016). Affective commitment has been advocated as the core essence of organisational commitment and the primary influencer of other components of organisational commitment (Mercurio, 2015).

Job performance broadly refers to the state or action which can be measured to contribute to organisational effectiveness (Onukwube et al., 2010). In addition, job performance can also be defined as an individual's work achievement after having exerted work, and it is related to achieving organisational goals (Onukwube et al., 2010; Hillriegel et al., (1999). Therefore, job performance is directly related to human capital, capabilities and experiences to achieve their tasks, and how these achievements contribute to achieving organisational goals (Aljuraid & Alsmairat, 2021). *Turnover intentions* as an attitude refer to the psychological detachment or mental process of quitting the job long before employees physically exit the workplace (Burriss, Detert, & Chiaburu, 2008). Even though the actual quitting behaviour or employee turnover serves as the major focus of interest for researchers and employers, employees' intentions to quit are the main catalysts for such withdrawal behaviour (Firth, Mellor, Moore & Loquet, 2004). Employees with strong feelings of turnover intentions are likely to withhold personal efforts that might contribute to organisational success. These can be manifested by the neglect of duties, reduced extra-role efforts and disengagement.

c. Trust in management as a mediator between structural empowerment and work attitudes

Trust ordinarily denotes the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people. This virtue affects how an individual behaves towards others. Even though the trust concept has been researched from various facets, such as trust between organisations (i.e., an inter-organisational perspective) or trust between organisations and their customers (i.e., marketing perspective) (Dietz & Den Hartog, 2006), this study focuses on the intra-organisational trust phenomenon which relates to trust between employees and supervisors/managers, or among co-workers. The definition of trust adopted in this study refers to trust as a willingness to be vulnerable to the actions of another party. This conceptualisation holds that a trustor will be willing to be vulnerable to another party based on the trustor's propensity to trust other people and the trustor's perception that the particular trustee is trustworthy (Mayer & Davis, 1999). For a trust relationship to occur, the model by (Mayer, Davis & Schoorman, 1995) holds that the trustee must be specific, identifiable and perceived to act with reasonable discretion.

In this study, trust in management represents the mediating variable. The mediation process can be understood as the presence of a third variable that transmits the effect of an independent variable on the dependent variable, is positioned in a causal sequence between two variables, and accounts for the relationship between the independent and the dependent variables (MacKinnon, Fairchild & Fritz (2007); Baron & Kenny, 1986). For trust in management to mediate the relationship between structural empowerment and employee work attitudes, structural empowerment must firstly be related to trust in management. In turn, trust in management should be related to work attitudes. Overall, the perceived prevalence of structural empowerment leads to increased trust in management, leading to increased job satisfaction, performance and affective commitment, individual task performance and decreased turnover intentions. Therefore, trust in management functions as a mediator between structural empowerment and employee work attitudes.

Empirical literature documents the evidence of the mediating role of trust in management associated with various work outcomes. For instance, Chan & Mak (2016) report that trust in management mediates the relationship between workplace fun and job satisfaction. Trust in management was also found to be a partial mediator between high-involvement work systems and work-related attitudes of job satisfaction and affective commitment (Uribetxebarria, Gago, Legarra & Elorza, 2021). The mediating role of trust in management is also reported in the relationship between organisational career management and turnover intentions (Haridas, Ture & Nayanpally, 2022). Examining the mediating role of trust in management in the public sector, Cai, Loon & Wong (2018) found that trust in management mediated the relationship between leadership and employee acceptance of the change. The mediating effect of trust in management was also established in the relationship between perceived high-performance work practices and employee attitudes of job satisfaction and affective commitment (Kloutsiniotis & Mihail, 2018). Therefore, against the backdrop of conservation of resource theory, this study contends that to the extent that trust in management is a manifestation of conditional resource employees possess, trust will mediate the relationship between structural empowerment and employee work attitudes.

d. The integrated moderated-mediation model of core self-evaluation

Moderation occurs when the intervening variable exacerbates or diminishes the influence of the independent variable on the dependent variable (Coulton & Chow, 1992). In this study, core self-evaluation represents the moderating variable. Research in positive organisational scholarship advocates core self-evaluations as the conceptual phenomenon important for understanding employees' dispositional effects on work attitudes and behaviours (Ock, McAbee, Ercan, Shaw & Oswald, 2021). Core self-evaluation refers to the individual's fundamental appraisal of his/her overall worthiness, capacity, and effectiveness in relation to functioning within the environment (Judge, Erez, Bono & Thoresen, 2003; Judge, Van Vianen & De Pater, 2004). This broader higher-order latent construct is argued to be an integrative dispositional trait depicted by self-esteem, self-efficacy, locus of control and emotional stability (Judge, 2009). *Self-esteem* refers to an overall appraisal of one's self-worth; *generalised self-efficacy* relates to an estimate of one's ability to perform and cope successfully within an extensive range of situations; *emotional stability* refers to an individual's propensity to feel calm and in control, *locus of control* is attributed to the belief that desired effects result from one's own behaviour rather than fate or influence of external forces (Chang Ferris, Johnson, Rosen & Tan, 2011). Individuals with positive or high core self-evaluations appraise themselves consistently positively across situations. They view themselves as worthy, capable, and in control of their lives (Judge et al., 2004).

Empirical findings on CSE show that it has been positively associated with employee psychological well-being (Sahin, Pal & Hughes, 2020). The findings imply that individuals who are capable of identifying their self-worth and efficiency have more control over their lives. Cristofaro & Giardino (2020) found a positive relationship between CSE and organisational decision-making variables, including self-leadership and self-serving bias in managerial decision-making. Thereby, managers with high CSE were reported to have greater self-leadership compared to other managers with low and average CSE. Inconclusive results regarding the moderating role of CSE were reported by Spanouli & Hofmans (2020) in the study examining the role of CSE and vitality in relation to organisational citizenship and counterproductive work behaviours. Even though CSE was expected to moderate all variables, the study results revealed that CSE did not moderate the relationship between vitality and minor counterproductive work behaviours. Usman, Liu, Li, Zhang, Ghani & Gul (2020) found the positive associations between the effects of servant leadership on the thriving of employees in the workplace to be stronger for employees with high levels of CSEs. Employee CSE plays a critical role in determining work outcomes because, due to its innate nature, it pertains to employees' capacities, hence it is a resource that organisations can use to their advantage. Drawing from the conservation of resources theory's description of personal resources, this study posits that the perceived prevalence of structural empowerment in the organisation nourishes individual employees' attributes of core self-evaluation, which in turn (higher levels of CSE) enhances employees' desirable work attitudes of job satisfaction, affective commitment and decreases undesirable attitude of turnover intentions.

f. Primary and secondary objectives

Considering the established direct independent relationships between structural empowerment and employee work attitudes of job satisfaction, affective commitment, in-role performance and turnover intentions, and the promising mediating role of trust in management and the moderating

role of core self-evaluation in limited studies, the main objective of this study was to propose a moderated mediation model of trust in management and core self-evaluation as the boundary conditions explaining the relationship between structural empowerment and employee work attitudes. The secondary objective was to examine the direct effects between structural empowerment, trust in management, attitudinal work outcomes (job satisfaction, affective commitment, in-role job performance) and turnover intentions. Thirdly the study investigates whether trust in management mediates the relationship between structural empowerment and employee work attitudes. Lastly, the study examined whether core self-evaluation moderates the mediated relationship between structural empowerment and employee work attitudes via trust in management.

3. METHODOLOGY

Utilising a quantitative approach, data for this study were collected using self-administered questionnaires from public sector employees in seven government ministries in Lesotho. The quantitative methods seek to obtain accurate, reliable data and quantifiable measures of variables that allow for statistical analysis (Queirós, Faria, & Almeida, 2017). Quantitative research is advantageous for allowing research frameworks and methods to be shared and replicated (Bell, Harley, & Bryman, 2022).

3.1 Research design and sampling strategy

Using the cross-sectional time horizon, the study adopted a correlational design. Correlational design is a research strategy designed to discover relationships between two or more variables (Asamoah, 2014). A convenience sample (n=290) was obtained from Lesotho governmental ministries. The study adopted convenience sampling considering the accessibility to the government ministries and respondents' willingness. The descriptive statistics show that the sample consisted of 160 (55.2%) female and 130 (44.8%) male respondents. In total, 48.3% of the respondents were between 36 and 45 years of age, while 27.2% were between 25 and 35 years of age. About 20% of the respondents were older than 45, while the rest were younger than 25. The majority of the respondents (50.1%) had tenures ranging between 6 and 15 years; 30.4% had one to five years of public service; 15.8% had more than 16 years of employment with the public service departments. Pertaining to educational qualifications, 60.7% of the respondents held a bachelor's degree, which indicated that, generally, public service employees were well qualified with regard to formal education. In relation to the employment rank or position, the majority of the respondents (43.5%) occupied middle management or supervisory positions, and 39.7% of the respondents occupied non-managerial positions. Senior management level respondents and consultants occupied 16.9% of the position levels.

3.2 Data collection

After permission had been granted to the researcher to conduct a research study at the respective government ministries, the respondents received a survey package, which included a cover letter explaining the purpose of the study, a structured questionnaire and a return envelope. The respondents were also informed that participation in the survey was voluntary. To ensure confidentiality, the respondents were instructed to seal the completed questionnaires in the envelopes and deposit the completed questionnaires into the secured box in the reception area. The

permission to use data for research purposes was requested and obtained from the government ministries and the participants. The study also received an ethical clearance for the minimum risk category.

3.3. Research instrument

Independent variable - Structural empowerment. Structural empowerment was measured using the nineteen-item conditions of work effectiveness questionnaire-II (CWEQ-II) scale developed initially by Laschinger et al. (2001) and used by (Havaei & Dahinten, 2017) (e.g. “I get the opportunity to challenging work”). The items were rated on a 5-point Likert scale ranging from 1 = Never to 5 = Always. The higher scores indicated a greater degree of structural empowerment. In their research, Laschinger et al. (2001) reported a coefficient α of .82.

Dependent variable - Job Satisfaction. Job satisfaction was evaluated using a five-item scale originally developed by Andrews & Withey (1976) and used by Rentsch & Steel (1992) (e.g., “How do you feel about the work you do on your job – the work itself?”). The items were rated on a 5-point Likert scale ranging from 1 = extremely dissatisfied to 5 = extremely satisfied. The higher scores represented a greater degree of general job satisfaction. The coefficients α score from study by Rentsch and Steel (1992) was .81.

Dependent variable - Affective Commitment. The affective commitment was assessed using the six-item scale originally developed by Meyer et al. (1997) and as used by (Rhoades et al., 2001), e.g. “I feel a strong sense of belonging to my organisation”. The items were rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The coefficients α score from the (Rhoades et al., 2001) study was .85. The higher scores represented a greater degree of affective commitment.

Dependent variable - Performance. Subjective performance was assessed using the seven-item scale originally developed by Williams & Anderson (1991). An example item reads: “I adequately completed assigned duties.” The items were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The higher scores indicated a greater degree of in-role job performance. Cronbach’s of this scale ranged from 0.85 to 0.90, as reported and used by Tims, Bakker, & Derks (2014).

Dependent variable - Intentions to quit. Intentions to quit were evaluated with the four-item scale originally developed by Veldhoven & Meijman (1994) and reported and used by (Schaufeli & Bakker, 2004), e.g. “I intend to change jobs in the coming year”. The items were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The coefficients α score from Schaufeli & Bakker’s (2004) study was .89. The higher scores indicated a greater degree of intention to quit.

Mediator variable - Trust in Management. Trust in management was measured by a ten-item scale originally developed by (Mayer & Davis, 1999) and as used by Chao et al. (2004) (e.g., “I am confident that top managers can make right decisions”). The combination of selected items were based on their relevance to general trust and integrity aspect of trust perceived from top management. The items were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The greater score represented a higher degree of trust in management. The

coefficient of trust in management was $\alpha .77$ from a study by (Mayer & Davis (1999) and $\alpha .92$ for integrity-related trust from Chao et al. (2004).

Moderator variable - Core self-evaluation. Core self-evaluation was measured using a twelve-item direct measure scale developed by Judge et al. (2003), e.g. “I am confident I get the success I deserve in life”. The items were rated on a 7-point Likert scale ranging from 1 = Very strongly disagree to 7 = Very strongly agree. The increased scale was used in line with (Hiller & Hambrick’ (2005) recommendation to measure higher core self-evaluations more precisely. The higher scores represented a greater degree of core self-evaluation. The coefficients α score from a study by Judge et al. (2003) was .81.

3.4 Data analysis

The collected data were processed with the statistical packages for social science (SPSS) version 27 (IBM, 2022). The statistical analysis for this study included descriptive statistics, reliability and correlation statistics and a simple mediation model analysis. We conducted a Pearson's correlation analysis to determine the type and nature of relationships between structural empowerment, trust in the leader, and employee attitudes (Affective commitment, job satisfaction, performance and intention to quit). Effect sizes with a confidence level of 95%, $p < 0.05$, were considered significant. Effect sizes with 0.1 denoted a small effect, 0.3 a medium effect, and 0.5 a large effect (Steyn, 1999). The minimum criterion for practical significance was a medium effect of 0.30 (Cohen, 1988). For internal consistency, the study conducted a reliability test using Cronbach Alpha. To ascertain the instrument’s reliability, the higher the coefficients, the better (Sekaran & Bougie, 2016). We utilised PROCESS macro (Hayes, 2017) for simple mediation modelling with the Jamovi open-access software (Version 2.2.5.0). The conditional process analysis was conducted to test the moderated mediation model. Mediation was established with the indirect effect using a percentile bootstrap estimation approach with 5 000 samples (Shrout & Bolger, 2002). An indirect effect from the bootstrap analysis was considered significant if the lower-level confidence interval (LLCI) and upper-level confidence interval (ULCI) excluded zero (Zhao, Lynch, & Chen, 2010). A positive mediation result could only be determined when the mediated and direct effects existed, pointing towards the same direction (Zhao et al., 2010).

4. RESULTS AND DISCUSSION

The results of this study are presented in four sections below, namely, (i) factor analysis, followed by (ii) descriptive statistics and correlational analysis, (iii) testing for mediation effects and finally, (iv) testing for moderation effects.

Factor analysis

A simple principal component analysis was conducted on the items of the scale used in this study to assess if the items were loaded on the intended scales (factors). An analysis of the eigenvalues and the scree plot were used to determine the number of factors that could be extracted. EFA was conducted using a simple principal component. Analysis was conducted on the pooled solution (i.e. all the participants were included in the same analysis) of the independent variable (IV) or predictor in the model: (Structural empowerment- SE) - (eigen value = 5.312; variance explained =40.863%; KMO = .863), the mediator (M) (Trust in the leader) in the proposed model, (eigen value = 4.316; variance explained = 61.655%; KMO = .895) and the moderator (W) (Core self-

evaluation - CSE) in the proposed model, (eigen value = 1.784; variance explained = 44.601%; KMO = .580) and the dependent variables (DV), Organisation Commitment (OC) (eigen value = 3.891; variance explained = 63.649%; KMO = .860), Job Satisfaction (IJS) (eigen value = 2.174; variance explained = 54.345%); KMO = .665), Subjective experience of performance (ISEP) (eigen value = 2.517; variance explained = 62.936%); KMO = .765), and Intentions to quit (ITQ) (eigen value = 3.402; variance explained = 85.055%); KMO = .768) suggested that all of the scales used in this study were unidimensional.

Descriptive statistics

The descriptive statistics and the reliabilities of all the scales used in the study are presented in Table 3 below.

Table 3: Descriptive statistics

| | Alpha | Mean | SD | Skewness | Kurtosis |
|----------------------------|-------|-------|-------|----------|----------|
| 1. Structural Empowerment | 0.88 | 3.034 | 0.690 | -0.156 | -0.180 |
| 2. Trust in the leaders | 0.90 | 3.014 | 0.884 | -0.254 | -0.254 |
| 3. Core Self Evaluation | 0.58 | 4.001 | 0.745 | 0.689 | 0.461 |
| 4. Organisation Commitment | 0.88 | 3.363 | 0.896 | -0.460 | 0.001 |
| 5. Job satisfaction | 0.71 | 3.310 | 0.682 | -0.337 | -0.022 |
| 6. Performance | 0.80 | 3.988 | 0.563 | -0.872 | 2.662 |
| 7. Intentions to quit | 0.94 | 3.510 | 1.165 | -0.400 | -0.719 |

Inspection of Table 1 suggested that all scales were reliable and internally consistent because the yielded Cronbach alpha (α) values for the scales used in the study exceeded the required .70 cut-off value. Table 1 also shows that all the variables used in this study were scored above the scale's midpoint, suggesting agreement with or experiencing the construct. Table 1 also indicates that the data for all scales used were normally distributed given the guidelines of 2.00 for skewness (Finch & West, 1997) and 4.00 for kurtosis (Field, 2009).

Correlational analysis

This study was also interested in determining the relationships between the variables used in this study (structural empowerment, trust in the leader, core self-evaluation, affective organisational commitment, job satisfaction, subjective performance and intentions to quit). The results of this analysis are presented in Table 2 below.

Table 2: Correlation analysis

| | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------------|--------|--------|-------|--------|--------|-----|
| 1. Structural empowerment | - | | | | | |
| 2. Trust in the leaders | .41** | - | | | | |
| 3. Core self-evaluation | .00 | 0.09 | - | | | |
| 4. Organisation commitment | .48** | .47** | .12* | - | | |
| 5. Job satisfaction | .40** | .42** | .08 | .64** | - | |
| 6. Performance | .02 | -.10 | .24** | -0.05 | .14* | - |
| 7. Intentions to quit | -.39** | -.31** | -.02 | -.59** | -.47** | .10 |

** Correlation is significant at 0.01 level. / * Correlation is significant at 0.05 level. Results were interpreted as: 01= small effect, 0.3 = medium effect, 0.5 = large effect (Steyn, 1999).

Inspection of Table 2 suggests that structural empowerment demonstrated noticeable relations between trust in management and employee work attitudes. The relationship between structural empowerment and trust in leaders reports a positive result ($r = 0.41$, medium). Significant relationships were also reported between structural empowerment and attitudinal outcomes. Structural empowerment recorded a positive relationship with organisational commitment ($r =$

0.48, medium) and job satisfaction ($r = 0.40$, medium). The relationship between structural empowerment and intentions to quit showed an inverse relationship ($r = -0.39$, medium). The results demonstrate that the higher levels of perceived structural empowerment within the sample will be associated with lower feelings of turnover intentions. Trust in management reported a positive association with organisational commitment ($r = 0.47$) and job satisfaction ($r = 0.42$) with both relationships considered as medium. Additionally, trust in management has an inverse relationship with turnover intention ($r = -0.31$), which is interpreted as a medium effect. This would imply that respondents who indicated experiencing a high prevalence of structural empowerment would likely be associated with lower levels of turnover intentions.

Testing the mediation models

The hypothesised models are mainly mediation models in which structural empowerment in an organisation influences the perceptions of trust in the leader, which, in turn, affects employee attitudes at work, such as organisational commitment, job satisfaction, subjective experiences of performance and intentions to quit. Although we started with this more parsimonious model, there are no theoretical reasons to exclude partial mediation. We performed a closer examination of the direct and indirect effects as well as confidence intervals to evaluate their relative sizes. We computed the significance of mediation effects by using the bootstrap procedure (95% normal Confidence Interval (CI) using 1000 samples) as implemented in the Jamovi free access software (version). The results of the mediation analysis can be found in Table 3.

Table 3: Mediation effects

| Organisation commitment | | | | | Job satisfaction | | | | |
|-------------------------|----------|---------------------|---------|--------|--------------------|----------|---------------------|---------|---------|
| Effect | Estimate | Confidence Interval | | p | Effect | Estimate | Confidence Interval | | p |
| | | Lower | Upper | | | | Lower | Upper | |
| Indirect | 0.176 | 0.0994 | 0.263 | < .001 | Indirect | 0.122 | 0.0688 | 0.188 | < .001 |
| Direct | 0.445 | 0.3017 | 0.589 | < .001 | Direct | 0.278 | 0.1564 | 0.395 | < .001 |
| Total | 0.622 | 0.4972 | 0.750 | < .001 | Total | 0.400 | 0.2871 | 0.515 | < .001 |
| Performance | | | | | Intentions to quit | | | | |
| Effect | Estimate | Confidence Interval | | p | Effect | Estimate | Confidence Interval | | p |
| | | Lower | Upper | | | | Lower | Upper | |
| Indirect | -0.0430 | -0.0918 | 0.00472 | 0.075 | Indirect | -0.127 | -0.237 | -0.0311 | -0.0311 |
| Direct | 0.0584 | -0.0724 | 0.17725 | 0.337 | Direct | -0.534 | -0.735 | -0.3261 | -0.3261 |
| Total | 0.0154 | -0.1090 | 0.13636 | 0.803 | Total | -0.661 | -0.836 | -0.4777 | -0.4777 |

A closer inspection of Table 3 revealed that there was a *partial mediation* in two of the models with organisational commitment and job satisfaction as DV and a *fully mediated* model with intentions to quit. However, this study could not confirm the mediating effects of trust in the relationship between structural empowerment and subjective experience of performance. Partial mediation implies that there is not only a significant relationship between the mediator (trust in the leader) and the dependent variable (organisation commitment) but also some direct relationship between the independent (structural empowerment) and the dependent variable (organisation commitment). Full mediation, in this case, implies that the mediator (trust in the leader) fully explains the association between structural empowerment and intentions to quit.

Testing the moderated mediations (conditional process) models

This study also aimed at determining the conditional process where core self-evaluation could serve as a moderator in any of the three paths (a, b, and c’) in any of the mediation models tested above. In these models, structural empowerment served as a predictor of employee attitudes (organisation commitment, job satisfaction and intentions to quit) through a mediator core self-evaluation. The mediating model with subjective experiences of performance is excluded from any other analysis because the mediating role of core self-evaluation could not be confirmed in the mediation analysis in this study.

In conditional process analysis using the Jamovi software, we first wanted to check whether the moderator actually has a moderating effect on the components of the mediated effects. In order to do this, we looked at the moderation effects (interactions). We performed a closer examination of the direct and indirect effects as well as confidence intervals to evaluate their relative sizes. We computed the significance of mediation effects by using the bootstrap procedure (95% normal Confidence Interval (CI), using 1000 samples as implemented in the Jamovi free access software version. The results of the moderated mediation analysis with organisational commitment, job satisfaction, subjective performance experience and intentions to quit are presented below. First, we focussed on the moderated mediation model with organisational commitment as the dependent variable. The results of this analysis can be found in Table 5 below.

Table 4: Moderation effects (interactions) with Organisation Commitment as Dependent Variable

| Moderator | Interaction | Estimate | SE | Lower | Upper | β | z | p |
|-----------|---------------------------------|----------|--------|----------|-------|---------|-------|-------|
| CSE | SE: CSE \Rightarrow Trust | 0.0901 | 0.1002 | -0.09885 | 0.294 | 0.0593 | 0.899 | 0.368 |
| | SE: CSE \Rightarrow Commit | 0.0535 | 0.1023 | -0.15026 | 0.251 | 0.0349 | 0.523 | 0.601 |
| | CSE: Trust \Rightarrow Commit | 0.1568 | 0.08 | -0.00413 | 0.310 | 0.4237 | 1.960 | 0.050 |

Inspection of Table 4 above suggests that CSE does not moderate the path from SE to Trust (at least not in a substantial way). The interaction between SE and CSE in predicting trust is insignificant; a confidence interval including zero supports this notion. We also note that CSE does not moderate the path from SE to commitment (again, at least not in a substantial way) because the interaction between SE and CSE in predicting commitment is not significant (confidence interval including zero supports this notion). However, we noted that CSE seems to moderate the path from trust to commitment because of an insignificant marginal value ($p=0.051$), even though the confidence interval includes zero). This means that conditional mediation is perhaps due to the fact that when trust influences commitment, its effects depend on CSE levels (conditions). This model is sometimes called moderated mediation because the interaction comes after the mediator in the mediation pathway.

After finding a near-significant interaction, we know that the mediated effect depends on the levels of the moderator. Thus, we should see how the mediated effects look when estimated at different levels of the moderators. We can call these simple mediated effects. Simple mediated effects should be observed in the Conditional Mediation results section. The results show the mediated (indirect), direct, and total effects at different levels of the moderators. By default, the levels of the moderators are CSE = mean-SD (also referred to as *low levels* of CSE), CSE = mean (also referred to as *medium levels* of CSE), and CSE = mean + SD (also referred to as *high levels* of CSE). These results are displayed in Table 5 below.

Table 5: Conditional Process

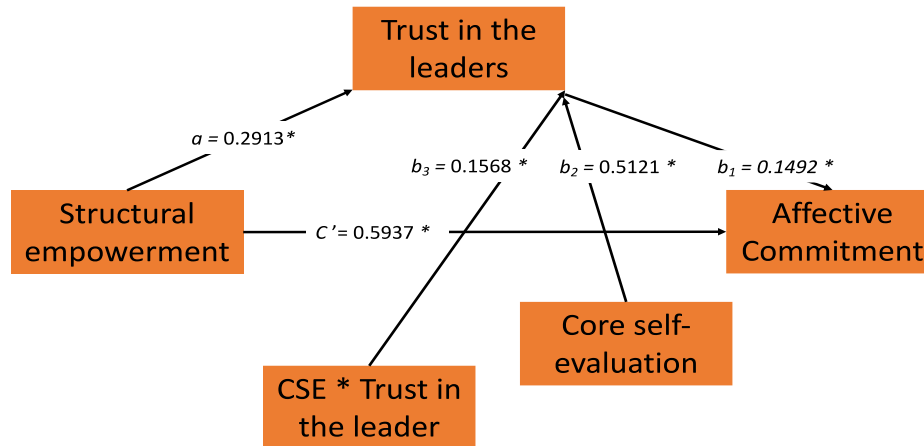
| Moderator levels | | | 95% C.I. (a) | | | | | | |
|------------------|-----------|---|--------------|--------|---------|-------|---------|------|--------|
| CSE | Type | Effect | Estimate | SE | Lower | Upper | β | z | p |
| Mean-1·SD | Indirect | SE \Rightarrow Trust \Rightarrow Commitment | 0.0776 | 0.0424 | - | 0.163 | 0.0610 | 1.83 | 0.067 |
| | | | | | 0.00298 | | | | |
| Mean-1·SD | Component | SE \Rightarrow Trust | 0.4449 | 0.0994 | 0.24497 | 0.635 | 0.3473 | 4.48 | < .001 |
| Mean-1·SD | | Trust \Rightarrow Commitment | 0.1744 | 0.086 | 0.01359 | 0.351 | 0.1756 | 2.03 | 0.043 |
| Mean-1·SD | Direct | SE \Rightarrow Commitment | 0.4012 | 0.0959 | 0.21491 | 0.591 | 0.3153 | 4.18 | < .001 |
| Mean-1·SD | Total | SE \Rightarrow Commitment | 0.4447 | 0.0962 | 0.25609 | 0.633 | 0.3423 | 4.62 | < .001 |
| Mean | Indirect | SE \Rightarrow Trust \Rightarrow Commitment | 0.1492 | 0.0392 | 0.07326 | 0.227 | 0.1156 | 3.81 | < .001 |
| Mean | Component | SE \Rightarrow Trust | 0.5121 | 0.0741 | 0.36939 | 0.66 | 0.3997 | 6.91 | < .001 |
| Mean | | Trust \Rightarrow Commitment | 0.2913 | 0.0637 | 0.16672 | 0.416 | 0.2892 | 4.57 | < .001 |
| Mean | Direct | SE \Rightarrow Commitment | 0.4411 | 0.0743 | 0.29561 | 0.587 | 0.3418 | 5.93 | < .001 |
| Mean | Total | SE \Rightarrow Commitment | 0.5937 | 0.0667 | 0.46288 | 0.724 | 0.457 | 8.9 | < .001 |
| Mean+1·SD | Indirect | SE \Rightarrow Trust \Rightarrow Commitment | 0.2365 | 0.0652 | 0.11091 | 0.366 | 0.177 | 3.63 | < .001 |
| Mean+1·SD | Component | SE \Rightarrow Trust | 0.5793 | 0.1067 | 0.37345 | 0.792 | 0.4521 | 5.43 | < .001 |
| Mean+1·SD | | Trust \Rightarrow Commitment | 0.4082 | 0.0821 | 0.24875 | 0.571 | 0.3914 | 4.97 | < .001 |
| Mean+1·SD | Direct | SE \Rightarrow Commitment | 0.4809 | 0.1119 | 0.25077 | 0.689 | 0.3599 | 4.3 | < .001 |
| Mean+1·SD | Total | SE \Rightarrow Commitment | 0.7427 | 0.0815 | 0.58298 | 0.902 | 0.5717 | 9.12 | < .001 |

Note. Confidence intervals computed with method: Bootstrap (normal) / Note. Betas are completely standardised effect sizes

A closer inspection of Table 5 suggests that the indirect effects of the *low levels of the CSE* group $IE=0.0776$, $CI= (-0.00298, 0.163)$, $\beta=0.0610$, $z=1.83$, $p=0.085$ did not yield a significant effect, even though the confidence intervals did not include zero. This means that the conditional mediation effects are not due to the fact that when trust influences commitment, its effect does not depend on low CSE. However, Table 6 suggests that the indirect effects of the *medium levels of the CSE* group ($IE=0.1492$, $CI = (0.07326, 0.227)$, $\beta=0.1156$, $z = 3.81$, $p<0.001$) did yield a significant effect, and the confidence intervals did not include zero. This means that the conditional mediation effects are due to the fact that when trust influences commitment, its effects do depend on medium CSE. In addition, we also note that the indirect effects of the *high levels of the CSE* group ($IE=0.2365$, $CI= (0.11091, 0.366)$, $\beta = 0.1770$, $z=3.63$, $p<0.001$) yielded a significant effect, and the confidence intervals did not include zero. This means that the conditional mediation effects are due to the fact that when trust influences commitment, its effects depend on high CSE. Thus, for medium and high CSE, CSE has a strong effect on commitment, and this effect is partially due to the mediating effects of trust.

Conditional process analysis: CSE as moderator

Conditional process analysis: CSE as moderator



Next, we looked at the conditional process where core self-evaluation serves as a moderator (W) in the mediation model with structural empowerment as IV, trust in the leader as mediator (M) and *job satisfaction, performance and intentions to quit* as DV. The analysis revealed that the conditions of CSE did not influence any of the paths in the mediating models with structural empowerment (IV), trust in the leader (M) and Job satisfaction, performance and intentions to quit (IV).

5. DISCUSSION

The study sought to address three objectives. Firstly, utilising the Job Demands-Resource model and conservation of resource theory as the theoretical frameworks, the study examined the relationships that exist between structural empowerment, trust in the leader, core self-evaluation and employee attitudes such as organisational commitment, job satisfaction, subjective experience of performance, and intentions to quit. Secondly, we tested the mediating role of trust in the leader in the relationship between structural empowerment and employee attitudes such as organisational commitment, job satisfaction, subjective experience of performance, and intentions to quit. Finally, in addition, we also wanted to test four separate conditional processes (also referred to as moderated mediation models) where core self-evaluation could serve as a moderator in any of the paths in the mediating models with employee attitudes such as organisational commitment, job satisfaction, subjective experience of performance, and intentions to quit as dependent variables (DV) and structural empowerment as the independent variable (IV).

The findings of the correlation analysis suggest that the perceived prevalence of structural empowerment will be associated with positive work attitudes of job satisfaction, affective commitment and in-role performance while negatively related to turnover intentions. Structural empowerment also confirmed a positive relationship with trust in management.

The results of the mediation analysis suggest the existence of two partial mediation models, with organisational commitment and job satisfaction as DV, one full mediation model with intentions to quit as DV, and one model where the mediation role of trust in the leader as DV could not be

confirmed in the relations between structural empowerment and subjective experiences of performance.

Partial mediations, in this case, mean that two employees who differ by one standard deviation in their structural empowerment are estimated to differ by 0.622 standard deviations in their organisation commitment, with the person with better structural empowerment reporting more organisation commitment. The person with one standard deviation more structural empowerment is estimated to be 0.176 standard deviations higher in organisation commitment as a result of the positive effect of structural empowerment on trust in the leader, which in turn increases organisation commitment. Holding constant trust in the leader, an employee with one standard deviation higher in structural empowerment is estimated to be 0.445 standard deviations higher in organisational commitment. Partial mediations, in this case, mean that two employees who differ by one standard deviation in their structural empowerment are estimated to differ by 0.400 standard deviations in their job satisfaction, with the person with better structural empowerment reporting more job satisfaction. The person with one standard deviation more structural empowerment is estimated to be 0.122 standard deviations higher in job satisfaction as a result of the positive effect of structural empowerment on trust in the leader, which increases job satisfaction. Holding constant trust in the leader, an employee with one standard deviation higher in structural empowerment is estimated to be 0.278 standard deviations higher in job satisfaction.

Full mediation means, in this case, the person with one standard deviation more structural empowerment is estimated to be -0.127 standard deviations higher in intentions to quit as a result of the positive effect of structural empowerment on trust in the leader, which in turn decreases intentions to quit. This study could not confirm the mediating role of trust in the leader in the relationship between structural empowerment and subjective performance. Employees who think they are structurally empowered through resource availability will trust their leaders more. In turn, they will be more committed, satisfied with their jobs and less inclined to think about quitting. Independent of this process, employees who believe they are structurally empowered through resource availability will also experience being more committed, satisfied with their jobs and less inclined to think about quitting.

This study also aimed at *determining the conditional process where* core self-evaluation could serve as a moderator in any of the three paths (a, b, and c) in any of the mediation models tested above. In these models, structural empowerment served as a predictor of employee attitudes (organisation commitment, job satisfaction and intentions to quit) through a mediator core self-evaluation. The mediating model with subjective experiences of performance was excluded from any other analysis because the mediating role of core self-evaluation could not be confirmed in this mediation analysis in this study.

The *results of the moderated mediation analysis* suggested that CSE seems to moderate the path from trust to commitment because of an insignificant marginal value ($p=0.051$), even though the confidence interval includes zero). This means that conditional mediation is perhaps due to the fact that when trust influences commitment, its effects depend on CSE levels (conditions). This model is sometimes called moderated mediation because the interaction comes after the mediator in the mediation pathway. After finding a near-significant interaction, we know that the mediated effect depends on the levels of the moderator. Thus, we looked for how the mediated effects look when estimated at different levels of the moderators.

We observed that the indirect effects of the *medium and high levels groups of the SCE* group yielded a significant effect, and the confidence intervals did not include zero. This means that the conditional mediation effects are due to the fact that when trust influences commitment, its effects depend on medium and high levels of CSE. Thus, for medium and high CSE, structural empowerment strongly affects commitment. This effect is partially due to the mediating effects of trust in the relationship between structural empowerment and affective commitment.

The literature study shows that even though the predictors of employee work attitudes have been extensively researched, the process and boundary conditions for these relationships are scantily explored, especially in the public sector context. To fill this gap, deriving from the JD-R theory, this study established that the prevalence of structural empowerment as a job resource in organisations leads to increased levels of attitudinal outcomes of job satisfaction and affective commitment while reducing the likelihood of employees having intentions to leave the organisation. Previous research studies also supported these results (Kanter, 2008; Laschinger & Read, 2017; Fragkos et al., 2020) for the relationships between structural empowerment and work attitudes. These findings imply that it is critical for employers to provide a conducive work environment which ensures that employees have access to resources in the workplace. In particular, access to information, opportunities, support, and formal and informal power are the salient features of structural empowerment. In line with the motivational process of JD-R theory, the availability of this resource will stimulate the intrinsic and extrinsic faculties of the employees, which in turn will induce the activation of desired employee work attitudes (Bakker, 2017).

The mediation analysis results identified trust in management as the mechanism through which structural empowerment influences employee work attitudes. Trust in management plays a vital role in influencing work attitudes, as explained by the conservation of resource theory (Hobfoll, 2009). From these results, we can infer that when structural empowerment is prioritised by organisations and is accessible, employees develop increased trust in management as a psychological resource that promotes desirable work attitudes. This is consistent with the findings of extant research (Kloutsiniotis & Mihail, 2018; Chan & Mak, 2016; Kloutsiniotis & Mihail, 2018). The studies found trust in management to be a mediator between structural empowerment and various attitudinal outcomes.

This study further explored the role of core self-evaluation as the boundary condition, explaining how structural empowerment, directly and indirectly, influences employee work attitudes. This study identified core self-evaluation as a personal resource that individuals possess at different levels in line with COR. The results show that although all employees may generally benefit from job resources such as structural empowerment in organisations, individuals with higher levels of core self-evaluation will dispositionally invest themselves more cognitively in their jobs and take responsibility for their interaction with the organisation. Previous research concurs with the findings of this study. For example, in the study by Cristofaro and Giardino (2020), managers with higher core-self evaluation were found to have greater self-leadership than other managers with low or average CSE. The moderating role of core self-evaluation was also established in various studies (Chang et al., 2011; Usman et al., 2020).

6. IMPLICATIONS

This study contributes to theory and practice in various ways. Firstly, the study amalgamates the theoretical underpinnings of Job Demands-Resource theory and Conservation of Resource theory to add new insights to the mechanisms and boundary conditions related to the critical role of structural empowerment and trust in management on employee attitudes. It further accentuates the importance of considering individual differences and personality traits in explaining the interaction between elements of the organisation's situational variables considered as job resources and employee attitudinal outcomes.

With regard to managerial implications, organisational leaders and managers, particularly in the public sector, can strategically use an empowering work environment to ensure that employees have access to needed structural resources to stimulate the easy flow of work and desirable attitudinal outcomes. It is also evident that when employees perceive the work environment to be empowering, they develop greater trust in management and, in turn, enhance positive attitudes in their jobs.

The study also reminds managers to pay attention to employees' differences and prioritise the improvement of employees' core self-evaluation. Interventions can also be tailored for employees with lower levels of CSE, as the study has shown that higher levels of CSE promote desirable attitudes in organisations. Individuals can also take the initiative to self-evaluate themselves on their personality traits and attributes and use the evaluation outcomes for their development plans. Additionally, managers may leverage personality test measures when formulating recruitment and selection strategies, which can advance the organisation's chances of employing personnel with the desired personality and dispositional attributes.

Finally, by testing the conceptual model in a developing country in Africa, this study not only provides new evidence about the mechanisms and boundary conditions explaining the relationship between structural empowerment and employee work attitudes but also validates what is already known about the direct effect or links between structural empowerment and attitudinal work outcomes.

7. LIMITATIONS AND FUTURE RESEARCH

Even though the study contributed new insights to the extant literature, some limitations should be considered. Firstly, the quantitative approach limits the respondent's in-depth narratives and expressions about the investigated variables; therefore, a qualitative approach is needed to enrich the findings in future studies. Secondly, the cross-sectional time horizon only allows for variables to be measured simultaneously, which constrains the conclusions concerning causal relationships. The consideration of a longitudinal study can yield better results for verifying causal relationships. Future research should also utilise other organisational factors, e.g. transformational leadership and other boundary conditions that predict desirable employee attitudes in the workplace. This study focused on public sector organisations in only one country, Lesotho, which limits the generalizability of the findings to other sectors. Future studies can be tested on other developing African countries' contextual and cultural settings.

8. CONCLUSION

This study investigated the relationship between employees' perceived structural empowerment and employee work attitudes. It further examined the mediating role of trust in management and the moderating role of core self-evaluation. The study was motivated due to heightened pressure and repercussions of human, environmental and economic strain on employees, which subsequently leads to the depletion of their energies and resources, disabling them from being effective and productive at work. This affects how they feel about their work and has a snowball effect on the type of attitudes they can develop due to strain from the work environment. This study aimed to develop and propose a model that would serve as a guide for public sector organisations in identifying the organisational factors or job resources and individual employee differences that are critical for nurturing desirable employee work attitudes, which in turn have the potential to influence the employees' behaviours and actions in the workplace.

These findings contribute immensely to the managerial decision-making processes in public sector organisations, especially in areas related to providing a conducive work environment, recruitment and selection strategies, employee retainment and wellbeing.

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EVALUATION OF SWITCHING COSTS TYPOLOGY ON MARKETING ETHICS OF SOUTH AFRICAN MEDICAL SCHEMES

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ABSTRACT

The South African government has announced the complete transition to the National Health Insurance by 2025. In this course, medical schemes use switching costs to retain members. The study investigates customers' evaluation of a typology of switching cost facets (relational financial, and procedural costs) by direction (positive or negative) on marketing ethics of South African medical schemes. A quantitative research method through descriptive design collected cross-sectional data from 250 members of medical schemes in the Gauteng province using face-to-face surveys. The self-completed questionnaires measured the validated scale-items in literature. In total, 208 legible questionnaires (response rate of 83.2%) were captured into AMOS 27 to analyse the structural equation modelling. The results show economic risk costs negatively affect customers' perceived marketing ethics, while evaluation costs have a positive impact. Strategically managing customers' perceptions of these procedural switching costs would improve their evaluation of medical schemes' marketing ethics in South Africa. Measuring the direct impact of switching costs typology on marketing ethics offers valuable theoretical contributions to services marketing literature and a managerial strategy to retain customers. Assessing the emotions, anxiety, and stress of these issues would improve the insights.

Keywords: switching costs, medical schemes, South Africa, healthcare, marketing ethics

1. INTRODUCTION

The National Health Insurance (NHI) White Paper shows the objective to consolidate medical schemes and standardise the benefit options by 2025 in the implementation of gazetted NHI structures (Council for Medical Schemes, 2018). In 2019, the medical schemes industry grew by 0.8%, a slight improvement from the 0.05% increase recorded in 2018. In 2000, medical schemes reduced from 144 to 78, which includes 20 open schemes (covering 55.38% beneficiaries) and 58 restricted schemes. In March 2020, the number of registered benefit options was reduced to 246 from 264, excluding the 69 efficiency-discounted options that comprise the registered individuals' options (Council for Medical Schemes, 2020). This was commended by the Health Market Inquiry after it found members confused by a proliferation of benefit options in the medical schemes industry, which adds obstacles to the operation of market competition, leaving members in the fringe of the private healthcare market. The Health Sector Anti-Corruption Forum indicates that both private and public healthcare markets in the healthcare sector are vulnerable to fraud and corruption, fraudulent orders, tender irregularities, poor governance, bogus and fraudulent qualifications, transfer of liabilities to the state, bribery, and overpricing (Council for Medical Schemes, 2020).

Under these conditions, this study aims to establish and implement the strategic trend for medical schemes to grow ethical practices by instituting, communicating, and monitoring ethical values

and legal facets linked to their organisational history, culture, and market environment. But what are marketing ethics? According to Eastman et al. (1996, p. 952), marketing ethics refer to the “inquiry into the nature and grounds of moral judgments, standards, and rules of conduct related to marketing decisions, behaviours and institutions”. However, few sources in marketing ethics literature offer a definition of the term. Scholars mostly examine ethical issues and analyse ethical behaviour, rather than describing what is or is not ethical in marketing (Diacon & Ennew, 1996). Consumers’ view of ethical behaviour may differ from an organisation’s definition and may not always correspond with widely held definitions of ethics (Brunk, 2010).

Regardless of how marketing ethics is defined, achieving it in the specific subject field requires medical schemes to avoid undesirable practices, as they often affect the trustee election process, fitness, and propriety of the board, leading to unfair practices to members, marketing, and branding activities or the prejudiced effect by service providers (Council for Medical Schemes, 2018). Daily patients may be subjected to unethical coercion or be forced to accept one treatment option over another by service providers abusing their power (Latham, 2004). The more sensibly difficult issues have to consider not only coercion or rationality, but also information provided to patients and their level of knowledge. Scholars (Latham, 2004; Schenker et al., 2014) have indicated that procompetitive effects of advertising increase demand for lower-cost services and goods in markets where quality and price are visible, but in healthcare market, advertising is less likely to produce similar effects, as patients often lack information about the costs and quality. Therefore, any marketing behaviour taking advantage of consumers’ lack of information or any coercion towards expensive healthcare treatment options is wrong and unethical.

Furthermore, as healthcare costs continue to rise at an alarming rate, cost-control measures become unavoidable and painful (Axtell-Thompson, 2005). Abraham et al. (2006) found that both changes in premiums and whether a customer has an existing relationship with a healthcare provider influence switching behaviour. These customers’ decisions to switch rely on the combination of three main attributes – namely perceived cost, perceived quality, and total switching costs (Lin et al., 2012). Customers perceiving higher switching costs are less likely to change service providers (Burnham et al., 2003). In this study, the loss, penalties or sacrifices that consumers incur when switching service providers are referred to as switching costs (Jones et al., 2007). Strategic management literature considers switching costs the key defence instruments that organisations use to differentiate their services and products, and lock in customers to stop them trying competitors’ offerings (Porter, 1980). Large medical schemes lock in (prevent from switching) members by cross-selling other insurance products often through relationships with brokers. Medical schemes operating outside these large conglomerates struggle to attract broker clients, and members with product bundles from one scheme view the switching costs between medical schemes as higher. Alternatively, medical schemes think members attached to insurance and wellness organisations are beneficial, as the product bundles they offer increase members’ switching costs and those familiar with a product or a service hesitate to switch (Competition Commission South Africa, 2018). Consequently, locking in members to medical schemes has hazardous allegations for market competition (Council for Medical Schemes, 2018). A concern for this study is that if suppliers can lock in customers, they may increase prices above the marginal costs without any fear of losing customers (Aydin & Özer, 2005). Burnham et al. (2003, p. 119-

120) viewed a “lock-in” strategy of switching costs as only improving a “passive loyalty” and rely on “voice over exit”, despite serving dissatisfied customers.

The purpose of this study is to measure customers’ evaluation of switching costs on marketing ethics of medical schemes in South Africa, as organisations that use switching costs as a key strategy to build and retain customer relationships, irrespective of their satisfaction (Jones et al., 2007). According to Burnham et al. (2003), organisations have strong reasons to ensure synergy in managing the connections between switching costs and satisfaction. Similarly, both practical and ethical considerations advise organisations to learn how to increase switching costs in tactics that offer additional customer value, such as increasing switching costs while concurrently improving customer satisfaction (i.e., teaching customers about other or new uses of the product, identifying its unique features, offering loyalty-building services and valuable bonus points, and engaging with them in a valuable relationship). Nevertheless, the topic has attracted limited research when aiming to develop relationships driven by ethical marketing, rather than passive loyalty. Previous studies focusing on switching costs have measured customer satisfaction, repurchase intention, and loyalty (Aydin & Özer, 2005; Burnham et al., 2003; Jones et al., 2007). Hence, this study measures the direct effects of perceived switching costs typology facets on marketing ethics of medical schemes in South Africa.

2. LITERATURE REVIEW

2.1 Switching costs typology

Switching costs refer to “onetime” costs, rather than the ongoing costs related with using a service or a product after developing a repeat purchase relationship (Porter, 1980, p. 10). Burnham et al. (2003, p. 110) defined switching costs as “the onetime costs that customers associate with the process of switching from one provider to another”. There are varied levels of switching costs within each type of switching cost and Burnham et al. (2003) proposed a switching cost typology involving three facets. They stated that the effect of satisfaction on a consumer’s intentions to stay or leave the current service provider becomes stronger (weaker) when and if a consumer perceives lower (higher): (1) loss of money, effort, and time (*procedural switching costs*); (2) loss of quantifiable financial resources (*financial switching costs*); and (3) a feeling of emotional or psychological distress due to the loss of attachment to an organisation or its brand and terminating the relationship with the service employees (*relational switching costs*). Scholars further classified the procedural switching costs as negative switching costs (actual loss), while classifying financial switching costs and relational switching costs as positive switching costs (foregone gains) (Jones et al., 2007, p. 337). This positive versus negative classification of switching costs is vital due to the different mediating roles of diverse commitment levels (Nagengast et al., 2014), and it is very useful for businesses wanting a clear strategic direction for using switching costs to develop customer loyalty (Ngo & Pavelková, 2017).

Figure 1 illustrates the conceptual framework that adopts and tests the impact of the eight varied facets of the validated switching costs typology (economic risk costs, evaluation costs, learning costs, set-up costs, benefit loss costs, monetary loss costs, personal relational loss costs, and brand relational loss costs) (Burnham et al., 2003) on ethical marketing issues (Murphy et al., 1992) of medical schemes in the context of South Africa.

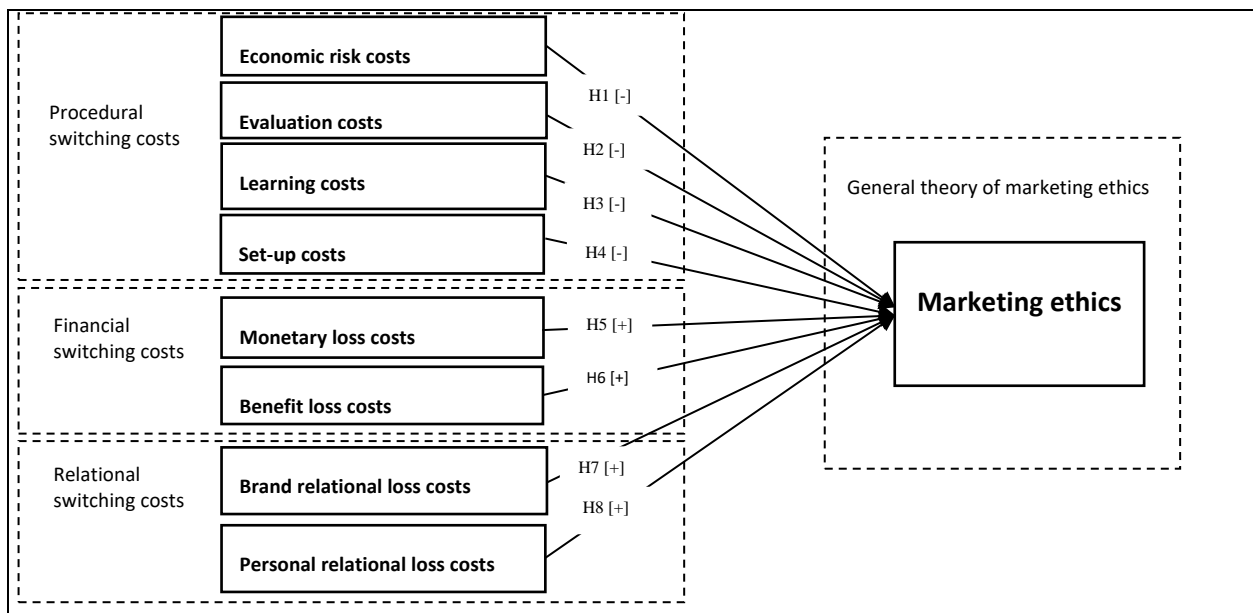


Figure 1: Conceptual framework. (Author’s own construct)

2.1.1 Procedural switching costs

Procedural switching costs refer to the “refer to the time, effort, and/or hassle the consumer anticipates would be involved with switching” (Jones et al., 2007, p. 337). These include four facets, namely economic risk costs, evaluation costs, learning costs, and set-up costs (Aydin & Özer, 2005; Burnham et al., 2003; Jones et al., 2007), which reflect a negative attitude towards relationship continuity (Klemperer, 1995).

Economic risk costs are the psychological or emotional costs incurred from the perception of alternative risks and uncertainties of trying a new service or product (Burnham et al., 2003, p. 111). Consumers experience uncertainty regarding the potential for negative outcomes when switching to a service provider they have little information about (Burnham et al., 2003; Jones et al., 2000, 2002). This study proposes that:

H1: Economic risk costs negatively affect customers’ evaluation of ethical marketing.

Evaluation costs are the effort and time costs of searching for, identifying, and analysing information about a new service provider (Aydin & Özer, 2005). It takes time and effort for consumers to collect information, evaluate potential alternative medical schemes, and apply mental effort to analyse and rearrange this information before they make a suitable or well-informed decision (Burnham et al., 2003). This study proposes that:

H2: Evaluation costs negatively affect customers’ evaluation of ethical marketing.

Learning costs concern the effort and time costs related to the process of learning the new knowledge about the uses of a new service or product effectively (Klemperer, 1995). Investments in learning are often provider-specific, such as the costs of learning the service blueprint of a new service provider (Jones et al., 2007; Klemperer, 1995). This study proposes that:

H3: Learning costs negatively affect customers’ evaluation of ethical marketing.

Set-up costs are incurred when setting up a new account for primary use or starting a new relationship with another service provider (Burnham et al., 2003, p. 111). These costs involve the

searching time, contracting, applying for a new health plan, and arranging of new administration of documents. The set-up costs include the information exchange needed to lower selling risks and know buyers' specific needs. This study proposes that:

H4: Set-up costs negatively affect customers' evaluation of ethical marketing.

2.1.2 Financial switching costs

Financial switching costs include the quantifiable financial or monetary loss costs that customers incur when switching to a new service provider (Burnham et al., 2003). They comprise benefits loss and monetary loss costs (Burnham et al., 2003; Jones et al., 2000), which result from the positive sources of restraints (foregone gains), such as losing privileges, invested transactional specific assets, loyalty rewards points, "treasures", or discounts (Burnham et al., 2003; Jones et al., 2007).

Benefit loss costs are "contractual linkages that create economic benefits for staying with an incumbent firm.... In switching to a new provider, consumers may lose points they have accumulated and discounts or benefits that are not afforded to new customers" (Burnham et al., 2003, p. 111). Such benefits extend beyond the core service (e.g., loyalty benefit, identity gains, and relational affairs) and create varied behavioural and emotional reactions, compared to negative switching costs (Aydin & Özer, 2005; Ngo & Pavelková, 2017). Consequently, this study proposes that:

H5: Benefit loss costs positively affect customers' evaluation of ethical marketing.

Monetary loss costs are "the onetime financial outlays that are incurred in switching providers other than those [costs] used to purchase the new product itself" (Burnham et al., 2003, p. 111; Klemperer, 1995; Porter, 1980). The expenditures for joining a new service provider include initiation fees or deposits (Burnham et al., 2003). Scholars (e.g., Burnham et al., 2003; Jones et al., 2002) have found that monetary switching costs positively and significantly impact customer retention. This study proposes that:

H6: Monetary loss costs positively affect customers' evaluation of ethical marketing.

2.1.3 Relational switching costs

Relational switching costs are "emotional discomfort due to the loss of identity and the breaking of bonds" (Burnham et al., 2003, p. 109). They consist of personal relational loss and brand relational loss costs (Burnham et al., 2003), which are derived largely from positive sources of constraint representing the positive benefits and value enhancements (e.g., special treats and friendships with employees) outside of the core service that a customer loses when switching to a new service provider (Ngo & Pavelková, 2017).

Personal relational loss costs are the emotional distress incurred by customers when terminating the relationship identity established in the interactions with the contact employees (Burnham et al., 2003; Klemperer, 1995; Porter, 1980). The brand identity loss and the end of the bond and friendships with the contact employees cause psychological and emotional distress to customers (Jones et al., 2000, 2007) and are derived largely from positive sources of barriers in interpersonal relationships offering intrinsic benefits less likely to arouse feelings of entrapment or sabotage type of behaviours (Jones et al., 2000). This study proposes that:

H7: Personal relational loss costs positively affect customers' evaluation of ethical marketing.

Brand relational loss costs concern the emotional distress that customers experience when switching their current brand attachment to another service provider (Burnham et al., 2003, p. 111). Customers who believe they are familiar with the medical scheme brand and perceive its brand as having a strong, unique, and desirable image will be highly attached to that brand, even on an emotional or psychological level and will not wish to leave this affiliation. These customers want to stay and have positive reasons to stay in a relationship with the service provider, which stimulate positive emotions, affective commitment, and true loyalty (Jones et al., 2007). This study proposes that:

H8: Brand relational loss costs positively affect customers' evaluation of ethical marketing.

2.2 Marketing ethics

From the traditional principles by philosophers like Aristotle, the original wisdom of the term “ethics” is “human action evaluated from the view of its wrongness or rightness” (Gaski, 1999, p. 315). Businesses should identify the dimensions alongside which consumers evaluate the ethicality of corporate behaviour – that is, which business actions are judged to be wrong or right (Brunk, 2010). Medical scheme practitioners may have a positive attitude towards the provision of gifts to patients not because the behaviour is perceived as ethical, but because of the favourable consequences of offering them gifts (Dubinsky & Loken, 1989). From a marketing perspective, Latham (2004) argued that brokers show interest in acquiring sales, yet the products they sell do not match the customers' special needs. The brokers aim to build relations and restore a good reputation with big corporate insurers, even those who provide poor customer treatment. These corporate practices deprive customers of justice or self-esteem and may be viewed as illegal, thus limiting trust and diminishing the potential efforts for establishing long-term relationships. Relationship marketers should be willing to question the fairness of every strategy and policy, and must answer not only whether “Is it lawful?”, but also “Is it right?” (Berry, 1995).

Prevailing ethical challenges and complaints, price, and competition may affect customers' switching behaviour (Balabanis et al., 2006), such as complaints received from dissatisfied beneficiaries whose medical scheme marketed the standard co-payments of certain endoscopic procedures at a price exceeding the actual costs of the procedure, and also as a joint liability with their scheme. Customers realised that the scheme was only using co-payments to entirely escape its liability (Council for Medical Schemes, 2020). The nature of the problem this study assesses requires the use of quantitative research methodology.

3. RESEARCH METHODOLOGY

3.1 Sampling design and data collection method

Face-to-face surveys were used to gather data from South African medical scheme members (3 598 421 in 2019) (Council for Medical Schemes, 2018). Cross-sectional data were collected in the Gauteng province, which has the highest utilisation levels of medical scheme beneficiaries, estimated at 40% (Council for Medical Schemes, 2020). The survey errors and measurement errors were tested in a pilot study sample of 50 individuals sharing common experiences on the topic. Filter questions registered the initial study's sample. A non-probability sampling method of

judgement sampling (Hair et al., 2017) was used to select only 250 members with more than six months' experience with their medical schemes. Four skilled fieldworkers distributed the structured questionnaires near healthcare facilities (i.e., private and public) in June 2019. The structured questionnaires, which contained a purpose statement of the study, were self-administered by male and female respondents aged 18–60 years old. Research ethics, such as voluntary participation and exits, data privacy and its storage safety, were applied. The researcher's institutional Ethics Committee issued the ethical clearance certificate. A total of 208 (83.2% response rate) completed questionnaires were returned, with the captured data then being processed (code, edit, tabulate) into SPSS 27 for statistical analysis. Israel (1992) proposed the use of the Taro Yamane formula of sample size calculation:

$$n = \frac{N}{1 + N(e)^2}$$

where “*n*” is the sample size, “*N*” is the population size (total sum of beneficiaries), and “*e*” is the sample error (0.05). The $n = 250$ ($N = 3\,598\,421 / 1 + N = 3\,598\,421(0.05)^2$) is reliable – with similar studies done by Burnham et al. (2003) and Ngo and Pavelková (2017) – and met the set ratio of a minimum of 20 items from the variables measured in the model to perform a structural equation modelling (SEM) analysis (Bollen, 1989). In short, this sample size was deemed adequate to test the model.

3.2 Measurement instrument

The instrument had the screening questions, the purpose and instructions, and author's details on the cover page, followed by two sections. Section A captured the demographic data, such as gender, age, affiliated medical scheme, duration of affiliation, number of dependents, monthly contributions in rand, and the member's switching experience. Section B captured perceptions of switching costs typology facets, measuring 31 validated scale items (Burnham et al., 2003) and nine validated scale items measuring ethical marketing issues (Murphy et al., 1992). A five-point Likert scale (ranging from 1 = “strongly disagree” to 5 = “strongly agree”) assessed the 40 validated scale items turned into statements that examine the objectives of this study.

4. RESULTS AND DISCUSSION

4.1 Demographic profile and reliability

The sample comprised of 54.8% females. In terms of age, 24% were 25–29 years old. Furthermore, 55.3% of respondents belonged to Discovery Health, 40.4% contributed up to R3 000 monthly to their medical schemes, and 41.8% exceeded a period of five years' experience. The results support the ranks for medical schemes reported by PwC (2012), whereby Discovery Health had more members' votes. To evaluate the chances of unstable indicator weights, data show no possible collinearity (variance inflation factor [VIF]) issues – $VIF > 3-5$ (Hair et al., 2019). While the true reliability of the factor is measured by Cronbach's alpha and composite reliability (CR), the former is seen as conservative, while the latter is deemed liberal (Hair et al., 2019). Cronbach's alpha (α) is a split-half coefficient that tests the accuracy of a construct in examining a latent variable (Cronbach, 1951). A Cronbach's alpha value of > 0.7 or closer to 1 shows greater internal consistency reliability (Malhotra, 2007). Table 1 shows the Cronbach's alpha values, ranging from

0.755 for ethical marketing issues to 0.921 for personal relational loss costs. Other switching cost types, such as learning costs ($\alpha = 0.384$), set-up costs ($\alpha = 0.366$), and brand relational loss costs ($\alpha = 0.319$), were deleted as they did not meet these criteria.

4.2 Measurement model

Drawing the covariance matrix on AMOS 27, a maximum likelihood estimation was used to test the estimates of various parameters (Jöreskog et al., 1999) of the measurement model built on nine factors. The interrelationships between the factors extracted were tested without restricting the covariances between latent variables (Anderson & Gerbing, 1988). This was to identify and redress the model outliers, namely the negative error variances and the standardised factor loadings, whereby all the standardised residuals must be less than 2 in actual value to confirm validity of the model (Jöreskog et al., 1999), which was met in Table 1. The lowest standardised factor loading was for economic risk costs (ERC4: $\beta = 0.682$), while the highest was for benefit loss costs (BLC2: $\beta = 0.965$). Although the standardised factor loading should be > 0.70 , correlations of > 0.6 may sometimes be suitable (Hair et al., 2019). Concerning the t -values, the lowest was for economic risk costs (ERC4: t -value = 8.728) and the highest was for personal relational loss costs (PRLC3: t -value = 17.612).

Table 1: Standardised factor loadings and reliability

| Variables | Items | Loadings | t -values | Cronbach's alpha (α) |
|---------------------------------------|-------|----------|-------------|-------------------------------|
| Ethical marketing issues | EMI1 | - | - | 0.755 |
| | EMI2 | 0.736 | Fixed | |
| | EMI3 | 0.738 | 9.871 | |
| | EMI4 | 0.795 | 10.549 | |
| | EMI5 | - | - | |
| | EMI6 | 0.814 | 10.740 | |
| | EMI7 | - | - | |
| | EMI8 | - | - | |
| | EMI9 | - | - | |
| Economic risk costs | ERC1 | - | - | 0.840 |
| | ERC2 | - | - | |
| | ERC3 | 0.760 | 9.592 | |
| | ERC4 | 0.682 | 8.728 | |
| | ERC5 | 0.844 | 10.313 | |
| | ERC6 | 0.694 | Fixed | |
| Evaluation costs | EC1 | 0.744 | 10.722 | 0.866 |
| | EC2 | 0.834 | 12.109 | |
| | EC3 | 0.809 | 11.742 | |
| | EC4 | 0.770 | Fixed | |
| Benefit loss costs | BLC1 | 0.898 | 14.945 | 0.912 |
| | BLC2 | 0.965 | 15.578 | |
| | BLC3 | 0.785 | Fixed | |
| Monetary loss costs | MLC1 | 0.813 | 11.369 | 0.857 |
| | MLC2 | 0.906 | 12.030 | |
| | MLC3 | 0.739 | Fixed | |
| Personal relational loss costs | PRLC1 | 0.817 | 15.670 | 0.921 |
| | PRLC2 | 0.862 | 17.370 | |
| | PRLC3 | 0.868 | 17.612 | |
| | PRLC4 | 0.902 | Fixed | |

Table 2 shows that the CR values exceed the > 0.7 threshold for each latent construct, ranging from 0.834 (economic risk costs) to 0.921 (personal relationship loss costs) (Bagozzi & Yi, 1988). Each construct's convergent validity for all items was tested using the average variance extracted

(AVE) (Fornell & Larcker, 1981). Table 2 verifies the convergent validity of all items on each factor, with AVE values ranging from 0.559 (economic risk costs) to 0.785 (benefit loss costs), meaning all items were above > 0.5 or shared variance with other constructs tested. This shows that the scale items of separate constructs have a positive correlation. The square root of the AVE ($\sqrt{\text{AVE}}$) values ranged from 0.748 (economic risk costs) to 0.886 (benefit loss costs), which exceeds the observed correlation coefficients, thus confirming discriminant validity, as recommended by Fornell and Larcker (1981).

Table 2: Discriminant validity

| Constructs | CR | AVE | PRL | EMI | BLC | MLC | EC | ERC |
|-------------|-------|-------|--------------|--------------|--------------|--------------|--------------|--------------|
| PRLC | 0.921 | 0.744 | 0.863 | | | | | |
| EMI | 0.854 | 0.595 | 0.030 | 0.772 | | | | |
| BLC | 0.916 | 0.785 | 0.139 | 0.001 | 0.886 | | | |
| MLC | 0.861 | 0.676 | 0.209 | 0.136 | 0.321 | 0.822 | | |
| EC | 0.869 | 0.624 | 0.172 | 0.162 | 0.308 | 0.534 | 0.790 | |
| ERC | 0.834 | 0.559 | 0.255 | -0.101 | 0.229 | 0.516 | 0.570 | 0.748 |

Notes: PRLC = personal relational loss costs; EMI = ethical marketing issues; BLC = benefit loss costs; MLC = monetary loss costs; EC = evaluation costs; ERC = economic risk costs

The overall goodness of the model fit had absolute fit indices showing acceptable chi-square ($\chi^2/\text{df} = 337.847/194 = 1.741$) below the required value of 3 (Kline, 1998). The fit among the covariance matrix of the observed variables and the theorised model result when the goodness-of-fit index is > 0.90 (Hair et al., 2019). All indices showed acceptable model fit: comparative fit index = 0.947; Tucker-Lewis index = 0.937; incremental fit index = 0.948; relative fit index = 0.863; and normed fit index = 0.885 (Bollen, 1989). Moreover, the root mean square error of approximation, with an adequate fit of 0.060, showed that the data population covariance matrix fits the model (Bollen, 1989). These fit indices allowed further testing of the structural model.

4.2 Structural model

The structural model was drawn on AMOS 27 to test the significant ($p < 0.01$) effects of the proposed relationships (Anderson & Gerbing, 1988). SEM analysed whether the five independent variables (economic risk costs, evaluation costs, benefit loss costs, monetary loss costs, and personal relational loss costs) correlate with one another, and with one dependent variable of ethical marketing issues. Table 3 exhibits the summarised results of the structural model. Although customers' evaluation of economic risk costs ($\beta = -0.348$; $p < 0.00$) shows a negative significant impact on ethical marketing, evaluation costs ($\beta = 0.278$; $p < 0.01$) shows a positive significant effect. Other switching costs types did not have a significant effect on ethical marketing issues in this study, as it was proposed in the literature review and/or specified in Figure 1. The results support H1, while H2 is rejected due to the directional effect of this switching costs type, as shown in the literature studies. In short, customers' evaluation of procedural switching costs pertaining to economic risk costs negatively influence their ethical marketing view of medical schemes. The squared multiple correlation coefficient is 0.11. It shows that 11% of the variance in customers' evaluation of medical schemes' marketing ethics is explained by the procedural switching costs pertaining to economic risk costs and evaluation costs among the eight switching cost typology facets.

Table 3: Switching costs typology

| Hypothesis | Independent factor | Coefficient (β) | t-value | p-value |
|------------|----------------------------|-------------------------|---------|---------|
| H1 | Economic risk | -0.348 | -3.015 | 0.003** |
| H2 | Evaluation | 0.278 | 2.477 | 0.013* |
| H5 | Monetary loss | 0.180 | 1.716 | 0.086 |
| H6 | Benefit loss | -0.068 | -0.839 | 0.402 |
| H8 | Personal relationship loss | 0.042 | 0.534 | 0.593 |

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed)

5. CONCLUSIONS AND RECOMMENDATIONS

This study aimed to distinguish and understand the impact and direction (i.e., positive and negative) of different mechanisms through which the various switching cost types could influence organisations' marketing ethics. The results show that the perceived marketing ethics of medical schemes are negatively affected by economic risk costs. This supports research by Jones et al. (2007), who explained procedural switching costs as largely expected to be perceived by customers as relatively painful, influencing them not to switch service providers. Consequently, the positive impact of evaluation costs on marketing ethics was unexpected. Varied sentiments can explain this result, namely that members: (1) do not hesitate the evaluation costs incurred in the process to switch medical schemes; (2) do not feel locked in with the medical schemes; and (3) consider the value of healthcare quality evaluation itself. Nagengast et al. (2014) confirmed a negative moderating effect of procedural switching costs on the impact of satisfaction on repurchase behaviour in the banking sector. Thus, members of medical schemes adhere to the importance to evaluate the healthcare plan and benefit packages offered by other medical schemes appropriately before deciding to switch. The intricacy of the market situation shows how consumers have a sensitive concern and apathy, and evaluate any serious thoughts before switching medical schemes, which gives industry competitors early-entry advantages (e.g., brand and customer loyalty, switching costs) (Competition Commission South Africa, 2018). Despite executing ethical behaviour, it will be worthless if switching is perceived as too costly (Colwell et al., 2011). This study shows the key role of the economic risk costs as negative sources of constraint in the medical scheme sector, similar to other sectors in prior studies (Burnham et al., 2003; Jones et al., 2000, 2007). Customers worry about the loss of financial dependence on medical schemes for healthcare, and loyalty points linked to economic rewards, or price cuts on over-the-counter medicine, or that they will have to pay out of their pockets to receive medicine when it arrives at the pharmacy or drug store. These losses are painful, as consumers who might want to switch to alternative medical schemes are forced to stay (i.e., locked in) by economic repercussions – that is, the freedom of choice that was previously enjoyed is now limited by factors customers cannot control. As negative sources of restraint, increasing economic risk costs will eventually outweigh the benefits gained, thereby developing a perception of unethical marketing practice with the core service.

5.1 Managerial implications and theoretical contributions

This paper is the first to explain how customers' evaluation of switching costs could be applied as active managerial policies directly improving perceived marketing ethics of medical schemes in South Africa. A proper management of switching costs in an ethical manner could increase customers' retention with medical schemes "by adding value" in the services relationship. This relates to distributive justice. Key account managers' responsibilities include objectively increasing economic risk costs by equitable and fair distribution of savings or discounted

payments, which could improve marketing ethics perception, thus reinforcing profitable long-term relationships with key clients, who are often viewed as sources of successful businesses.

The study contributes insights advancing the current services marketing strategy focusing on building sustainable customer relationships in a more ethical policy. The study offers an integrated theoretical framework for understanding the direct effect of switching costs typology on customers' evaluation of ethical marketing issues in a medical scheme setting in the emerging economy of South Africa. This multidimensional nature of switching costs seldom appears in literature, with no extant research having measured its direct impact on marketing ethics. This is a novel architecture for measuring switching costs. This study supports existing literature showing that procedural switching costs bind customers in the relationship (lock in), which instils a feeling of being “hostages” (Sharma & Patterson, 2000, p. 484). As a lock-in strategy could result in withholding customers spreading negative word-of-mouth, it is better for managers to consider an emotional, rather than a calculative aspect when increasing switching costs (Jones et al., 2007). The significant negative impact of economic risk costs on marketing ethics is a unique valuable contribution to literature and offers clear practices specific to the medical field. The study closes a gap in literature by systematically determining how these elements relate. As the original contribution, this study is a groundbreaking for research in the health services sector where marketing ethics are key in the evaluation of quality healthcare.

5.3 Limitations and future research directions

Future surveys could be extended outside the province of Gauteng to generalise the results to broader dependents of medical schemes in South Africa. Moreover, the factors measured could be improved, since the brand relational loss costs, set-up costs, and learning costs had lower reliability in this study. Qualitative research may offer in-depth insights on the obstructive issues in medical schemes. Studying the progresses of the NHI benefit package and patient satisfaction is needed. In addition, the experimental design testing the effects of lock-in strategy on marketing psychology factors (i.e., emotions and frustration) is needed. Furthermore, the study can be extended into other countries and industries, such as banking. The effect of switching costs on commitment should be known, due to their importance to the relationship marketing theory.

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A SOCIOTECHNICAL APPROACH TO AID HOUSEHOLD FUEL DECISIONS IN SOUTH AFRICAN TOWNSHIPS

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ABSTRACT

Technical solutions to address the emissions from the household use of solid fuel and thereby improve the resulting consequences for health have been studied extensively. To reduce the domestic burning of solid fuel, such as coal, in townships on the South African highveld, air quality offset projects provide unique opportunities to implement changes to the type of fuel used. The literature on pilot offset projects focuses mainly on economic challenges. Although the social challenges involved have been reported, few studies have been published that elaborate on the social factors hindering sustainable offset projects in indigent households.

For example, after 25 years since the adoption of projects to reduce coal-fired emissions by using a novel ‘Basa Njenge Magogo’ method of top-down burning of such fuel to reduce smoke, this approach is adopted by only a minority of domestic coal users. This practice does not cost anything to society to implement but requires behavioural changes in the way a fire is packed and lit. Likewise, the removal of coal stoves in homes requires attention to not only a host of economic and fuel supply chain challenges, but also behavioural and cultural adjustments by communities to succeed in converting to less-polluting household fuels such as gas and renewable energy.

The South African Air Quality Offsets Guideline (2016) – hereafter referred to as the Guideline – published by the then Department of Environmental Affairs, has been reviewed to determine to what extent communities should be considered during the implementation of fuel switch policies. The Guideline stresses the need for “concerted efforts by both government and polluting industries to clean up the air”, yet the role of communities is virtually absent in this process. Empirical data from recently published pilot studies are presented here to support the recommendations we propose.

Even if the Guideline becomes law, a third factor is critical to the successful implementation of clean fuel technologies, namely, the person lighting the coal stove. Community concerns have been raised about the use of alternative energy sources such as gas and renewables due to perceived risks associated with their use. Beyond the normal, one-way public consultation process with affected parties, we recommend that in future policy guidelines should also encourage a deeper understanding of communities, to effect behaviour change. A social entrenchment framework is proposed that can be achieved through mutual dialogue, the co-creating of rules and co-ownership of technology solutions, to prevent regress to coal use after the introduction of offset projects. This sociotechnical approach is essential to implement such sustainable projects for the long term, by integrating accumulated knowledge about air pollution and its health impacts as well as technology solutions, alongside community support, to achieve the adoption of clean energy.

Keywords: Culture, behaviour, community, coal, stove

INTRODUCTION

The South African highveld is geographically defined by the high-altitude plateau in the interior of the country where cheap coal is in abundant supply and used for cooking and heating. As a result, solid fuel burning creates severe air quality problems (Makonese et al., 2017), especially in low-income townships (Annegarn & Sithole, 1999). The emissions from burning coal affect the health of the communities involved as a result of both outdoor and indoor air pollution (Norman et al., 2007; Scorgie, 2004; Scorgie et al., 2003) (Norman et al., 2007). More recent studies confirm that most local and district municipalities lack air quality management plans (Tshehla & Wright, 2019) and resultant pollution (DFFE, 2020) results in thousands of deaths and comorbidities in South Africa every year (Adesina et al., 2020; Tshehla & Wright, 2019).

The dire situation of burning solid fuel domestically – coal and, to a lesser extent, wood and dung, depending on location – has recently been summarized by Bilgrami (2021) in a study on global access to clean cooking. Citing a World Health Organization report of 2020, this report states that the air quality situation in southern Africa has deteriorated since 2010. A crisis exists particularly in sub-Saharan Africa, the only region in the world where the number of people without access to clean fuel for cooking continues to rise sharply and results in poor air quality and health effects. The causes cited are a lack of economic progress, joblessness, regional conflict and, more recently, COVID-19 related economic impacts and disruptions in electricity supply, result in increased solid fuel burning.

Industries also burn coal that must meet minimum emission standards since 2014 and must apply for atmospheric emission licences from the Department of Environmental Affairs (renamed the Department of Forestry, Fisheries and Environment) to operate. One of the conditions of the licence can be the requirement to implement air quality offset projects among low-income households adjacent to their factories, to address indoor and outdoor air pollution. The National Environmental Management Air Quality Offsets Guideline (hereafter referred to as the Guideline) of 2016 provides the basis for piloting and implementing these offset projects, aimed at reducing domestic solid fuel burning emissions. With reference to this relatively new Guideline, this paper seeks to contribute towards successful implementation of offset projects, with a particular focus on social aspects.

The objective of this study therefore is, first, to analyse the Guideline for guidance on social requirements for project implementation. Second, based on historical information, to identify possible gaps in its scope to ensure that one of the main goals of the Guideline is met: namely, to facilitate sustainable, long-term implementation of clean fuel solutions long after the project is completed. Third, possible changes to the Guideline are recommended to improve the prospects of an offset project succeeding, with a focus on societal factors.

In summary, therefore, although there has been extensive scientific research to address air quality and related health concerns in South Africa, what remains to be clarified is to what is needed to strengthen the formal Guideline for air quality offset projects to succeed in reducing the domestic burning of solid fuel. This is the purpose of the study reported here.

BACKGROUND

Impact of poor air quality

Air quality research is well established in South Africa. Since 1971, the *Clean Air Journal* reported a total of 22 articles that have centred on air pollution over the South African highveld, 12 papers have appeared on coal-related emissions and another 12 have focused on domestic coal burning. Since the 1990s, increasingly more studies explored air quality health concerns associated with domestic fuel burning (Annegarn & Sithole, 1999; Scorgie et al., 2004; Scorgie et al., 2003; Terblanche et al., 1992; Terblanche, 1998).

Indoor air pollution has a devastating effect on health, impairs productivity, is a burden to women especially and reduces life expectancy (WHO, 2002). Poor house ventilation, coal stove quality and chimney design result in major indoor air quality hazards. While high quality coal is exported from South Africa (Steyn & Minnitt, 2010), low quality coal often finds its way to inefficient coal stoves (Le Roux et al., 2009). The mortality and morbidity impact of coal emissions on the highveld has been estimated to claim thousands of deaths annually and reduced life expectancy (Norman, Barnes, et al., 2007), with the effects varying according to geography and the pollutants involved. Many studies have shown that among anthropogenic air pollutants, particulate matter (PM) is a major cause of adverse health effects (Friedl et al., 2008; Norman et al., 2007; Norman et al., 2007). Several investigations have therefore focused on measurements of PM concentrations on the South African highveld as an indicator of indoor air pollution from residential solid fuel burning (Adesina et al., 2020; Wernecke et al., 2015). Moreover, other studies (Adesina et al., 2020) reported that the average outdoor concentration of particulate matter was about half of that indoors. In winter, the indoor pollutant levels increased notably more, when doors and windows are closed to retain heat. The elevated concentrations of particulate matter indoors in winter is mainly due to domestic solid fuel combustion, and not from industrial sources.

Balmer (2007) conducted community surveys in a highveld township and concluded that households use a large range of fuels and appliances at the same time including coal, paraffin, gas, electricity and wood, depending on their local availability and intended use. However, coal remains the greatest concern and is most commonly used for space heating especially during winter, for water heating, cooking, and ironing (Le Roux et al., 2009).

The impact of COVID-19 on increasing poverty, population growth and regular electricity load-shedding contribute to the problem, with more than a million households in South Africa alone resorting to coal, firewood and dung for domestic use (Kerimray et al., 2017; SurrIDGE et al., 2005). On the highveld these fuels are used for domestic cooking and heating of bath water throughout the year, as well as for space heating in winter (Makonese et al., 2017) using coal-fired “mbaulas” (braziers). Electricity is only the fourth-most used form of energy for cooking in townships even when available, after coal, wood and paraffin, due to its unaffordability (Le Roux et al., 2009). Otherwise, it is mainly used for lighting and appliances such as phones.

Case study: Basa Njengo Magogo

Although the air quality research base over decades appears strong, the implementation of subsequent policies to reduce coal-use in households appears weak. Coal remains to be burned in a “mwabula”, “Imbhawulas” or “Umwabula”, a home-made brazier (Balmer, 2007; Le Roux et

al., 2009; Surridge et al., 2005) and in coal stoves in the township households. To address the emissions from these sources, a technology called “*Basa Njengo Magogo*” was developed and introduced into townships in the late 1990s. By stacking the fire and igniting it from the top (Balmer, 2007), this method generates less pollution as ‘the smoke rises through the hot zone and is consequently burnt’ (Surridge et al., 2005). Pilot studies demonstrated the benefits of the method: it costs nothing to implement, makes use of existing appliances, uses 20% less coal (saving costs), reduces heating times from 55 minutes to 13 minutes and smoke emissions were reduced by between 60% and 90%, as confirmed in CSIR laboratory tests (Le Roux et al., 2009).

The benefits and method were demonstrated to more than 80 000 of households in coal-burning areas in South Africa (Balmer, 2007). However, a few years later the improved method was used by only 13% of township households (Wright et al., 2011). As a result, this case study is interesting as the usual socio-economic concerns of affordability does not apply and rely mainly on a behavioural change in the way household fires are made.

Environmental policy

In South Africa to address air quality, significant improvements have been made in air quality policy since democracy in 1994 under the Constitution, providing everyone with the right to an environment that is not detrimental to health. Dealing with sources, the National Environmental Management Act (NEMA, 1998) followed with industry emission standards (NEM:AQA, 2004), providing stricter industry plant emissions standards for point sources. Industrial emissions are regulated by the sources applying for an atmospheric emission licence (AEL) from the then Department of Environmental Affairs.

Ambient air quality standards (NEM:AAQS, 2009) followed next, which are loosely based on World Health Organization guidelines. However, ambient air quality remains of grave concern and exceedances of these standards are common, especially in low-income township areas during winter (Scorgie, 2004).

The use of solid fuel by households is a greater contributor than industry to the ambient pollution in townships (Balmer, 2007; Kerimray et al., 2017), even though some 950 000 households burn between one million and 2.5 million tonnes of coal per year (Balmer, 2007; Steyn & Minnitt, 2010; Surridge et al., 2005), compared with industrial consumption of 178 million tonnes annually, whose effects are emitted at high elevation and thus dispersed.

The policies to reduce the domestic use of solid fuel have been relatively unsuccessful when compared to Asia, as a consequence southern African domestic emissions have worsened in recent years (Bohlmann & Inglesi-Lotz, 2018) and result in exceedance of both ambient and indoor standards (WHO, 2002, 2014). In Asia, since 2010, 600 million people (65% of the population) without access to clean fuels for cooking were lifted out of poverty with access to clean fuels. According to the IEA (2021), in southern Africa, hundreds of millions of citizens without access to clean cooking is rising in numbers and are increasingly resorting to coal, as well as biomass such as wood and kerosene, despite increased access to electricity (Bohlmann & Inglesi-Lotz, 2018; Le Roux et al., 2009). Although access to electricity is reasonably high in South Africa, some 70% of low-income households have to rely on other sources of energy and cannot afford electricity to cover their basic energy needs.

Offset guideline

In March 2016, under the National Environmental Management Act, the air quality offsets Guideline was published (NEM:Air Quality Offsets Guideline, 2016) by the then Department of Environmental Affairs, providing an opportunity for industries to help address ambient and indoor air quality concerns in local communities. Air quality offsets, for example, can reduce or eliminate domestic solid fuel burning to counterbalance atmospheric emissions by industry, by improving ambient and indoor air quality. The Guideline provides a regulatory framework and stresses the need for “concerted efforts by both government (key licensing authorities) and polluting industries (applicant) to clean up the air”. The roles of both the relevant authority and applicant (“a person implementing an offset project”) are clearly spelled out. The last few years has seen atmospheric emission licence (AEL) authorizations to industries include an offset project as part of licence conditions for purposes of either postponement or variation of emission limits, or where an airshed does not meet ambient pollution levels. As a result, the project developers that implement offset projects are typically appointed by large organisations such as Eskom, the national electricity utility, or Sasol, an integrated energy and chemical company that implement offset projects as part of their atmospheric emission licence agreement with the now Department of Forestry, Fisheries and Environment and must report progress.

The offset project solutions are location specific, differ across the country and are agreed upon between the government department and project applicant. The examples of pilot offset projects since 2014 showed a multipronged approach to ensure that the goal of improved indoor and ambient air quality is achieved. Examples of pilot air quality offset projects implemented include the thermal insulation of homes in combination with the introduction of alternative fuels such as natural gas or solar power, combined with upfront capital investment by the project developer for essential equipment in households such as the replacement of coal stoves (Langerman et al., 2018). Both Sasol and Eskom report annually in their sustainability reports their progress on offset projects and report to the Department.

Air emission offset pilot projects implemented thus far indicated that socio-economic conditions in low-income households do not allow simple fuel switching to cleaner fuels, due to cost constraints (Langerman et al., 2015). However, the case study of *Basa Njengo Magogo* provides an example of where behavioural change is an important driver for domestic fuel choices.

Policy and public participation

Environmental policies in South Africa require public participation (NEMA, 1998) to reduce industrial emissions (NEM:AQA, 2004) and for the approval of environmental impact assessments. The offset Guideline follows a similar approach. The main actors are government and industry, while community participation is required. A thorough understanding exists between industry and government as reflected in the Guideline, as to why emission standards are needed while negotiations continue about implementation timelines. However, increasingly sceptical non-government organisations (NGOs) are closely scrutinizing progress. Public consultation often consists of one-way, top-down communication with affected communities through NGOs. This public participation process suffices to address the needs to consult about the more than 200 million tonnes per annum of coal burned by industry in South Africa, prior to receiving regulatory approval for licences and authorizations.

The same approach of public participation is used to implement air quality offset projects. Langerman (2019), Langerman et al. (2016); and Langerman et al. (2018) acknowledged the need for community engagement and community buy-in to ensure the success of offset initiatives, though most studies rarely include details on the social requirements to ensure project success. As a result, the focus of this review now shifts to human behaviour.

Behavioural and cultural research

The safety compliance and behaviour paradigm may seem distant from household-level solid fuel emission decision-making, but a similar personal change in behaviour is required to reduce domestic solid fuel burning at home. Likewise, safety management, although heavily regulated, relies closely on individual ownership of the safety concern by the person to succeed (Dekker, 2015; Myers et al., 2014). In the homeowner's context, "compliance refers to acting in accordance with some somebody else's wishes" to clean up the environment by improving on household fuel decisions.

Even if the air quality offset Guideline is replaced with legislation in future, the actions of the homeowner, when lighting a fire or preparing food at home, need to change to reduce the impact of coal burning. Recent research on safety stresses the importance of understanding and knowledge to ensure successful safety interventions and achieve behaviour change, to bring technology solutions and social aspects together (Schulman, 2020).

Hu et al. (2020) took compliance a step further and distinguished between "deep" compliance and "surface" compliance. Surface compliance is enacted only to meet legal requirements and to prove compliance, hence a tick-box exercise to comply simply for the sake of complying. However, where individual actions are required and changes are to be made, the authors argue for deep compliance instead, to effect change. In safety, employees require deep compliance to maintain safety programmes, change worker behaviour, and reach organisational goals. Every individual and the group as a collective need to take ownership of the coal dilemma to succeed in meeting air quality and health goals in the community.

Recent behavioural research highlights the need for cultural understanding to address safety, health, and environmental behaviour. Although multidimensional, antecedents of safety behaviour and compliance include culture (Hu et al., 2020; Schulman, 2020). National cultures may well differ among countries (Hofstede, 2011; Hofstede, 2017) when comparing household views about the environment. For example, Hofstede's national culture dimensions differ among nations. One such dimension is the preference for a relatively short-term focus in South Africa generally, as opposed to a long-term predisposition most common in countries such as China. Many Asian countries have successfully reduced domestic coal use (IEA, 2021), where regulations worked in a compliance-driven society that is a different cultural setting from South Africa's. Another cultural difference appears in the dimension of uncertainty avoidance, with countries differing widely on views about the value of rules in society (Hofstede et al., 2010). These dimensions could play an important role in the effectiveness of policy and changes in rule to effect behaviour change in domestic solid fuel use. In South Africa, instead of making a power move such as introducing draconian legislation that may well work in China, another, more sustainable option may be to make the domestic decision-maker status worthy (Kemper et al., 1984), involving the homeowner as part of the process of finding sustainable solutions to ensure long-term buy-in.

Another example of the need to consider technology solutions with social behaviour appears from the field of climate change research. The 5th Assessment Report on the mitigation of climate change from the Intergovernmental Panel on Climate Change (IPCC, 1988), introduced a chapter in 2014 for the first time on risk perception and responses to uncertainty by societies. The interface between social uncertainty and science policy influences decision-making by individuals and communities. Indeed, the importance of culture and behaviour to effectively address climate change in society is now well established (Lorenzoni & Whitmarsh, 2014). Perceptions differ between “own” contribution to a problem (such as coal use) when compared to the contribution of “others”: role players do not perceive themselves to be the problem but blame others. The continued rise of coal use globally since the IPCC was established in 1988, despite thousands of scientific reports on climate, proves the point that science policy alone cannot make change happen, without people changing their behaviour.

Interdisciplinary research

Sovacool (2009) provides interesting insights into the resistance in the adoption of renewable energy in the United States. Following a lengthy analysis of American policy, regulations, available technology and the economics of renewable energy, this author concludes that the biggest factor overlooked in energy policy is behavioural and cultural in nature (that is, social), not technical. Energy use is a classic example of a sociotechnical system encompassing technological, social, political, regulatory, and cultural aspects of electricity supply and use (Sovacool, 2014). Education on its own does little to reduce differences in opinions by decision-makers: even highly educated individuals differ widely about possible solutions, neither do incentives provide a long-term solution to start behavioural change (Sovacool, 2009). He found that a lack of personal responsibility for one’s own energy consumption patterns hinders a change in behaviour. The tendency easily to blame other consumers, companies or authorities will result in nothing being done about the problem. Researchers agree that beyond technical policy and economic hurdles, behaviour and culture pose the biggest challenges and therefore a combined sociotechnical approach is required to achieve successful outcomes (Lorenzoni & Whitmarsh, 2014). This sociotechnical theory assumes that any system can only be understood and improved if both 'social' and 'technical' aspects are brought together and treated as interdependent parts of a complex system.

METHOD

The objective of this study was first to analyse the Guideline for an indication of social requirements for project implementation. The Guideline was analysed for references to the role of society in offset projects, supplemented by the latest literature on cultural and behavioural change requirements to ensure long-term compliance with the objectives of offset projects.

Second, based on historical information, we identified possible gaps between the content of the Guideline and one of its main goals: namely, to guarantee the sustainable, long-term implementation of clean fuel solutions long after the project is completed. To identify gaps, a comparison was made between the Guideline and the “best practice” as described by Hu et al. (2020) on “deep” compliance requirements, also supported by Sovacool (2009) and more recent work by Schulman (2020). The latter authors developed requirements for long-term, sustainable

behaviour change in agents, as opposed to short-term, “shallow” compliance. Following a comparison of principles and themes as described in the Guideline, the results were summarized in tables. Compliance in this context does not refer to legislation but to meeting the Guideline’s objectives to achieve clean air and better health outcomes from reduced solid fuel use, when offset projects are implemented.

Third, this study aims to recommend possible changes to the Guideline to improve the prospects of the offset project succeeding, using an integrated sociotechnical model as described by Goede and Hofstede (2021).

RESULTS

A comparison was made between the NEM:Air Quality Offsets Guideline (2016) approach, which is designed top-down – for example, by authorities and project applicants – against the requirements for “deep” compliance from Hu et al. (2020). The latter is a bottom-up design from, for example, the perspective of low-income households. Table 1 summarizes four references to communities found in the Guideline. The columns in Table 1 highlight the gap and opportunity to close this gap towards deep compliance and commitment.

Current extent of public participation

The principles that apply to offsets can be grouped in two categories (Table 1). First, the principles related to communities are described in section 3 of the Guideline. Transparency is required in the public consultation process to ensure buy-in for the offset project. The applicant must provide members of the public with any information related to the implementation of the project. Clearly, this requirement applies to the applicant to inform the community. Sustainability is described as ensuring that not only short-term solutions are proposed, such as introducing alternative fuel sources, without the need for long-term subsidies to secure financial viability.

Table 1. Comparison of the offsets Guideline against deep, long-term compliance

| Policy Guideline | Requirement(s) | Example(s) | Sufficient for compliance to long-term goals? (Hu et al., 2020; Sovacool, 2009) |
|--|--|--|--|
| (NEM:Air Quality Offsets Guideline, 2016) | | | |
| Principles (section 3) 3c) Transparency & acceptability 3e) Sustainability | Provide information. Long-term solutions. | Emails Newspaper notices Websites | Yes. One-way communication from applicant and authority to community. But results in “shallow” compliance. |
| Offset design (section 5) Public participation | Part of offset project design. | Libraries Notice boards | |
| Public participation (section 6) Community meeting(s) | Programme for PP to include meeting(s). | Public participation (PP) meetings and minutes of meetings | No. Lacks requirement to address fallacies, falsehoods, and fears in the community about change from use of solid fuel such as coal. See Table 2 for suggestions about “deep” compliance. |
| Roles and responsibilities (section 7): 7.3) Communities | Participate, comment, and suggest. Consult, demonstrate support, buy-in. | | |

The policy guideline also refers to offset design (section 5 in the Guideline) and includes the requirement for public participation, but not much more definition is provided here as to the extent of participation expected.

The principles are typically met by project developers who provide information about offset projects to communities through various electronic outlets, from emails and websites to paper-based sources such as billboards and libraries. Traditionally, most project developers will use a combination of methods to distribute offset project information to communicate with the community. Newspaper notices are published in several local and national newspapers. Copies of a draft implementation plan are typically made available for viewing at public libraries. The principles and offset design outlined in Table 1 provides for one-way communication and is an important first step to inform communities about the project. The sharing of knowledge is a first step required towards acceptance.

Public participation and roles

Public participation (section 6) requires a detailed and transparent public participation programme to be developed, including one or more public meeting(s) in the community (Table 1). Likewise, section 7 on roles and responsibilities outlines in more detail what is expected from communities (section 7.3). The participants in affected communities are given opportunities to participate, comment and suggest options to make applications acceptable. Where necessary, communities may have to demonstrate support. Public meetings are held to present and discuss the implementation of the project, while the attendance register, and minutes of the meetings are recorded. The issues raised formally during the public participation process and responses to these comments are summarised.

Even though the Guideline says relatively little about community engagement, the project developers and the authority's roles are clear and broadly acknowledge that community support is vital to the success of offset projects. In each community where offsets are to be implemented, a local stakeholder reference group will usually be set up through which the project developer (from industry) and local community representatives will communicate with each other.

DISCUSSION

Towards “deep” compliance

How can a society progress from “shallow” to “deep” compliance through behaviour and cultural understanding? The acceptance of personal and one's own responsibility opens the door to long-term behaviour change and the adoption of alternative energy sources beyond coal (Sovacool, 2009). Extensive research by Dekker (2015, 2016), Dekker and Breakey (2016); and Myers et al. (2014), delves into human behaviours when facing uncertainty and pressure. Inside households, decisions on energy use are made that often deviate from the ideal (Sovacool, 2009). Given limited resources and other pressures, fear of the unknown, conflicting priorities, perceived judgements, and reporting approaches, behaviour can result in being non-ideal. Table 2 describes the causes and proposed solutions for such non-ideal behaviours to achieve social entrenchment of environmental policies that aims to improve decisions about household fuel.

Table 2 proposes solutions for improved community buy-in to offset projects based on the actual behaviours observed in society. The following four such areas of concern are based on the approach by Dekker (2015) and require specific solutions.

Fear of the unknown is best addressed by knowledge sharing through education and training, already addressed to some extent through the Guideline. Fear of alternative fuels, which can arise from the risk of gas exploding, escalating costs, no fall-back position to coal when the stove is removed, when gas runs out or electricity load-shedding occurs (Balmer, 2007; Bilgrami, 2021; Langerman, 2019; Le Roux et al., 2009) – all these require attention to avoid uncertainty (Hofstede et al., 2010). Knowledge about regulations and technologies for air quality abatement and how air quality affects health will provide the first step in educating communities. The individual imparting the knowledge should be carefully considered and ideally selected by a respected community member to build trust. The current offset guideline largely assists with the one-way, top-down communication of information; however, education is only the first step to allay fears of the unknown.

Table 2: Societal entrenchment approach for sustainable offset projects

| Problem | From (past) | To (ideal) | Proposed solutions |
|-------------------------------|--|--|--|
| Fear of the unknown | Do nothing, fear of gas, unforeseen cost, inconvenience, explosions. | Controlled fears: Taking control of fears, making sound decisions. | Knowledge. Education by credible community members. |
| Conflicting priorities | Cheap coal vs better health. Polluting coal vs exploding gas. | Balanced priorities: Optimize household choices to improve health. | Dialogue. Focus on common goals such as health. |
| Perceived judgements | Either harsh, unforgiving law enforcement or all-forgiving, non-existent rules. | Flexible judgements: “deep” understanding of rules and goals. | Co-create. Society-based rules and regulations required. |
| Reporting approach | Blaming others: neighbours, authorities, companies, NGOs, media. Hiding reality of costs, inconvenience. | Learning reports and feedback during pilots: report experience in a transparent way. | Ownership. Community co-owns solutions, share jobs and well-being. |

The second requirement is to resolve conflicting priorities to help decision-makers in households to face the real-world trade-offs in their communities. The decision between cheap coal and (more) expensive energy; between the health costs of coal pollution and health benefits of renewables; the decision between winter requirements for ample heat emanating from a coal stove to less heat from a gas stove, all require two-way dialogues. The simple, existing solution to coal to satisfy multiple functions in one, against the more complex gas, heating, cooking and insulation combination solution requires dialogue as it introduces a more complex energy decision-making system (Sovacool, 2014).

Third, perceived judgements need to be overcome. Judgements by both society – for example, neighbours – and the regulators will determine to some extent how communities will take decisions on domestic fuel use in future. In a world of harsh judgements where no alternatives exist, resistance to comply can result in rebellion, whereas with a lenient approach where everything is allowed (Dekker & Breakey, 2016), progress will be slow as is probably the case at present with regard to domestic solid fuel use that remains unregulated. The solution will lie in a balanced approach with the co-creation of rules and, eventually, regulations about solid fuel use in society and the mutual agreement about the value of improved health to society. The opportunity to address injustices of the past, such as limited access to clean energy under apartheid policies, is also implicit in the offset intervention (Langerman, 2019).

Lastly, the reporting approach matters. Regular, honest feedback reports are required from the community from the inception of offset projects through pilot projects and larger-scale rollouts in

the community. Blaming is a common card to play by stakeholders when facing challenges but does not resolve anything: blaming authorities, companies or neighbours transfers ownership to others (Sovacool, 2009). Hiding true feelings about the offset project does not result in any learning to improve the situation. The solution will require co-ownership of solutions, for example where coal is phased out and replaced by LPG as an energy source, community ownership of new gas supply chains in the community will ensure long-term success through job opportunities and improving livelihoods in the community.

The offset policy guidelines take the first important steps to inform communities about the projects in their settings but lack detail on actual participation requirements. This review suggests that we must go several steps further in offset projects than the traditional technical approach to public participation. The mindset approach must change from “public participation” to “personal participation”, to assist offset project implementation by behaviour changes at home. To “...achieve long term environmental protection...” as defined in the Guideline, an offset project requires actual behaviour change, by household members in their private capacity before collective change can take effect in the community.

To achieve the long-term sustainable goals of offset projects, the four-step societal entrenchment approach is recommended, as described above. While air quality research seeks to advance technological interventions to improve air quality, an understanding of the social requirements by low-income households is needed to change behaviour at home. Without a better understanding of air quality issues and the health value that implementation will add to society, acceptance of change will be low and clean fuel will remain out of reach from the perspective of environmental justice (Langerman, 2019).

Consultations should start early during development of high-level plans to manage expectations and to learn from offset pilot projects. The four steps can be summarized as follows: first, the technical knowledge from project designers and government should be combined with societies’ knowledge, expectations, and the history of their behaviour. Knowledge of air pollution effects on health is essential, but education is not enough (Sovacool, 2009). Second, interactive dialogue is required to resolve myths, inaccuracies, and expectations. Third, co-creation of societal rules to improve air quality not only provides for a societal licence to operate, but also eventually to draw up rules and regulations. This will result in deep compliance and easier adoption of offset projects at a societal level. Lastly, co-ownership of solutions will lead to maintenance of the offset, through the creation of sustainable jobs and livelihoods in the long term.

In summary, to achieve change in social behaviour in the cultural context, decision-makers will have to consider a two-way, bottom-up and top-up approach where communities are required to provide structural inputs to design a successful sociotechnical offset system.

CONCLUSION

Personal consultation and commitment are required of those affected in addition to public consultation. “Deep” behavioural and cultural understanding of the purpose of an offset project is required by communities to ensure long-term project implementation and sustainability.

The role of regulators to define sound policy guidelines in close cooperation with project developers of offset projects is well established. However, the next challenge in rolling out the

body of knowledge and policies about air quality through offset projects is to ensure social entrenchment, to successfully clean up the air in affected communities. The implementation of an air quality offset policy is improved by a deeper understanding of community culture and behaviour, to provide a single sociotechnical approach. That leaves the authorities with a challenge to balance the rules and regulations approach that may follow the Guideline, with education, and awareness to co-create and own the voluntary adoption of safe household fuel decisions. Further research is required to validate the successful implementation of the findings of this study.

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SAFETY CULTURE AT A COAL LOGISTICS COMPANY: HOW TO DO BETTER?

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ABSTRACT

Achieving zero harm in heavily mechanised industries seems unattainable if a weak safety culture prevails. Embedding safety risk indicators in an organisation strengthens safety culture and improves safety performance. The academic literature focuses on safety culture that acknowledges compliance with safety policies and procedures; it omits another safety risk, however, which, in this study, is defined as perceptions of safety decision-making held by the workforce. Using a questionnaire-based survey for data collection, this study assessed the perceived safety culture at a coal logistics company that for decades has had safety management systems in place. With a 36% response rate from 518 employees, the study surprisingly revealed a misalignment in safety culture between management and non-management, and across departments. This result complements the outcomes of two-yearly self-assessments of safety system compliance, by using a different tool, which concluded that its safety culture was aligned and mature. However, with distribution scores of 4.2 and 3.8 out of 5 for management and non-management, respectively, the overall level of perceived safety risk integration in decision-making remains high. Higher perceptions of integration from functions such as Finance, Engineering, and the Health, Safety, Environment and Compliance departments are evident, compared to Human Resources, Operations and Maintenance, which are less aligned in safety culture. The latter departments are also closer to the coalface with high intrinsic safety risks and prevalence of safety incidents, probably explaining the misalignment and the reason why zero harm is not yet being achieved. Prior interventions resulted in an aligned safety culture between company management and contractor management, with a similar safety risk integration score of 4.2 out of 5. Operations and Maintenance recorded the highest return of “I do not know” responses, identifying areas for improvement. Participants indicated that, to strengthen the safety culture in the organisation, accountability for including safety risk in decision-making, communication, and shared understanding must be improved, prioritising Operations and Maintenance.

Keywords: Risk culture; safety culture; perceptions; decision-making; safety risk integration; accountability.

1. INTRODUCTION

Safety culture and its relationship with organisational culture and safety outcomes in work environments have been widely researched over the past three decades (Pidgeon (1991); Cooper (2000); Guldenmund (2010a); Guldenmund (2010b); Zhang et al. (2002); Fernández-Muñiz et al. (2007); Wiegmann et al. (2004); Nordlöf et al. (2015)). This body of research demonstrates that the safety culture of a company is reflected in its organisational culture and safety performance.

Workers worldwide are exposed to work-related safety risks, and others succumb to associated accidents (Nordlöf et al., 2015). Management's commitment to safety influences the way employees regard, interpret and understand safety, which in turn affects the reduction in occupational safety incidents (Choudhry et al., 2007; O'Toole, 2002). Companies invest in risk mitigation strategies, through improved engineering, training and awareness raising (ILO, 2018); these investments have resulted in a gradual decline of occupational injuries globally (Kim et al., 2016).

However, the goal of zero work-related accidents that many organisations aspire to seems beyond reach. According to Grahn et al. (2017) and Guldenmund (2010a), the main obstacle to achieving this aim can be an eroded and weakened safety culture, which creates conditions conducive to work-related safety incidents. A safety incident is an undesired event during the course of work, which results in a potential or actual injury or fatality (ISO, 2018). Studying a business's safety culture facilitates an understanding of specific safety risk indicators to direct safety improvement strategies to mitigate safety incidents (Guldenmund, 2000). Researchers refer to safety culture and safety climate as similar concepts. For example, every two years the organisation studied in this report conducted self-assessments of safety system compliance using the maturity model of Foster and Hault (2013); but then concluded that there is an "aligned safety culture".

The present study goes further; it focused on perceptions of safety decision-making held by the workforce and the results provided insight into the effect of safety culture on the organisation's safety risk improvement strategies. The primary research question that guided this study was: "What is the perceived safety culture within the coal logistics company?" Schwatka et al. (2016) indicate that studies defined perceptions as non-management based, but few reflected perceptions as experienced by both management and non-management. For this study, the first of its kind conducted at the company surveyed, "perceived safety culture" is defined as the perceived level of inclusion of safety risk in decision-making by a representative sample of employees.

The basis of the findings of this research was a quantitative study on perceptions of a sample of 518 employees and contractors, at different work levels, on safety risk culture at the coal logistics company. The expected outcome of the study was based on the following hypotheses:

- Null hypothesis ($H_{1,0}$): safety culture perceptions at management level are aligned with those at non-management level.
- Alternative hypothesis ($H_{1,1}$): safety culture perceptions at management level are higher than at non-management level.
- Null hypothesis ($H_{2,0}$): safety culture perceptions of the workforce are the same across different departments in the organisation.
- Alternative hypothesis ($H_{2,1}$): safety culture perceptions of the workforce are misaligned across different departments in the organisation.

The company studied has been in the South African coal industry for more than 40 years, servicing most coal-mining companies that export coal to global markets abroad. It has a reputation for a safe, reliable, and efficient coal logistics service with certified safety management programmes since 2002. Train wagons from the coal mines are unloaded, coal is stockpiled and later loaded onto vessels for shipping. The company has 866 employees including contractors. Safety risks include exposure to high-voltage equipment, high-speed conveyor belts, and railway safety incidents. The safety performance of the organisation is above average for the industry, but the company recorded an unacceptable lost time injury frequency rate prior to the study in an industry that aspires to zero harm.

The company's management will use the outcomes of this study to enhance safety strategies aimed at reducing occupational safety incidents. The significance of the study to the organisation, and as a contribution to scholarship, is to understand how safety culture in the coal logistics company is perceived at different management and non-management levels and across different departments in the business, with a view to future improvements during decision-making.

2. LITERATURE REVIEW

Risk culture

Risk is the effect of uncertainty on objectives (ISO, 2009). Culture, according to Hofstede et al. (2010), is “the collective programming of the mind which distinguishes the members of one group or category of people from another.” Hoogervorst (2004) avers that culture is a collection of values and beliefs that act as guidance for a certain behaviour. They view culture at work as something the organisation has, and results from learned responses of group members to environmental conditions and stimuli. It is considered a relatively stable attribute of an organisation that is preserved even if group members change (Hoogervorst, 2004). Ring et al. (2016) conclude that there can be many sub-cultures in an organisation, each with its own impacts and consequences for the company.

According to Bozeman and Kingsley (1998), risk culture is the organisation's inclination to consider risk as accepted and addressed by its managers. Risk culture is also the perceived level of inclusion of risk in decision-making, and represents how much a group values managing risk (Zaيمان et al., in progress). For this study, safety risk was used as the specific risk type investigated and formed the basis of the data collection.

Safety culture

Safety culture is one of many cultures within an organisational culture, and should be developed within this framework to ensure uniformity of its dimensions (Frazier et al., 2013). Hoogervorst (2004) describes organisational culture as based on beliefs and assumptions. According to Probst et al. (2019), safety culture is defined as the employees' perceptions regarding an organisation's policies, practices and procedures that indicate the value and the importance of safety at the workplace. It is a reflection of the extent to which the employees perceive that safety is prioritised at work as compared to productivity and other business indicators. Dahl and Kongsvik (2018) assert that safety culture in the workplace involves the perceptions about the policies, practices and procedures shared by the employees. According to Choudhry et al. (2007), Fernández-Muñiz

et al. (2007), Guldenmund (2000) and Mearns and Flin (1999), safety culture is a set of values, perceptions, attitudes and patterns of behaviour with regard to safety shared by members of an organisation. They elaborate that it reflects a high level of concern about, and collective commitment to the reduction of, work-related safety risks. Cooper (2000) describes safety culture as a component of organisational culture, which affects the attitudes and behaviours of the workforce towards safety performance. He avers that safety culture coexists with other operational and organisational attributes. Safety culture, according to Nordlöf et al. (2015), is characterised by five indicators, namely, acceptance of risks, individual responsibility for safety, trade-off between productivity and safety, the importance of communication, and external conditions. For the study reported here, safety risk culture is defined as the perceived level of inclusion of safety risk in decision-making.

Perceptions of safety culture

A key characteristic of an organisation's mature safety culture is common perceptions among managers and staff regarding the importance of safety, and there can be misalignment of how different levels of the organisation recognize this importance (Clarke, 1999). Therefore, a mutual understanding that each organisational level recognizes the importance of safety facilitates a resilient safety culture in the company (Clarke, 1999).

According to O'Toole (2002), organisations have limited resources to help reduce occupational injuries. They struggle with how best to focus these limited resources in order to achieve their strategic safety goals. Kim et al. (2016), however, report that work-related injuries have declined over the past decade through engineering controls, safer machinery and processes, and better adherence to regulations. They point out that these systems are not effective unless augmented by a strong safety culture in the workplace. Management's commitment to safety is the main contributor to a heightened level of safety culture as perceived by employees (Fruhen et al., 2014).

Dimensions of safety culture

The academic literature on safety culture reveals it as comprising many characteristics, although not all examples incorporate the essential safety culture features. According to Frazier et al. (2013), four important features of safety culture are management concern for safety, personal responsibility, peer support, and the presence of a safety management system. Dahl and Kongsvik (2018) agree with these attributes being important, adding competence regarding safety, and a low perception of work pressure to the list. Alruqi et al. (2018) included supervisory safety rules and safety procedures as important. They all assert that the most important safety culture dimension is safety leadership. The Risk Culture Indicator model of Zaaiman et al. (in progress) used in this study is based on 10 interlinked risk culture indicators, notably more than those previously identified in the literature; it is the foundation of the study reported here.

Quantitative research

Quantitative studies are relatively simple to use in cross-sectional comparisons, and straightforward to implement in different organisations (Wiegmann et al., 2004). Research based on a quantitative survey focuses on establishing a representation of what the participants think about an issue using validated quantitative analytical tools to ensure the objectivity and reliability

of the data collected and interpreted (Barnham, 2015). The UARM Risk Culture Scale (UARM RCS-2019) used in this study is a 44-item, 6-point Likert scale that has been developed and piloted over three years (2016–2018) at the Centre for Applied Risk Management of North-West University, South Africa (Zaaiman et al., 2021).

The scale is now mature and can be regarded as valid, as its items are reliable and consistent across sectors, functions, and management levels. The scale also shows a high Cronbach's alpha reliability coefficient of 0.97. It measures the two-risk culture-related factors, namely, perceived level of integration of risk in decision-making processes, and comfort with own risk management role. For this study, safety risk was the specific risk type measured in the culture-related factors and the questionnaire was adopted accordingly.

3. METHODOLOGY

Research instrument

A quantitative study was conducted to assess the perceived safety culture of the organisation using the UARM RCS-2019 (Zaaiman et al., 2021), which focused participants on safety risk. The survey consisted of seven demographic items followed by 44 items related to safety risk, using a 5-point Likert scale. Response options also included “I do not know” and “I do not understand the statement” to mitigate possible unauthentic effects of respondents who truly did not know the answer to an item. The “I do not know” answers were not included in the scale's factor analysis, and only participants with fewer than 30% of such answers per factor were included in the calculation of the factor scores (the average score). The UARM RCS-2019 assessed two aspects of the safety culture in the company. Factor 1 comprised 24 items related to the respondents' perceived level of integration of safety risk in decision-making in the organisation, whereas Factor 2 contained 18 items related to the respondents' perceived comfort with their own safety risk management role. The Cronbach's alpha of 0.97 indicates that the scale was reliable for this study's sample. In addition, the “I do not know” answers were analysed separately, thereby providing valuable information on the levels of uncertainty about features related to safety culture in the questionnaire that could indicate possible safety-risk-related lack of knowledge. Two additional diagnostic questions were included in the survey to allow respondents to suggest the way forward to improve the safety culture of the company.

Participants and procedure

The target population for the study was the company's workforce of 518 employees out of a staff complement of 866. Only contractors at operator level were excluded from the study owing to their inadequate English language proficiency and low levels of education. The sample was spread across the various departments of the company, namely, General Management, Human Resources, Finance, Operations, Maintenance, and Engineering as well as Health, Safety, Environment and Compliance (HSEC).

In practice, 188 responses were received from the survey, corresponding to a 36% response rate, which is above the acceptable minimum response rate of 34% (Shih & Fan, 2008). In total, 185 responses were included in the Factor 1 inferential analysis and 184 responses were included in

the Factor 2 inferential analysis. For Factor 1, three respondents and, for Factor 2, four respondents provided more than 30% “I do not know” responses.

The three employee categories used for statistical analyses of the respondents’ answers were company management, contractor management, and company non-management.

Data collection

The survey instrument was electronically distributed to the potential participants via the online survey platform. An anonymous e-mail address, created by the company’s IT department specifically for this study, was used for the distribution of the scale. In addition, printed copies of the questionnaire were distributed manually for respondents who did not have access to a computer, without involvement of the researchers. The researcher captured written responses electronically on the same online platform, for statistical analysis. The NWU Ethics Committee EMS-REC approved the study (ethics number NWU-00400-19-A4), following approval by the case study organisation and observing all ethics protocols for participants.

The respondents were given an opportunity to complete the survey during working hours; four reminders to all followed via the anonymous e-mail address. Data gathering, as well as the housing and analysis of data sets, were conducted by the statistician at the Centre for Applied Risk Management.

Data analysis

The statistical analysis of the survey responses was conducted using the most recent version of SAS analytical software. Statistical tests were selected according to the research objectives, the scale format and distribution of the data. Descriptive and inferential statistical analyses were performed. Tests for data normality were applied as part of the test selection process. Normality of the score distributions could not be assumed, so statistically significant differences were identified using non-parametric Kruskal–Wallis tests. Significant differences between company management, contractor management and company non-management responses were tested at the 95% confidence level.

The surveys that were incomplete were discarded. Surveys with more than 30% “I do not know” responses per factor were not included in the inferential statistical analyses.

The UARM RCS-2019 assessed two aspects of the safety risk culture in the company, namely:

Factor 1: The perceived level of safety risk integration in decision-making in the organisation.

Factor 2: The perceived comfort with own safety risk management role.

Maturity scores of the risk culture were obtained by calculating the average of the items per factor.

4. RESULTS AND DISCUSSION

The results of the study are presented in the following sections, with focus on demographics, factor distributions, response bias, tests of hypotheses, analysis of “I do not know” responses, organisational characteristics that assisted respondents to include safety risk in decision-making, and what needs to be done to improve the inclusion of safety risk in decision-making.

Demographics of study respondents

The ages of the survey population ranged from 20 years to more than 60. Most respondents (81%) were aged between 30 and 59 years. The working experience at the company was more than 5 years. The fair balance of age and working experience between management and non-management among the respondents contributes to understanding their perception of safety risk in the company. The work experience of most respondents suggests that they are conversant with the safety risk management policies and procedures of the organisation.

Factor distribution

According to the ISO (2009), integration of risk in decision-making involves risk management through risk assessment processes. Therefore, in the context of the ISO, Factor 1 measures the perceived level of assessing safety risks and using the outcomes as inputs into safety risk mitigation strategies. The risk management role, according to the ISO (2009), is the acceptance of risk accountability; those individuals who have fully accepted risk accountability must be adequately skilled, and have sufficient resources to check and improve controls, monitor risks, and ensure effective risk communication with internal and external stakeholders. Factor 2 assesses the comfort of individuals with their own safety risk accountabilities.

Factor distribution at management and non-management levels

Table 2 presents correlations between factors at company management, contractor management, and company non-management categories.

Table 1: Factor scores at management and non-management levels.

| Employee category | Factor scores | |
|------------------------|---------------------------|---------------------------|
| | Weighted average Factor 1 | Weighted average Factor 2 |
| Company management | 4.2 | 4.2 |
| Contractor management | 4.2 | 4.3 |
| Company non-management | 3.8 | 4.0 |

Factor 1: Perceived level of safety risk integration in decision-making in the organisation

Table 1 shows a high level of perceived safety risk integration in decision-making among company management, contractor management and company non-management. Although the average Factor 1 score for company non-management employees is slightly lower than that of management and contractor management personnel, the value of 3.8 is within the range of a high level of perceived safety risk integration in decision-making. This difference implies that the perceptions of non-management employees about the level of safety risk integration in decision-making are not as positive as those of management. Non-management employees are not as confident as management about the level of implementation of safety risk mitigation strategies in the organisation.

Comparison of Factor 1 results for company management and contractor management, however, shows an alignment and a high level of perceived safety risk integration in decision-making. According to Bahn (2013), including company and contractor employees in the same safety management programme improves focus on safety risks by the latter due to the convenience of

their sharing a similar safety management process. The results show alignment between company management and contractor management in the company’s safety risk culture.

Factor 2: Perceived comfort within own safety risk management role

Table 1 confirms that company management, contractor management and company non-management have a high level of perceived comfort with their own safety risk management role. The higher average score for Factor 2 than Factor 1 for company non-management characterizes optimism bias. Caponecchia and Sheils (2011) describe optimism bias as the inclination to think that the probability of undesirable events happening to oneself is more unlikely than believing they will happen to someone else. It is an element of personal risk perception, and as such can result in reduced focus on the application of mitigating controls to safety risks. Optimism bias demonstrated by the workforce may become a significant problem of complacency towards safety risk awareness in an organisation. The higher average score for Factor 2 than for Factor 1 for company non-management may also indicate the existence of a self-enhancement and superiority bias, which is a tendency to see oneself in a more favourable light than is realistic (Hoorens, 1993).

A generally low perception of safety risk culture expressed by non-management employees indicates that they consistently rate themselves and the company lower for both Factors 1 and 2 than management employees.

Factor distribution at departmental level

Table 2 presents the distribution of weighted factor scores across departments in the company.

Table 2: Factor scores for different departments.

| Department | Factor scores | |
|--------------------|---------------------------|---------------------------|
| | Weighted average Factor 1 | Weighted average Factor 2 |
| General Management | 4.7 | 4.6 |
| Human Resources | 3.9 | 4.1 |
| Finance | 4.4 | 4.3 |
| Operations | 3.9 | 4.0 |
| Maintenance | 3.9 | 4.1 |
| Engineering | 4.0 | 4.1 |
| HSEC | 4.3 | 4.4 |

Factor 1: Perceived level of safety risk integration in decision-making in the organisation

Factor 1 results show a high level of perceived safety risk integration in decision-making across all departments. The exceptionally high scores recorded for General Management are expected because this department sets the strategic direction, risk management policy, and risk management framework for the company. Factor 1 scores are also relatively high for the Finance and HSEC departments too; the possible explanation for these results is that the two departments are the traditional custodians of enterprise-wide risk management and compliance in the company. However, Maintenance, Operations and Human Resources, where most employees work at the coalface, have relatively lower Factor 1 scores. The possible explanation for these results is that Operations and Maintenance have high intrinsic safety risks and prevalence of safety incidents compared to other departments, therefore employees in these departments perceive the efforts for the implementation of safety risk mitigation strategies as relatively inadequate. The Human Resources department participates in matters relating to the well-being of employees; hence their

Factor 1 score is aligned with those of Operations and Maintenance. Even though there is a high level of perceived safety risk integration in decision-making across all departments, the distinct variation of these scores indicates differences in perceived level of safety risk integration in decision-making across departments.

Factor 2: Perceived comfort within own safety risk management role

Factor 2 scores in Table 2 demonstrate that personnel in all departments have a generally high level of comfort with their own safety risk management roles. This Factor 2 result is consistent for company management, contractor management and company non-management.

Response bias

An overall high response bias was noted for both Factors 1 and 2 scores. Factor 2's positive response bias is even greater than that of Factor 1; this outcome represents a socially desirable response bias, which is the tendency for people to portray themselves favourably in questionnaires (van de Mortel, 2008). Such bias may exist for both Factors 1 and 2 due to social norms that value politeness. Since safety is one of the organisation's values, respondents probably know what the "right" answer should be and cannot be seen to respond otherwise.

Tests of hypotheses

The rank-based non-parametric Kruskal–Wallis and Mann–Whitney tests were used to compare the distributions of management and non-management levels, to determine whether to reject the null hypotheses.

Alignment of safety risk perceptions at management and non-management levels

The null hypothesis ($H_{1,0}$): safety risk culture perceptions at management level are aligned with those at non-management level. The basis for this hypothesis is that the outcomes of in-house safety compliance surveys conducted by the company every two years have demonstrated an overall maturity and alignment at different levels in the company on measured attributes of safety culture. Alternative hypothesis ($H_{1,1}$): safety risk culture perceptions at management level are higher than at non-management level.

The Kruskal–Wallis test results compare Factor 1 and Factor 2 scores for company management, contractor management and company non-management. The results show the p value of less than 0.05 for both Factors 1 ($X^2 = 17.94$; $p < 0.001$) and 2 ($X^2 = 7.04$; $p < 0.030$) at job level categories, suggesting misalignment in perceived level of safety risk integration at management and non-management levels.

A determination of how the three levels differ from each other was conducted using pairwise Mann–Whitney tests. It showed the p value of less than the significance level of 0.05 for Factor 1, between company management and company non-management categories ($X^2 = 11.39$; $p = 0.002$), also between contractor management and company non-management categories ($X^2 = 11.79$; $p = 0.002$). Hence safety risk culture perceptions among company non-management differ from those of both company management and contractor management for Factor 1. For Factor 2, contractor management and company non-management categories differ ($X^2 = 6.59$; $p = 0.031$). Similar results were observed when comparing the combined management group with the non-

management group (Factor 1: $X^2 = 17.17$; $p < 0.0001$; Factor 2: $X^2 = 5.82$; $p = 0.016$). These results confirm that the perceived comfort with own safety risk management role differs between management and non-management.

The null hypothesis is therefore rejected using both Factor 1 and Factor 2 data, in support of the alternative hypothesis that the perceived level of safety risk integration in decision-making is higher among management than among non-management.

Alignment of safety risk perceptions at departmental levels

Null hypothesis ($H_{2, 0}$): safety risk culture perceptions of the workforce are the same across different departments in the organisation.

Alternative hypothesis ($H_{2, 1}$): safety risk culture perceptions of the workforce are misaligned across different departments in the organisation. Kruskal–Wallis tests were conducted for Factors 1 and 2 to determine whether there are statistically significant differences among the various departments regarding the perceived level of safety risk culture. Test results show a p value of less than 0.05 for Factor 1 for the different departments ($X^2 = 14.35$; $p = 0.026$). These results indicate that there is a significant difference between departments in perceived level of safety risk integration in decision-making. The similarity in high Factor 2 scores across different departments reported in Table 2 corresponds to the Kruskal–Wallis test results for Factor 2 across all departments ($X^2 = 11.67$; $p = 0.070$). These results, with the p value greater than 0.05 for Factor 2, confirm the alignment of employees' perceived comfort with their own safety risk management roles, across different departments.

Both for Factors 1 and 2, the results therefore imply the rejection of the null hypothesis in favour of the alternative hypothesis that safety risk culture perceptions of the workforce are misaligned across the different departments.

Analysis of “I do not know” responses

The “I do not know” responses from company management, contractor management and company non-management indicate potential improvement opportunities. The company's non-management personnel exhibited an overall highest prevalence of “I do not know” responses compared to company management and contractor management. The high record of “I do not know” responses of company management on the item “the organisation rewards staff members who take responsible safety risks”, was unexpected. Company management are policymakers and should be aware of the rewards linked to safety risk and other risk culture indicators and indicates a gap in safety risk communication. The other Factor 1 item with a high rate of “I do not know” responses indicates that 16% of respondents did not know if “Managers use safety risk management as a criterion when evaluating the performance of staff members”.

At departmental level, Operations and Maintenance combined elicited 73% of the “I do not know” responses. The workforce in those two departments experience relatively low levels of perceived safety risk inclusion in decision-making processes in the organisation.

Which organisational characteristic assisted you most to include safety risk when you make decisions?

The respondents' overall declarations were that "accountability for including safety risk when making decisions", "shared understanding of safety risk" and "safety risk communication" were the organisational characteristics that assisted them most to include safety risk in decision-making. "Leadership: tone from the top about actively including safety risk when making decisions" was a characteristic that helped company management more than "safety risk communication".

What needs to be done to improve the inclusion of safety risk in decision-making?

About 18% of respondents averred that "accountability for including safety risk when making decisions" is the primary area of focus for management to improve on. They also asserted that "safety risk communication" and "how safety risk is included in decision-making in different groups" are further areas requiring focus to improve safety risk culture in the company. To the contractors, "shared understanding of safety risk" is more important than "safety risk communication" and "how safety risk is included in decision-making in different groups in the organisation". Organisational characteristics that the workforce believes are well-entrenched include "accountability for including safety risk when making decisions", "safety risk communication" and "shared understanding of safety risk".

5. CONCLUSION

Overall, there is a high level of perceived safety risk integration in decision-making in the company; moreover, management's perception of this integration is higher than that of non-management. There are, however, significant differences among departments in perceived level of safety risk integration in decision-making, guiding management to work areas requiring attention. The difference in perceptions on safety culture between management and non-management, and across departments, was unexpected due to the outcomes of safety compliance surveys conducted in-house by the company that indicated alignment and a developed safety culture in the organisation. The alignment of company management and contractor management on perceived level of safety risk integration in decision-making was expected due to the company's established safety management programme, which includes contractors.

The high level of comfort with own safety risk management roles for management and non-management presents optimism bias, which can result in possible complacency of employees towards safety risks, reducing situational awareness of the safety risks presented. With most respondents having work experience of between five and more than 10 years, complacency that may inhibit safe behaviours and attitudes is probable. Operations and Maintenance demonstrated lower perceptions of safety risk integration in decision-making than other departments; this result indicates a perception of inadequate safety risk mitigating strategies by employees at the coalface.

Decision-making in the organisation is perceived to incorporate safety risks, and employees' comfort with their own safety risk suggests a well-developed safety risk culture in the company. However, the workforce at the coalface continue to get injured and zero harm seems impossible to achieve so far. Strategies to strengthen safety risk culture in the company, and improve safety performance, should focus on the accountability of each worker and of management for including safety risk when making decisions, improved communication, inclusion of safety risk in group

dynamics, and shared understanding of safety risk. Priority must be given to Operations and Maintenance.

This study introduced the concept of “risk”, shifting focus away from a narrow definition of safety culture which is based on compliance with safety policies and procedures, as often occurs in safety culture surveys. In so doing, it integrated the views about safety risk culture into the overall risk culture of the organisation, which is the perceived level of inclusion of risk in decision-making representing how much a group values managing risk.

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A SOUTH AFRICAN PERSPECTIVE ON THE IMPACT OF COVID-19 ON EXCISE DUTIES AND SOCIAL GRANTS

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ABSTRACT

South Africa experiences high levels of poverty which were aggravated by the global Covid-19 pandemic. In its efforts to alleviate the plight of the poor, the South African government pays out social grants which are funded through the fiscus that includes – amongst others – income tax, corporate taxes and excise duties. In 2020, an additional social grant – the Covid-19 social relief of distress grant – was introduced to give financial assistance specifically to those affected by Covid-19. Budgeted excise duties decreased during the 2021 tax year due to the alcohol and cigarettes ban, while social grants, including the new Covid-specific one, increased due to poverty caused by Covid-19. The purpose of this study is to determine the impact of Covid-19 on excise duties collection and social grant pay-outs, using the Data Envelopment Analysis (DEA) methodology. Data were collected from the South African Annual Budget, South African Annual Report, Statistics South Africa and results from prior studies. The total social grant pay-outs for the 2021 tax year amounted to R218 billion of which R19.5 billion was spent on the Covid-19 social relief of distress grant. This study revealed the significant impact of Covid-19 on the collection of excise duties and increase of social grants as well as the use of excise duties to fund social grants not being sustainable. This information could be useful for government agencies, academics, policymakers and economists in order to determine the future increases or decreases of excise duties and social grants.

Keywords: Covid-19, data envelopment analysis, excise duty, poverty alleviation, social grants

1. INTRODUCTION

The collection of taxes in South Africa forms an integral part of the pool of revenue used to finance social grants. Economies around the world were hit by the Covid-19 pandemic in 2020 and the already volatile South African economy was no exception (South African Government, 2020). Policymakers in low-income economies worldwide has launched various measures to provide income support to citizens most effected by the Covid-19 pandemic (Patnaik & Sengupta, 2020). It is clear that South African policymakers followed the lead since the burden on the South African government to pay social grants increased due to increased unemployment and in response, a new grant, the special Covid-19 social relief of distress grant, was introduced in May 2020 to alleviate the poverty of those most affected (South African Government, 2020).

Before the special Covid-19 social relief of distress grant was introduced, a total of eight types of social grant existed in South Africa (SAGS, 2014). A vital source of revenue to fund social grants is the collection of excise duties (Snowdon, 2012). According to Snowdon (2013:8) excise duties may be categorised as a form of regressive tax, while Sadowsky (2014:1) refers to excise duties as

a type of sumptuary tax which is levied on items such as alcohol, cigarettes, sweets, soft drinks, fast foods and coffee, as well as the activity of gambling. According to Gupta and Liu (2020) a fiscal deficit is imminent as a result of the Covid-19 pandemic and the responses thereto, primarily as a result of the shortfall in revenues collected.

During the global Covid-19 pandemic, certain restrictions were implemented by the South African government in order to limit the spread of the virus. One of the restrictions that came into effect was a ban on the sales of alcohol and cigarettes, seriously impacting the revenue collection of excise duties (South African Government, 2020). However, the pay-out of social grants continued uninterrupted amidst the increasing poverty in South Africa. As stated by Auerbach et al. (2020) the Covid-19 pandemic and associated policy amendments have a significant impact on the United States of America's government budgets, as the government faces fiscal shocks. The South African Government will likely face the same difficulties. This study investigates the relationship between the reduction in revenue collected from excise duties resulting from the restrictions implemented by policy makers on the sales of alcohol and cigarettes and the increased payments of social grants.

2. LITERATURE REVIEW

Social grants may be defined as “an award of financial assistance in the form of money to an eligible grantee with no expectation that the funds will be paid back” (Entrepreneur Media Inc. Encyclopaedia, 2014). The eight types of social grant in South Africa as stipulated by the South African Government services (2014:1) comprise child support grants; old age grants; disability grants; foster care grants; care dependency grants; grants-in-aid; war veteran grants; and social relief of distress grants.

In addition to the existing social grants, another grant, the Covid-19 social relief of distress grant, was introduced in May 2020 because of the National State of Disaster declared by the South African President on 26 March 2020 (South African Government, 2020). The Covid-19 social relief of distress grant of R350 is paid to South African citizens who are currently unemployed and who do not receive any form of income, social grant or unemployment insurance fund (UIF) payments (SASSA, 2022). Social grants should improve the living conditions of citizens by the redistribution of wealth in order to create an unprejudiced community (Saunders, 2013). The Constitution of the Republic of South Africa (Act 108 of 1996) states that every South African citizen has the right to have access to social security, which includes appropriate social assistance when they are unable to look after themselves and their dependants.

As stated in the introduction, excise duties may be categorised as a form of regressive tax and are levied on luxury items (Sadowsky, 2014). The aim of levying excise duties is to reduce the consumption of harmful goods and to increase government revenue (Pietersen, 2015). The purpose of excise duties has always been for the benefit of governments: in this case, it represents a source of revenue which is used for social grants for low-income South African citizens (Snowdon, 2012) and to provide goods and services to the public (Beggs, 2014). Alcohol excise taxes are high because they raise revenue, reduce the consumption of alcoholic beverages and its attendant problems as well as provide funding for key government programmes (Bianchi, 1996).

The amount of excise duties levied on alcohol depends on the type of alcoholic beverage. Those alcoholic beverages listed include malt beer, unfortified wine, fortified wine, sparkling wine, ciders and alcoholic fruit beverages and spirits. The total revenue collected – including excise duties – decreased during the 2021 year of assessment (YOA) from April to March as a result of the national lockdown imposed in response to the Covid-19 pandemic when the sale of alcohol and cigarettes was banned for the greater part of the 2021 YOA (South African Government, 2020). There was therefore a shortfall in revenue collections caused by the decreased excise duty collection as a result of restrictions on trading activity and tax deferrals (The South African National Treasury, 2021). The objective of this study is to determine the impact of the Covid-19 pandemic on the collection of excise duties and social grants.

3. METHODOLOGY

Research methodology, as defined by Rajasekar et al. (2013), is a methodical technique that is used to achieve research objectives and to solve a problem. The objective of any research methodology is to focus on the process, tools and procedures that are used in a study (Mouton, 2013). This study used a non-empirical research design, a quantitative data approach and data envelopment analysis (DEA) to analyse the data collected.

3.1 Research design

Research design forms the cornerstone of a vital plan or strategy which aims to answer research questions (Burns, 2000): furthermore, research design includes a structure which facilitates the collection and analysis of data (Bryman & Bell, 2007). The focus of a research design is on the output, based on the study that is planned and the results thereof (Mouton, 2013). A non-empirical research design was adopted as it made use of existing data (Mouton, 2013) to investigate the relationship between the collection of excise duties, the payment of social grants and the impact of the Covid-19 pandemic on these. Data were collected from various sources and analysed using the DEA in order to address the purpose of this study which is to investigate how the increased social grants were funded taking into consideration the loss of revenue from the collection of excise duties resulting from the restrictions on the sales of alcohol and cigarettes.

3.2 Data collection

Statistical data were collected and analysed in order to assist the researchers to address the purpose of this study. Data sources included the South African annual budgets of 2017 - 2021, the South African annual reports of 2017 - 2021, Statistics South Africa's annual reports of 2017 - 2021 and results of prior studies. These sources were used to determine the relationship between the decreased excise duty collections, increased social grant pay-outs and the impact of the Covid-19 pandemic on these figures. The next most important factor in the collection of data is the data collection method.

The data collection method utilised in this study to investigate the impact of the Covid-19 pandemic on the collection of excise duties and the payment of social grants was the DEA, defined as a data-aligned method for the evaluation of a performance of a set of peer entities, called decision-making units (Cooper et al., 2011). Furthermore, Cooper et al. (2011) states that these decision-making units convert multiple inputs into multiple outputs. The DEA methodology

identifies and assesses observations that represent the performance of the entities being assessed: it “envelops” observations in order to identify a “frontier” that can be used to assess the efficiency of the entity, or measure its performance (Cooper et al., 2011). The grounds for using the DEA in this study is to establish a benchmark efficiency ratio that can be used to assess the efficiency of annual inputs in future.

In accordance with this methodology, the term decision-making-unit (DMU) will be used. A DMU represents any entity that is evaluated as part of a group that uses the same or similar inputs to produce the same or similar outputs (Cooper et al., 2011). This study will specifically focus on the revenue collected from excise duties. The yearly increase or decrease in revenue collected from excise duties over a five-year period is expressed as a percentage and is used as the inputs for the DEA in this study. The yearly increase or decrease in social grants paid over a five-year period from 2017 to 2021, which is funded through the fiscus which includes revenue collected from excise duties, is expressed as a percentage and is used as the outputs for the DEA in this study. It is assumed for the purpose of this study that the total revenue collected includes excise duties, which is utilised to fund the pay-outs of social grants. The resources used or required are usually the inputs and the outcomes are usually the outputs (Wojcik et al., 2019).

3.3 Data analysis

A quantitative data analysis was conducted in order to answer the research question posed by the study. Quantitative research is based on the identification of the significance of subjective phenomena (Burns, 2000), while quantitative data analysis refers to analysing plain numerical data. Quantitative data analysis is used to calculate deviations between groups, evaluate relationships between variables and test hypotheses (Jansen et al., 2020). Continuous numerical data were collected through analysing statistics published by the South African Revenue Services (SARS) in their annual tax statistics on revenue collection reports from the 2017 YOA to the 2021 YOA together with the South African Social Security Agency’s (SASSA) annual reports for the same period. The data that were collected and analysed are illustrated in Tables 1, 2, 3 and 4.

Table 1: Total percentage revenue collection by SARS

| % | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 |
|---|---------------|----------------|-------------|-------------|-------------|---------------|
| Personal Income Tax | 28.44 | 39.1 | 39.0 | 38.3 | 38.1 | 37.2 |
| Corporate Income Tax | 16.56 | 16.4 | 15.9 | 16.6 | 18.1 | 18.1 |
| Dividends Tax/STC | 1.71 | 2.0 | 2.1 | 2.3 | 2.3 | 2.7 |
| Other direct taxes | 1.7 | 1.7 | 1.5 | 1.5 | 1.6 | 1.5 |
| Value-added Tax (VAT) | 39.98 | 26.5 | 25.6 | 25.2 | 24.5 | 25.3 |
| Fuel levy | 4.55 | 6.0 | 5.9 | 5.9 | 5.8 | 5.5 |
| Indirect Customs Duties | 2.97 | 3.8 | 4.1 | 4.3 | 4.0 | 4.0 |
| Specific Excise duties | 2.54 | 2.6 | 3.5 | 3.2 | 3.1 | 3.1 |
| Other indirect taxes | 1.57 | 1.9 | 2.5 | 2.6 | 2.5 | 2.5 |
| Total Tax Revenue (Percentage) | 100 | 100 | 100 | 100 | 100 | 100 |
| The change in the movement of excise revenue as a % of total revenue collected | (2.31) | (25.71) | 9.38 | 3.23 | 0.00 | (6.06) |

Source: (SARS, 2022)

Table 1 indicates the total actual amounts (as a percentage value) of revenue collected by SARS on the various types of tax from the 2017 – 2021 years of assessment, as well as the total percentage actual revenue collected from excise duties. All taxes collected by the South African government forms part of the fiscus. The fiscus is then used to fund government expenses. Therefore it is safe

to say that the revenue collected from excise duties does form part of the funds that are utilised to fund grant pay-outs. Even though the percentages might seem insignificant the monetary value of these percentages are high. The budgeted data for the 2022 YOA were used for the purpose of the study.

The revenue collected from excise duties remained constant from the 2017 YOA to the 2018 YOA. The information in Table 1 indicates that the revenue collected from excise duties showed a steep decline in the 2021 YOA. The national ban on the sale of alcohol and cigarettes was enforced for the larger part of the 2021 YOA therefore it can be safely assumed that the decline of 25.71% ($\frac{2.6\% - 3.5\%}{3.5\%} \times 100 = 25.71\%$) from the 2020 YOA to the 2021 YOA in revenue collected from excise duties was a direct result of this national ban.

The national ban on the sales of alcoholic continued into the 2022 YOA (South African Government, 2020). The lingering impact of the Covid-19 pandemic on the revenue collection from excise duties is evident from the data collected and illustrated in Table 1, which shows a further decrease of 2.31% ($\frac{2.54\% - 2.60\%}{2.60\%} \times 100 = -2.31\%$) in budgeted revenue collected from excise duties during this period. The focus now shifts to the total social grant expenditure by SASSA as illustrated in Table 2.

Table 2: Total social grant expenditure by SASSA

| | 2021 R'000 | 2020 R'000 | 2019 R'000 | 2018 R'000 | 2017 R'000 |
|--|---------------|---------------|---------------|---------------|---------------|
| Total grant pay-outs | 218 956 935 | 190 289 381 | 162 709 839 | 150 154 753 | 138 905 183 |
| Increase in social grant expenditure | 28 667 554 | 27 579 542 | 12 555 086 | 11 249 570 | 10 582 332 |
| Increase in social grant expenditure as a % | 3.94% | 119.67% | 11.61% | 6.31% | 26.51% |

Source: (SASSA, 2022)

Table 2 illustrates the total social grant expenditure from the 2017-2021 years of assessment paid out to the social grant recipients by SASSA. The total amount of expenditure includes all eight types of social grants, but for the 2021 YOA, the extra Covid-19 social relief of distress grant is included.

A R28 667 554 (R190 289 381 – R218 956 935) increase in the social grants paid out during the 2020 YOA in comparison with the total social grants paid out during other years is evident from the data collected and presented in Table 2. An assumption can be made that, due to the Covid-19 pandemic, poverty in South Africa increased, resulting in more South African citizens requiring financial assistance from the government and this is reflected in the massive growth in social grant pay-outs of 119,67% ($\frac{27\,579\,542 - 12\,555\,086}{12\,555\,086} \times 100$) in 2020.

Just as the total revenue collected from all taxes is used to fund the total budget of the South African government, the total revenue collected from excise duties is utilised to fund social grant pay-outs (Snowdon, 2012). The data from Table 1 and Table 2 are used in Table 3 to calculate the percentage increase or decrease of the amount of grant pay-outs funded by the revenue collected from excise duties.

Table 3: Total grant pay-outs funded from excise duties

| | 2021 R'000 | 2020 R'000 | 2019 R'000 | 2018 R'000 | 2017 R'000 |
|--|---------------|---------------|---------------|---------------|---------------|
| Total grant pay-outs | 218 956 935 | 190 289 381 | 162 709 839 | 150 154 753 | 138 905 183 |
| Percentage revenue collected from excise duties | 2.6% | 3.5% | 3.2% | 3.1% | 3.1% |
| Total grant pay-outs paid from revenue collected from excise duties | 5 692 880 | 6 660 128 | 5 206 715 | 4 654 797 | 4 306 061 |

Source: (SARS, 2022 & SASSA, 2022)

The data presented in Table 3 show that there was a growth in revenue from excise duties used to fund social grants paid from the 2017 YOA to the 2020 YOA, with a significant increase during the 2020 YOA. However, the impact of the national ban on alcohol and cigarettes is once again noticeable during the 2021 YOA where the data suggest that there was a decrease of 14.52% ($\frac{R5\ 692\ 880 - R6\ 660\ 128}{R6\ 660\ 128}$) in revenue collected from excise duties which forms part of the fiscus that is used to fund social grant pay-outs. The data collected and illustrated in Tables 1-3 were utilised to do a DEA.

4. RESULTS AND DISCUSSION

The DEA is used as research tool in order to determine the relationship between the excise duties collected by SARS as a percentage of the total revenue collected and the social grants paid out by SASSA. The DEA is used to calculate the relative efficiency scores based solely on the available data (Martín-Gamboa & Iribarren, 2021). For the purpose of the DEA, an input and output are identified and used to calculate the efficiency scores. In this study, the percentage increase or decrease in revenue collected from excise duties was regarded as the input, while the percentage increase or decrease in payments of social grants funded by revenue collected from excise duties was regarded as the output.

The most frequently used method used for the DEA is ratio analysis. The efficiency ratios are calculated in Table 4 by applying the efficiency formula which is determined by taking the outputs calculated in Table 3 and dividing them by the measured inputs calculated in Table 1.

Table 4: DEA efficiency calculation

| | 2021 | 2020 | 2019 | 2018 | 2017 |
|---|----------|--------|--------|-------|---------|
| Excise revenue as a % of total revenue collected | (25.71%) | 9.38% | 3.23% | 0% | (6.06%) |
| % excise duties utilised to fund social grants | (14.52%) | 27.91% | 11.86% | 8.10% | 1.69% |
| Efficiency ratio | 0.56 | 2.98 | 3.67 | 0 | (0.28) |
| Relative efficiency measured against 2019 YOA | 15% | 81% | 100% | 0% | (8%) |

Source: Authors own compilation

In Table 4 the relative efficiency scores were calculated by using the excise duties as a percentage of total revenue collected as the input, and the percentage excise duties utilised to fund social grants as the output. The efficiency calculation measures how efficiently the revenue collected from excise duties funds the portion of social grants paid out over the five years. The data utilised

in Table 4 is a summary of the data calculated in Tables 1, 2 and 3. This data has been applied to the DEA in order to compute the efficiency ratios for the 2017 YOA to the 2021 YOA. A benchmark efficiency ratio is then identified from the efficiency ratios. The efficiency ratios are used to measure the relative efficiency against the benchmarked efficiency ratio.

The efficiency measured reveals a steady increase from the 2017 YOA to the 2019 YOA and a slight decrease in the 2020 YOA. During the 2021 YOA, a significant decrease in efficiency is visible which can be attributed to the decrease in revenue collected from excise duties, as illustrated in Table 1. This decrease was a consequence of the alcohol and cigarettes ban, while the increase in social grant pay-outs as illustrated in Table 2 reflect the government's response to the deprivations suffered during the lockdown period.

The 2019 YOA shows the highest efficiency ratio while 2017 shows the lowest efficiency ratio, the relative efficiency of the other years can therefore be evaluated against the 2019 YOA. To calculate the relative efficiency, the ratio of each respective year under discussion is divided by the ratio calculated for 2019(3.67) and multiplying this by 100 to obtain an efficiency percentage.

From the relative efficiency measurement, it is evident that the 2020 YOA compares relatively well to the top performing YOA (2019) this is as a result of the excise revenue as a percentage of total revenue collected that compares closely to that of the benchmarked YOA, while the other years under review do not. The available data show that 2017, 2018 and 2021 were relatively less efficient than the 2019 and 2020 years since the excise revenue as a percentage of total revenue collected for these years were lower than that of the benchmarked YOA. This suggests that 2017, 2018 and 2021 had less efficient inputs to fund their outputs. The inefficient performance of 2021 can be attributed to the decrease in the revenue collected from excise duties due to the ban on the sales of alcohol and cigarettes as a result of the Covid-19 pandemic.

5. CONCLUSION

The purpose of doing the DEA in this study was to identify a benchmark efficiency ratio which could be used to assess the efficiency of annual inputs, these being revenue collected from excise duties in order to fund a portion of social grants paid out (the output). The benchmark efficiency ratio established by using data collected in this study over a five-year period was 3.67 in 2019, as illustrated in Table 4. Therefore, it can be deduced that the 2017, 2018 and 2021 years of assessment do not compare well with the benchmarked efficiency ratio. The decline in the efficiency ratio during the 2021 YOA can be attributed to the decrease in revenue collected from excise duties resulting from the national ban on the sale of alcohol and cigarettes as a result of the Covid-19 pandemic, together with an increase in social grant pay-outs which can also be directly linked to Covid-19 and the poverty it exacerbated.

The accuracy of the benchmark would be increased if data over a longer period of time were analysed. The benchmark would need to be re-calculated annually to ensure that it remains relative and keeps up with trends regarding revenue collections from excise duties and pay-outs of social grants. The benchmark could be used to test the efficiency of any given YOA by comparing the efficiency ratio of the YOA under question with the benchmarked efficiency ratio. This comparison would give the user an indication of the efficiency of the inputs collected and outputs paid during a specific YOA, in comparison with previous periods. The efficiency comparison of

five years (2017-2021) was focused on in the study. The outcome of this comparison confirmed that the Covid-19 pandemic had a negative impact on the relationship between the collection of excise duties and the payment of social grants, this is proved by the inefficiency of 2021 YOA in the DEA.

Based on the results and findings in this study it is clear that the Covid-19 pandemic had a significant impact on the collection of revenue from excise duties collected by SARS, due to the sales restrictions that were enforced during the hard lockdown. This led to the South African government needing to find additional sources of revenue to fund the gap in the fiscus caused by the decreased collection of revenue from excise duties to cover government expenditure which includes social grant pay-outs.

It is anticipated that the impact of the Covid-19 pandemic on the revenue collected, and social grants paid will be distinctly visible on a DEA which includes the 2022 YOA. This study is limited since the data for the 2022 YOA were not yet published by SARS and SASSA at the time of the study. It is recommended that further research be done to ascertain exactly which portion of the various revenue sources collected by SARS is utilised to fund social grants and how efficiently taxpayers' money for this purpose is used. Further research could also be carried out on which revenue pools were identified and used to cover the shortfall in revenue collections from excise duties as well as the detailed impact of the Covid-19 pandemic on the collection of excise duties.

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AN AFRICAN EXPLORATION OF WOMEN VICTIMISING FELLOW WOMEN: A LITERATURE REVIEW STUDY

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ABSTRACT

Most studies on Gender-Based Violence (GBV) tend to focus more attention on men as the perpetrators of abuse. The victimisation of widows by fellow women tends to be ignored, especially in Africa. This victimisation is encountered in the form of widowhood rites practices. These practices are against the spirit of *ubuntu* which promotes respect for humanity and the dignity of others. Fellow women perpetuate these practices by supporting or performing them, and by upholding patriarchal values/beliefs that call for the enforcement of these practices. The practices pose a major threat to the widows' mental, economical, reproductive, and physical health. This study exposes the contributing factors, the consequences, the possible solutions and the measures that may be utilised to promote the spirit of *ubuntu* among women in Africa. The findings from the literature review reveal that women perpetuate the practice of widowhood rites due to the lack of knowledge on the negative effects they pose on the widows. Furthermore, the internalised competition among women, and women being at the disadvantaged receiving end from the government service delivery are contributing factors to widows continual victimisation. This study adopts a qualitative approach, and it uses the literature review design. It used the purposive sampling technique to select secondary existing literature on the subject. The literature was restricted from 2000 to 2022 (19 years, 8 months' projection- by time of conducting this study). The thematic content analysis was used to analyse data. The findings of the study indicate that the lack of knowledge on the negative effects of the widowhood rites practice is due to ignorance, the significance of culture to womanhood and the normalisation of widowhood rites. Furthermore, the findings show that women are at the receiving end when it comes to economic empowerment and opportunities from the respective governments. Lastly, the findings outline that the internalised competition among women is due to the community's misogyny patriarchal social structure values. The study suggests that collective cooperation between the community leaders, Non-governmental Organisations (NGOs,) the Criminal Justice System (CJS) and the Department of Social Development (DSD) is required in bringing awareness on the negative effects of the rites on the widows in the community. The creation of opportunities for the empowerment of women such as sourcing funds to aid with starting a small business and home-based farming for the widows is another way the government can aid the widows. The eradication of the victimisation of widows relies more on fellow women being educated on the detrimental consequences of the rites on widows.

Keywords: Widowhood rites, women, widows, patriarchal values, victimisation, Africa

1. INTRODUCTION

The African continent founded the Nguni Bantu term, *ubuntu* which is based on the ideology of *umuntu ngumuntu ngabantu* which is translated from Zulu/Xhosa to English as “I am because we are”. This concept/philosophy emphasises on the acts of humanity, respect, unity, and compassion irrespective of the socio-economic standard (Lefa, 2015). The philosophy of *ubuntu* emphasises on the practices and values that promote the sharing of bonds that promote humanity. This includes acts such as giving, showing love to neighbours, and protecting one another with no expectations of getting anything in return, for example, the sharing of basic things such as sugar between neighbours (Mayaka & Truell, 2021).

Irrespective of Africa being the founders of the *ubuntu* concept, the widows are still punished for experiencing a natural and inevitable process that all the married women are prone to experience. Furthermore, at the hands of fellow women who carry out and support practices of widowhood rites (Ayodele, 2014). The practice of widowhood rites contradicts every value and practice that are preached by the concept of *ubuntu*. The women in Africa support, encourage, and perform rites on widows without taking into consideration the amount of damage that these rites cause. There is no attention to how these practices set failure for the future female generation in terms of independence, freedom, and being heard (Mayaka & Truell, 2021). This study intends to highlight the reasons/justifications behind the victimisation of widows by fellow women.

2. LITERATURE REVIEW

The practices of widowhood rites in Africa are not considered as alarming factors that call for the government interventions to resolve, because of how they have been normalised in the African societies. This is known as organisational culture (African tribes), which is characterised by shared values, practices, and experiences that are ingrained into the members of the organisation’s traditions, that influences their perspective, thoughts, and emotions. The African women within the society are ingrained into accepting the practice of rites as part of the traditions of the tribes which they belong to (Durojaye, 2013).

The African tribes establish the rules and the procedures that are to be adhered to, that are meant to maintain control and stability with no room for innovation or flexibility (Pemunta & Alubafi, 2016). This is known as hierarchical cultural practices, and they are inherent from generation to generation (Ayodele, 2014). Thus, resulting in fellow women continuing to directly and indirectly supporting and performing the practice of rites on widows (Ayodele, 2014). This includes acts such as socially ostracizing widows, the accusation of witchcraft, the disinheritance of property, sexual cleansing, and wife inheritance (Fraser & Nwadinobi, 2018). In addition, the forcing of widows to weep loudly, to wear black and to shave their hair to show their grievances is another form of emotional abuse suffered by the widows at the hands of fellow women. Various traditions/cultures within Africa deem widows as spiritually unclean thus the subjection of widowhood rites is deemed as a procedure to purify them (Fraser & Nwadinobi, 2018).

In African societies, cultural practices are understood and defined based on their significance to the culture, without further investigating their consequences, as long as they serve the intended purpose. Wife inheritance is meant to increase the family’s lineage, and it is also for sexual cleansing to mark a new beginning of events in the widow’s life, that is when the mourning process

ends. Before the inherited widow is passed on to another man (wife inheritance), witchcraft accusation is used to establish through a deadly oath the innocence of the widow regarding the death of the husband (Fraser & Nwadinobi, 2018). In addition, social ostracisation is used to force the widow to perform rites to avoid being a bad omen to the society due to the restless spirit of the late husband and property disinheritance is done to protect the asserts of the late husband. There are a number of contributing factors to why fellow women promote the victimisation of widows, which are discussed in the section that follows (Afolayan, 2011). For instance, on the DSTV Channel 157 (Moja Love, 07 June 2022), the reality show *Mamazala* broadcasted a story of a woman who accused her in laws in their presence that they accused her of killing her husband. The woman further said that they brought a traditional healer and asked her to come out from the house at midnight to fill holes while she was naked to prove her innocence.

2.1 Lack of knowledge on the negative effects of widowhood rites

In the African society, the women lack knowledge on the extent and the severity of the practice of widowhood rites, they tend to only recognise the visible changes/signs in the widow's life, but they have limited knowledge of the extent of the harm. The visible changes/signs can be weight loss and sudden poverty, which they attribute to obvious reasons such as stress and the mismanagement of funds (Pemunta, 2011). The women hardly attribute weight loss or sudden poverty to the aftermath of the practice of the widowhood rites, because of the normalisation and justification of these practices. The justification is used to cover inhuman practices such as property disinheritance where the widow loses everything to the greedy in-laws who believe they have some sort of entitlement to the deceased man's property (Fraser & Nwadinobi, 2018). Property disinheritance is indirectly supported by customary/indigenous law, which is the most active law in Africa when it comes to traditional or *lobola* weddings. This law is based on community values, as well as the norms and customs which are guided by the social values of the patriarchal system (Pemunta, 2011). For example, in Cameroon, customary law defines a wife as a property of the husband and all the legal issues regarding inheritance should be communicated to the male relatives of the deceased husband not the widow nor her children, unless there is a male child (Pemunta, 2011). This results in the wife's exclusion from property, being evicted from the matrimonial home (especially when the widow refuses to participate in wife inheritance or sexual cleansing).

Property disinheritance does not only suddenly affect the widow at that period, but it extends to devastating consequences to the widow's children, thereby affecting their quality of life, such as adequate health, education and acquiring the necessary skills for employment (Okpala & Utoh-Ezeajugh, 2018). This sudden poverty that the widow is thrown into exposes her to more victimisation due to the desperation/ maternal desire to provide for their children. This prunes the widow to accept rites such as sexual cleansing and wife inheritance, just to be in the family (Pemunta & Alubafi, 2016). The sudden poverty also affects the children of the widows by exposing them to prostitution, child labour and child marriages as an escape from poverty. The other reasons for the widows' loss of weight that are not obvious to the minds of fellow women are the psychological harm and the reproductive harm that the widows experience during the practicing of these rites. The African women are asserted with behavioural words such as 'being strong', which blinds the fellow women to acknowledge the extent of emotional damage that is done by these rites (Okpala & Utoh-Ezeajugh, 2018).

As the widows try to portray the ideology of strong women, this leads to their suffering in silence from mental related issues such as Post Traumatic Stress Disorder (PTSD), anxiety and mental dissonance. PTSD is what is known as battle fatigue, this occurs after one experiences or witnesses traumatic events, and this affects both the widows and their children who witness how the death of a husband, or a father has a detrimental impact on their lives. PTSD is characterised by experiencing lasting ordeals that cause fear, helplessness, or horror and, this affects the choices that are made by the children of widows regarding marriage. The female children become afraid of experiencing similar treatment while the male children fear having their wives having to go through the rites (Smith, 2020). Anxiety is an extreme emotion that an individual suffers when exposed to triggering stimuli. Anxious people experience constant and overwhelming worry, fear, and nervousness, and this can range from mild to severe panic attacks or palpitations that interferes with daily life (Bhargava, 2020). Mental dissonance is categorised by the lack of peace or harmony between two conflicting beliefs, values, and norms. This results in the constant feeling of sadness, guilt, shame, or regret. This has been experienced mostly by the widows under two conditions, firstly, when they do not agree to the practice of widowhood rites but end up participating in them out of forced compliance or by coming through new knowledge such as their widowhood rites and when they come across the agencies that can help them (Kendra, 2022).

Reproductive harm is one of the possible reasons for weight loss. In this regard, the widows that go through wife inheritance and sexual cleansing are at a higher risk of contracting Sexual Transmitted Infections (STIs) that affect their fertility. They may get inflammatory diseases and cervical cancer. The STIs that affect the woman's reproductive system include syphilis, chlamydia (which are bacteria), gonorrhea, human papillomavirus and genital herpes which are viruses (Vinetz, 2020). These STIs can cause damage, inflammation or cause scars to the fallopian tubes, the ovaries, and the uterus. The topic on STIs in Africa is a taboo and women in general fear talking about it because of all the patriarchal stigma that is attached to it, such as that the STIs affect 'loose women', and they fear to confront their husband about it (Vinetz, 2020).

2.2 Internalised competition among women

The African women come from a generation of women that are socialised into adjusting and accepting widowhood rites (Manala, 2015). The word internalised means that the type of competition among women comes from a natural desire to become better but it is more of a learnt competition. This type of competition is taught to female teenagers to strive to be what is known as a 'better woman'. The concept of a better woman is centered around the ideology of grooming a female child to become a wife, this includes teaching a female child how to behave, that is which values or characters they must portray to be recognised as a worthy woman. These values are centered around misogynistic patriarchal values (Okpala & Utoh-Ezeajugh, 2018). As the women evolve, this internalised competition is caused by two forms of division among the women. The first division is between the women who continue to hold on to the misogynistic values that emphasise on women being submissive, docile, and dependent and those who refuse to be oppressed further by these misogynistic patriarchal social values that denote women as the men's property or inferior beings. This type is labelled as feminist (having feminist values). The second division is between the women who hold/have feminist values and widows (Pemunta & Alubafi, 2016).

The competition in each division is the result of the desire to maintain what is known as a hierarchy of power, this is a sort of a high power of influence, as well as control and dominance over those who cannot achieve to maintain power (Pemunta & Alubafi, 2016). This is where the women become both the victims, the perpetrators, and the enhancers of widowhood rites who are also obstacles to the desired change. The maintenance of this hierarchy of power has continuous intersecting consequences in both divisions. In the first division, those who accept and maintain the practice of widowhood rites especially in the villages are given a social influential position among the community, because of their status of being women of value. While those labelled as feminists are seen as women who have no honour, and their act can not to be imitated within the society especially by teenage females (Pemunta & Alubafi, 2016). Contradictory to the first division, the women who are labeled as feminists tend to have power, these women are in influential social positions that are not cultural but are more economical and political. The feminists are in the front line of fighting against GBV, and any form of oppression, by indirectly enforcing the same injustices towards widows, meaning they are not fighting against any GBV, or any form of oppression that is experienced by the widows. These women project/displace their disapproval from their communities into their areas of influence, they do this by blocking and controlling any opportunity of empowerment amid liberating the widows. These women who are labelled as feminists are general women and widows who refused to be victimised by the practice of widowhood rites in the name of culture (Afolayan, 2011). The internalised competition is a control mandate of the misogynist patriarchal system, whose purpose is to establish a sense of dominance, and a state of inferiority, which results in the division among women. These are just strategies of maintaining the principle of this system (Note for clarity, the women who are labelled as feminists are a different concept from feminism as a movement, but in the context of this study, the women who are labelled as feminists are women who refuse to adhere to the oppressing cultural practices, and they are labelled by the women who adhere to them).

2.3 Women being at the receiving end of their government (Service delivery)

The widows in Africa are still marginalised by their respective governments, this is done indirectly by institutionalising systematic psychological and economical oppression on them (Sossou, 2002). These types of oppression from the government break the widows' spirit. He psychological oppression from the government is shown by the lack of support for the widows. The local government lacks infrastructures/buildings that are specifically for widows that are evicted from their marital homes (Sossou, 2002). This discourages the widows from refusing to partake in the widowhood rites practices due to the fear of being homeless. Furthermore, the Department of Social Development (DSD) lacks the effective strategies to eradicate the continuous practice of widowhood rites. They tend to be ineffective in dealing with the attitudes that are encountered by the widows from their employees such as the lack of compassion, understanding, and empathy (Sossou, 2002). The widows are at the receiving end of services such as counselling, victims of crime support groups and legal aid or information regarding the property disinheritances battles (Pemunta, 2011). The government departments such as the Department of Health, Criminal Justice System (CJS) lack support towards improving the lives of widows, departments such as the. This is demonstrated by a lack of campaigns that aim at educating the community especially where the practice of these inhuman traditions is dominant (Pemunta, 2011). The health department does not have campaigns on sexual reproductive rights, as well as the risk and established ways to report

/activate women rights. Furthermore, the CJS lacks campaigns on educating the community on how these practices are infringements as they violate the rights of the widows (Pemunta, 2011). The women in general are at the receiving end of services such as free community-based adult courses that focus on computer literacy, human rights and basic financial literacy education or developmental courses (Pemunta, 2011).

The government lacks the funds that are directed only at assisting the widows' children to further their education. This shows the indirect economic oppression from the government (Pemunta, 2011). Moreover, the government still allows some oppressive laws and policies to rob the widows of their shared property with the late husband, more especially the women who are married in customary union (Bolt & Masha, 2019). Customary marriage is the most common form of union practiced in Africa, it permits the males (from the husband's side) to oversee the land, and all the economic resources of the deceased. Marriage in such a law results in a fatal reality for the widows, more especially if they have no male older child. The relative successor inherits all the property including the widow and her children. This shows how the customary union contract favours the males more than the females, thus resulting in gender inequalities in marriage (Pemunta, 2011).

3. METHODOLOGY

The methodology consists of scientific methods and processes of data collection and analysis that are to endure the trustworthiness and validity of the research. This includes the specific approach, design, methods of data collection and analysis as well as the scientific rules to adhere to (Bezuidenhout, 2011). This study deploys a qualitative approach to expose the contributing factors, consequences, possible solutions and measures to promote the spirit of *ubuntu* among women in Africa. A qualitative approach is the processing of non-numerical information, which relies on the narrated data on individual experiences. This study uses documentary analysis. Documentary analysis is both a research method and a process for identifying and critically exploring existing knowledge. Moreover, it is a method of collecting and analysing data from the literature of different secondary sources (Snyder, 2019). This involves methods such as reviewing data from articles, journals, books, and newspapers on topics with similar interest with the researcher. Thus, giving the researcher power to create a firm foundation from the different sources, which aid in advancing or revising the existing knowledge. This is achieved through relating, integrating, and comparing the findings, perspectives, and the intersections of different disciplines of research, to create an overview and highlight the areas that need further research (Snyder, 2019).

The researchers accessed the information that relates to the aim of the study both electronically and manually (Galloway, 2005). Non-probability sampling, specifically purposive sampling was applied to select the documents that had valuable and relevant information to be included for analysis (Neuman, 2014; Waller, Farquharson & Demsey, 2016). In this study, there is no population, but the sampling is based on the data that is extracted from the available documents (Galloway, 2005) on the victimisation of widows by fellow women in Africa. The researchers extracted the data from existing sources that were previously collected by other researchers for another problem and could be used to respond to the current inquiry (Johnston, 2014; Kalu, Unachukwu & Ibiemi, 2018). The researchers created inclusionary and exclusionary criteria focus to enable them to select the documents with information that is relevant to the study (Gross, 2018).

The researchers extracted the relevant information from different published sources (Kalu *et al.*, 2018). These sources include but are not limited to government publications, journal articles, books, research articles, and magazines. The University of Limpopo library was visited to search for electronic data bases for information. Document analysis is important when a researcher is doing cross-cultural research (Bowen, 2009), just like this study where the researchers are interested in women victimising fellow women by not singling out South Africa, but the researchers are interested in studying the African continent. The key guiding words while extracting data were widowhood practices, widowhood rites and cultural practices towards widows in Africa and the researchers were interested in data that was published between 2000 and 2022. The researchers targeted sources that were related to the topic and could answer the research aim (Johnston, 2014; Gross, 2018; Kalu *et al.* 2018). Furthermore, the previous mentioned authors argue that there is no specific process to follow when doing document analysis. However, they state that the researcher can begin by developing a research question or aim that will be answered by identifying a data set that will be evaluated to answer a different question or aim. This methodology can contribute to scientific knowledge by offering an alternative perspective (de Andrade, Schmitt, Storch, Picolli & Ruoff, 2018).

When doing the documentary analysis, the researchers considered whether the sources of information are authentic in that they can be trusted. In this regard, the researchers ensured that the analysed documents were genuine and had integrity. Credibility was maintained by verifying if the information to be analysed in the documentary sources was free from error and that it was not misleading (Ahmed, 2010). The suitability of the secondary data to the research topic was also verified (Martins, Carneiro da Cunha, & Serra, 2018). The literature review design enables the researchers to adhere to document reviewing methods that evaluate the transparency, reproducibility, relevancy, and the reliability of the data from the parent study. To ensure this, the researchers followed five crucial systematic literature review steps. The first step is framing the questions for the review and the focus was on the problems to be addressed by the review through the use of clear and structured questions before resuming the study. The second step was identifying the relevant sources, and this focused on extensive and multiple printed and electronic resources. In this study, the researchers selected secondary data from 2000 to 2022 although it was not in a chronological order (Khan, Kunz, Kleijnen & Antes, 2003). Thirdly, the researcher assessed the quality of this study by checking the quality of the heterogeneity, stability and strength of inferences and the ability to be reproduced for future research. The fourth step was summarising the evidence, this included data synthesis such as qualities, themes, and effects to explore the differences between the literatures of secondary sources. The final step was the interpretation of data, this included the resolution to the issues that were highlighted in the previous steps, as well as the validity of data by providing references to establish the strength and weakness of the evidence (Khan *et al.*, 2003).

The study uses the Thematic Content Analysis method to analyse the secondary data by coding data into themes. This includes thoroughly reading the identified documents/content with the intention of identifying patterns, as well as extracting the meaning of the themes with the purpose of forming categories for analysis (Bowen, 2009). The researchers adhered to the steps of established criteria for analysing data, which include firstly familiarisation with the selected data, which is in identifying the important information to the study to avoid biases. The second step was

creating and organisation codes, followed by the reviewing of initial themes from the parent study. The next step was the implementation of new definitions and the naming of themes which are derived from the literature of the parent study into current the study. The last step was producing the research report (Braun & Clarke, 2006). During this process, the researchers did not just extract the information that was available in the documents, as they established the contribution that the available information could make to the phenomena under study (Bowen, 2009).

Ethical consideration includes all the scientific rules that the researchers should adhere to, to avoid misconduct. In this study, the researchers adhered to the plagiarism rules which ensure that the researcher does not present the work of other authors as their own work. The researchers adhered to the rules of plagiarism by acknowledging all the authors from whom the data was obtained from, without changing the original idea nor the thoughts of the author when paraphrasing. The researchers adhered to the plagiarism rules to avoid the violation of academic integrity (Eaton, 2017).

4. FINDINGS OF THE STUDY AND IDENTIFIED THEMES

Some African societies are rooted in cultural beliefs that hardly change even in the present time which is characterised by human rights and the concepts of treating one another with the spirit of *ubuntu*. These cultural practices are of fundamental importance to both women and men, as they are socialised to believe that they are to preserve some sense of Africanism that colonisation has not tampered with (Shanguhya & Folola, 2018). These cultural practices give Africans a sense of identity, and unity as one nation is united by common practices. This results in a blinded society that fails to identify between constructive cultural practices and victimising cultural practices (Okpala & Utoh-Ezeajugh, 2018). This causes the society to lack sufficient knowledge about the effect of these practices and thus, it causes the divisions among women.

4.1 Lack of knowledge on the effect of widowhood rites

The studies by Ajayi, Olanrewaju, Olanrewaju and Nwannebuife (2019), as well as that of Ngwaoga, Uroko, Okoli and Okwuosa (2021) allege that factors such as ignorance that are shown by fellow women, as well as the significance of culture to womanhood and the normalisation of widowhood rites are the main contributors to the victimisation of widows. These factors blind the women from seeing the fatality of the practice of the widowhood rites and how inhuman these acts are. The women do not see how these practices not only violate the widows' human rights, but also the basic vital principles of *ubuntu* that make us human.

A state of being ignorant is when an individual lacks sufficient knowledge or the state of being aware of other important facts on a particular phenomenon. The ignorance among fellow women is perpetuated by the lack of local, national, and international statistics on the aftermath of the widows financial, social, and health conditions from the government statistics or the public reports (Nottelmann, 2015). Furthermore, ignorance is perpetuated by the normalisation of widowhood rites. A study done by Van de Walle (2018) on the fate of the invisible and excluded widows in Africa, shows that the widows in Africa are hidden in local, national, or international statistics that highlight the status quo of their respective countries. Additionally, the study by the previously mentioned author shows that on social issues such as poverty, GBV and unemployment there is no special category that highlights the issues faced explicitly by widows, instead they are

categorised as women (Nottelmann, 2015). Consequently, the failure to highlight the condition faced by widows creates uncertainty in fellow women on whether the practice of widowhood rites is a victimising practice or not. The women fail to advocate for fellow women who are widows due to a lack of statistics that bring awareness on the state of the widows. Moreover, the women become active members to support the practice of widowhood rites and participating in the social ostracism and accusation of witchcraft because they are not aware of the negative effects on the widows psychologically, financially, and socially. Subsequently, they unknowingly become volunteers against any possible change aiming at eradicating the practice of victimising widowhood rites (Sossou, 2002; Nottelmann, 2015).

4.2 Normalisation of African traditions that victimises the rights of widows

The normalisation of the practice of widowhood rites in African countries is due to the need to preserve the hierarchical cultural practices. Many changes brought by colonisation can be accepted within the African societies as long they do not temper with the African beliefs (Shanguhyia & Folola, 2018). Any change that contradicts the core cultural practices is met with harsh consequences. The widows that go against the practice of widowhood rites risk to be banished from their communities. Those who refuse to be inherited by the late husband's brother or relatives experience poverty and are evicted from their matrimonial homes (Fraser & Nwadinobi, 2018). The practice of widowhood rites is as normal as breathing in the African society, and it is not considered as a state of emergency nor is it viewed as abuse or a form of GBV. The extent of this normalisation is so prevalent to a point that the fellow women do not see the need to extend the principles of *ubuntu* towards the widows (Shanguhyia & Folola, 2018).

The normalisation of widowhood rites (for instance wife inheritance, sexual cleansing, and the disinheritance of property) violates the rights of the widows. This study found parallel similarities of constitutional human rights between the countries in Africa that aim to protect the widows from oppression, discrimination, and victimisation. For example, some of the rights that are violated through the practice of widowhood rites are as follows:

- Section 26(3) of the South African Constitution, 1996 is similar to Section 44(1) of the Nigerian Constitution, which states that no one may be evicted from their home or have their home demolished without an order of court made after considering all the relevant circumstances.
- Section 34(1) (a) of the Nigerian Constitution of 1999 is similar to Section 12(d) of the South African Constitution, and Section 26 of the Constitution of Zimbabwe Amendment Act (No. 20 of 2013), which states that no marriage is entered into without the free and full consent of the intending spouses, which is similar to Section 45(2) of the Kenyan Constitution.
- Section 44(3) of the Constitution of Kenya, 2010, states that no one shall compel another person to perform, observe, or undergo any cultural practice or rite, and this is similar to Section 26 of the Constitution of the Republic of Ghana, 1992 (Amendment through 1996). (1 & 2).
- The Republic of Ghana's Constitution of 1993, Section 15(2) (a), states that no one shall be subjected to torture or any other cruel, inhuman, or degrading treatment or punishment, (b) or any other condition that detracts or is likely to detract from his dignity and worth as a human being, similar to the Constitutions of the following countries:

- ✓ Kenya Section 29
- ✓ Zimbabwe Section 51 and 53
- ✓ South Africa Section 12(d)
- ✓ Nigeria Section 34(1)

4.3 Cultural influences on the victimisation of widows in Africa

Culture plays a significant role to womanhood, it defines what/whom is a woman and influences the appropriate and acceptable behaviour for a woman (Durojaye, 2013). Culture plays a role in directing a woman's interest in career advancement, beliefs, perspectives, and emotional intelligence. Culture defines a woman in terms of a female individual who is ready to be a wife. This includes women who show behavioural characters such as obedience, submission, perseverance in hardship, who are tender, nurturing and have the ability to hold the household/family together (Keister & Southgate, 2011). Culture influences a woman to hold on to stereotypes and biases of what is to be considered a "woman", such as the saying in Northern Sotho that says '*lebitla la mosadi ke bohadi*', or '*mosadi o tsware thipe ka bohale*', which both translated in English means a married woman is forbidden to return to irrespective of the conditions faced in marriage, instead the married women should have endurance because is the requirement of keeping a home . This type of stereotype is the perpetuating factor to women staying in abusive intimate relationships and widows who are being subjected to the practice of widowhood rites. The importance of culture to womanhood makes cultural inconsistency to be acceptable among women and widows; without challenging nor questioning it (Keister & Southgate, 2011). Mostly, women are the ones forced to adhere to cultural practices that are oppressive as compared to the male counterparts.

Cultural inconsistency is when culture cultivates gender differences/inequalities, by putting expectations and pressure on one gender while being soft on the other gender. Only widows go through the harsh widowhood rites. Whereas men (widowers) are only requested to abstain from sexual intercourse for a month, while waiting for cleansing after that they are free (Ewelukwa, 2002). The widows are to wear black clothes, they have to shave their hair, and go for two types of cleansing that is sexual and normal cleansing. In addition, the women are forced to remarry a relative of the late husband and they are accused of witchcraft. Culture has contributed to what the widows go through to be seen and to be accepted as normal, the stronger the culture, the more widows will be subjected to victimisation without receiving sympathy from fellow women (Ayodele, 2014).

4.4 Internalised competition among women

A study by Benenson (2013) reveals that the root problem to internalised competition is false consciousness, which is an illusion of power that the women create which enables them to believe that they are out of the claws of the patriarchal system misogyny social values that oppresses the women (Gramsci, 2010). False consciousness is an internalised illusion that is held dear by women who believe in feministic values. False consciousness creates the need within fellow women to oppress the widows because of their adherence to the practice of widowhood rites. False consciousness offers women some justification without substance (illusion) as to why they should not support the widows, such as why the widows can say no to the practice of rites, but they

intentionally choose the victimisation. False consciousness causes women to be in the survival of the fittest mode and they are unaware that they are indirectly continuing with the core mandate of the patriarchal system's oppression (Sossou, 2002; Gramsci, 2010).

The survival of the fittest mode creates an atmosphere that does not encourage the principle of *ubuntu*, where fellow women do not support nor care for the widows. This illusion creates an atmosphere of 'them and us'. This survival of the fittest call for individualism instead of the collective work of *ubuntu*, forces the women to prioritise financial wealth, power, and influence over anything that is collective, moreover, it calls for one to be in control and to be a subordinate (Okpala & Utoh-Ezeajugh, 2018). This power that is maintained under false consciousness is seen in various departments that should be an empowerment to widows but becomes the reception of oppression. Fellow women in politics or in the DSD utilise the resource on other female gender issues, but not on the widows. They partake in the bias belief of 'widow blaming' (Sossou, 2002). This type of belief causes the fellow women to blame the widows for their misfortunes. Additionally, they claim that the widows have a choice regarding the practices of rites, while ignoring the other factors that the widows will deal with if they refuse to adhere to these rites. They blame the widows for not being literate, and for financial stability and exercising their rights. This biased ideology of widow blaming causes fellow women to show no compassion towards the widows instead they displace their previous past trauma and how they prioritised independency to protect themselves from being subjected to any form of abuse and expect the same from the widows (Okpala & Utoh-Ezeajugh, 2018).

4.5 Women being at the disadvantaged receiving end of the government

The researchers argue that women in Africa are failed and forsaken by their respective governments when it comes to economic and empowerment opportunities. To this date, fewer women are considered for tenders, despite their qualifications or business advancement that shows leadership. In the history of Africa, there has been only four female presidents between 2006 to 2022, of which two are no longer presidents namely Joyce Hilda Banda (Malawi 2012-2014) and Ellen Johnson Sirleaf (Liberia 2006-2018) and two are still presidents namely Samie Suluhu Hassan (Tanzania 2021-present) and Sahle-work Zewde (Ethiopia 2018-present) in 54 African countries (Watkins, 2021). The ratio of female presidents to male presidents shows that there is a gender inequality in Africa, especially with women making up most of the population. The African governments still hold and maintain the patriarchal system beliefs regarding women being incompetent to lead, in Northern Sotho there is a proverb that says '*tsa eta ke e tsadi pele di wela ka lengopeng*' that means that if women are to lead then disaster and complications should be expected. The gender inequality practices shown by the government to women who are believed to be of prestigious positions (educated, businesswomen) regarding economic opportunities leaves no hope for the poor widows (Ayodele, 2014; Musau, 2019).

The most common local government authority body that is used especially in the rural areas of Africa, is the Tribal Authority Counsel, which is mostly responsible for ensuring the respect of by-laws, resolving disputes within the community, and playing a role in maintaining peace (Okpala & Utoh-Ezeajugh, 2018). It is very rare to find a king or chief being a woman in Africa, because of the patriarchal system that the tribal authority is still operating from (Okpala & Utoh-Ezeajugh, 2018). This makes it difficult for the tribal authority council members to adequately resolve issues

of the victimisation of widows by the widowhood rites, because of their significance to tradition (Sossou, 2002). Thus, the inability to hold awareness campaigns, implementations of support system aimed at offering counselling to the widows are not prioritised because of the patriarchal system still practiced. A study by Sossou (2002) shows that in African societies, the women suffer from laws and policies that discriminate them based on their personal status, land ownership, inheritance, and credit facilities (Okpala & Utoh-Ezeajugh, 2018).

4.6 Measures to promote the spirit of *ubuntu* among women

The spirit of *ubuntu* is a great social catalyst to any crisis, as it emphasises that an individual's identity is embedded in collective work to better each other. This implies that one cannot succeed working in an individualistic manner to change social issues. Social issues are not only to be tackled by a certain group only, but by all who are involved either directly or indirectly. Therefore, the spirit of *ubuntu* can be restored and promoted through these integrated important values of life which are explained below (Mayaka & Truell, 2021).

4.6.1 Values of Justice, Responsibility and Equality

Women can only achieve justice on issues concerning them when they abolish the spirit of 'us and them' and realise that the only system that is the enemy is the patriarch system. Consequently, this will help fellow women to understand that the issue of widowhood rites is inevitable to all the married women. Likewise, this will indicate to women that they must come together and fight for justice regarding all the matters that concern them (Mayaka & Truell, 2021). Responsibility requires the women to realise how their tolerance of the widowhood rites practice, either by supporting or participating in them, lead to them being the number one obstacle to change which is not only vital to the widows but the future female generation. Taking responsibility involves becoming each other's keeper and protector. Equality is created when the widows and the fellow women understand that holding on to the illusion, such as that of false consciousness and biased ideology such as the survival of the fittest are pure mandates of the patriarchal system to maintain oppression (Mayaka & Truell, 2021).

4.6.2 Value of Collectiveness, Relatedness and Reciprocity

The women should work collectively to tackle social issues, including treating one another with love, and having a spirit of helping. This implies that the women should put into action the ideology of '*wathinta umfazi wathinta imbhokodo*', which is based on the idea of women standing together and fighting social issues together. Furthermore, this means that the women are to be available to assist each other, this includes the women in all the social levels tackling social issues before they decay (Mayaka & Truell, 2021). Relatability is more of what makes women one, this includes events such as motherhood, being nurtures, and having desires to be free from the systematic oppression of the patriarchal system, and a social role in their family and society. This can be maintained through reciprocities of kindness, and unselfishness service to one another (Mayaka & Truell, 2021).

5. RECOMMENDATIONS

For any social change to occur it requires the challenging of the status quo, this means that the collective partnership between involved departments, agencies and organisation must work

together to eradicate, educate, and bring more awareness to the negative effect of practice of widowhood rites, this includes the cooperation between this department, CJS, DSD and the NGOs (Department for International Development, 2012). The government needs to focus on consciousness and raising agencies to eliminate and identify the cultural and the structural strategies that are operating against their interest of empowering widows. This requires the government to integrate this within their department to orientate government personnel to stop giving a bad attitude to widows (Department for International Development, 2012). The government should have organisations/agencies in villages to emphasise on the personal, collective empowerment and transformative approaches to combat the practices of the widowhood rites that are demeaning or victimising. This includes the support systems from a national, or provincial level to improve the condition of widows in developing countries (Dube, 2019). The government has to allocate special funds for aiding the widows with home-based farming and to start small business (Dube, 2019).

6. CONCLUSION OF THE STUDY

The victimisation of widows by fellow women is perpetuated by the factors that women can overcome by working collectively to improve and support each other. Instead, the women are under the illusion of not being victims to a patriarchal system, yet they are not seeing that they are playing and scoring for the same system. This implies that the women are under the illusion of avoiding being victims and this makes them to oppress others in search for dominance thus oppressing the widows who are of inferior position. The patriarchal system is based on the oppression of women. There is no powerful tool or strategy that the women can pull to eradicate the practice of demeaning or victimising widowhood rites more than being each other's keepers and protectors (Mayaka & Truell, 2021). No gender can fight for GBV and the issues that are faced by widows more than the victims of the abuse and fellow women. No gender can protect a stable future for the female child than the current mothers, aunts, this includes the women in governance, and in politics as they can uplift each other by preserving the spirit of *ubuntu* (Mayaka & Truell, 2021).

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EVALUATING THE ROLE OF AFFECTIVE COMMITMENT IN FOSTERING UNIVERSITY EMPLOYEES' COMMITMENT

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ABSTRACT

Employee commitment has been described as one of the most important factors of organisational success. Managers as well as scholars continue to search for better ways to nurture commitment in the workforce and the current study aims to make a contribution in that regard, in the South African university context. The literature review was conducted on the concepts of employee commitment and affective commitment, as well as on employee commitment in a university environment. The study adopted an explanatory research design, while the preferred research approach was the deductive method. Furthermore, the study chose a quantitative methodology in order to determine the common characteristics of the respondents. A survey by means of a questionnaire was used to gather data, while descriptive statistics, *t*-test, and ANOVA (analysis of variance), were conducted on IBM SPSS, Version 26. The study aims to test how the variables of gender, age, qualification, and years in an organisation, as well as positions, influence affective commitment. The ANOVA analysis shows that none of the above variables has a positive relationship with affective commitment. Scholars conduct more studies into factors that influence affective commitment, while HRM practitioners identify and implement practices that infuse commitment.

Keywords: Employee/organisational commitment, affective commitment, continuance commitment, normative commitment, university employee, infuse

INTRODUCTION

Several researchers have ascertained that employees' emotional bond to their organisations (affective commitment) is a source of commitment and loyalty. These employees have a sense of belonging and identification. This sense drives employees to get more attached to the organisational tasks and objectives and infuse their willingness to pursue the organisational goals and their desire to remain in the organisation (Meyer & Allen, 1991; Mowday, Porter & Steers, 1982).

In the view of Rhoades, Eisenberger, and Armeli (2001), Eisenberger, Huntington, Hutchison, and Sowa (1986), and Shore and Shore (1995), affective commitment can be better explained by the organisational support theory. This theory suggests that in order to meet socioemotional needs and evaluate the organisation's willingness to reward increased efforts, employees form general beliefs about how well the organisation values their contributions and cares about their wellbeing (perceived organisational support [POS]).

In the same vein, Meyer and Allen (1997) postulate that factors such as work practices in terms of rewards, procedural justice, and supervisor's support have stronger associations with affective commitment than personal characteristics of employees. However, as noted by Levinson (1965),

employees personify the organisation and view its favourable or unfavourable treatment as indicative of its kindness or malevolent orientation towards them. With regard to the POS, Eisenberger *et al.* (1986), Mowday *et al.* (1982), Rousseau (1989), Schein (1980), and Wayne, Shore, and Liden (1997) ascertain that employees realise reciprocity, and feel the obligation to care about the organisational success and wellbeing and strive to contribute towards achieving objectives.

Concerning university employee commitment, a number of studies have been conducted in an attempt to determine the factors of commitment. Like in many other fields, results are incongruent and reach different conclusions from various environments. A study by Smeenk, Eisinga, Teelken, and Doorewaard (2006) conducted among Dutch university employees has found that factors such as decentralisation, compensation, training and development, position occupied, and career mobility have an important influence on employee commitment in the separatist faculty. Age, organisational tenure, level of autonomy, working hours, social involvement, and personal importance play a major role in the commitment of the hegemonistic faculty's employees, while factors such as participation, social interactions, and job level are found in both faculties to impact on employees' commitment. These findings are in line with the argument by Delery and Doty (1996) and Guest (1997) that different factors of human resources management are suited for organisations with different identities.

While the debates about employee commitment continue to dominate academic research and human resources discussions, the current study aims to contribute to this field by exploring the factors that influence employee commitment in South African institutions of higher learning. The article is arranged in the following manner: the next section discusses the scholarly review of the topic, followed by the methodology applied to conduct the study. The findings of the primary data will be presented next, followed by their discussion. Conclusions and recommendations will end the article.

LITERATURE REVIEW

This section discusses the scholarly works related to the constructs of the current study. It will cover employee commitment, affective commitment as well as commitment of employees in a university environment.

Employee commitment

There are three dimensions of organisational commitment: affective, continuance, and normative (Smeenk, Eisinga, Teelken & Doorewaard, 2006; Meyer & Allen, 1997). The affective commitment (want to remain) is concerned with employees' proximity to social relationships and to the organisation, and it mainly evolves when people are involved in and recognise the value-relevance of and/or derive their identity from the organisation. Continuance commitment (need to remain) comprises social roles or positions that push people to weigh the costs associated with leaving the organisation against the rewards related to remaining in the organisation, while normative commitment (ought to remain) concerns the internalisation of norms and values, and inner convictions. It is about the individual's feeling of moral obligation to remain with the organisation.

Antecedents of organisational commitment

Mowday *et al.* (1982), Steers (1977), and Lee (1971) group the commitment to the organisation into three antecedent categories:

- Personal variables, which include age, gender, education, need for achievement, organisational tenure, position tenure, and family responsibility.
- Job and role characteristics, which include career mobility, job challenge, job level, role conflict, role ambiguity, level of autonomy, and working hours.
- Structural factors, such as social involvement, personal importance, and formalisation.

Expected effects on organisational commitment from HRM practices

Debate is going on among academics about the effect of HRM practices on organisational commitment. In this debate, some argue that decentralisation is a crucial element for boosting organisational commitment (Bateman & Straser, 1984; Knoke, 1988), while authors such as Bhagat and Chassie (1981), and Shore and Barksdale (1988) argue that compensation has a more significant impact on organisational commitment. Further opinions on how organisational commitment is brought forward are those by Mayer and Schoorman (1998) and Wallace (1995a), who they claim that participation has a positive impact on organisational commitment. In the same work, Wallace names social interactions as a positive contributor to organisational commitment.

However, Wallace (1995b) contradicts his previous finding and reports that participation and organisational commitment do not have a significant relationship. Shore and Barksdale (1998) and Igbaria and Wormley (1992) have found no correlation between training/development activities and organisational commitment. On the contrary, Shore and Barksdale (1998) report that the procedural handling of employees' complaints or grievances may strengthen the employees' willingness to stay and the moral duty to have a bit of confidence in the organisational commitment.

Prior to these debates, Jermier and Berkes (1979) have opined that only the participative style of management presents a significant relationship with a commitment to the organisation. In the same era, Bruning and Snyder (1983) and Jermier and Berkes (1979) have found that the following HR practices, role classifications, rule specifications, work assignment, support, people, organisational structure, or consideration, are uncorrelated with organisational commitment.

Galunic and Anderson (2000) and Knoke (1988) have found that there is a positive correlation between organisational commitment and communication, as is the case between performance appraisal and organisational commitment (Slocomber & Bluedorn, 1999).

Personal variables that infuse organisational commitment

Organisational commitment can also be driven by personal attributes, such as age, gender, education, need for achievement, length of position service (position tenure), and family responsibilities. With regard to age and organisational commitment, Banai and Reisel (1993) and Jans (1989) have found a positive relationship. With regard to gender variables, Knoke (1989) remarks that women are less committed to an organisation than their male counterparts, which correlates with what researchers such as Igbaria and Wormley (1992) and Van Dyne and Ang (1998) have found. Education was also found not to have a positive correlation with the

continuance and normative commitment, according to Cohen (1999) and Mayer and Schoorman (1998), while other researchers did find a relationship though insignificant (Knoke, 1988).

Concerning the need for achievement and organisational commitment, scholars such as Bateman and Strasser (1984) and Cohen (1992) have found no significant correlation between them, but Cohen (1999) has found that affective and continuance organisational commitment increases with years spent in an organisation, even though they are not significantly related to the length of position (position tenure), according to Bateman and Strasser (1984). Nevertheless, a positive relationship has been found between position tenure and affective organisational commitment (Cohen, 1999). Finally, the family responsibilities variable was found not to have a significant relationship with organisational commitment (Bhagat & Chassie, 1981; Wallace, 1995a, 1995b), which is contrary to what Jans (1989) reported, namely that this variable had a negative effect, while Cohen (1999) found a positive correlation.

Job characteristic variables that instill organisational commitment

Scholars such as Kirchmeyer (1995), and Bhagat and Chassie (1981) have found that job and role characteristics, both career mobility and job challenges, positively correlate with organisational commitment. However, the relationship between the latter with job level is not significant (Banai & Reisel, 1993).

Factors such as the opposition of any combination of role pressures, i.e. role conflict, may stress the development of commitment (Glisson & Durick, 1988; Leiter & Maslach, 1988). Jaros, Jermier, Koehler and Sincich (1993) and Mayer and Schoorman (1998) report that role ambiguity has a negative correlation with organisational commitment, while the level of autonomy at the workplace is positively linked to commitment (Hall, Schneider & Nygren, 1990). Lastly, according to Bhagat and Chassie (1991), there is no relationship between working hours and organisational commitment.

Structural factors and organisational commitment

As reported by Igarria and Wormley (1992), commitment to the organisation can be influenced by structural factors, such as social involvement with colleagues. However, other scholars, such as Hall *et al.* (1990) have found that this factor has less importance in affecting organisational commitment. On the other side, the opportunity for an employee to fulfill their self-esteem and the feeling of their work are important factors for commitment and are positively related to organisational commitment (Buchanan, 1994). Lastly, formalisation (having written rules and procedures) was found to have no significant relationship with any of the commitment constructs (Wallace, 1995a, 1995b).

Affective commitment

Allen and Meyer (1990) refer to affective commitment as an emotional attachment to the organisation, with which dedicated employees associate and engage, and which appreciates their participation in the organisational activities. Similarly, John and Elyse (2010) refer to affective commitment as the “emotional identification” of an employee regarding involvement and attachment to the organisation, while McGee and Ford (1987) define affective commitment as a component of a worker’s commitment in an organisation that can be achieved through inclusion and association to its objectives.

In the view of Meyer and Allen (1984), affective commitment points to the existence of an emotional connection of being part of the organisation where people are faithful to it due to a feeling of having a place. Affective commitment is about emotional connection and identification with the organisation and participation in it, which leads employees to remain with the organisation once they have acquired a solid affective commitment. Mowday (1982) states that the antecedents of affective commitment largely fall into four classifications: personal, organisational/structural, and job-related characteristics, as well as employee work experiences.

However, studies by Rhodes and Steers (1981), and Glisson and Durick (1988) report that work experience factors, such as equity in rewards distribution (performance-based rewards), clarity of roles, and liberty from conflict, have been found to correspond with affective commitment. Other factors mentioned by Glisson and Durick (1988) are consideration by the manager, fairness in the job challenge (Meyer & Allen, 1987), promotion opportunities (O'Reilly & Cadwell, 1980), and participation in the decision-making process (Rhodes & Steers, 1981).

Employee commitment in a University

Semeenk *et al.* (2006) articulate that not enough research has been conducted on the effects of HRM practices and antecedents on organisational commitment in educational faculties at universities. According to Akpan (2013), a university is a system used to create a national identity and civil society through shared values and dedication to a common goal. Akpan (2013) views the mission of a university as that of training and producing a high-level workforce, which allows the country to develop in different domains, such as social, economic, political, and cultural.

In a university, a number of factors instill commitment, and Akpan (2013) mentions two that stand out the most: job security and job satisfaction. Job security is the employee's expectations about the job's continuity, which gives the guarantee of continuing to earn an income, rather than thinking of promotion, better work conditions, and further and durable opportunities. Ramay (2012) and Akpan (2013) report that a secure job is an employee's requirement and wish. Concerning job satisfaction, Robbins (1998) refers to it as an employee's cognitive, affective, and evaluative reactions towards his/her employment and a general attitude vis-à-vis their job or the difference between the amounts of rewards employees receive and the amount they believe they should receive.

Shan (1998) supports the above views when he confirms that in an academic environment, job satisfaction can strengthen retention and commitment, all of which can contribute to the development of institutional effectiveness. Other scholars such as Steyn and Van Wyke (1999) are skeptical about teachers' commitment to their jobs and organisations and point out that they are only concerned about their month-end salaries. However, the authors mention teachers' demotivating factors, such as lack of involvement, in policy changes and the violation of their rights.

Concerning the HRM practices, the Buck and Watson (2002) study outline the following nine HRM practices as the best possible to drive commitment in a university:

- Decentralisation
- Compensation
- Participation

- Training/development
- Employment security
- Social interactions
- Management style
- Communication
- Performance appraisal.

METHODOLOGY

Approach

This study intends to investigate whether personal variables of gender, age, qualification, and years in an organisation, as well as positions, influence affective commitment in a University in South Africa. To achieve this objective, the study used quantitative data for a sample of 100 employees from both administrative and academic staff. In the view of Yin (2011) and Bryman (2012), a quantitative study is conclusive research that uses large representative samples and involves structured data collection procedures.

The rationale for using the quantitative approach is that it relies on the idea of testing either an idea or a theory as it takes its origin from positivism. Gorard (2010) speaks about positivism as the philosophy that suggests the existence of a straight relationship between the world (objects, events, phenomena) and our perceptions and understanding. For the purpose of the current study, primary data were collected by the researcher by sending questionnaires by email to the respondents.

Furthermore, the quantitative approach implies a nomothetic context, which involves investigating what characteristics people share with others or similarities between the individuals. In this context, we can say that nomothetic implicates the establishing of rules that explain the generalisation among the people (Bryman, 2012). For the purpose of the current study, the researcher aimed at showing the extent to which findings could be generalised.

A further advantage of the quantitative approach is that statistics justify the validity of the findings, which statistics have been applied during the questionnaire construction and hypothesis testing. With this approach, statistics are central in addressing the issues under investigation, unlike in the qualitative research whereby words are used in data collection and analysis.

Methods

Data collection

For the purpose of the current study, data were collected by means of a questionnaire. As stated by Hesse-Biber (2016), the use of a questionnaire in data collection is a common method applied in research, premised on the view that targeted respondents possess enough knowledge and information about the phenomenon under investigation and that they can share it verbally. Since questionnaires provide a standardised way of data collection and also for an even large size of population, they were used in a self-administered manner to collect data for this study.

Furthermore, questionnaires appear to be popular and basic tools in social sciences, where they are mostly used to answer the “who”, “what”, “where”, “what number of” and “how much” kinds of

questions. Finally, the use of questionnaires to collect data allows the formulation of justification and explanations from the data collected concerning connections among the factors and create models of those connections. It is also suggested that the use of a questionnaire allows researchers to transcend the normal research procedure and be more independent in assessing the respondents' feedback.

Instrument

The instrument used to collect data was a questionnaire, consisting of two sections: Section A comprised biographical information about the respondents, while Section B consisted of close-ended questions seeking information about employee commitment.

The structure of Section B of the questionnaire shows the first half with Organisation Commitment Questionnaire (OCQ) with 18 items asking about the three dimensions of commitment. The second half of Section B of the questionnaire, with 28 items, sought information about different individuals' factors affecting their commitment to the organisation. The items in this section were rated on a Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree) where the respondents were asked to choose the option that they considered to suit their perceptions.

Analysis

Since the study adopted a quantitative approach, the data analysis was based on numbers. In this regard, data collected were captured while being checked for missing data, removing the outliers to have clean data. One hundred respondents' responses were captured and a graphic, *t*-test, and ANOVA (analysis of difference) were conducted on IBM SPSS, Version 26. During the data analysis process, the researcher examined the major findings by looking at the likenesses, connections, and contrasts that could be observed between the findings of this investigation and those of past researches (Hsieh & Shannon, 2005).

ETHICS

In research, ethics consists of the application of the essential ethical principles, such as design and implementation, and more importantly, the consideration and respect for society, the use of resources, avoiding misconduct, and observing regulations of research (University of Stirling, 2021). Ethics is an important feature of research as the world of research aims at promoting authentic knowledge, depicting the truth, and possibly being error-free. A further benefit of ethics is that researchers are capable of dealing with collaborative information on the topic because respondents, mentors, and other stakeholders can bring their assistance.

The current study involved individuals as objects of investigation. Hence, data collection had to be done with minimal ethical risks, which involved a number of ways:

- Introduction of the research to the respondents as well as a request from them to participate. This coincides with Babbie and Mouton's (2010) statement that respondents should not be forced to participate in research, but rather participate voluntarily.
- Respondents were provided with comprehensive information about the objective of the research and the necessity of their participation, bearing in mind that participation was voluntary and they were free to withdraw at any stage.

- Furthermore, the respondents were informed of their rights of not having to answer all the questions on the questionnaire, as well as the benevolent nature of their participation.
- Additionally, respondents were informed of their choices of using pseudonyms in the completion of the questionnaire, though names would not be revealed either during the data analysis phase or in publications.
- Respondents were also informed that their designation of workplace would not be revealed at any stage of the study, even after it had been concluded.
- Respondents were also informed that the data they provided would be kept in a secure cabinet with only the researcher and supervisor having access to it. Unfortunately, it was not easy to inform them of the maximum period of keeping the raw data due to the fact that it could be used for research-related activities in the near future, or for longitudinal studies. However, according to the university research policy, the data should be kept for a minimum period of five years and the researcher undertakes to comply.
- Lastly, the study was granted ethical clearance by the university that constituted the unit of investigation.

FINDINGS

The following section presents and analyses the results of the empirical investigation. As stated above, the study adopted a quantitative approach to collect data from the respondents, while the descriptive statistics, *t*-test, and ANOVA (analysis of variance) were conducted on IBM SPSS, Version 26.

Group differences between the respondents

Group difference analysis was also conducted to determine if the affective commitment was different across the variables of gender, age, qualification, years in organisation, and position.

Table 1. Gender

| Gender | Percentage |
|--------|------------|
| Male | 48 |
| Female | 52 |
| Total | 100 |

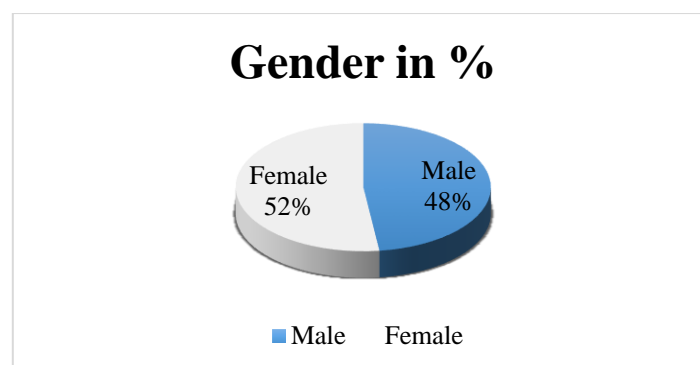


Figure 1: Gender

Table 1 above reflects the gender of employees who were respondents to the study. According to Table 1 above, 48% of the respondents were males, while 52% of the respondents were females. These figures slightly differ from those of the South Africa Survey 2014/2015, which shows that males were 49%, while females were 51% of the total population of the Republic of South Africa.

Affective commitment

Age

Table 2 below reflects the mean score of affective commitment, which is different among all age groups considered in the study. However, this difference in mean score is not statistically significant since we have a p -value of (0.249), which is above 0.05 (Table 3). This finding reflects that affective commitment for the age groups considered in the study is the same.

Table 2: Descriptive Results: Affective Commitment – Age

| Age | Mean | Std. Deviation |
|---------------|------|----------------|
| 20 – 29 years | 2.89 | 0.54 |
| 30 – 39 years | 2.97 | 0.41 |
| 40 – 49 years | 2.72 | 0.40 |
| 50 – 59 years | 3.00 | 0.45 |
| Total | 2.88 | 0.42 |

Table 3: ANOVA: Affective Commitment – Age

| | Sum of Squares | df | Mean Square | F | p -value |
|----------------|----------------|----|-------------|-------|------------|
| Between Groups | 0.745 | 3 | 0.248 | 1.420 | 0.249 |
| Within Groups | 7.866 | 45 | 0.175 | | |
| Total | 8.611 | 48 | | | |

Qualifications

Table 4 below shows the mean scores of affective commitments, which are different across the level of education. However, that difference is non-significant as the p -value of 0.347 is higher than 0.05 (see Table 5 below).

Table 4: Descriptive Results: Affective Commitment – Qualifications

| | Mean | Std. Deviation |
|------------------------------------|------|----------------|
| Post-Matric Diploma or Certificate | 2.97 | 0.43 |
| Baccalaureate Degree(s) | 2.93 | 0.63 |
| Postgraduate Diploma(s) | 3.07 | 0.43 |
| Postgraduate Degree(s) | 2.80 | 0.37 |
| Total | 2.88 | 0.42 |

Table 5: ANOVA: Affective Commitment – Qualifications

| | Sum of Squares | df | Mean Square | F | p -value |
|----------------|----------------|----|-------------|-------|------------|
| Between Groups | .592 | 3 | .197 | 1.129 | .347 |
| Within Groups | 8.033 | 46 | .175 | | |
| Total | 8.625 | 49 | | | |

Years in Organisation

Table 6 shows that the mean scores of affective commitments are slightly different across different years people have been in the organisation, and the difference is non-significant due to the fact that the $p = 0.064$ is above 0.05 (see Table 7 below).

Table 6: Descriptive Results: Affective Commitment – Years in Organisation

| | Mean | Std. Deviation |
|------------------------|------|----------------|
| Between 1 to 3 years | 2.72 | 0.34 |
| Between 4 to 6 years | 3.08 | 0.43 |
| Between 7 to 10 years | 2.71 | 0.40 |
| Between 11 to 15 years | 2.83 | 0.26 |
| Between 16 to 20 years | 3.07 | 0.45 |
| Total | 2.88 | 0.42 |

Table 7: ANOVA: Affective Commitment – Years in Organisation

| | Sum of Squares | df | Mean Square | F | p-value |
|----------------|----------------|----|-------------|-------|---------|
| Between Groups | 1.519 | 4 | .380 | 2.404 | .064 |
| Within Groups | 7.106 | 45 | .158 | | |
| Total | 8.625 | 49 | | | |

Positions

Table 8 below shows the mean scores of affective commitment, which are slightly different across different positions respondents occupy in the organisation. But the difference is non-significant considering the $p = 0.101$ being above 0.05 (see Table 9 below).

Table 8: Descriptive Results: Affective Commitment – Positions

| | Mean | Std. Deviation |
|-----------------|------|----------------|
| Manager | 3.06 | 0.46 |
| Supervisor | 2.67 | 0.24 |
| Lecturer | 2.79 | 0.38 |
| Faculty officer | 2.78 | 0.25 |
| Administrator | 3.20 | 0.40 |
| Librarian | 2.78 | 0.38 |
| Total | 2.91 | 0.41 |

Table 9: ANOVA: Affective Commitment – Positions

| | Sum of Squares | df | Mean Square | F | p-value |
|----------------|----------------|----|-------------|-------|---------|
| Between Groups | 1.517 | 5 | .303 | 1.984 | .101 |
| Within Groups | 6.422 | 42 | .153 | | |
| Total | 7.939 | 47 | | | |

Central Tendency Measures

In order to conduct the descriptive analysis of the constructs of affective commitment, continuance commitment, normative commitment, work discretion, time availability, rewards and reinforcement, and appreciation and stimulation, central tendency measures (mean, median, and standard deviation) were used, with the objective of analysing and understanding the main tendency of the responses on scaled items.

As stated above, a 5-point Likert scale was used, where one corresponded to *strongly disagree* and five corresponded to *strongly agree*. Departing from the principle that 2.5 ($5 \div 2$) is the middle point of the 5-point scale, it implied that any mean score below 2.5 shows that most respondents in the study tend to disagree or strongly agree. On the other side, a mean score of between 2.5 and 3.4 suggests that most respondents in the study tend to be neutral about the statement. Finally, an entire mean score equal or higher than 3.5 signals that most respondents tend to agree or strongly agree with the statements of the construct. The study also conducted some frequencies and percentages in order to appreciate the responses for each item (statement).

Table 10: Affective Commitment

| Items | Mean | Median | Std. Deviation | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | Total |
|---|------|--------|----------------|-------------------|----------|---------|-------|----------------|--------|
| Overall results | 2.88 | 2.83 | 0.42 | | | | | | |
| I would be very happy to spend the rest of my career in this organisation (AC1) | 3.90 | 4.00 | 1.15 | 6.0% | 6.0% | 16.0% | 36.0% | 36.0% | 100.0% |
| I really feel as if this organisation’s problems are my own (AC2) | 3.58 | 4.00 | 1.01 | 2.0% | 16.0% | 20.0% | 46.0% | 16.0% | 100.0% |
| I do not feel like “part of my family” at this organisation (AC3) | 2.02 | 2.00 | 0.94 | 34.0% | 38.0% | 20.0% | 8.0% | | 100.0% |
| I do not feel “emotionally attached” to this organisation (AC4) | 2.34 | 2.00 | 1.17 | 28.0% | 36.0% | 12.0% | 22.0% | 2.0% | 100.0% |
| This organisation has a great deal of personal meaning for me (AC5) | 3.58 | 4.00 | 1.11 | 4.0% | 14.0% | 24.0% | 36.0% | 22.0% | 100.0% |
| I do not feel a strong sense of belonging to this organisation (AC6) | 1.88 | 2.00 | 0.85 | 36.0% | 46.0% | 12.0% | 6.0% | | 100.0% |

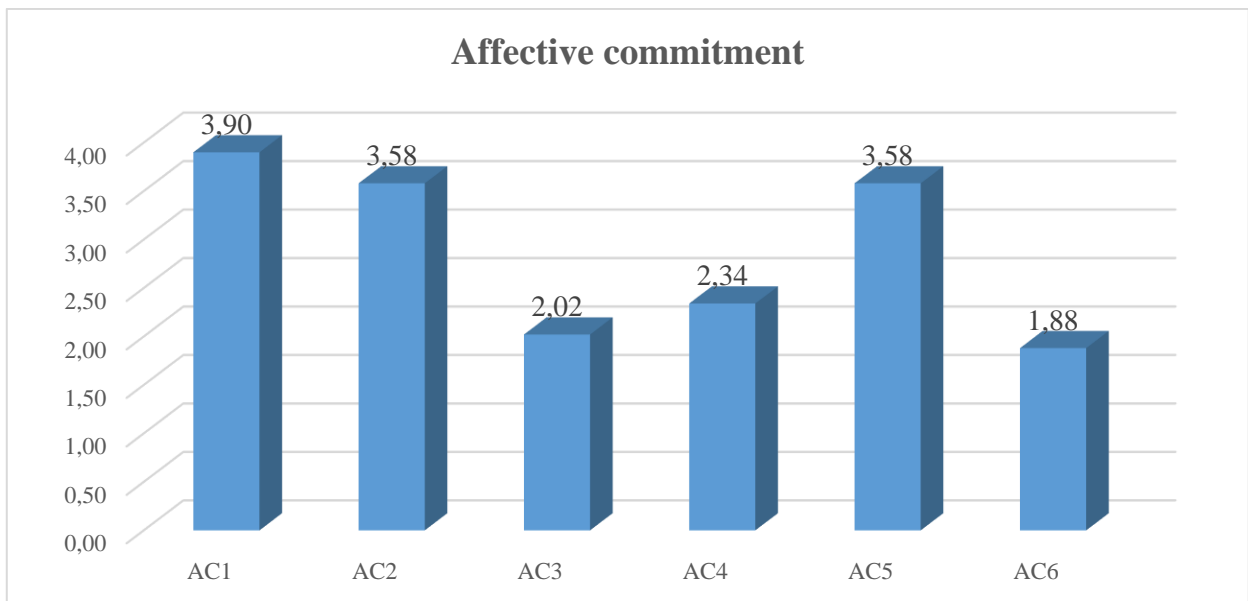


Figure 6: Affective Commitment

The results in Table 10, above, indicate that the majority of respondents tend to be negative with the constructs of affective commitment as evidenced through the mean score of 2.88, which is below 3.4. This means that they tended to have a particular perception of affective commitment. The results also indicate that respondents strongly disagree (34%), and disagree (38%) with the statement “I don’t feel like part of my family in this organisation”, strongly disagree (28%), and disagree (36%) with the statement “I don’t feel emotionally attached to this organisation”. Furthermore, respondents strongly disagree (36%) and disagree (46%) with “I don’t feel a strong sense of belonging to this organisation”.

CONCLUSION AND RECOMMENDATIONS

The literature review has shown that committed employees add value to the organisational productivity and success. It was evidenced that HRM practices play major roles in sparking motivation and commitment. This evidence coincides the statements by Wang (2010) and by Owoyemi, Oyelere, Elegbede, and Gbajumo-Sheriff (2011) that committed employees add value and that commitment improves performance and productivity.

The literature review was conducted on employee commitment, affective commitment and employee commitment in a university. On this last construct, the study realised that not enough research had been conducted on it but discovered that job security and job satisfaction were the factors that had previously been indicated as instilling commitment in educational institutions.

The analysis of variance (ANOVA) has shown the following results that led to the conclusion about the significance or insignificance of the difference. Concerning age, the ANOVA results show a p-value of 0.249, which is above 0.05, thereby making it statistically insignificant. Concerning the qualifications, the ANOVA results show a p-value of 0.347, which is superior to 0.05. This means the difference is not statistically significant, leading to conclude that the education variable does not impact or influence affective commitment in the university that was the unit of investigation.

With regard to the years spent in the organisation, the ANOVA results show a p-value of 0.064, which is above 0.05. This means the variable of years employees spend in this organisation does not influence commitment. Finally, the ANOVA conducted on the variable of positions occupied in organisation showed a p-value of 0.101, which is above 0.05. This also means that the difference between years in an organisation and affective commitment is not statistically significant.

The first recommendation goes to scholars to conduct more research on this topic. This is because a paucity of literature was found on affective commitment at universities. Studies in this regard can expand the debate and broaden the knowledge in terms of welfare of employees and could include other population types, such as nationality, gender, disability, and others, considering the rise of these demographics in different academic institutions.

Future research could involve more universities in South Africa and beyond, an exercise through which new insights on the topic can emerge.

It is also recommended that HRM practitioners conduct investigations to better understand which practices can better infuse affective commitment in their organisations.

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GUIDELINES TO MITIGATE AUTOMATED PROCESS-RELATED RISK IN A SOUTH AFRICAN FINANCIAL TECHNOLOGY ORGANISATION

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ABSTRACT

This qualitative study aimed, first, to explore how end-users understand automation-related risks in a South African financial technology organisation. Research on human–automation interactions suggests that there are operational risks when end-users adopt or use automated systems. For example, the literature records that organisations do not ensure that end-users understand automated, process-related, built-in risks presented to them. Furthermore, documented information about how end-users understand automated process-related risks in financial technology organisations is scarce in the academic literature as well as in the particular organisation studied in this report. A work-level-related approach was used to address this research problem, focusing on end-users facilitating client-related transactions to consumers on behalf of various financial organisations. Data were collected through semi-structured interviews with 13 end-users representing two organisational functions of automated processes in the business: handling client-related transaction processing and undertaking reconciliations. Overall, the findings indicate that trust in automation is needed for end-users to understand automated process-related risks. Participants in the study population cited unavailability of specific system functionality and increases in personal risk accountability due to overall limitations in the system as contributing risk factors. Contributing factors of special interest to the risk culture of the organisation in the study were a lack of knowledge sharing and inefficiencies related to power distance. By evaluating end-users' process-related risk reporting and eliciting feedback from system developers, the power distance in the organisation could be improved. Second, the results of the exploratory study and two additional interviews were used to compile risk-related guidelines for employees at different work levels on built-in, automated processes. An empowerment strategy of this kind, the first to be considered by the business, could improve the organisation's risk culture and management over time. Moreover, the outcomes of the study may be beneficial to developers of automated systems and risk practitioners in general and significant to more organisations.

Key words: End-user understanding of automated process-related risk; work levels; automation; risk culture; risk-related behaviour; risk management structures

1. INTRODUCTION

The automation of payments in the commercial world plays a key role in allowing financial enterprises to achieve their strategic organisational objectives (Kuate, 2017). Financial businesses use digital information about transactions to facilitate payment services in a way that promotes cost efficiency, productivity and customer service (An et al., 2014; Nesindande, 2019; Yamani et al., 2020). The study by Nesindande (2019) was the only one that could be found on implementing

automated systems in a South African financial organisation. By partnering with specialists such as the South African financial technology organisation where this study was conducted, financial institutions use alternative ways rather than implementing such automation methods themselves (Berrut et al., 2017). End-users in the technology business use automated systems to facilitate payments to consumers on behalf of various financial organisations. Their daily tasks often include reviewing risk-related transactional information, deciding whether a payment can go through or not, and the subsequent reconciliation of these money movements.

As a strategic partner to several financial institutions, it is valuable for the organisation in the study that end-users perceive automated process-related risks in the same way as top organisational management and report these risks (Harding, 2016). However, the problem is that information supplied by automated systems is not always sufficiently tailored for individuals to understand built-in, process-related risks. Conversely, if risks are reported but not understood or given the priority needed by system developers, it may result in errors and consequently more serious risks for the organisation. The possible lack of a shared understanding of risk can be attributed to the apparently little consideration given by organisations to bottom-up communication of automated, process-related, risk experiences from end-users to system developers and organisational leaders (Barker & Gower, 2010; Chadburn et al., 2017; Nesindande, 2019; Sepeng et al., 2020; Yamani et al., 2020). On further investigation of the potential problem within the company in the study, the author found that little is documented on how end-users perceive automated process-related risks and, therefore, the objective of the research reported here was first to explore end-user understanding of automated process-related risks, and second to address this problem in practice by proposing work-level-related guidelines to mitigate these risks.

According to Agarwal and Kallapur (2018), valuable information that can prevent a negative impact on strategic objectives is lost without meaningful interactions between end-users, developers and organisational leaders. They call this cognitive risk – risk that is attributed to how risk information is shared in daily interactions among organisational stakeholders. Therefore, sharing information between organisational groups contributes to achieving a business's objectives and is a characteristic of a successful risk culture, which is an organisation's risk state of being (Annandale, 1996; Beck, 2013; Douglas, 1992; Gendron et al., 2016; Palermo et al., 2017; Power, 2004; Power et al., 2013; Schein, 2010).

The literature that links risk culture and automation emphasizes communication and trust as the main drivers of "good" interactions between end-users and automated systems (Hemon-Hildgen et al., 2020; Lee et al., 2021; Sibanyoni, 2021; Yamani et al., 2020). Nesindande (2019) explored the experiences of payment processors (end-users) using Robotic Process Automation (RPA) in a South African commercial bank. The findings suggested that in the case of this particular bank, not enough time was being spent familiarising end-users with the newly introduced automated systems. However, I found no study that explored end-user understanding of automated, process-related risk. For this reason, the small-scale, qualitative study reported here also addresses a gap in the literature by exploring end-user understanding of automated process-related operational risks from 13 participants in a South African financial technology organisation. The first research question asked was: How do end-users understand automated process-related operational risks within their work roles? Furthermore, in practice and in the risk culture literature, bottom-up

communication is an underused means of risk identification in organisations (Bozeman & Kingsley, 1998; Power et al., 2013; Sinha & Arena, 2020).

In follow-up action after the initial study was completed and to compile useful guidelines for risk-related stakeholders from different work levels in the organisation, two more interviews were conducted: one with an external legal practitioner involved with financial fraud detection, and one responsible for end-user training.

Automated risk identification and reporting are fundamental actions in the organisation and methods to facilitate conversation between critical teams such as end-users, developers and risk practitioners in the company not only improves the risk culture, but also highlights the benefit of well-functioning operational systems and processes. Therefore, a second research question was asked: What guidelines for different work levels can benefit automated, process-related risk management in the organisation?

2. LITERATURE REVIEW

This section discusses the definition of “end-users” and the factors they need for successful interaction with automated systems. It then introduces definitions of “risk” and “risk culture” as they apply in the context of the study.

2.1 End-users and automation

As the term suggests, the end-users of automation are those who need or want to use an automated system to execute a task. In this study, operational end-users need to use automated systems to facilitate payments and allocate consumer deposits on behalf of different financial organisations. On the other hand, financial end-users use automated systems to reconcile money movements after payments and deposits have been made. In both scenarios, when end-users interact with automated systems to facilitate those processes related to financial transactions, trust in automation is needed as an essential, underlying requirement for successful interactions (Yamani et al., 2020).

Trust in automation can be defined as an expectation of consistency in operation from an automated system in the future (Muir, 1987, 1994). Muir (1994) developed what seems to be one of the first successful models for determining the levels of trust humans place in machines, focusing on supervisor trust in automation (Autor, 2015; Balfe et al., 2015; Endsley, 2016; Hemon-Hildgen et al., 2020; Lee & See, 2004; Sato et al., 2020; Yamani et al., 2020). The model incorporates the meanings and dynamics of trust in human relationships, described in Rempel et al. (1985), and proposes that end-user trust in automation is progressively built in three stages: predictability, dependability, and faith that a system will work as intended.

Automation has been used for decades to create a variety of efficiencies in many industries, from engineering to general office management (Bainbridge, 1983; Bibby et al., 1975) and has long been around in the financial sector as a substitute for manual labour (Autor, 2015). In the business studied in this report, automation controls assist end-users with processing financial transactions. The supervisory roles studied by Muir (1994) can be likened to the direct reporting line of the end-users. The attribution of trust in automation to supervisors implies that building trust involves all stakeholders, from the system itself to operators, supervisors, system developers and organisational leaders. Thus, end-users must trust the system they use and the people responsible

for creating and managing it. The systems approach of cognitive risk (Agarwal & Kallapur, 2018), referred to in the introduction, encourages understanding these interactions among organisational role players to identify potentially valuable risk-preventing information.

Automation adds value by promoting sustainable increases in process execution speed, creating opportunities for improved cost reduction and customer satisfaction efficiencies. Controlling processes through automation allows for the execution of tedious, repetitive validation of transaction-related information at high speed in the organisation. Consequently, automation reduces the number of decisions an end-user needs to make when processing transactions. Additionally, it presents meaningful results to end-users for complex transaction-related decision making that can be completed only through human intelligence. Thus, automation creates data-driven protection against operational risks and end-users in the organisation can be protected from manual, tedious tasks that could see them frustrated, disengaged from work, and making mistakes (van Wyk et al., 2016).

Nevertheless, how well-informed end-users are depends on how well the risk-related information presented to them through automated systems is understood. Accordingly, arriving at the espoused end-user's understanding of process-related risk needs a risk culture built on trust between end-users, developers and risk practitioners, facilitating valuable interactions to construct a mutual understanding of objectives and risks in the business.

2.2 Risk and risk culture

Risk in this study is defined as "the potential negative effect of uncertainty on achieving an organisation's objectives" (Taarup-Esbensen, 2019, pp. 750-755; Zaaiman et al., 2021). Risk management involves making sense of risk-related information, then using the insights to make decisions towards achieving an organisation's objectives (Taarup-Esbensen, 2019). Organisational risk culture, or risk climate, has many definitions (FSB, 2014; Sheedy et al., 2020). Some are expressed in terms of top-level strategic decision makers as a subgroup in businesses and exclude other risk decision makers outside this group of organisational elites. For example, Bozeman and Kingsley (1998) define risk culture as the perception of managers that their co-workers and superiors take risks and thus encourages risk-taking. The definition of Zaaiman et al. (2021), therefore, who propose a value-based definition that is inclusive of risk decision makers in all areas of an organisation, is more appropriate for this study. They define risk culture as:

"The typical attitudes to risk when decisions are made in the group, i.e., how risk is usually considered when members of the group make decisions. The normal or typical level of active inclusion of risk when decisions are made by an organisational group represents the value attributed to managing risk by the group. Perceived typical inclusion of risk in decision-making, therefore, represents the group's risk culture." (Zaaiman et al., 2021)

Power distance as a concept in organisational management can be defined as comprising two parts (Hofstede et al., 2010):

- High power distance: An authoritarian structure is often preferred in an organisation. Defensive risk cultures develop in subgroups exposed to this power distance structure. The defensiveness may cause a revolt against established processes among organisational

employees, as they attempt to protect themselves (Agarwal & Kallapur, 2018; Annandale, 1996; Gendron et al., 2016).

- Low power distance: All individual perspectives are equally valuable to the organisation across all structures of governance. Everyone assumes the role of a risk manager, who is free to challenge existing methods of risk constructively (FSB, 2014).

Guidelines on constructing what the Financial Stability Board (FSB) defines as a sound risk culture in organisations suggest that using "low power distance" is conducive to the process (FSB, 2014; Hofstede et al., 2010). An ideal risk culture can be defined as one where all organisational actors assume the role of a risk manager within their respective functions. They are responsible for organisational risk decision-making based on a shared understanding of risk within a group (FSB, 2014; Taarup-Esbensen, 2019).

Figure 1 illustrates the organisational hierarchy of risk manager groups in the company researched for this report. As the arrows suggest, business processes and actions are driven by the decision making of those at the top. Therefore, the hierarchy supports the academic literature's focus on organisational leadership's role in defining and reforming risk culture (Palermo et al., 2017).

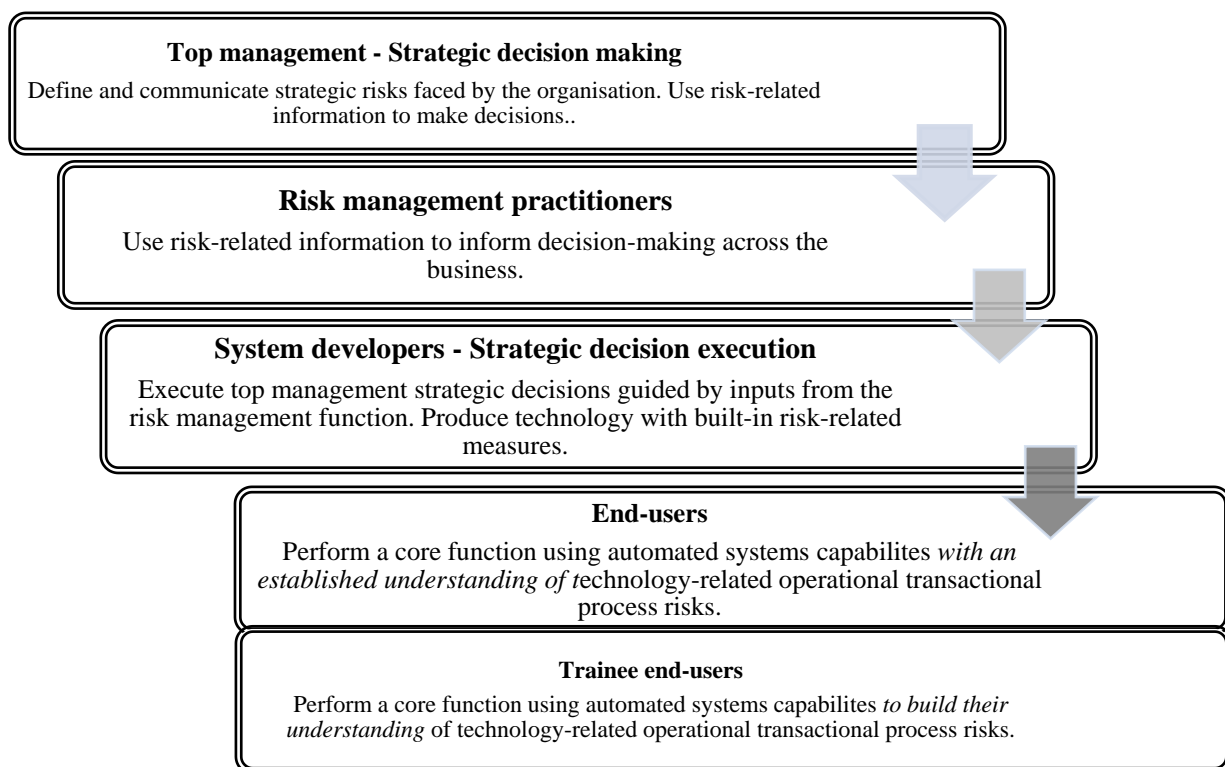


Figure 1: Organisational hierarchy and end-user understanding of risk.

Developers have their perspectives on meeting timelines related to strategic decisions. Software Development Lifecycle (SDLC) models are often used to arrive at the most efficient way to present automated system information to end-users. These models describe a procedure for planning, creating, coding, testing, and implementing end-user requirements (Hemon-Hildgen et al., 2020; Sharma, 2017). Furthermore, developers need to consider the high costs of making changes and maintaining software, which could influence end-user reporting of system-related issues and risks.

Figure 1 illustrates this possibility, with no arrows showing end-users' feedback to inform developers and top management, advising them of their experiences in the post-implementation stages. This situation raises the following questions:

- Is the organisation spending enough time understanding end-user preferences?
- Do organisational elites, developers of automated systems and end-users have a shared understanding of automation-related process risks in the company?
- Is the power distance within the organisation and the various groups conducive to a sound risk culture?

Attempting to answer these questions without first exploring end-user experiences in the organisation implies an exclusion of end-user views. It follows that engaging with end-users could provide some insight into what might be needed to enhance the organisational risk culture (Hofstede et al., 2010). Therefore, the first step in such an intervention is to answer the research question: How do end-users understand automated process-related operational risks within their work roles?

To contextualize the investigation on risk understanding, the risk-informed decision culture (RiDC) model of Zaaïman et al. (2021) illustrated in Appendix A, and the definition of risk culture provided in the previous section were used. Financial regulators, for example the FSB, attribute risk culture as a core contributor to the 2007-2009 financial disaster (FSB, 2014). The RiDC model is based on cultural theory (Hofstede et al., 2010; Schein, 2017) and includes 10 risk culture indicators focused on organisational decision-making to operationalise the concept of risk culture in practice. In addition, the RiDC codebook provided a basis for code development and thematically identifying relations in the model. Furthermore, using the outcomes of this initial study a second research question was posed: What guidelines for different work levels can benefit automated, process-related risk management in the organisation?

3. METHODOLOGY

This research was conducted in a South African technology organisation that assists financial institutions with transaction-related administrative tasks. Little is documented and understood in the company regarding the mechanisms of risk inclusion that each end-user group employs during automated process-related decision making.

3.1 Research design

An exploratory, qualitative, interview-based study was therefore performed, first, to investigate end-user understanding of risk. Second, the results of the exploratory study were used, and two more interviews were conducted to provide recommendations to three work levels on how to mitigate automated, process-related risks in the organisation. The study was based on the interpretive research paradigm as described by Saunders et al. (2016), who suggest that qualitative approaches are suitable in research contexts characterised by scarcity of information, allowing access to meanings and in-depth understanding of feedback from willing participants. Purposefully sampled, one-on-one, semi-structured interviews of the kind recommended by Creswell and Poth (2018) and Yin (2018) were initially used for data collection from two end-user groups. The first end-user group employs automated processes to administer payments made to and from clients. The second group reconciles processed, client-related financial transactions. The results of these

interviews led to two more interviews, conducted with stakeholders involved in fraud detection and training end-users, respectively.

3.2 Study population and sampling

When sampling was performed and the interviews conducted, the organisation had 450 permanent employees. The target population represented close to 25% of this number, with 110 individual end-users assigned "administrator" roles. The participating end-users had to be knowledgeable and able to explain their thoughts, intentions and experiences related to performing their roles (Creswell & Poth, 2018; Fugard & Potts, 2015; Gioia et al., 2012, p. 17; Silverman, 2013). Purposive sampling was thus found to be best suited for participant selection in this instance (Campbell et al., 2020). The author invited 15 end-users to take part in the study, of whom 13 consented and actually participated. The 87% participation rate remained within the acceptable number of subjects as recommended by Creswell and Poth (2018) for qualitative studies. The study population comprised 10 operational administrators responsible for processing transactions and three finance administrators responsible for reconciling those processed transactions.

3.3 Data collection

Apart from the last two, which were conducted in person, all interviews were performed online using Microsoft Teams (MT) to conduct, record, transcribe and facilitate any follow-up conversations with the participants. First, the MT verbatim transcriptions needed to be corrected for readability. Second, detailed notes and recordings were compared to ensure no loss of information and context during corrections. All interviews lasted between 15 and 20 minutes. As an employee of the organisation, the language-based common ground between the first author and participants produced the added benefit of keeping interviews brief without language barriers created by role-specific jargon (Creswell & Poth, 2018; Gioia et al., 2012; Saunders et al., 2016, p. 389; Sinha & Arena, 2020).

When end-users or their supervisors are unclear about how to proceed on a specific transaction, the risk management team is often consulted to provide clarification. These consultations suggest that the organisational risk management team is viewed as offering guidance by the participants. The author was cognisant of the possible hierarchy bias that may have resulted from his position as a risk guidance provider (Saunders et al., 2016, p. 407; Yin, 2018, p. 153). Therefore, the end-users were assured that participation in the interviews was voluntary, and they could withdraw from the process at any time. Additionally, it was stressed that the request for their participation affirmed that their roles as risk management stakeholders could make a positive difference in the company's risk culture. Three demographic questions and the results obtained (presented in Table 1) addressed the following: i) they explored participants' understanding of the organisation's primary focus, ii) determined participants' work function, and iii) revealed how long they had occupied their positions.

Table 1. Responses to demographic questions

| Views on the industry | IT and financial sector (1)* | | IT and financial sector (1)* | |
|-----------------------|------------------------------|---|------------------------------|---|
| Participants | Time spent in the function | Details | Count | Participant function |
| P1-2, P4-5, P8-11 | (<5 years) | P1, 2, 4, 5, 9,10 (≥1 year) and P8,11 (<1 year) | 7 | Finance (1 = P1) Operational (6) |
| P3, 6, 7, 12, 13 | (≥5 years) | P7,12 (≥10 years) and P3, 6,13 (<10 years) | 5 | Finance (2 = P6, P12), Operational (3) |

*Number of participants (in brackets) that declared their positions in the organisation's financial technology or financial sectors.

For collection of the empirical data for the initial study, participants were first asked to provide their definitions of risk, as studies on risk perception have found that it is better to understand how a person defines a construct such as risk before explaining how they identify it (Slovic et al., 2004; Slovic et al., 1982). Table 2 summarises the interview questions.

Table 2. Interview questions – initial study

| Index | Question asked |
|-------|---|
| 1 | How would you define risk? Author explains: In this study, I am interested in process-related operational risks that may negatively impact your ability to make transaction-related decisions in the organisation. |
| 2 | Based on your experience with using automated workflow systems to perform your daily tasks, can you please describe the issues that you encounter when processing a transaction? |
| 3 | How do you think the potential issue(s) or risk can be addressed? |

The interviews were recorded and transcribed; immediately afterwards, for the sake of transparency, the recordings and verbatim transcripts were made available to the participants to check if they were a true reflection of their words (also known as member checks) (Merriam, 2015). However, due to the technical jargon used by end-users, the author needed to apply a denaturalized approach in the transcription process, as suggested by Nascimento and Steinbruch (2019). The denaturalized approach requires that descriptions of the jargon used are provided when necessary.

To compile guidelines on mitigating automated, process-related risks for different work levels, two more interviews were used later to gather useful information from a legal practitioner assisting the organisation with fraud risk, and an end-user trainer. The question put to the legal practitioner was: What would motivate an end-user to report possible fraud-related risks? The question for the facilitator of end-user training was: What are the most frequent questions asked by trainee end-users in practice after they have completed their training?

3.4 Data analysis

Thematic analysis was used to evaluate the qualitative research data. As explained in the literature, identifying themes and patterns of meaning from a data set concerning a research question is not constrained to predetermined theoretical frameworks, and the results can have many possible applications (Braun & Clarke, 2006; Trainor & Bundon, 2020). Babbie (2016, p. 90) suggests that, with a qualitative approach, knowledge can be constructed by identifying themes and trends from participants' perceived understanding of risks, beliefs, routines and personal traits. The seven-step application of thematic analysis of Braun and Clarke (2006, 2013) was used to analyse the data. They declare their approach as "reflexive" thematic analysis, which prioritises the researcher as the primary research instrument and results in a codebook developed for a specific study (Braun

& Clarke, 2019). The analysis steps included: familiarisation with the data; initial code generation; search for themes; reviewing themes; defining and naming themes; and reporting.

The data analysis approach focused on generating information power from the sample of carefully selected end-users and constructing meaningful themes relevant to the organisational context as described in the literature (Braun & Clarke, 2021). The author studied the interview transcripts in two stages for theme identification. Codes were identified from the transcripts and grouped according to themes. A customized thematic codebook was constructed using reflexive thematic analysis (Braun & Clarke, 2006, 2019). The RiDC model (Zaaiman et al., 2021) was used to associate apparent risk culture indicators and to interpret possible risk culture-related implications for the organisation (Braun & Clarke, 2013).

The study was approved by the Faculty of Economic and Management Sciences Research Ethics Committee (EMS-REC) of the North-West University (NWU-00095-21-A4). Consent was obtained from the company to conduct the interviews during office hours and consent to participate in the study was obtained from each participant. There is, however, inherent subjectivity in the assessment of the findings that the author may or may not be aware of (Merriam, 2015). These may be due to external influences or a result of being employed by the organisation, which could influence the study results (Braun & Clarke, 2019, 2021). To address the rigour of the investigation, the subjective reporting of the researcher was acknowledged, and for trustworthiness of data collection and analysis, a reflexive journal was kept as a critical account of the research process (Merriam, 2015; Nowell et al., 2017). Credibility of data collection and interpretation was maintained by member checks, and a detailed record of the research process and decisions taken to complete the study (reflexive journal) is available from the researcher on request (Merriam, 2015). The codebook for the study is also available on request.

4. RESULTS AND DISCUSSION

Collectively, participants summarised risk as the probability of exposure to harm or loss to oneself or the organisation – either due to mismanagement of client-related or personal information, leading to risks related to compliance, ethics, fraud, processes and data leaks or to breaches in the future.

Codes extracted from the transcripts were grouped into subthemes. End-user understanding of automated process-related operational risks is summarised as two main themes, each supported by the subthemes (Table 3).

Table 3: Summary of initial study themes and subthemes

| Theme (T*) | Subtheme (S*) | Description | Examples of participant feedback |
|---|---|---|---|
| RiDC model level: Structure-based indicators Quality of human-automation interactions (T1) | Established trust in automation (T1S1) | Trust in automation and its facilitation of processes form part of the organisation's risk management structures intended to facilitate risk practices. As a formal risk structure, automation drives execution and understanding of how risk should be managed and valued in an organisation (Muir, 1994; Schein, 2017; Zaaiman et al., 2021). | "We are using this automated system to make our work possible." – P11 "I do not think there is anything in the system that could be changed." – P6 |
| | Clarification of responsibilities (T1S2) | Automated processes that generate clear risk information assist with facilitating autonomy while ensuring that end-users have a clearer understanding of their role in managing risk for the organisation (Nonaka & Takeuchi, 1995). | "It is your responsibility to clear the batch according to the system and the way it is set to auto reconcile." – P12 "The system will prompt you and ask if you want to continue." – P13 |
| | Automation imperfection (T1S3) | Imperfect automation functionality and network downtime compromise the volume and quality of risk information generated by automated processes to be interpreted and used for risk inclusion by end-users during transaction-related decision making, contributing to some end-user frustrations (Jardine & Hrudey, 1997; Yamani et al., 2020). | "You have to do a lot; you have to do what the system is supposed to do, and you also have to do your part." – P9 "The network sometimes becomes a serious issue, and that is something that is beyond our hands." – P11 |
| RiDC model level: Behaviour-based indicators Communication-related risk behaviour (T2) | Communication from end-users (T2S1) | The exchange of risk-related information to enhance risk decision-making processes from end-users (Barker & Gower, 2010; FSB, 2014). | "I did what I have to, contacted risk to say, guys, you are the experts here. I am not happy with what I am seeing." – P7 |
| | Communication to end-users (T2S2) | The exchange of risk-related information to enhance risk decision-making processes to end-users (Barker & Gower, 2010; FSB, 2014). | "They never communicate that [automated system changes] prior. It is only when something goes wrong, or we pick up something." – P1 |
| | Risk communication and understanding between end-user groups (T2S3) | Understanding of system input requirements lacking in other end-user groups. | "There is 'capture' [trainee end-users] involved. In most cases, it is usually because of that." - P1 referring to additional work due to incorrect trainee end-users' inputs |

*T and S are used to denote theme and subtheme associations with information shared by participants in the initial study.

By answering the research question: How do end-users understand automated process-related operational risks within their work roles? the initial exploratory study contributed to the literature on operational risk reporting and the organisation's documentation and risk management gaps. The RiDC model and codebook assisted in associating the themes for the research with indicators of risk culture as defined by the model.

The study findings suggested that end-users are likely to identify system-related risks better if they trust the system. Based on feedback from participants, the initial group of 13 participants were

found to have a high level of trust in the system. Understanding and awareness of risk tend to increase as trust in systems increases within this type of human–computer interaction (Lee et al., 2021; Muir, 1987; Rempel et al., 1985). In an experiment, Muir and Moray (1996) tested the theory developed in Muir (1994) (see Background), and their findings contradict the order of end-user trust development stages suggested by Muir (1994). What is relevant to the study is that their order suggests that faith in systems precedes dependability, ending with challenges faced in building the relationship towards predictability, which is achieved last. Muir and Moray (1996) attribute variation in the trust development stages to an error in their modelling rather than the initial theory being wrong. Yamani et al. (2020) argue that the Muir and Moray (1996) findings are accurate, and particularly relevant in current circumstances, where COVID-19 influences organisational conditions and trainee end-users are "forced" to use automation. Overall, the reported end-user experiences suggest that both automated systems and risk culture-related challenges in the organisation negatively influence trust.

“The anticipation is that it [automation] works 100%, but we find ourselves coming across things that we did not anticipate we would come across.” – P5

4.1 Automated system-related challenges

For end-users to be comfortable using automation to address possible risks, they need to feel that the automated system's functioning is dependable (Lee et al., 2021). The participants generally considered this to be the case (T1S1 – P1, P6, P9, P11, P13). However, experiences of system functionality not working as intended, flaws in the logical flow of existing functionality, and overall system unavailability were cited as the main contributors to end-user discomfort (T1S3 – P1, P5, P9, P11). Their ability to identify these challenges can be seen as supportive of their trust in the automated system (T1S2 – P4, P7, P13). However, some participants (P1, P10, P12) still felt that system developers often overlook their need to understand the underlying causes of some system-related issues.

When the assistance afforded by automation is lost, there are instances of reduced availability of risk information available for relevant decision making. This type of reduction in information means that much of the risk inclusion becomes user-driven, increasing end-user accountability. When automated systems are down, it seems to lead to defensiveness regarding accountability among end-users. Annandale (1996) suggests that defensive working environments increase work stress, which may adversely affect end-users. Consequently, individual efficiency and trust in automation are negatively influenced while risks of human error increase.

Based on end-user perspectives, the value of automation-related risk information between the two risk decision-making groups seems inversely related (Roeschmann, 2014). End-users seem to be hungry to understand automation-related problems (T2S1 – P1, P10, P12). However, end-users' perceived reluctance from developers to willingly share knowledge adversely influences the progression of trust and end-user understanding of valued, automated process-related operational risks in the organisation. Moreover, the responses from end-users regarding the perceived communication-related behaviour of developers could be suggestive of a high-power distance relationship between end-users and developer teams (T2S2 – P1, P10, P12).

“They [developers] never communicate with the people [end-users] who work with those [automated] systems.” – P1

How communication takes place matters for the development of trust, and the following studies from the literature support the findings from this study. Dressel (2015) suggests that crises prevention, management responsibilities and trust in authorities are explanatory factors of risk perception and crisis communication strategies in organisations. Similarly, the study of Muir and Moray (1996), where optimising the dynamic allocation of functions in automated systems is considered, suggests that explanatory variables for good communication include subjective ratings of trust and automation properties that support end-user trust.

The perspective of system developers also requires some consideration, and a reasonably plausible counterargument is that imperfections are often a characteristic of automated processes (Sato et al., 2020). For example, end-user frontends (the screens end-users eventually interact with) are often configured with an assigned business analyst's assistance, and interpretations of frontend requirements offered by such an analyst could be incorrect.

The equally plausible arguments for each group generated particular interest in the risk culture between the two groups.

4.2 Risk culture-related challenges

The participants' suggestions of a lack of knowledge sharing and inefficiencies in power distance between end-users and system developers warranted asking if the existing power distance relationships were conducive to a sound risk culture. However, there were additional findings gathered from participants in the initial study, suggesting that system developers are not all to blame for some of their challenges (T2S3 – P2, P3, P6).

Instead, some issues reportedly stemmed from the comparatively less influential group of trainee end-users. The issues reported were mainly related to incorrect capturing of information that relatively more experienced end-users would have to correct after the automated system performs error detection (T2S3 – P2). Therefore, the relatively experienced end-users showed characteristics of a risk culture Dressel (2015) labels as individual-orientated risk awareness. In contrast, trainee end-users were less risk aware and seemed more state-orientated, given that they were still in the faith-driven relationship phase with automation.

“Some of the issues are just based on some things somebody else [a trainee end-user] did, which then gave the system a wrong response.” – P2

4.3 Developing guidelines to mitigate automated process-related risk

Before and during the initial 13 interviews conducted for the study, an increase in financial fraud attempts were reported by end-users in the organisation while providing a service to financial organisations. This was also observed by the researcher in the line of his duty and could be linked to the COVID-19 pandemic. As a result, the need for fraud risk management initiatives was prioritised by financial institutions (Buil-Gil et al., 2021; Geldenhuys, 2021). In the follow-up research, a legal practitioner with a background in supporting whistleblowing initiatives was interviewed. When asked what would motivate an end-user to report possible fraud-related risks, Participant 14 suggested finding ways to place end-users in a position of power.

The initial study findings suggested that how end-users perceive risks can be indicated by how efficiently they communicate risk-related information to other stakeholders to resolve their automation-related issues. There is an argument that if someone can make sense of risk-related information, then that person can manage risks (Taarup-Esbensen, 2019; Weick, 1995). From a fraud prevention perspective, regardless of their experience with automated systems as “risk managers”, end-users can contribute to detect operational risks by utilising opportunities to incentivise individual instinct for fraud-related risk awareness. However, exploring a sample of trainee end-users' current level of risk understanding was not found to be contributing to the objectives of the study and, therefore, Participant 15, who had been training end-users within the company for two years, was a suitable candidate to provide insight using the question: What are the most frequent questions asked by trainee end-users in practice after they have completed their training?

It was unsurprising that from the perspective of Participant 15, trainee end-users raised questions about what to do with instruction types they had not seen before. This concurred with the source of incorrect capturing of information pointed out by interviewees in the initial study:

“They do not necessarily know what they are looking at in some instances.” – P15

Also raised were issues around automated system functionality reported by both end-users and trainee end-users. Participant 15 attributed these issues to the developers being unresponsive to end-user needs rather than inherent automation imperfection:

“When you have exceptions that the system does not cater for.” – P15

Based on their preference for automated systems rather than manual working, the majority of end-users reached a phase of dependability on automation. Weick (1987) points out that automation addresses an efficiency problem and improving the reliability of an efficient system in mitigating risks requires improving people's knowledge and understanding of risks. Furthermore, organisations that value storytelling often have more reliable systems. Barker and Gower (2010) support the view that storytelling in the moment can achieve reliability and trust in systems. The findings also support building system reliability through storytelling and some participants have reported a preference for this method of knowledge gathering (P1, P12). However, storytelling is perhaps an effective communication strategy not used to its full benefit by developers to enhance end-user understanding of automated process-related risks. Therefore, storytelling coupled with a detailed application of existing policies and utilisation of experiences from past crises, as recommended by Cox Jr. (2012), can facilitate the collaborative learning process needed to improve risk reporting in the organisation.

The research results from all 15 participants were used to develop guidelines that encourage different storytelling methods and improved communication to better address the various system and risk culture-related challenges across stakeholder groups. The guidelines proposed in the study are designed to promote automated system predictability while improving the organisation's ability to mitigate automated process-related risks. Table 4 provides the intended audience of each guideline, and Appendix B details the support from interviewees used to compile the list of guidelines.

Table 4: Guidelines to improve operation of automated processes

| Guideline | Linked research outcome | Intended end-users of guideline | Intended beneficiary |
|---|---------------------------------|---|--------------------------------|
| Use examples of system constraints to explain the unavailability of system functionality to end-users clearly. | Human–computer interaction | System developers | End-users Trainee end-users |
| Use forms and surveys to understand group dynamics within smaller groups. | Risk culture-related challenges | Risk practitioners | Organisation-wide risk culture |
| Incentivise end-user fraud detection action according to their preferences (can be monetary). | Risk culture-related challenges | Risk practitioners | End-users Trainee end-users |
| Encourage financial clients to keep risk-related information submission methods standardised. | Human–computer interaction | Risk practitioners System developers | Trainee end-users End-users |
| Apply more stringent risk-related information capturing standards. | Human–computer interaction | System developers | Trainee end-users End-users |
| Create opportunities for end-users to report exception cases that the system does not cater for. | Human–computer interaction | End-users Risk practitioners | Trainee end-users End-users |
| Create opportunities for trainee end-users to interact with transaction request types currently unavailable in training material but experienced in practice. | Human–computer interaction | End-users Risk practitioners | Trainee end-users |

Overall, the findings suggest that there is trust in automated systems among the participant groups. Resilient human–automation interactions were expected to characterise end-user groups in an organisation that considers itself at the forefront of automated solutions in the South African financial industry. However, network instability, flaws in the logical flow of system rules and limited system functionality for some teams can generate process-related risks despite the trust placed in automated systems. These issues cause ad hoc fluctuations in participants accepting risk accountability. Communication of system-related inefficiencies forms part of how end-users make sense of risks related to automated processes. Nevertheless, the participants in the study believe that developers know more about the end-user issues of this nature but do not always effectively inform end-users after solutions are implemented to improve the automated systems introduced for their use. According to the participants, these communication dynamics add to the frustrations felt by end-users when their work efficiency is affected by ineffective automated systems. This issue hampers their understanding of risks related to automated processes, as could be confirmed from the literature (Endsley, 2016). Furthermore, from the detail in Appendix B and the communication challenges expressed by P1, P10 and P12 below, it can be concluded that guidelines aimed at facilitating interaction between various stakeholders, particularly around issues of concern to end-users can benefit automated, process-related risk management in an organisation.

“I think they only communicate underlying system issues directly with the people involved in the development of those systems. They never communicate with the people who work with those systems.” – P1

“I think there must just be communication between the people who deal with the instructions (end-users) and the people who make the decisions (developers).” – P10

“Instead of indicating what the issue was, they will clear that batch without you knowing what the underlying issue was.” – P12

5. CONCLUSION

The qualitative study reported here explored end-user understanding of operational risks related to automated processes in the context of a South African organisation and proposes guidelines to mitigate these risks. The study contributes to a gap in the protocols followed by the company in the study and in the literature by reporting on how end-users of automated processes understand risks and manage risk reporting in a financial technology organisation by answering two research questions: How do end-users understand automated process-related operational risks? and What guidelines for different work levels can benefit automated, process-related risk management in an organisation?

The author initially collected data through semi-structured, one-on-one interviews with 13 end-users of automated processes from two organisational functions in the business studied in this report to answer the first question. The findings indicated that there is end-user trust in the automated processes and developers of the automated systems in their working operations. Once trust in automated systems is present, end-users will identify and highlight issues or risks to developers based on automated process-related inefficiencies that they perceive to increase risks to themselves. These personal risks can be in the form of personal time costs due to the unavailability of system functionality or increases in accountability due to overall system unavailability. Either form of perceived personal risk could materialise due to end-users having to process transactions manually with reduced risk-related information available and consequent increased risk of human error. The benefit to the organisation is that the resultant frustrations of end-users about system inefficiency or unavailability showed that end-users are proactive in raising issues with developers. On the other hand, according to the participants in this study, developers are perceived as not sharing the same enthusiasm when explaining the underlying causes of issues or risks reported by end-users. The possible inefficiencies of knowledge sharing and unproductive power distances among organisational groups imply that there is room for improvement. These findings were confirmed by the last two interviews.

The power distance in the organisation can be improved, and end-users can be educated to become more risk-aware about the management of risks. This can be accomplished by valuing end-users' process-related risk reporting and eliciting feedback from developers on specific automated process-related topics. Applying the RiDC model as a framework during the initial work to arrive at the findings and recommendations in this study provided practical proof of the importance of the yet to be published model's indicators for successful risk management. Recommendations have been made to the company to use well-designed forms and surveys to further explore the automated systems in use and risk culture-related challenges with stakeholders. When completing the second phase of the study, the intention was to gather insights from the bottom-up work levels to the next group of risk decision-makers and validate the end-user views. Unfortunately, developments within the organisation and system developer unavailability at the time, prevented the survey approach from being used. The proposed bottom-to-top insight-sharing process therefore remains an avenue for further research within the company. The guidelines related to the automated processes presented here (see Table 4) were designed to encourage engagement between the

various stakeholders in this particular business to address risks related to automated processes. The focus on just one organisation and the restricted time available to complete the study were among its limitations. However, there is an increased use of automated processes across multiple industries. Therefore, the study results and the automated process-related guidelines presented here can be relevant and valuable to more organisations experiencing similar end-user-related issues. The findings from this research as well as the proposed guidelines also contribute to the literature on operational risks related to automated processes.

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7. APPENDIX A

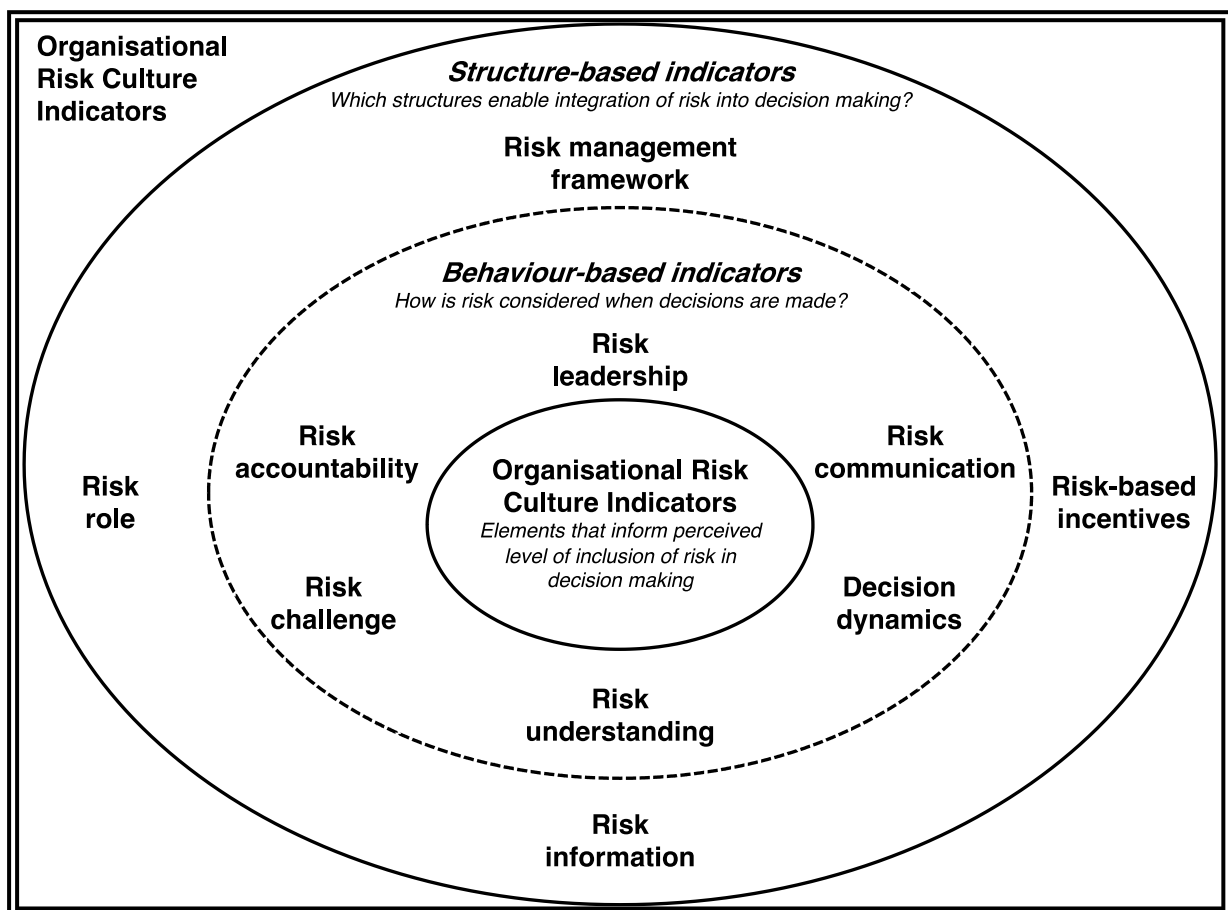


Figure 2: Risk-informed decision culture (RiDC) model (Zaaiman et al., 2021).

The model suggests that organisational behaviours occur within and are influenced by the structure of an organisation’s risk management framework. Figure 2 shows the 10 organisational elements that the (RiDC) indicator model suggests informing perceptions of how organisational groups include risk in their decision making (Zaaiman et al., 2021).

8. APPENDIX B

Table 5: Interview extracts and reasoning supporting the proposed guidelines

| Guideline | Participant Reference | Interview extract or researcher observation informing the guideline | Researcher reasoning for guideline inclusion |
|--|---|---|---|
| Use examples of system constraints to explain the unavailability of system functionality to end-users clearly. | P5 | For instance, maybe let us say we are loading a new client. We find that on the automated side, it does not allow us to capture the client's nationality in some instances. This is a compliance requirement that should allow an amendment. | There are reported limitations that end-users identify as important to manage compliance and customer satisfaction-related risks. However, the end-users seem to not understand the reasoning for these limitations that seem to increase the organisation's operational risk exposure. |
| | P10 | The system is programmed in a certain way. See, for example, there isn't anything that says that there's a missing page. The system-generated communication to the client is a bit vague, suggesting that the client only needs to specify the fund or the amount. It does not specifically say the request is to submit missing a page. | |
| Use forms and surveys to understand group dynamics within smaller groups. | The researcher's recommendations to the company after the initial research. | Although organisation-wide use of surveys and forms might not be feasible for the moment, they may prove helpful in smaller groups and where questions specific to an organisational problem are asked. For example, in this instance, where the participant groups, area of interest (risk understanding) and issues of concern to be explored are clearly identified. | |
| Incentivise end-user fraud detection action according to their preferences (can be monetary). | P2 | There is too much fraud happening in the world right now | According to delegates at the 2022 South African Fraud Prevention Services summit. (SAFPS, 2022) Successful fraud prevention is a collective effort involving internal and external stakeholders. From the definitions of risk and industry knowledge displayed by end-users, there is an awareness of the threat of fraud. Based on the confirmation from P14, it is helpful to attempt to incentivise this awareness. |
| | P5 | Especially in the financial services sector where you would get many fraudsters attempting to infiltrate your organisation and do money laundering and whatsoever | |
| | P7 | I suspected that a request I was working on was a fraudulent transaction and reported it. So, I managed to save the organisation from losing R200,000. | |
| | P4 | I would define risk as anything that puts someone in a situation where their information is being jeopardized and fraudulent stuff happening because that | |

| Guideline | Participant Reference | Interview extract or researcher observation informing the guideline | Researcher reasoning for guideline inclusion |
|---|-------------------------|--|--|
| Encourage financial clients to keep risk-related information submission methods standardised. | P15 | A lot of investors get confused about what it is they are filling on on instruction forms. It seems they themselves do not understand what is required at times, and capture supporting notes | The inflow of requests from customers sometimes has ambiguous explanations of information. (P1, P15) The system also has instances where information is incomplete or not accommodated (P1, P5). |
| Apply more stringent risk-related information capturing standards. | P1 | There's no client account number, there's no additional information. In order for you to be like this amount of money belongs to this person.... | The result is increased risk of poor data quality that can be fixed through standardised input valiations on internal systems intended for end-users, and front-ends intended for request submissions by customers. |
| | P15 | A lot of investors get confused about what it is they are filling in on instruction forms. It seems they themselves do not understand what is required at times, and capture supporting notes | For this study, the focus is on the internal systems. Therefore, developers need to account for these considerations within system design elements. |
| Create opportunities for end-users to report exception cases that the system does not cater for. | P15 | When you have exceptions that the system does not cater for. | The second line risk management function does not seem to have a complete view of system-related and knowledge management challenges experienced by end-users to provide appropriate guidance. Therefore, it is necessary to ensure that existing avenues for reporting are well-known by all stakeholders and that where the existing channels are deemed insufficient, other avenues for effective reporting are explored. |
| Create opportunities for trainee end-users to interact with transaction request types currently unavailable in training material but experienced in practice. | Researcher Observations | There seems to be no clear line of contact between the first and second lines of risk management and end-users to report what could be significant system capability challenges and knowledge development. | |
| | P15 | They do not necessarily know what they are looking at in some instances | |

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CAN SOUTH AFRICA STILL BE SEEN AS THE POSTER CHILD OF GOOD GOVERNANCE?

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ABSTRACT

The implementation of the King II report in 2002 and King III in 2010 placed prominence on the overarching corporate governance principles of fairness, accountability, responsibility, and transparency, while the King IV Report, published in 2016, emphasises corporate governance practices namely, ethical leadership, corporate citizenship, sustainable development, and stakeholder inclusivity. It has been argued that bad corporate governance practices increase the possibility of business failure, even if companies report good financial performance. Due to ongoing business failures globally and locally, serious questions are therefore raised about the credibility of financial disclosures. The past few years posed a noticeable decline in how corporate South Africa is perceived and it seems as if it is no longer seen as the poster child of good governance, leading to the research question, why does it seem as if good corporate governance practices are not prioritised? The aim of this study is to determine why South Africa may no longer be seen as the poster child of good governance. A literature review of selected JSE-listed companies, who was considered by the Business Insider as some of the largest corporate governance scandals in South Africa during the decade ending in 2020, was done. This was done by referring, among others, to peer-reviewed articles, textbooks, news articles and other secondary data on these corporate failures available in the public domain, to briefly determine what the governance reason for the business failure was, as well as to determine the financial impact of these governance scandals, by comparing their respective market capitalisation and share prices before and after their demise, to illustrate the long-lasting impact of these scandals on the selected companies. The results indicated that the seemingly lack of ethical leadership and transparency, which are pillar-stones of good governance as prescribed by the King Reports, may have partially resulted in these huge business scandals and ultimate losses to their stakeholders. The recommendation from this study is that boards of directors should be held accountable for setting policies and strategies aligned with the King Codes on corporate governance to ensure accountability and fiduciary duties and that a practical framework should be developed to assist with this.

Keywords: Business failures, corporate governance, JSE-listed companies, King II, King III, King IV

1. INTRODUCTION

The Institute of Directors in South Africa (IoDSA) assigned retired judge, Mervyn King, together with a panel of experts to develop the King Reports of corporate governance for South Africa, commencing with the introduction of King I in 1994, King II in 2002, King III in 2009 and the latest, King IV in 2016. The golden thread that links these codes together, is the fact that sound corporate governance practices are a vital part of good management and basic governance

principles such as accountability and corporate ethics should inform board processes. All these developments contributed to position South Africa as a global leader and a pioneer of good governance, yet the increasing number of devastating business scandals in South Africa during recent years exposed several shortcomings in governance at large well-established organisations (Manganye, 2019).

Lessambo (2014) states that corporate scandals are driven by three factors:

- Pressure or incentives – Market expectation or manipulation of financial statements to show good results to get an incentive.
- Opportunity – Financial scandals often commence with only small adjustments in financial statements whenever a deemed opportunity comes up, and then soon evolves to become the norm to override controls.
- Rationalisation of fraudulent behaviour – Management often tends to justify their wrongful actions by trying to find something in the Accounting Standards or Acts to support these actions.

Although business failures are not new or unique to South Africa, the unforeseen demise of several seemingly financially strong companies is unsettling (Enoos, 2021). These business failures, each evidenced by a clear absence of ethics, harmed corporate South Africa during the past decade. Losses suffered by stakeholders because of these catastrophic failures will be difficult to recover (Business insider, 2020). Modiha (2018) also remarks that if sound corporate governance principles were ingrained, some of these corporate scandals would not have occurred and concluded that these failures could be an indication of serious deficiencies in most organisations' governance practices.

Van Vuuren (2020) opines that if corporate governance is treated as a “tick-box” exercise, without it being supported by an ethical commitment by all stakeholders, it merely becomes “empty talk” to comply with Johannesburg Stock Exchange (JSE) listing requirements, instead of assuring stakeholders that good corporate governance forms a vital part of a business. Stakeholders should hold boards accountable for the execution of sound corporate governance practices in the company and this is further underlined in King IV that accountability and transparency are equally important (IoDSA, 2018).

The aim of this study is to investigate if corporate South Africa can still be considered as the poster child of good governance, by referring to peer-reviewed studies on corporate governance as well as secondary data on some of the most prominent business failures of JSE-listed companies during recent years that could partially be blamed on poor corporate governance practices. This is preceded by a brief literature review of the King Reports on corporate governance in South Africa and the importance of good governance in organisations.

The importance of this study is to illustrate that if board processes are informed by good governance principles such as accountability and honesty, it can assist in the avoidance of possible business failures. There is an assumption that listed companies cannot fail because of bad governance, as it is a JSE-listing requirement to comply with King IV, however, this study aims to illustrate that despite this compulsory adherence to King IV, business failures due to poor governance are increasing in South Africa, resulting in higher investor distrust.

This study strengthens the perception that South African governance practices are on a downward trajectory, resulting in declining access to external funding which hampers economic growth and sustainability. This study further illustrates the negative effect poor governance has on a company's wealth and that it can ultimately result in total demise. It is therefore important to restore corporate South Africa to be the poster child of good governance again.

2. LITERATURE REVIEW

2.1 Overview of the King Reports on corporate governance

IoDSA developed the four King Reports on corporate governance under the leadership of Mervyn King over a period of more than two decades, (1994 to 2016), with the intention to regulate the implementation and disclosure of effective corporate governance practices. The institutionalisation of corporate governance was the aim of King I published in 1994, followed by an expansion of this by the publication of King II in 2002 (IoDSA, 2002). The inclusion of many of these principles in the SA Companies Act of 2008, resulted in the development of King III, which became effective in 2009 and had a “risk-centric” approach (IoDSA, 2009; SAICA, 2017). The development of the latter persevered to keep South Africa at the forefront of ground-breaking governance principles globally (Mans-Kemp and Van der Lugt, 2020; IoDSA, 2009).

It, however, soon became evident that the flexibility to deviate from the 75 principles recommended in King III, if such deviations were explained, emanated in the implementation of King III to become a mindless “tick-box” compliance exercise (PWC, 2016; Van Vuuren, 2020). The Organisation for Economic Co-operation and Development (OECD, 2014, 2021) contests that effective corporate governance plays a fundamental role “in underpinning the integrity and efficiency of financial markets”. King III describes corporate governance as a set of practices to ensure “fairness, accountability and transparency” for all its stakeholders (IoDSA, 2009).

The King IV Report was developed to correct the perceived weaknesses of King III, but also to capitalise on the strengths of King III (Harduth and Sampson 2016). King IV (2016) with an elevated focus on stakeholder inclusion became effective in 2017, consisting of only 17 principles, with one of the aims being to avoid another “tick-box” exercise. This was brought about by demanding a cautious approach to comply with the recommendations, as well as explaining on what grounds compliance was based on, as opposed to a mere compliance exercise (PWC, 2016). To assist boards of directors, each of the 17 principles is supported by recommended disclosure practices (IoDSA, 2016), but as much as King IV requires full disclosures and explanations on the compliance to these principles, no disclosure on the implementation of each of the recommended practices is required.

The intention of this flexibility was to allow companies to apply their minds without excessive restrictions, to ensure appropriate governance practices for their specific circumstances, however, this increases the probability of prejudiced disclosures, as preparers of annual reports instinctively aspire to portray a positive picture of the business (Van Vuuren, 2016, 2020). This phenomenon is further encouraged by the fact that most of the 17 principles in King IV speak to attributes that are difficult to quantify, such as “ethical culture, good performance, effective leadership and legitimacy” (IoDSA, 2016). It is also important to note that although compliance with King IV is voluntary, it is compulsory for companies listed on the JSE to adhere to King IV (JSE, 2022).

However, Naudé et al. (2018) argue that among others, some of the key competencies that directors are supposed to bring to the boardroom are “independence of thought” and “care, skill and diligence”, which implies that they should be able to effectively implement the principles as prescribed in King IV. They further stressed the extreme importance of board processes to be informed by essential governance principles such as accountability, honesty, and transparency, which could aid in the avoidance of possible business failures.

2.2 Why is good governance important?

Singh (2021) states that investors evaluate the soundness of corporate governance practices in a company before making an investment decision, therefore transparency and high-quality disclosure on corporate governance are very important. Investors perceive these disclosures as an indication of effective management and quality decision-making processes, which could enhance investor trust and ultimately increase investment in the business. This ultimately improves business performance with reference to profitability and increased share prices. It also enhances the potential for increased competitiveness, access to global markets, as well as better finance opportunities, which could result in better growth and sustainability. The OECD (2021) also asserts that well-governed companies attract excellent investments, which is essential for sustainable growth.

Agyemang et al. (2019) opine that corporate governance and ethics must be ingrained in corporate culture to ensure mindful application of governance guidelines. Naudé et al. (2018) defined corporate governance as “the system whereby business organisations are directed and controlled”, which leaves directors with the deep-rooted difficulty of how to drive the business forward, while keeping it under cautious control. Furthermore, Naudé et al. (2018) opine that the conflict “between performance (driving forward) and conformance (prudent control) provides a useful framework for analysing the corporate governance system of any organisation”.

Canter (2018) states that governance practices should be “principled, robust and sustainable”, as stakeholders depend on the annual reports to advise them on the soundness of these practices in the organisation. Investors rely on the management of an organisation to increase the value of their investments, and the board of directors is therefore obligated to make prompt and regular disclosures to stakeholders on the credibility and effectiveness of governance practices in the company. Singh (2021) indicates that sound corporate governance also has an objective to ensure that an effective risk mitigation structure is in place, to reduce the risk of business failures and scandals.

Natesan and Du Plessis (2019) amplify the significance of quality disclosure in annual reports, as the chances for general and biased disclosures are heightened, because of the non-quantifiable characteristics of most of the principles in King IV, increasing the risk for potential business failures to go unnoticed. It is therefore evident from the aforementioned, that good governance structures need to give investors the assurance that the business is not heading for failure and that the management of the organisation is accountable, transparent, and trustworthy and in return, the value of the organisation is increased (Singh, 2021).

The International Finance Corporation (IFC, 2018) also stated that accountability and transparency are vital to strengthen public trust, which is fundamental to assure continued economic development, sustainability, and growth; an entity needs access to external capital and other crucial

resources to ensure business success. For this reason, sound corporate governance practices are vital for building a good business reputation and earn the trust of investors and other stakeholders. King IV therefore describes corporate governance as “the practicing of ethical and effective leadership, to realise an ethical culture, good performance, effective control and legitimacy” for the business (IoDSA, 2016).

Madigan (2018) expresses that effective corporate governance should assure adequate assignment of accountability and optimal use of resources to enhance business success. Van Vuuren (2020) opines that corporate governance characterises the competency and efficiency of management as far as “accountability, leadership, risk management and reporting are concerned”.

2.3 Corporate failures in South Africa

The large corporate scandals that shook South Africa and the world during recent years are still dominating the business news, as investors and other stakeholders globally suffered huge losses due to these failures. It did, however, lead to the question, of whether South Africa, which is regarded as a pioneer and leader in ground-breaking corporate governance (Mans-Kemp and Van der Lugt, 2020), can still be seen as the poster child of good governance as it became apparent, that a common denominator of these business failures was a total lack of ethical leadership and transparency (Rossouw and Styan, 2019). The CEO of the Ethics Institute of South Africa, Prof. Deon Rossouw (2022) reported on the decline of ethical standards and stated that corporations in South Africa have been “thoroughly lamented over the past decade”. He further opines that the lamentations soared to an all-time high when the magnitude of corrupt practices was revealed before the Zondo Commission on state capture and concluded that it severely harmed the “moral fibre of organisations in the private, public and state-owned sectors”. This adds to the perception that South Africa may no longer be seen as the “poster child” of good governance. These revelations made it clear that the rebuilding of ethical leadership and good governance is crucial for restoring investor trust, to ensure much-needed development and economic growth in South Africa, given the growing unemployment rate and poverty in the country.

Manganye (2019) stated that it is more difficult than ever before, to prosper in the fast-moving business environment, where companies compete for the same customer base. This is further complicated by the ever-increasing demands and expectations from customers for better services and products. Furthermore, Manganye opined that business success can no longer be guaranteed by only “refining past practices”, resulting in organisations to implement radical changes to business strategies and practices in a short time, which can partially explain the increasing collection of corporate governance failures during the past years.

BusinessTech (2021) reports that South Africa has one of the biggest business failure rates in the world. Although the Covid-19 pandemic could be partially blamed for several failures during the past two years, it is also ascribed to a lack of access to funding. This lack of access to external funding may be a further indication of investor distrust, due to the devastating failures that crippled corporate South Africa in recent years.

The Business Insider (2020) highlights some of the biggest South African corporate scandals of the past decade up to 2020 and the final impact on stakeholders may take years to be fully determined, if ever. Although several huge corporate governance failures are mentioned by the Business Insider (2020), such as the scandals at state-owned enterprises like ESKOM and the

SABC, the scandals in institutions such as VBS-Bank, KPMG and MCKinsey & Company and the so-called “Gupta-owned” companies such as Oakbay Resources and Energy Ltd, Sahara Computers and Tegeta Exploration & Resources among others, these entities were excluded in this study, as they all form part of the Zondo Commission’s investigation into state capture, which is still in the process to be finalised. It may, however, be a topic for future research.

The report by the Business Insider (2020) also highlighted an investigation launched by the Competition Commission, into extensive collusion between several prominent construction companies, concerning the erection of the 2010 Soccer World Cup stadiums in South Africa, adding an estimated R14 billion to the construction costs. It is no secret that most of the companies implicated in this scandal had decades long successful history in the construction industry in South Africa, which just strengthens the perception that South African governance practices are on a downward trajectory. To avoid prosecution and much higher penalties, at least 15 of these companies agreed to pay a combined fine of R1.4 billion to the Competition Commission. Seven of these companies were listed on the JSE and two of these companies were even at some stage part of the JSE Top-40 Index and subsequently two of these companies’ trading has since been suspended on the JSE (SHARENET, 2022). However, since investigations on this alleged “bid-rigging” are still ongoing, these companies did not form part of this study but are merely mentioned to support the perception that corporate South Africa can no longer be seen as the poster child of good governance.

3. METHODOLOGY

With reference to the exclusions mentioned in 2.3 above, this study therefore only focussed on the remainder of the JSE-listed companies (Table 1) as mentioned by the Business Insider (2020) as some of the biggest business failures of the past decade. The estimated amounts implicated in the scandal, as well as an abridged explanation of the alleged governance failure, are also indicated in Table 1.

Table 1: Alleged JSE-listed Company governance failures.

| JSE-listed Company | JSE Ticker Code | Last year-end before demise became public | Alleged estimated amount involved in scandal | Alleged possible governance failure |
|------------------------------|-----------------|---|--|--|
| 1 Steinhoff Int. Holdings NV | SNH | Sep. 2017 | R250 Billion | Accounting fraud, too much power in the hands of individuals. |
| 2 Tongaat Hulett's | TON | Mar. 2018 | R1.5 Billion | Accounting fraud |
| 3 EOH Holdings Ltd | EOH | Jul. 2017 | R120 Million | Illegal conduct, involving the procurement of software by the SA defence department. |
| 4 Sasol Ltd | SOL | Jun. 2019 | \$4 Billion | Serious mismanagement related to the cost of the Sasol expansion project at Lake Charles, Louisiana. |
| 5 Gold Fields Ltd | GFI | Dec. 2012 | R25 Million | Alleged bribery |

Source: Business Insider (2020), adjusted

This study is restricted to a desktop literature review by referring to, among others, peer-reviewed articles, textbooks, news articles and other relevant secondary data available in the public domain, to briefly determine what the governance reason for the failure was, as well as to get an idea of the estimated amount of the losses suffered by the stakeholders, at the time the misconducts came to light (Table 1). In addition to this, a limited literature review was also performed on the importance

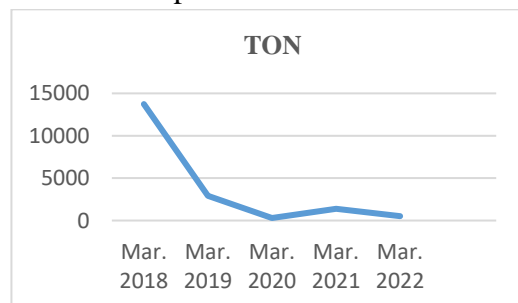
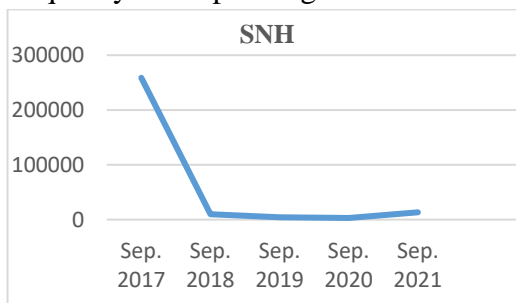
of corporate governance, the effect of business failures and a brief overview of the King Reports on corporate governance, looking at market capitalisation and share prices of the selected companies where available.

Market capitalisation is the most recent market value of a company’s outstanding shares and thus a good indicator of a company’s value (CFI, 2022). Sitorus et al. (2017) also opined that “the value of the company is an investor perception of the level of success of companies that are often associated with their share price”. For purposes of this study, both the market capitalisation as well as the share price of the selected companies at their respective financial year-ends just before their demise (as indicated in Table 1) were compared to the market capitalisation and share prices there-after up to their most recent year-ends respectively, to illustrate the impact of such failures on stakeholders and on the already strained South African economy. This is further elaborated on in the section to follow.

4. RESEARCH FINDINGS AND DISCUSSION

The aim of this study was to determine if South Africa could still be seen as the poster child of good governance, as South Africa is considered a pioneer in the development of effective corporate governance practices as indicated in the King Codes on corporate governance. There is an expectation that listed companies should not or cannot fail due to poor governance, because it is compulsory according to the JSE-listing requirements, to comply with King IV. A previous study by Van Vuuren has, however, shown that disclosure on corporate governance is merely a “tick-box” exercise to comply with JSE-requirements and does not necessarily mean that effective governance practices are implemented. Continued business failures result in more investor distrust, which has a devastating effect on economic growth.

Figure 1 illustrates the market capitalisation of the selected JSE-listed companies at their respective year-ends just before their demise in comparison with their market capitalisation there-after, up to the most recent year-end respectively., whilst As market capitalisation is a good indicator of a company’s value, the decline in the market capitalisation illustrated in Figure 1 just after their demise can therefore be an indication of the enormity of the failures, partially caused by the lack of good corporate governance practices, which strengthens the continued concern about the quality of corporate governance structures in South African companies.



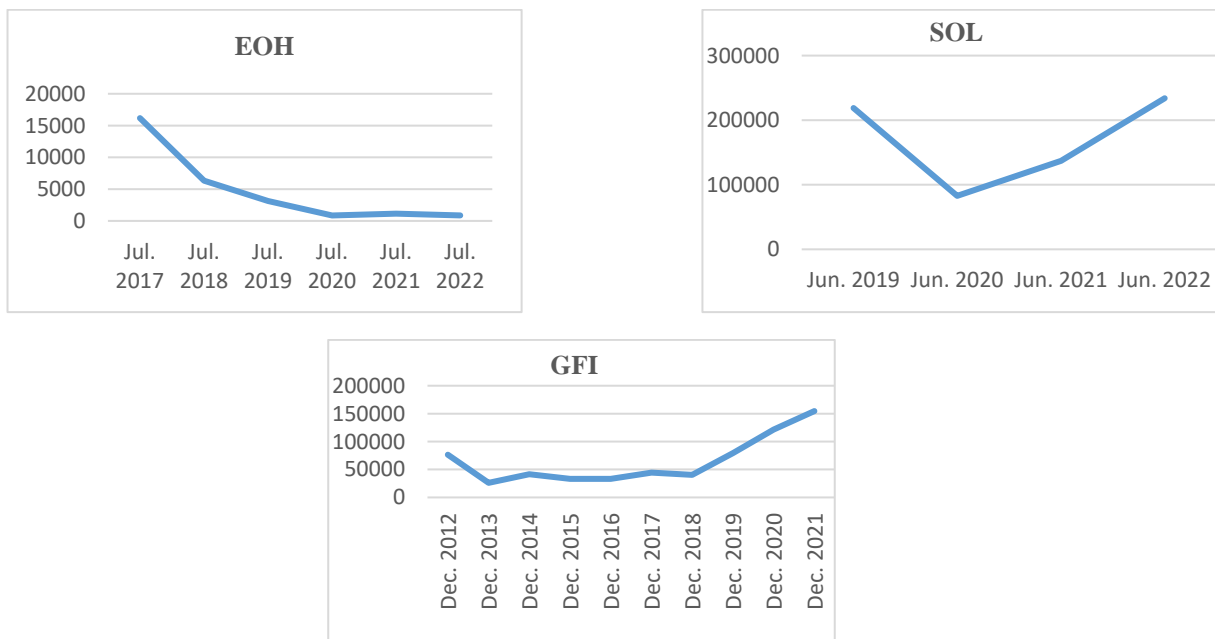
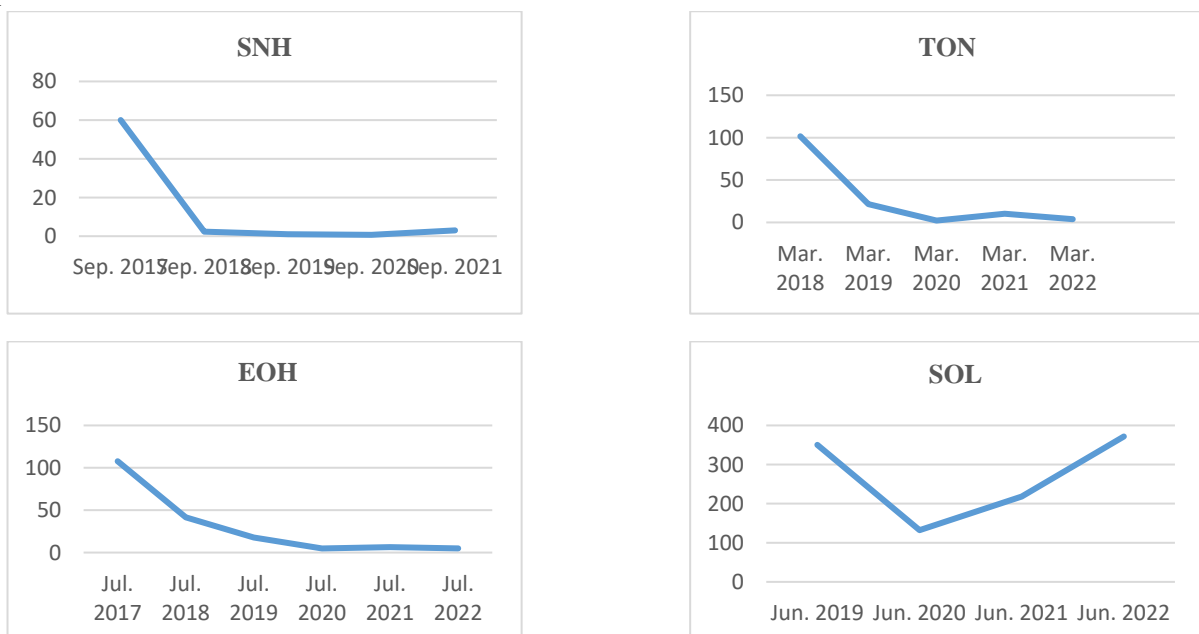


Figure 1: Market Capitalisation of selected JSE-listed companies on their respective year-ends, before and after their demise, in R'000.

Source: McGregor (2022)

The above illustrates that the market capitalisation of the respective companies dropped significantly from the year-end just before their demise (indicated in Table 1) to the year-end just there-after, supporting the perception that South Africa can no longer be seen as the poster child of good governance and that corporate South Africa has a lot of work ahead to restore investor trust. As can be seen in Figure 1, three of the companies still did not recover to their former performance as before the scandals became public, whilst the other two recently shown that they are busy recovering. The recovery actions implemented by these two companies can be a topic for future research.

Figure 2 illustrates the movement in the share prices of the selected companies for the same periods.



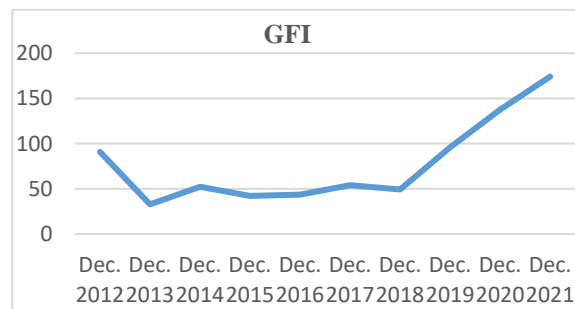


Figure 2: Share Prices of selected JSE-listed companies on their respective year-ends, before and after their demise, in Rand.

Source: McGregor (2017 - 2022) and Investing.Com (2012 - 2016)

The huge decline in the share prices of the respective companies, before and after their demise as illustrated in Figure 2, further seems to validate the perception that South Africa can no longer be seen as the poster child of good governance and strengthens the notion that a company’s value is very sensitive for any compromises on good governance.

As illustrated in Figure 1 and 2 respectively, both the market capitalisation as well as the share prices shown significant downward trends just after the demise of the selected companies and although two of the companies did recover, it took some years for this to happen. The corrective measures regarding corporate governance which could have resulted in the two companies to recover, as well as the reasons for the limited improvement in the other three companies might be a topic for future research.

5. CONCLUSION AND RECOMMENDATIONS

Although the objective of King IV was to decrease the number of complex governance principles from 75 in King III, to only 17 “simpler” principles in King IV, the flexibility allowed in King IV to comply and explain in accordance with the specific nature of the business, as well as the difficulty to quantify compliance to mostly qualitative principles such as ethical leadership, may result in those corporate scandals due to weak governance structures, to be ongoing.

The recommendation from this study is that boards of directors need to be held accountable to not only “apply and explain” how the governance practices are complied with within the company, but also need to disclose how it was implemented. There should be consequences for not adhering to good corporate governance practices. An urgent drive should further be embarked on by corporate South Africa, to ensure that adherence to King IV is not just a compliance exercise, but a true reflection of their understanding of the importance of good governance.

To assist with the abovementioned, a further recommendation is that a framework should be developed against which corporate governance practices implemented in a business can be tested for effectiveness, to ensure that corporate governance is not just a “tick-box” exercise. Until such time that the implementation of corporate governance practices is not seen as a critical part of the success and sustainability of the business, but only considered to be a compliance exercise, the huge business failures will continue, with devastating consequences on the local as well as the global economy.

The recommended framework might be the topic for future research, to overturn the perception that South Africa is no longer seen as the poster child of good governance and to ensure that investor trust in the South African economy is restored. The governance reasons for the improvement in two of the selected companies' market capitalisation and share prices might also be a topic for future research.

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SUPPLY CHAIN MANAGEMENT PRACTICES AND CORPORATE PERFORMANCE IN A SOUTH AFRICAN PUBLIC ELECTRICITY UTILITY

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ABSTRACT

The operations of Eskom Holdings remain constrained by numerous factors that affect its effectiveness. Some of these include high demand for electrical energy in the country and region, high debt, and corruption involving hiring incompetent contractors and the general wastage of financial resources. A possible solution to some of these challenges is improving the execution of supply chain management within this organisation. This study investigated the relationship between supply chain management implementation, supplier performance and corporate performance at Eskom Holdings. The study followed a quantitative approach in which a survey questionnaire was distributed to 85 respondents who were supply chain managers and professionals, purposively selected from Eskom, based in the Gauteng Province. Data were analysed using descriptive and inferential statistics in the form of Pearson correlations and regression analysis. Correlation analysis revealed moderate to strong correlations between all six factors considered in this study. However, amongst the supply chain management activities, only strategic supplier partnerships predicted supplier performance. Also, supplier performance is both strongly correlated with and predicts corporate performance. The study offers supply chain managers and professionals at Eskom Holdings information that can be used to diagnose supplier and corporate performance-related challenges. It suggests that the effective implementation of supply chain management activities is critical to the improvement of both supplier and corporate performance in the electrical energy industry in South Africa.

Keywords: Supply chain management, strategic supplier partnership, information sharing, information quality, supply chain integration, supplier performance, corporate performance

INTRODUCTION AND BACKGROUND

In South Africa, the responsibility to provide electrical energy lies under the sole monopolistic mandate of a government-owned national utility, Eskom (Eskom Integrated Report, 2016). As a corporate entity, Eskom was established in 1922 as a national electrical energy utility (National Treasury, 2015). Fourie (2014) suggests that Eskom ranks among the top 20 utilities in the world regarding its electrical energy generation capacity. Eskom's primary duty is to generate electrical energy and its transmission, distribution, sale, importation and exportation when necessary (National Treasury 2011; Eskom Integrated Report, 2016). Eskom is active in all elements of the electrician energy supply chain, which includes the transmission and distribution to industrial,

mining, commercial, agricultural, and residential customers and redistributors. As a corporate entity, Eskom generates approximately 90% of the electrical energy used in South Africa and about 40% of the electrical energy used on the African continent (Department of Energy and Minerals, 2016). The utility also plays a critical role in employment creation, employing approximately 47 978 on fixed and temporary contracts (Eskom Integrated Report, 2016).

Eskom currently faces many difficulties, ranging from a leadership crisis, ineffective cost recovery, irregular and wasteful expenditure, management corruption, lack of skills and capacity to non-compliance with policies and regulations as well as labour unrest in its power stations (Tait & Winkler 2012; De Vos 2015; Eskom Integrated Report, 2016). These have led to a financial crisis within the electrical energy supply giant (Eskom, 2017). Furthermore, Eskom does not have proper strategies to collect revenue from the various municipalities nationwide (Fourie, 2014; PMG, 2019). Almost all the municipalities owe Eskom billions of rands (Eskom Integrated Report, 2016). Over the years, these arrears have further accumulated a persistent breach of the payment terms applicable to creditors. As of 2021, the electrical energy supplier's debt has ballooned to R464 billion, and the interest on its debt alone equated to R39.1 billion in the previous financial year, 2020 (BusinessTech, 2021). The government stepped in, providing a bailout of R56 billion in 2020/21 and R31.7 billion in 2021/22 (BusinessTech, 2021). Significant as these sums may be, Eskom is still far from escaping its vast debt. As a result, some major projects are not completed on time as there are insufficient funds to finance these projects (PMG, 2019). Incomplete projects could also be attributed to hiring incompetent contractors through corruption. Corruption remains a significant problem within Eskom and inhibits economic growth (Chea, 2015; Eskom Integrated Report, 2016).

This study investigated the relationship between supply chain management (SCM) implementation, supplier performance and corporate performance at Eskom Holdings. Considering the above-mentioned operational constraints, the implementation of effective SCM practices has become a potentially valuable way of securing optimal efficiency and improving organisational and supply chain performance (Li, Ragu-Nathan, Ragu-Nathan & Rao, 2006; Diaconu & Alpopi, 2014; Wijetunge, 2017). An organisation's supply chain generally refers to all the activities involved in supplying an end-user-end with a product or service (Jack, Meredith & Shafer, 2012; Bourne, Melnyk & Bititci, 2018). Wijetunge (2017) defines SCM practices as a set of activities undertaken in an organisation to promote the effective management of its supply chain. The activity of SCM would then be the management of all the processes and activities involved in creating the product or service to ensure a consistent and reliable flow (Pasanen, 2015).

Although Eskom has a monopolistic foothold in the electrical energy generation and supply industry, improving its competitive advantage strategies without direct competitors implies operational competence and increased efficiency and effectiveness. While some research has been conducted before in the electrical energy industry (for example, McCurrach, 2005; Moloantoa, 2011; Solomon, Bester & Mol, 2017), there is a lack of evidence of previous studies that investigated the relationship between SCM practices and corporate performance. This study, therefore, aims to fill that gap by hypothesising that SCM practices can be the remedy to the ailing energy parastatal.

THEORETICAL BACKGROUND

Supply chain management best practices

SCM involves identifying best practices that can facilitate supply chain process alignment and integration and successfully implementing the latest collaborative information systems that drive efficiencies, performance, and quality throughout the supply chain (Robinson & Malhotra, 2005; Agus, Makhbul & Hassan, 2008). There is a myriad of SCM practices. However, in this study, SCM practices are conceptualised in four dimensions, namely, strategic supplier partnership (SSP), level of information sharing (IS), quality of information sharing (IQ), and supplier chain integration (SCI).

Strategic supplier partnership

A strategic supplier partnership is defined as a long strategic coalition of two or more firms in a supply chain to facilitate joint effort and collaboration in one or more core value-creating activities, such as research product development, manufacturing, marketing, sales and distribution to increase benefits to all partners by reducing total cost of acquisition, possession and disposal of goods and services (Li et al., 2006; Agus et al., 2008; Maestrini, Luzzini, Maccarrone & Caniato, 2017). It is designed to influence the strategic and operational capabilities of individual participating organisations to work more effectively with a few essential suppliers willing to share responsibility for the product's success (Li et al., 2006). According to Maestrini, Luzzini, Caniato and Ronchi (2018), supply chain partnerships aim to increase benefits to all partners by reducing the total cost of acquisition, possession, and disposal of goods and services. Hence, organisations seek to establish long-term relationships with suppliers.

Information Sharing

Information sharing is the ability to share real-time information with suppliers and customers synchronously (Fan, Li, Sun & Cheng, 2017). To enhance the results of information sharing, organisations must answer four main questions: first, what to share; then whom to share it with; then how to share; and finally, when to share (Lotfi, Mukhtar, Sahran, & Zadeh, 2013). The quality of the answers would help to avoid redundancy, minimise costs associated with misinformation and improve situational responses. This concurs with the view of Zhang and Chen (2013), who conclude that information sharing could be a valid predictor of supply chain effectiveness.

Information quality

Information quality may be viewed as the degree to which the information exchanged suffices the organisation's requirements. It encompasses objectivity, utility, and integrity (Hamister, 2012; Hong, Zhang & Shi, 2017). Moberg et al. (2002) add elements such as completeness, adequacy, and credibility, while Miller (2005:93) added believability, objectivity, precision, and reliability of the information, relevancy, comprehensibility, interpretability, consistency, conciseness, format, security and availability as determinants of information quality. According to Ding et al. (2014), dysfunctional effects of inaccurate or delayed information can impact operational effectiveness negatively. On the contrary, access to the right information enables firms to reduce uncertainty and enhance planning, which enhances their profitability (Zhou, Shou, Zhai, Li, Wood, & Wu, 2014).

Supply chain integration

Supply Chain Integration (SCI) is the extent to which all activities within an organisation and its suppliers, customers, and other supply chain members are integrated (Uwamahoro, 2018). SCI is a multi-dimensional concept whose various dimensions can ultimately be collapsed into three dimensions: customer, supplier and internal integration (Flynn, Huo & Zhao, 2010; Zhao et al., 2011; Cao, Huo, Li & Zhao, 2015). Internal integration is a process of inter-functional interaction and collaboration, coordination, communication, and cooperation that brings functional areas together into a cohesive organisation (Flynn et al., 2010; Zhao, Huo, Selen & Yeung., 2011; Ataseven & Nair, 2017). On the other hand, external integration refers to collaborating, sharing information, and aligning processes with external supply chain partners. (Flynn et al., 2010; Schoenherr & Swink, 2012; Turkulainen, Roh, Whipple, & Swink, 2017). It is frequently divided into two categories, customer integration and supplier integration, with each attempting to increase the amount of high-quality information shared between supply chain partners and their level of process alignment (Bakker, Boehme & Van Donk 2012; Stevens & Johnson 2016). Supplier integration involves offering information and directly contributing to decisions while downstream (Kamal & Irani, 2014). In contrast, internal integration involves understanding the collaboration between the supplier's products and processes and the customer's business (Turkulainen et al., 2017).

Supplier performance

Supplier performance relates to how well a supplier provides the required products to the buyer and is manifested as the outcome of the operation in terms of quality, delivery responsiveness, cost and technical support (Wu, Choi & Rungtusanatha, 2010; Maestrini, Luzzini, Maccarrone, & Caniato, 2017). Supplier performance is essential in supply chains because it significantly impacts maintaining collaborative relationships based on product quality, operational support, service quality and delivery performance (Huang, Yen & Liu, 2014). Suppliers play an imperative role in influencing the overall performance of supply performance networks, especially in a competitive business environment (Ho, Feng, Lee & Yen, 2012; Maestrini, Patrucco, Luzzini, Caniato, & Maccarrone, 2021). Since supplier performance significantly affects a focal firm's operations, organisations must regularly evaluate their suppliers' performance to adequately integrate supply chain activities (Huang *et al.*, 2014; Patrucco, Moretto, & Knight, 2020).

Corporate performance

The concept of performance describes how firms manage to attain an aim (Morin & Audebrand, 2014; Selvam, Gayathri, Vasanth, Lingaraja & Marxiaoli, 2016). This study uses business and firm performance to mean corporate performance interchangeably. Business performance can be described as the level of a fulfilled task of a business's aim or target according to obtained output or conclusion at the end of a business period (Yildiz, Baştürk & Boz, 2010). According to Abdi and Ali (2013), corporate performance refers to how efficiently and effectively a firm utilises its resources to generate economic outcomes. Al-Ansari and Sardoh (2013) considered it to relate to the ability of an organisation to gain profit and growth to achieve its general objectives. Similarly, Olughor (2015) conceptualise it as the ability of the firm to earn profit and development to achieve its general strategic goals.

CONCEPTUAL MODEL AND HYPOTHESES DEVELOPMENT

The study's conceptual model (Figure 1) highlights the direct causal relationships under investigation. The conceptual model consists of four predictor variables; SSP, IS, IQ and SCI, one mediating construct; Supplier Performance and one outcome; CP.

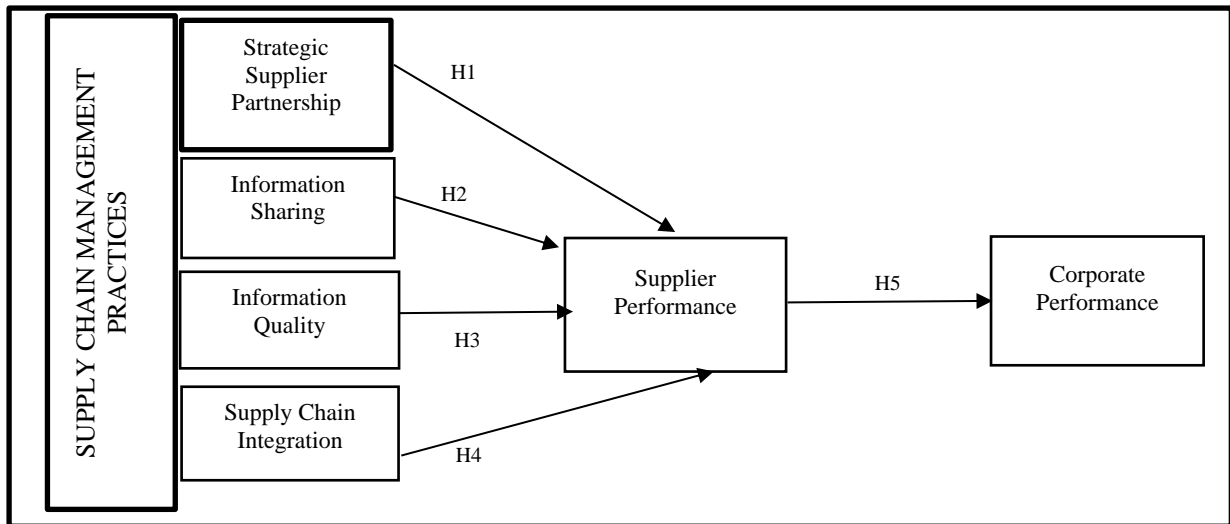


Figure 1: Conceptual model for SCM practices, SP and CP.

Supply chain management practices and supplier performance

Long-term relationships between suppliers and buyers allow for the free flow of feedback and ideas. It creates a more streamlined, effective supply chain that positively impacts cost and customer service (Busch, 2012; Maestrini et al., 2018). Information sharing in supply chains results in improved supplier performance brought about by effective resource utilisation, quick response, early problem detection, increased productivity, organisational efficiency and improved services, and building and strengthening social bonds (Zhang & Cheng, 2013). In addition, the sharing of quality information in a supply chain improves organisational performance, increases competitive advantage and increases competitive advantage (Omar, Ramayah, Lo, Sang & Siron, 2010; Hong, Zhang, & Shi, 2017). Moreover, Huo (2012) and Huo, Han and Prajogo (2016) describe supply chain integration as an efficient and practical approach to improving the performance of supply chains. Based on the presented literature, this study hypothesises that:

- H1: There is a positive relationship between strategic supplier partnership and supplier performance at Eskom
- H2: There is a positive relationship between information sharing and supplier performance at Eskom
- H3: There is a positive relationship between information quality and supplier performance at Eskom
- H4: There is a positive relationship between supply chain integration and supplier performance at Eskom

Supplier performance and corporate performance

Supplier performance as a practice in supply chains is essential since it has a massive impact on maintaining collaborative relationships among supply chain partners (Patrucco et al., 2020). When there is optimal supplier performance, supply chains experience product quality, operational superiority and service quality (Mafini, Pooe & Loury-Okoumba, 2016). Moreover, suppliers play a critical role in influencing the overall firm and supply chain performance in supply networks, especially in a competitive business environment (Ho, Feng, Lee & Yen, 2012). This study, therefore, hypothesises that:

H5: There is a positive relationship between supplier performance and corporate performance at Eskom

RESEARCH METHODOLOGY

Design and Sampling

The study adopted a quantitative research approach using a descriptive survey design, since it involved several statistical techniques used to summarise and organise data meaningfully. The target population in this study consisted of supply chain managers and professionals employed by Eskom and based in Gauteng Province. A non-probability sampling approach using the purposive sampling technique was followed in selecting respondents. The purposive sampling technique was necessitated by selecting respondents familiar with the area under consideration in this study (SCM).

Measurement Instrument

Measurement scales were adapted from previously validated instruments. SSP, IS, and IQ were measured using scales adapted from Hamister (2012). The scale for measuring SCI was adapted from Sundram, Chandran and Bhatti (2016). SP was measured using a scale adapted from Maestrini, Luzzini, Caniato, Maccarrone and Ronchi (2018). The scale used for measuring CP was adapted from Sundram et al. (2016). Response options were presented in Likert-type scales anchored by 1= strongly disagree, and 5= strongly agree. For the CP scale, response options were encoded by 1= much worse than previous performance and 5= much better than previous performance. Permission to collect data was granted by Eskom management in July 2018. After the questionnaire was developed, it was submitted to the UNISA School of Business leadership, which granted ethical clearance. The questionnaires were administered in November 2018 to the sample of supply chain managers and professionals at Eskom. A drop-and-collect method was used, in which respondents were given one week to complete the questionnaires. To clarify the purpose of the study, a covering letter was attached to the questionnaire to enable respondents to understand that the investigation is purely for academic purposes.

DATA ANALYSIS

After collecting the questionnaires, they were screened to remove incomplete and erroneous ones. After that, the data were recorded on a Microsoft Excel document before transferring to Statistical Packages for the Social Sciences (SPSS version 25.0) software for analysis. The data analysis

included validity and reliability tests, descriptive statistics, exploratory factor analysis, Pearson Correlations and Regression Analysis.

RESEARCH RESULTS

Demographic details of respondents

A total of 106 questions were distributed to the targeted supply chain managers and professionals at Eskom. Out of these, 91 questionnaires were returned, of which six were unusable. This culminated in 85 valid questionnaires that were returned, which yielded a response rate of 80.2 per cent. Male and female respondents were almost the same, 50.6 per cent (n=43) for males and 49.4 per cent (n=42) for females. Regarding age groups, the largest number of respondents were between 31 and 35 years (29.4%; n=25). The greatest number of respondents were holders of degrees (25.9%; n=22). The highest number of respondents (30.6%; n=26) had been employed in the organisation for two to five years. At least 59.5 per cent (n=25) of the respondents were in entry-level positions, while 24.7 per cent (n=21) were in professional positions. The greatest number of respondents (23.5%; n=20) were employed as procurement practitioners, while 16.5 per cent (n=14) were employed in quality management.

Measurement scale accuracy analysis

The present study measured reliability using the Cronbach alpha coefficient, and the scale purification was conducted using item-total correlations. According to Hair, Babin, Anderson and Black (2018), the recommended minimum cut-off value for the Cronbach alpha is 0.7. The Cronbach alpha values for all the latent constructs (SSP to CP) were well above 0.7, implying acceptable scale reliabilities.

To test for face validity, the questionnaire was reviewed by two academics who are specialists in SCM. Content validity was ascertained using a pre-test conducted using 15 conveniently selected respondents. Construct validity was tested using inter-factor correlations. Table 2 shows the significant positive correlations between the various constructs, confirming that construct validity was adequate in this study, as Hair et al. (2010) advised. To test for predictive validity, regression analysis was applied. As indicated in the two regression models (Tables 4 & 5), significant positive relationships were found between the dependent and independent variables, which confirms that predictive validity was adequate.

Table 2: Inter-factor correlations

| Research Construct | SSP | IS | IQ | SCI | SP | CP |
|--------------------|-------|-------|-------|-------|-------|----|
| SSP | 1 | | | | | |
| IS | 0.474 | 1 | | | | |
| IQ | 0.255 | 0.493 | 1 | | | |
| SCI | 0.128 | 0.457 | 0.695 | 1 | | |
| SP | 0.431 | 0.390 | 0.422 | 0.321 | 1 | |
| CP | 0.429 | 0.474 | 0.441 | 0.395 | 0.569 | 1 |

** . Correlation is significant at the 0.01 level (2-tailed); * . Correlation is significant at the 0.05 level (2-tailed)

SSP= Strategic supplier partnership; IS= information sharing, IQ= information quality; SCI= supply chain integration; SP= supplier performance; CP=corporate performance

An analysis of the correlations in Table 2 shows positive correlations between the constructs. The lowest correlation was calculated between strategic supplier partnership and supply chain integration ($r=0.128$; $p=0.243$). The highest correlation was calculated between information quality

and supply chain integration ($r=0.695$; $p=0.000$). The positive inter-factor correlations imply that an increase in one of these constructs is also associated with increases in the other. Therefore, for example, if Eskom increases its level of information sharing with its stakeholders, there will likely be some increases in supply chain integration, supplier performance, and corporate performance.

Regression analysis

Regression analysis is a statistical technique to test the relationships between dependent and independent variables (constructs) (Freedman, 2005). Regression analysis using the enter method was applied to determine predictive relationships between the different variables considered in this study. Two regression models ensued, the first with SCM practices as the independent variable and supplier performance as the dependent variable. Supplier performance was entered as the independent variable in the second regression model, and corporate performance was the dependent variable.

Table 3: Regression Model 1: Supply chain management practices and supplier performance

| Independent Variables: SCM practices | Dependent Variable: Supplier Performance | | | Tol | VIF |
|---|--|-------|------|------|-------|
| | Beta | T | Sig | | |
| SSP | .317 | 2.943 | .004 | .754 | 1.326 |
| IS | .085 | .701 | .486 | .593 | 1.686 |
| IQ | .255 | 1.865 | .066 | .470 | 2.126 |
| SCI | .064 | .477 | .635 | .486 | 2.059 |

R=.546; R squared=.298; Adjusted R squared=.263 Sig. $P<0.05$; Tol=Tolerance; VIF-Variance inflation factor
 SSP= Strategic supplier partnership; IS= information sharing, IQ= information quality; SCI= supply chain integration; SCM= supply chain management practices

In regression model 1 in Table 3, SCM practices scored an adjusted R-squared of 0.298, which illustrates that they contributed close to 29 per cent of the variance in supplier performance. This result further implies that the SCM practices in that organisation determine close to 29 per cent of the performance of Eskom’s suppliers. In comparison, the remaining 71 per cent is accounted for by other factors not considered in this study. Strategic supplier partnership ($\beta=0.317$) exerted the strongest influence on supplier performance, while supplier integration ($\beta=0.064$) exerted the least influence, making it the least essential SCM practice affecting supplier performance.

In the second regression model, supplier performance was entered as the independent variable, and corporate performance was entered as the dependent variable. The results are presented in Table 4.

Table 4: Regression Model 2: Supplier performance and corporate performance

| Independent Variables: Supplier performance | Dependent Variable: Corporate Performance | | | Tol | VIF |
|--|---|-------|------|-------|-------|
| | Beta | T | Sig | | |
| Supplier performance | .569 | 6.297 | .000 | 3.250 | 1.000 |

R=.569; R squared=.323; Adjusted R squared=.315 Sig. $P<0.05$; Tol=Tolerance; VIF-Variance inflation factor

Regression model 2 in Table 4 scored an adjusted R-squared= 0.315, indicating that supplier performance contributes close to 32 per cent of the variance on corporate performance. This result implies that close to 32 per cent of the corporate performance at Eskom is determined by the performance of their suppliers, with the remaining 68 per cent being determined by other factors that were not considered in this study. This result, therefore, showcases the importance of suppliers' performance to Eskom's overall performance.

Hypotheses tests results

The five hypothesised relationships of this study were tested through a combination of Pearson correlations and regression analyses. For the hypothesis to be accepted, the correlations and regression analysis results must be positive and significant. The results are presented in Table 5.

Table 5: Results of Hypotheses Testing

| Proposed Relationship | Hypothesis | Correlation Coefficient <i>r</i> | Beta Coefficient β | T Value | P Value | Outcome |
|-----------------------|------------|-------------------------------------|-----------------------------|---------|---------|----------|
| SSP → SP | H1 | .431 | .317 | 2.943 | .004 | Accepted |
| IS → SP | H2 | .390 | .085 | .701 | .486 | Rejected |
| IQ → SP | H3 | .422 | .255 | 1.865 | .066 | Rejected |
| SCI → SP | H4 | .321 | .064 | .477 | .635 | Rejected |
| SP → CP | H5 | .569 | .569 | 6.297 | .000 | Accepted |

SSP= Strategic supplier partnership; IS= information sharing, IQ= information quality; SCI= supply chain integration; SP= supplier performance; CP=corporate performance

The results of the hypotheses tests show that two hypotheses (H1 and H5) were accepted while (H2, H3 & H4) were rejected. Although there were positive associations (correlations) between supplier performance and three predictor factors, information sharing, information quality and supply chain integration, no predictive relationships were found amongst them in the regression analysis, as shown by the beta coefficients. Hence these hypotheses were rejected.

DISCUSSION OF RESULTS

This study aimed to determine the hypothesised relationships between SCM practices (SSP, IS, IQ, SCI) and SP and between SP and CP. The results are discussed as follows:

Strategic supplier partnership and supplier performance

Hypothesis (H1) was accepted. The results of the correlation analysis indicated a moderate positive correlation (association) between strategic supplier partnership and supplier performance ($r = 0.431$; $p < 0.01$). This result demonstrates that supplier performance will increase when strategic supplier partnerships are improved. The regression analysis results indicated a positive and statistically significant relationship ($\beta = .317$; $t = 2.943$; $p = 0.004$). This suggests that strategic supplier partnership predicts supplier performance. Hence the performance of suppliers is likely to be substantial whenever Eskom establishes strategic alliances with them.

Information sharing and supplier performance

Hypothesis (H2) was rejected. Although there was a moderate positive correlation (association) between information sharing and supplier performance ($r = 0.390$; $p < 0.01$), the relationship between these two factors was found to be statistically insignificant in the regression analysis ($\beta = .085$; $t = .701$; $p = .486$). The beta value is minimal (almost zero), and the t and p values are greater than the 0.05 significance level. The results imply that the two factors are correlated, but there is no predictive or causal relationship. Therefore, although increasing the level of information sharing might moderately increase the level of supplier performance at Eskom, there is no evidence that supplier performance is linked to information sharing.

Information quality and supplier performance

Hypothesis (H3) was rejected even though a moderate positive correlation was found between information quality and supplier performance ($r = 0.422$; $p < 0.01$). The relationship was statistically insignificant in the regression analysis ($\beta=.255$; $t=1.865$; $p=.066$). The results imply that while the two factors are associated, there is a lack of conclusive evidence of a predictive relationship. Hence at Eskom, improved quality of information and supplier performance increase together, but there is no evidence that the performance of suppliers originates from the quality of information shared.

Supply chain integration and supplier performance

Hypothesis (H4) was rejected. At the same time, moderate positive correlations were observed between supply chain integration and supplier performance ($r = 0.321$; $p < 0.01$), the results of the regression analysis were statistically insignificant ($\beta=.064$; $t=.477$; $p=.635$). The beta coefficient is minimal (almost zero), and the t and p values are greater than the 0.05 accepted significance level, which indicates that supply chain integration neither causes nor predicts supplier performance. Thus, at Eskom, supply chain integration and supplier performance increase together, but in reality, it is not certain that the performance of suppliers is caused or predicted by supply chain integration.

Supplier performance and corporate performance

Hypothesis (H5) was accepted in this study. The results of the correlation analysis showed a strong positive association ($r = 0.569$; $p < 0.01$). This result demonstrates that an increase in the performance of suppliers also increases the corporate (business) performance. In the regression analysis, the supplier performance was statistically significant ($\beta=.569$; $t=6.297$; $p=.000$), which suggests that it predicts corporate performance. Accordingly, the business performance of Eskom is attributed in part to the performance of its suppliers.

Concerning the relationship between SCM practices and supplier performance, the results of this study are consistent with previous seminal and more recent studies (Stank, Keller & Closs, 2001; Li, Ragu-Nathan, Ragu-Nathan & Subba Rao, 2004; Flynn et al., 2010; Cook & Heiser, 2011; Ibrahim & Ogunyemi, 2012) also found similar results. Several studies also show similar results about the relationship between supplier performance and corporate performance (Simpson & Siguaw & White, 2002; Ohdar & Ray, 2004; Modi & Mabert, 2007; Lindgreen, Vanhamme, Van Raaij & Johnston, 2013). Therefore, since positive correlations were found in this study, SCM practices must be improved at Eskom as this is associated with increases in supplier performance. However, greater emphasis must be placed on strategic supplier partnerships as this emerged as the most critical SCM practice. Also, to improve the corporate performance of the organisation, it is essential to ensure that the performance of all of Eskom's suppliers is enhanced.

LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The study is limited in using a small sample size ($n=85$), which limits its generalisability to the entire organisation, or other similar environments. Future studies could be conducted using larger sample sizes drawn from different provinces representative of Eskom. The study is also limited in that only four SCM practices were considered. Future studies could be conducted using other SCM

practices that were left out of this study, including buyer-supplier trust, TQM, information technology adoption and SCM risk management, amongst others. Also, corporate performance was measured as one factor in this study, yet it can be broken down into several sub-dimensions. Future studies can, therefore, use the sub-dimensions of corporate performance, such as financial, customer satisfaction, internal business processes, and learning and growth perspectives.

CONCLUSIONS, THEORETICAL AND MANAGERIAL IMPLICATIONS

This study aimed to examine the relationship between SCM practices, supplier performance and corporate performance at Eskom. Theoretically, the framework presented here provides a perspective which brings a better understanding of the relationship between SCM practices, supplier performance and corporate performance. The study revealed how each dimension of SCM practices impacts the mediating variable (supplier performance), either fully or partially, and how supplier performance influences corporate performance. As shown in the correlations, an increase in any of these four SCM practices will result in an improvement in the performance of Eskom's suppliers (supplier performance). However, only SSP directly predicted supplier performance among the four SCM practices. The study, therefore, concludes that there is a positive connection between SSP and supplier performance at Eskom. A strong positive association was also observed between supplier performance and corporate performance. The study, therefore, concludes that there is a positive connection between supplier performance and corporate performance at Eskom.

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THE PERCEIVED QUALITY OF STRATEGIC MANAGEMENT IN SOUTH AFRICAN ORGANISATIONS

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ABSTRACT

Strategic management is seemingly ubiquitously accepted as a key function of organisations and vital to their success, and numerous normative guidelines exist on what strategy is and how to do strategic management. What is less clear is what constitutes “good” strategic management and its relationship with organisational performance, given that experience has shown that many organisations struggle with the concept of strategic management and how to implement it for consistently positive outcomes. This in-company online survey examined the perceived quality of strategic management in 38 South African organisations, yielding 1,927 usable responses. Findings suggest that organisations are perceived to be generally good at setting and tracking their vision and strategic goals, and strategy implementation is seen to be regarded as an important issue in the organisation. However, when considering the extent to which the organisation knows its environment, the implementation and alignment of strategy with the internal organisation appear to be potential weaknesses. Respondents seemed to feel that long term objectives are not always achieved, that strategies are not always clearly understood, and that the structure, culture, and systems of the organisation are generally not supportive of its strategic direction. Regression analysis suggested that the diagnosis, guiding policy, and coherent action dimensions all influence the perceived performance of strategic management and the organisation.

Keywords: Strategic management, strategic management performance, South Africa, quality

1. INTRODUCTION

Strategy and strategic management are widely accepted in management literature as important to the success of organisations. For example, Mintzberg (1987) argued that a strategy is important to organisations to give it direction, focus, identity, and consistency. Hence it could be argued that all organisations should have a strategy in some form, whether it is deliberately planned and executed, or emerging from the decisions and actions of organisations (Mintzberg & Waters, 1985).

It could, accordingly, be argued that strategic management should correlate with organisational performance, and the better the organisation is at strategic management, the more likely it would be to outperform its rivals. As a result, the relationship of strategic management with organisational performance has received significant attention in management research, in a variety of settings, including the public sector (for example, Boyne & Walker, 2010). In a related line of enquiry, strategy implementation has generally been identified as a highly problematic area of strategic management, fraught with obstacles (for example, Beer & Eisenstat, 2002; Hrebiniak, 2006) and with a high rate of failure (Cândido & Santos, 2015).

Given that employees are (or should be) increasingly involved in the strategic management process

(see for example the work of Hautz, Seidl & Whittington, 2017 on open strategy) and especially in strategy implementation, it is surprising that their views of what good strategy entails have received so little attention. The only work I could find with this specific focus was the conceptual framework developed by Hay and Williamson (1997).

With this gap in mind, the purpose of this paper is to examine the perceptions of employees of South African organisations of the quality of strategic management in their organisations, based on a survey conducted in several organisations from various sectors and industries. In the next section the literature, especially as it pertains to the development of the questionnaire, is reviewed, followed by an outline of the methodology. The findings are then presented, followed by the conclusion to the paper, and recommendations to practitioners and academics.

2. THE QUALITY OF STRATEGIC MANAGEMENT

The purpose of the literature review was to examine existing literature on the quality of strategic management with the purpose of developing a questionnaire to use in this study. In the first instance, the influential work of Rumelt (2011) on “good strategy” guided the process. In this work, Rumelt argues that good strategy simply consists of three elements:

- (1) Good strategy requires incisive thinking to accurately *diagnose* the nature of the challenge that the organisation faces. It is incisive in the sense that it cuts through the overwhelming deluge of internal and external information to focus on a few aspects that are critical to the organisation.
- (2) It requires a *guiding policy* (read: strategy) for dealing with the obstacles or opportunities as diagnosed.
- (3) Implementing the guiding policy requires a set of *coherent actions* that are coordinated and work together.

This view of good strategy is similar in some respects to the concepts of market orientation (e.g., Jaworski & Kohli, 1993), absorptive capacity (e.g., Cohen & Levinthal, Zarah & George, 2002), and dynamic capabilities (Teece, Pisano & Shuen, 1997). All of these approaches argue that organisational success rests on the ability of an organisation to use intelligence about its environment to adapt to or even take advantage of changes in it. Rumelt’s (2011) perspective adds a more specific strategic process focus on the addition of the guiding policy as well as the coherent action, but the former concepts were useful in a general sense in developing certain aspects of the questionnaire.

2.1 Diagnosis

Diagnosis refers to the ability of an organisation to not only collect data or to scan the environment, but also to develop insights into what is relevant and critical to their organisations. In that sense it goes further than merely collecting and disseminating intelligence (Jaworski & Kohli, 1993), but it requires people in the organisation working together to transform intelligence into useful insights about their organisation and its environment (e.g., Zarah & George, 2002). Employees are more likely to perceive this as useful or important when they are involved in these processes of sense-making.

Table 1: Questionnaire items relating to diagnosis

| |
|---|
| We are quick to respond to important changes in our environment. |
| We have a good understanding of our key strengths and weaknesses. |
| Several departments get together regularly to plan responses to changes taking place in our business environment. |
| We are proactive in addressing anticipated changes in our business environment. |

2.2 Guiding policy

In developing the questions to address the issue of guiding policy, Rumelt’s (1997) framework for evaluating strategies was used (in Mintzberg, Ahlstrand & Lampel, 1998). Rumelt argued that in evaluating a strategic alternative, the following tests are important:

- Consistency: no mutually inconsistent goals and strategies are presented.
- Consonance: The strategy is appropriately adapting to events and changes in the external environment.
- Advantage: The strategy must sustain or grow competitive advantage or performance.
- Feasibility: The strategy is executable, in other words the organisation has the necessary resources to do it, and it does not create unsolvable sub-problems.

In addition to these important elements, Hay and Williamson (1997) also argue that a good strategy, from the perspective of employees, provides inspiration in the form of a clear direction and worthwhile goals.

The questions developed for this aspect in the questionnaire are outlined in Table 2.

Table 2: Questionnaire items relating to guiding policy

| QUESTIONNAIRE ITEM | REASON FOR INCLUSION |
|--|--------------------------------------|
| Our organisation has clear long-term (3 years +) objectives. | Clear direction and worthwhile goals |
| Our organisation has a clear vision for the future. | Clear direction and worthwhile goals |
| Our strategic decisions are always in line with our vision for the future. | Consistency |
| We have a clear long-term strategy. | Clear direction and worthwhile goals |
| Our strategies are acceptable to all key internal stakeholders. | Consistency |
| Our strategies are aligned well with our external environment. | Consonance |
| Our strategies make maximum use of what we do well as an organisation. | Advantage |
| We are not afraid of taking appropriate risks to grow our organisation. | Advantage |
| In our organisation, we manage risks well. | Consonance |
| Our strategic decisions ensure our organisation’s sustainability for the future. | Advantage |
| The strategic decisions that we make are realistic and implementable. | Feasibility |

2.3 Coherent action

The final element of Rumelt’s (2011) framework is about strategy implementation, the establishment of a coherent plan of action to ensure that the guiding policy is implemented. In the study, we adopted the perspective that the alignment of strategy and all elements of an organisation (the organisational architecture) is key to the success of strategy implementation. While there are several different perspectives on organisational architecture, Venter (2019) points out that the common elements of organisational architecture can be distilled down to the following elements: Leadership and governance, organisational capabilities, organisational culture, organisational structure, and technology. In strategy implementation, all implementation efforts will ultimately try to ensure that the organisational architecture and the strategy of the organisation are aligned.

Hay and Williamson (1997) also identified certain elements of a good strategy, from the perspective of employees:

- It helps employees to see the link between their jobs and the “big picture” in the organisation;
- Individuals are guided by the strategy in their day-to-day activities and decisions;
- It creates discretion for employees who can manoeuvre by loosening some existing constraints and generating some new options;
- Communication is improved by establishing a common language.

Elbanna, Katheeri, and Colak (2020) further suggest that strategy evaluation and control are also important elements of the strategic management process.

The questions developed for this element are outlined in Table 3.

Table 3: Questionnaire items relating to coherent action

| QUESTIONNAIRE ITEM | REASON FOR INCLUSION |
|--|-------------------------------------|
| Our organisation is focused on a few key performance indicators to track our progress with implementation. | Strategy evaluation and control |
| The leadership of our organisation is visibly committed to successfully implementing our strategy. | Leadership and governance alignment |
| The culture in our organisation strongly supports our strategic direction. | Organisational culture alignment |
| Our internal organisation structure supports our strategic direction. | Organisation structure alignment |
| Our internal operating environment (processes and policies) support strategy implementation. | Organisation structure alignment |
| We have the right technology in place to successfully implement our strategy. | Technology alignment |
| We have the right competencies in place to successfully implement our strategy. | Organisational capabilities |
| Strategy implementation is regarded as a very important function in our organisation. | Employee perspective |
| Our organisation’s strategy is clearly understood by most people in the organisation. | Employee perspective |
| We are constantly measuring our progress with strategy implementation. | Strategy evaluation and control |
| The activities of different divisions in this organisation are well coordinated. | Employee perspective |

2.5 Strategic management performance

Two questions were included to measure to what extent the strategic management process is perceived to be successful. In other words, it is achieving what it sets out to do? The questions measure two dimensions of performance, namely the extent to which strategic decisions it creates value for its owners, and the extent to which the organisation achieves its long-term objectives.

Table 4: Questionnaire items relating to strategic management performance

| |
|--|
| Our strategic decisions create value for the owners/ shareholders of the organisation. |
| We almost always achieve our long-term objectives. |

A 28-item scale using a 5-point Likert scale was developed to measure the various aspects that determine the quality of strategy, as well as its perceived performance. In the following section the research methods are explained.

3. RESEARCH METHODS

The online survey was conducted from 2018 through 2021 as part of a research project involving Masters level students at the Graduate School of Business Leadership at Unisa. Participating students distributed the questionnaire link in their organisations, or organisations they had access to, after obtaining organisational permission and an ethical clearance certificate. The questionnaire link was administered and maintained by the study leader (author). The structure of the study meant that participation was ultimately based on the purposive sampling of participating organisations and participants.

In studies like these, unengaged responses are always a potential problem, and suspected unengaged responses were weeded out by examining the standard deviation of the scale for each case, along with a visual inspection of the data to check for patterned responses. For example, in cases with a standard deviation of zero, answers were typically the same for each item, and such responses were weeded out. Where the standard deviation was very high, it could be due to a pattern response (e.g., 1-5-1-5). Once again, visual examination of the data allowed the researcher to identify and eliminate possible unengaged responses. In addition to unengaged responses, duplicates and untraceable responses were also deleted. After “cleaning” the data, there were 1,927 usable responses, from 38 different organisations, ranging from 16 to 141 responses per organisation.

Data were analysed using descriptive statistics and binomial regression to generate Beta coefficients. Beta coefficients are predictive in that they depict the amount of change in the dependent variable one variable should the independent variable change by one standard deviation.

4. RESULTS AND DISCUSSION

In this section, the findings of the study are reviewed by discussing the profiles of respondents, the findings for the three categories of strategic management (diagnosis, guiding policy, and coherent action), and strategic management performance. In the final section the relationship between these elements and organisational performance are examined.

4.1 Respondent profiles

The 1,927 usable responses were fairly evenly split between male and female respondents, with 54% being male and 46% female. The average age of respondents was about 42 years, with the majority of respondents between the ages of 30 and 55. Further comparative analysis centred on three variables, namely the sector the respondent works in, the position of the respondent in the organisation, and the level of education of the respondents. The findings with regard to these variables are discussed below.

Most of the respondents are employed in the private sector, public sector, and state-owned enterprises, with a fairly similar distribution between these three categories. When it comes to their position in their organisation, 63% of the respondents are in management positions. Quite a high percentage of respondents have post-school or postgraduate qualifications (almost 90%; which fits with the relatively high organisational positions of the respondents).

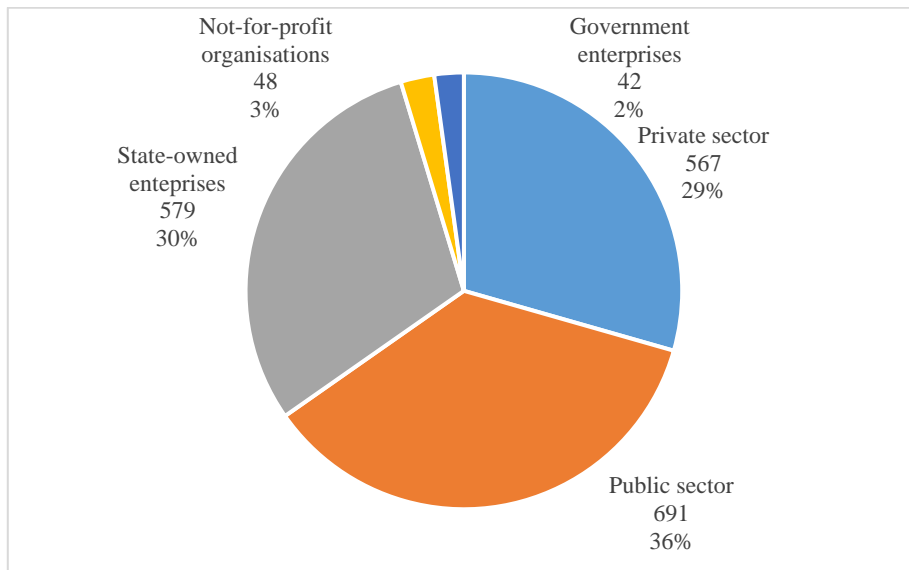


Figure 1: Respondents per sector

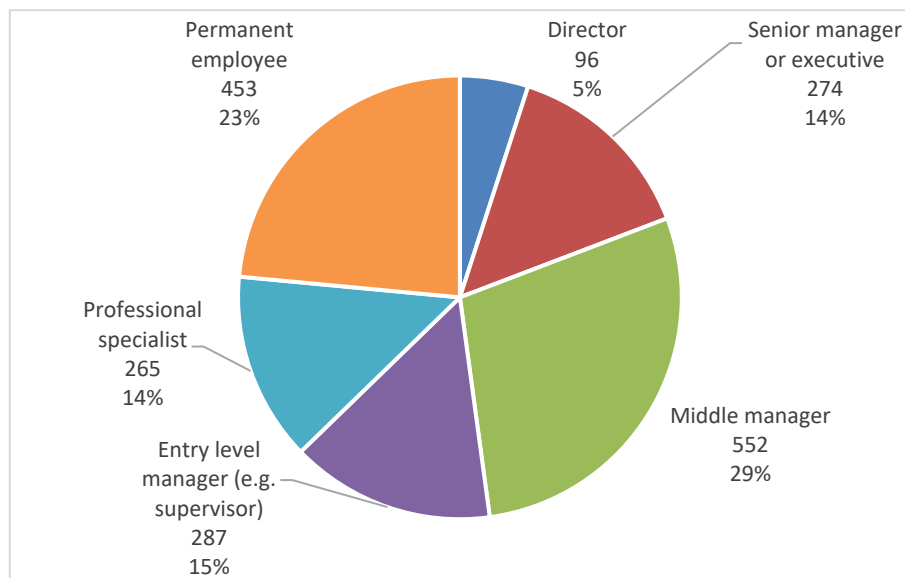


Figure 2: Position of respondents

The next section addresses the findings with regard to the diagnosis element of the study.

4.1 Diagnosis

The Cronbach’s alpha coefficient for this sub-scale was 0,839, well over the minimum acceptable level of 0,7 suggested by literature (Field, 2000). In Figure 3, the means for each of the four items in this component are depicted.

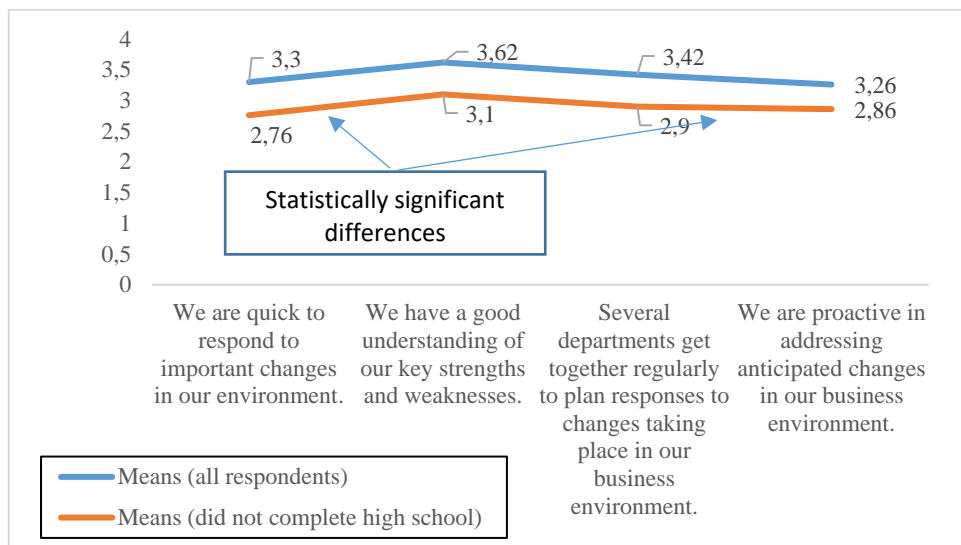


Figure 3: Scores for the diagnosis component

When comparing the means for the four items, no significant statistical differences were indicated. The frequencies were compared for each of the demographic variables, and two significant differences in perceptions were encountered only with regard to levels of education. In this regard it was interesting to see that those respondents that did not complete high school were generally much more negative than respondents with higher education levels. One possible explanation for this is that those respondents are more likely to be part of the unionised labour force, and generally more pessimistic about management actions in general.

4.2 Guiding policy

The Cronbach’s alpha coefficient for this sub-scale was 0,928. In Figure 4, the means for each of the items in this component are depicted.

With regard to these items, respondents were most positive about the organisation’s vision and long-term plans, but less positive about the ability to the organisation to manage risks, and to develop strategies that are acceptable to all stakeholders. Once again, the comparative analysis suggested that respondents with lower levels of education were significantly more negative about the items in this sub-scale.

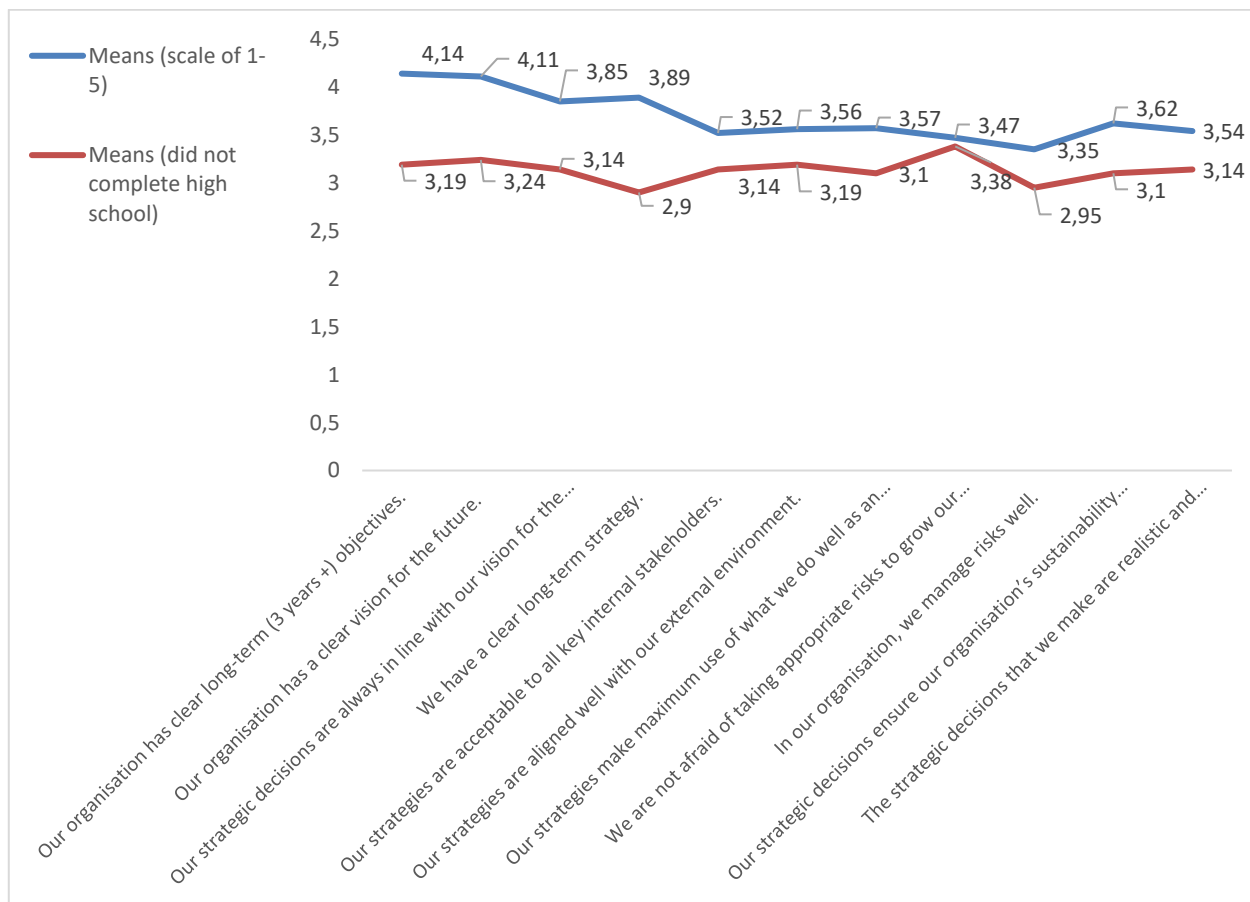


Figure 4: Scores for the guiding policy component

4.3 Coherent action

The Cronbach's alpha coefficient for this sub-scale was 0,919. Figure 5, the means for each of the items in this component are depicted.

In line with its reputation as the most problematic area of strategic management, this sub-scale turned out to deliver the most contested results. Similar to the previous components, level of education once again played a role, with respondents that did not complete high school the most critical of their organisation's performance in this area. In general, respondents were most pessimistic about the level of understanding of the strategy in the organisation, and the inter-departmental coordination, while the commitment of the organisation to strategy implementation was rated highly. In addition to the differences depicted in Figure 5, there were also certain interesting differences observed based on position in the organisation (see Figure 6). From this analysis, it is interesting to see that middle managers are generally more pessimistic than other levels about the extent to which the strategy is understood in the organisation, and the extent to which the structure supports the strategy. One possible reason for this is that middle managers are links between lower and higher levels and tend to have a better view of what is going on throughout the organisation.

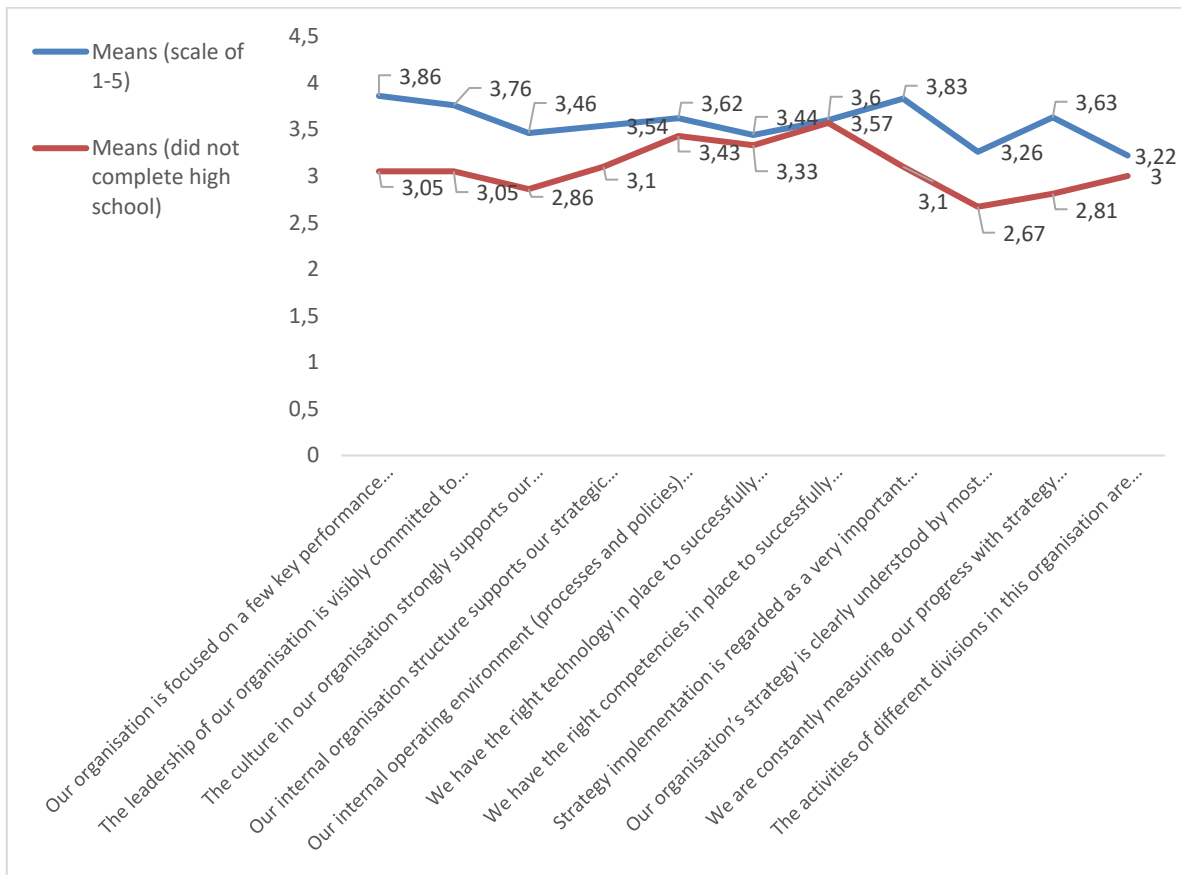


Figure 5: Scores for the coherent action component

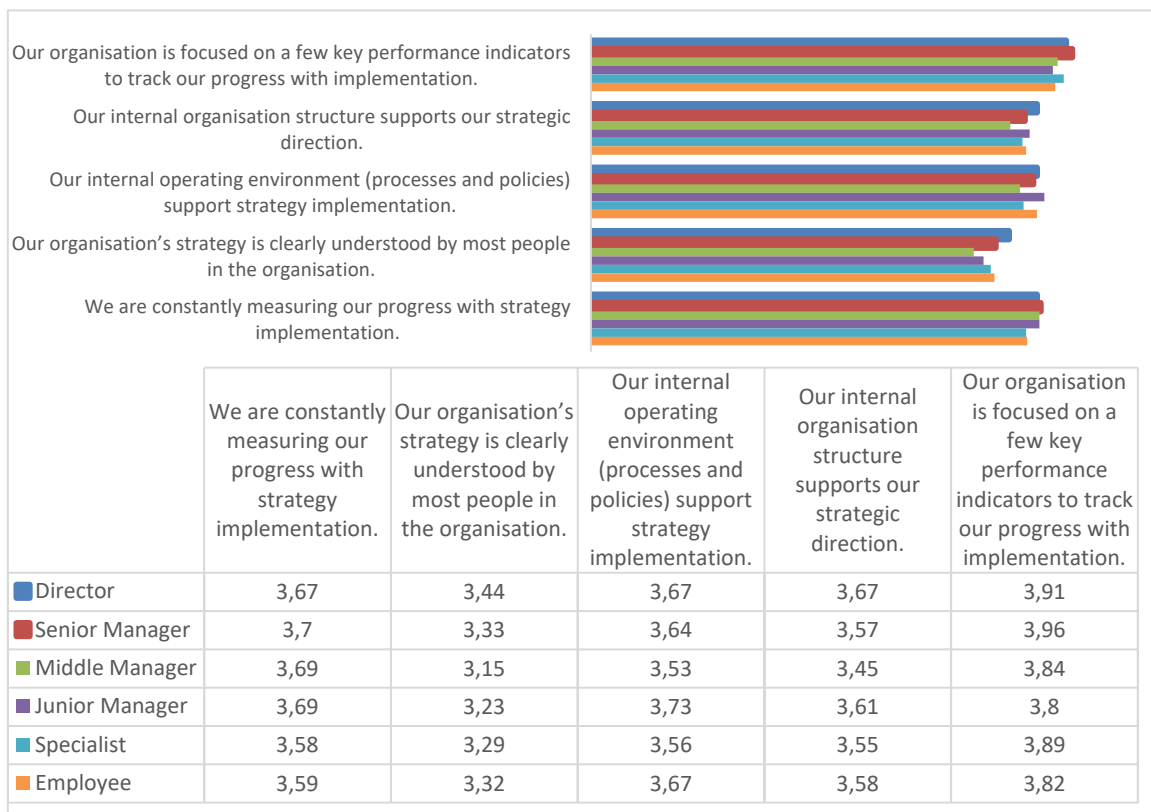


Figure 6: Perceptions of coherent action based on position

4.4 Strategic management performance

The performance of strategic management was measured by two items. In the first instance, respondents appeared to be more convinced that the organisation creates value for its owners (mean of 3,86), while they were less convinced that the organisation always achieves its long-term objectives (mean of 3,47). There were no statistically significant differences that emerged from the comparative analysis.

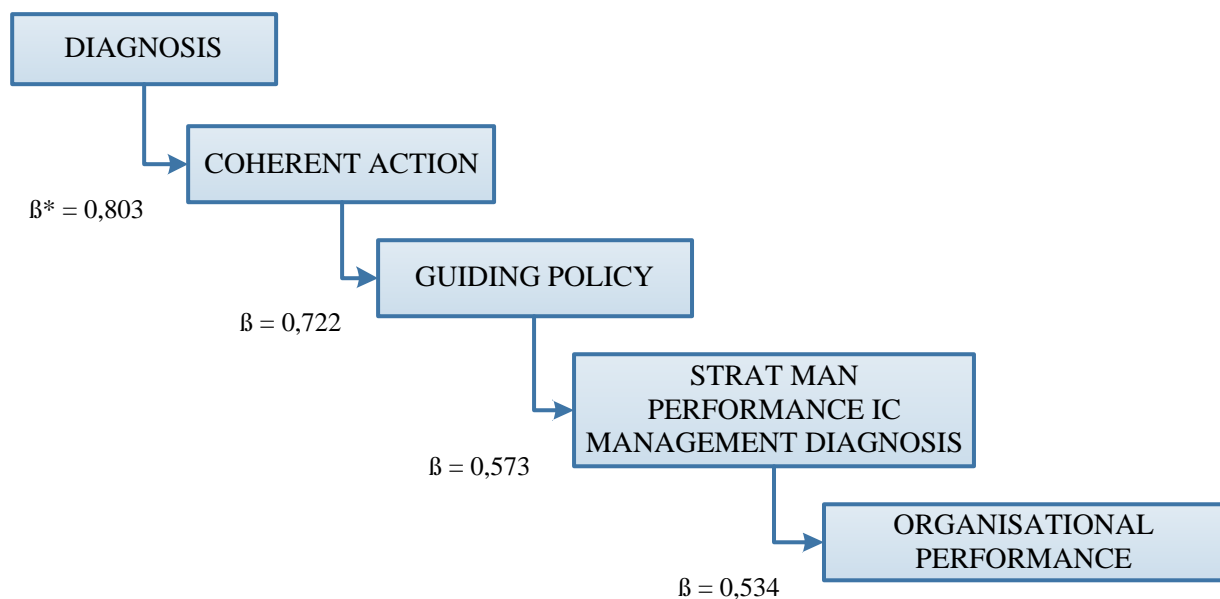
4.5 Relationships between constructs

In the final part of the analysis, the relationships between the constructs were examined using binomial regression. The items for each of the sub-scales were combined and an average was calculated. The same was done with the measures of organisational performance, so that there were five measures on a continuous scale of 1 to 5.

Table 5: Measures of organisational performance

| |
|-----------------------------------|
| Overall financial performance |
| Growth in revenue |
| Customer perceptions of our brand |

Binomial regression was used iteratively to determine the best model fit and to determine the relationships between the variables, resulting in a surprisingly linear model, albeit with high levels of explanatory power.



* Standardised Beta coefficient (significant at < 0,001)

Figure 7: A regression model for the quality of strategic management

Bearing in mind that the study measured perceptions, what the findings suggest is that the perceptions of respondents about diagnosis, is a strong predictor of their perceptions about coherent action. Their perception about coherent action is in turn a strong predictor of their perceptions about guiding policy, which is a strong predictor of the perceptions about strategic management performance. Finally, perceptions of strategic management performance and outcomes is a strong predictor of the perceptions of organisational performance.

5. CONCLUSION

This paper has focused on the aspects relating to the perceived quality of strategic management measured by 26 items and three constructs in a quantitative study conducted over the past four years. In addition to the three constructs outlined above, the study also measured the perceived success of strategic management. On the positive side, respondents perceived organisations to be relatively good at formulating strategies, especially when it comes to setting long-term goals, having a clear vision, and setting clear long-term strategies. However, on the negative side, organisations are not seen to be very quick or proactive to respond to challenges in their environment, strategies are not always well understood by all employees, and activities are not well-coordinated across departments. True to its reputation, strategy implementation (coherent action in the study) was the most contentious issue among respondents. It was also surprising that the greatest differences in opinions were due to educational levels, with respondents that did not complete high school being the most critical of strategic management in their organisations.

The study is limited by the fact that it relies on a purposive sample, rather than a random sampling method. However, the approach allowed the collection of data on a large scale, especially at the organisational level. This paper, accordingly, addresses just one aspect of the study, and the further analysis of the data (for example, at the organisational level) could reveal additional insights. All quantitative studies are reductionist in their nature, and this study also highlighted how valuable qualitative studies will be to develop a deeper understanding of how strategic management is actually done in organisations.

For strategic leaders the message seems to be that much more could be done to ensure that all employees are on the same page with regard to strategy, and to understand their role in it. In addition, more could be done to improve the responsiveness of the organisation to its environment, and to ensure that the activities of all departments are coordinated.

While strategic management is important to organisations, little is known about how it is done in organisations, how it is perceived by employees, and how it contributes to the success of organisations, especially in the South African context. This study attempted to contribute to a better understanding in this regard.

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SUPPORT STRUCTURES FOR INNOVATION AND ACADEMIC ENTREPRENEURSHIP IN SELECTED NIGERIAN UNIVERSITIES

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ABSTRACT

Knowledge institutions, particularly universities have become critical components of socio-economic transformation, national competitiveness and instruments for attaining sustainable development goals. They provide knowledge support, enhance human capital and improve industry renewals by introducing new technological products resulting from research and development (R&D) endeavours. There is overwhelming evidence today that legitimizes universities' efforts towards becoming entrepreneurial, particularly the need to compete for limited research funds, collaborate with industry, improve performance and boost international rankings among others. In Nigeria, it has been observed that high entrepreneurial orientation and motivation exist among the academics but there is little or no technology transfer and commercialisation activities going on. Therefore, it becomes imperative to examine the support structures for innovation and technology transfer/commercialisation in the system with a view to providing appropriate interventions. This study evaluates the support structures for innovation and academic entrepreneurship in thirteen selected universities across South-West Nigeria. Primary data were collected from two hundred and twenty-nine (229) faculty members in science, engineering and technology fields. In addition, some of the key government policies and programmes advanced to motivate technology transfer and commercialisation in the universities were analysed. The results show that the national science, technology and innovation policy clearly articulated sufficient support incentives and enablers to promote innovation and academic entrepreneurship in the research system. Also, robust funding mechanisms for research, research facilities and infrastructures have been set up. However, the weak ability to develop fundable research proposals among faculty limited their access. Although some of the technology transfer and commercialisation structures/enablers (including technology transfer offices, entrepreneurship development centres, centres of excellence, innovation hubs and intellectual property policy) exist in these universities, most faculty are not aware of their presence. Entrepreneurship training supports are provided to the faculty which most of them found very useful. The study concludes that university administrators need to intensify efforts to create awareness of innovation and its support structures among academics to improve patronage. Academics should be adequately trained on how to develop fundable proposals and access research and innovation grants. Also, incentivizing technology transfer and commercialisation in the university could further unleash innovation potential among the faculty.

Keywords: Innovation, technology transfer, entrepreneurship, incentives, innovation, Nigeria

INTRODUCTION

Knowledge institutions, particularly universities have become critical components of socio-economic transformation, national competitiveness and instruments for attaining sustainable development goals. They provide knowledge support, enhance human capital and improve industry renewals by introducing new technological products resulting from research and development (R&D) endeavours. There is overwhelming evidence today that legitimize universities' efforts toward becoming entrepreneurial, particularly the need to compete for limited funding, collaborate with industry, improve performance and boost international rankings among others (OECD, 2012; Adelowo and Surujlal, 2020; 2021). Across Africa, international development institution such as United Nations Economic Commission for Africa (UNECA) in collaboration with Universities on the continent is making frantic efforts toward advancing entrepreneurship among academics in higher education institutions (UNECA, 2021). Apart from training and promotion of entrepreneurship education among students in the universities, the entire ecosystem is now being motivated to serve as an incubator where research outputs are commercialised and faculty act as innovators or academic entrepreneurs (UNECA, 2021). One of the UNECA's interventions on the continent is the assessment study conducted on the level of preparedness of universities to transition from teaching and research to becoming entrepreneurial ones, using the OECD framework (OECD, 2012; UNECA, 2021). The first pilot phase of the project was conducted in Ethiopia, Ghana, Algeria, Senegal and South Africa to aptly identify the depth of preparedness of universities in Africa to become entrepreneurial in seven key areas including leadership and governance; organisational capacity; funding; people and incentives; entrepreneurial teaching and learning; preparing and supporting entrepreneurs; knowledge exchange and collaboration; and Internationalisation of institutions (Clark 1998; OECD, 2012; UNECA, 2021). In addition to these key defining areas of entrepreneurial universities, measuring the impacts is also important. The metrics for impacts have to be carefully crafted to showcase champion institutions while also motivating the starters. While unflinching effort and emphasis are paid to the leadership and governance structure of universities for their transformation, the leadership appointment process tends to impair their autonomy and subsequently the entrepreneurship process. In addition, public investment in research and organisation capacity and incentive systems are instrumental to a university's entrepreneurial transformation (Adelowo and Surujlal, 2020; 2021 Adelowo, 2021). As the government provides funding for research, capacity and facilities, deliberate effort is also required to create innovation or entrepreneurship infrastructure that could facilitate knowledge transfer and commercialisation. For instance, in Nigeria, it has been observed that high entrepreneurial orientation and motivation exist among the academics to engage in commercialisation or knowledge transfer but there is little result to show (NOTAP, 2019; Adelowo et al., 2022). After decades of operating technology transfer offices in knowledge institutions across the country, the latest evaluation report revealed inherent weaknesses in the operation of these offices including weak capacity, poor funding and lack of staff training (NOTAP, 2019). Although the National Development Plan of the Federal Government emphasised the creation of entrepreneurial talents, culture and environment as important solutions to ever-increasing unemployment rates ravaging the economy (MNPB, 2021; Ahmed, 2021), knowledge institutions have been identified to play critical roles in the process. For these institutions to play the roles more effectively, all stakeholders (academics and non-academics, policymakers, private sectors, NGOs and development partners) have to devise

mechanisms to facilitate the development of entrepreneurial mindset and infrastructure and spark their innovation potential. Previous studies by Adelowo (2018) and Adelowo et al. (2019) have detailed the level of academic readiness to bolster entrepreneurship in Nigerian universities however the extent of available support structure has not been deeply assessed. In addition, diverse entrepreneurship initiatives have been rejigged across universities however, the adequacy of their core provisions for stimulating innovation and knowledge transfer is yet unclear. Therefore, this article examines existing and recent structures/initiatives to support innovation and academic entrepreneurship across selected universities in the country, highlighting key implications for policy and practice. Specific data collected from faculty members across thirteen universities in South-west Nigeria were analysed to show the extent and degree of faculty's awareness of government initiative to support academic entrepreneurship in the country. The entrepreneurial capabilities among the faculty members were assessed together with the extent of perceived usefulness of entrepreneurship trainings undertaken. The rest of the sections in this article present a literature review, methodology, results and discussion and conclusion and policy implications.

2. LITERATURE REVIEW

2.1 Higher Education Institution, Economic and Sustainable Development

The higher education sector has a wide-ranging proven influence on the economy. Its influence on business provides commercial value to innovation, while academic instruction and skills training help individuals and organizations to have the tools to succeed in a knowledge-driven economy. Historically, higher education institutions have played key nation-building and continue to underpin a wide range of national institutions through the participation of academic staff in numerous public bodies. They have become more deeply and intentionally engaged in expanding assortment of economic development activities. These activities include technology commercialisation, corporate research, consultancy, supporting innovation and entrepreneurship, among others (Uyarra, 2010). In addition, higher education institutions contribute to the cultural development of the places in which they are located, they act as intermediaries in the regional economy by providing, for example, commentary and analysis for the media. As such, they make an indirect contribution to the social and cultural base of effective democratic governance, and ultimately economic success through the activities of autonomous academics. Mačerinskienė and Vaikšnoraitė (2006) identified three ways through which higher educational institutions influence economic well-being and development. Firstly, the direct expenditures by the institutions, their employees, and their students impact the local economy. This spending multiplies through the local economy until the monies are used to purchase goods and services from outside the local area. Secondly, higher education provides financial and non-financial benefits to the individual who pursues an advanced education and to society in general. Lastly, institutions of higher education are increasingly focused on knowledge creation. Thus, universities are sources of key research and development innovations that simultaneously can be beneficial to society and conducive to economic growth.

2.2 Research outputs and commercialisation: Academic entrepreneurship Perspectives

The term academic entrepreneurship has mostly been used to differentiate academics who have engaged in the creation of start-up companies from those who have not. It has to do with the direct

involvement of academic scientists in the development and commercialisation of the research outputs. Pilegaard et al. (2010) defined academic entrepreneurship as the involvement of academic scientists and organizations in commercially relevant activities in different forms, including industry-university collaborations, university-based venture funds, university-based incubator firms, start-ups by academics, and double appointments of faculty members in firms and academic departments. Mohar et al (2010) posited that the basis for academic entrepreneurship is organizational creation, renewal or innovation, which can occur either within or outside the university by means of research commercialization. Meyers and Pruthi (2011) described academic entrepreneurship as a variety of ways in which academics go beyond the production of potentially useful knowledge. They carry out a wide range of activities to facilitate the commercialization of that knowledge or become participants in designing new marketable products and assume a leadership role in ensuring the successful commercialization of these products. Wood (2011) noted that academic entrepreneurship is not a distinct event, it is a technical term that refers to the various activities that universities and industries carry out to commercialize the outputs of their research and to generate income for the university. Cantaragiu (2012) recognized academic entrepreneurship as the practice performed with the intention to transfer knowledge between the university and the external environment in order to produce economic and social value both for external actors and for members of the academia, in which at least a member of academia maintains a primary role. De Silva (2015) also refers to academic entrepreneurship as multiple activities which include entrepreneurial activity related to education, entrepreneurial activity related to scientific research, and entrepreneurial activity related to the establishment of commercial enterprises. Furthermore, Sysoeva (2015) defined academic entrepreneurship as a means of knowledge commercialization, expressed in the transformation of knowledge into new products, and technologies, and ultimately, in the contribution to the economic growth of a country and innovation.

Several indicators have been identified in the academic literature to analyse and measure academic entrepreneurship. Almeida (2021) conducted a systematic review on academic entrepreneurship indicators and identified a set of 29 indicators spread over 8 dimensions which include patents, infrastructures, university spinoffs, industry engagement, process creativity, process outcomes, process efficiency, and training. Secundo and Elia (2014) identified indicators related to creativity that is seen as an indispensable element of entrepreneurship. This creativity is driven by entrepreneurship to provide the creation of a product or service to solve some problem or facilitate the lives of its consumers. These indicators are fundamental to understanding how academic entrepreneurship has produced results within the universities and their environment (Almeida et al., 2019).

A rising number of studies continue to highlight the benefit of entrepreneurship as it has been noted to be the engine of most economies. Academic entrepreneurship particularly has been praised for its positive contribution to growth and employment creation. In line with the foregoing, public research organizations and particularly universities are becoming progressively entrepreneurial, aiming to realize the commercial value of their research (Rothaermel, Agung & Jian, 2007). It is believed that the engagement of Higher Education Institutions in entrepreneurial activities in recent years can be partly attributed to the implicit need for economic development and increased attention to social responsibility (Alessandrini, Klose & Pepper, 2013). In fact, there is a large body of empirical research showing that researchers who are very active in

commercialization, tend to be particularly prominent in their respective fields. For instance, Meyer (2006) shows that academic researchers who engage frequently in patenting activity are also more productive in terms of publishing. Moreover, Berggren (2021) recently highlighted major three key benefits of academic entrepreneurship to the university environment. Firstly, he recognized academic entrepreneurship as a facilitator of start-ups that enables knowledge spillover from research to students willing to take on the entrepreneurial role, the so-called missing link in academic entrepreneurship. Secondly, it also demonstrates that entrepreneurship education contributes to the development of long-term entrepreneurial capital, which facilitates future start-ups. Lastly, academic entrepreneurship facilitates start-ups by connecting key actors with different roles; students were found to be present, prepared and persistent entrepreneurs, alumni to be resource providers and role models, while researchers became enablers with a need for utilization of their research.

Farrell et al. (2022) described strong political and macroeconomic stability and encouragement of locally owned knowledge as part of the major enabler of academic entrepreneurship. It was further noted that entrepreneurial orientation, personal and general incentives, organization policies and strategies, and access to funding among others are key enablers of academic entrepreneurship. Academic entrepreneurship thrives in environments where state support and policies are guiding their activities. In another study conducted in Mexico, Cantu-Ortiz et al. (2017) established that the crucial enablers for academic entrepreneurship activities include a well-functional basic research platform, formation of specialized entrepreneurial teams, the establishment of generous and flexible intellectual property policies, oiling of entrepreneurship ecosystem with infrastructural resources, and aligning technology together with business incubation. The study of Guo et al. (2019) also revealed that China, being the world's largest emerging economy, has enjoyed an increase in institutional and organizational support for academic entrepreneurship. The survey of 200 Chinese universities and research institutions found that successful entrepreneurial academics had distinct professional, scholarly, and entrepreneurial traits.

2.3 Study Context

This section presents a succinct context for the study and particularly the roles of knowledge institutions in Nigeria's national innovation system. The Nigerian innovation system has been widely studied by innovation scholars from diverse perspectives. Oyelaran-Oyeyinka (1994) assessed ICT and shoe clusters in Lagos and Aba at different times and the results pointed to a weak interaction between the firms and universities or research institutes in the sector. Similar findings were observed in Nigeria's agricultural sector (Oyewale, 2005; Adebowale, 2009; Adeoti, 2010; Dada, 2015). The innovation systems in this context depict the depth of linkages, interaction and collaboration among actors, including institutions such as public and private, research and non-research, NGOs, and policymakers working cohesively towards improving the outputs from the ecosystems. Although the innovation system proponents placed a high premium on firms as innovators, other actors are perceived to play supportive roles including the creation of enabling environment, promoting, and advocating policy incentives to speed up the technological progress of nations. Knowledge institutions in the innovation systems are champions of new knowledge generation and the building of a critical mass of required human capital to sustain and improve innovations. Also, this is strongly connected to the triple (quadruple) helix model where the roles of universities are clearly highlighted beyond teaching and research (Etzkowitz, 1998; 2001; 2003;

2011) to include knowledge transfer and commercialisation. In fact, the knowledge spillover theory of entrepreneurship has further reinforced the existing argument that universities in this dispensation have to be properly equipped to foster industry linkage, technology transfer and commercialisation (Audretsch, 2012; 2014). For Nigerian universities to adjust to this new reality, several reforms have been implemented. For instance, to improve funding allocations to universities, a separate funding agency under the ministry of education had been set up to administer research and education funds. This is in line with the development agenda of the government to build a virile system for innovation and entrepreneurship and to improve the national revenue base through the development of technology-based enterprises (MNPB, 2021; Adelowo, 2022). Furthermore, the TETFUND administrators are currently working on the establishment of a Research and Innovation foundation to provide the necessary boost for research commercialisation in the university system (TETFUND-NRDF, 2021; Adelowo et al., 2022). As part of the efforts geared toward fasttracking technology commercialisation and transfer to the industry, the Innovation Foundation team has visited about 227 institutions including universities, research institutes and corporate organisations to create awareness, sensitise and charge them on the paradigm shift and the need to embrace innovations. In addition, the national science, technology and innovation policy clearly articulated important roles for universities as the engine of new knowledge and economic renewal (FMSTI, 2021). As the country aspires to become one of the global leaders in innovation and competitiveness, promoting academic entrepreneurship in the universities and research centres has been on the front burner since 2012. There are fundamentally three key provisions in the policy that clearly emphasised the promotion of technology transfer and efficient intellectual property management systems. These two provisions rely on devising appropriate incentive schemes and innovation infrastructure to support engagement in technology transfer and commercialisation. The third policy initiative is a clear articulation of the need for a national research and innovation council and fund (NRIC and NRIF) to bridge the ‘valley of death’ in the commercialisation process. The valley of death is coined to depict the barrier between proof of concepts and full-scale commercialisation which usually requires huge investments in terms of proof of concepts, prototyping and full-scale commercialisation. In addition, investment in entrepreneurship and innovation infrastructures such as science parks, incubators, accelerators, innovation hubs and technology transfer and intellectual property management offices are central to commercialisation success.

The need for innovation funding, infrastructure and investment become more pressing during the Covid-19 pandemic management in the country. For instance, the closure of international airspace due to the lockdown limited the inflow of essential and non-essential drugs and other basic necessities, forcing the country to look inward for solutions. Parts of the survival strategy of the government, going forward, was the introduction of special Covid-19 grants by the federal government to support research efforts in drug development and its commercialisation. Although the outcomes of the studies from the grantees may be too early for an assessment now, the process is an indication that government now recognise the roles of research and innovation in solving societal problems. More recently and based on the national development plan, the strategy to accelerate growth, deepen initiatives for diversified growth and foster sustainable development across all sectors made the Federal Government prioritise the establishment of a strong foundation and robust policy for small business growth; investment in critical physical, financial, digital and innovation infrastructure, enhanced capacities and enables vibrant educated and healthy populace.

One critical infrastructure that has eluded the country for many years is the science parks, where firms and knowledge institutions can co-exist, co-create, collaborate and co-commercialise inventions in order to boost national competitiveness. The government is now paying attention to science park establishment in the country (FMSTI, 2021).

The universities in Nigeria are coordinated by a national body known as National Universities Commission (NUC), which is responsible for course accreditation, monitoring, evaluation and quality assurance. The NUC is under the supervision of the Federal Ministry of Education. In total, Nigeria is home to over two hundred universities, dominated by private and religious-based ones (NUC, 2022). There are more universities in the southern part of the country than in the other geopolitical zones. Also, most universities in the region are better ranked compared to other geopolitical zones. Universities came under the spotlight of innovation when it becomes imperative for them to justify government investments and the need for them to make significant contributions to socio-economic development. To achieve this goal, the universities have to perform well in both traditional and ‘third-mission’ objectives such as knowledge generation, transfer and commercialisation (OECD, 2019; Adelowo et al., 2022). For the faculty members to buy into the transformation of universities, there is the need to identify and provide the necessary support structure required. This article, therefore, provides the baseline information on the perception of faculty members on the existing innovation infrastructure in selected Nigerian universities. Although earlier studies have clearly highlighted the roles of Technology Transfer Offices in Nigerian universities (Adelowo and Surujlal, 2021; Adelowo et al., 2022), however, the level of awareness and perception of the faculty members about these offices and other innovation infrastructures in the universities are underexplored. Hence, this article clearly provides a descriptive analysis of the support structure for innovation and academic entrepreneurship in Nigerian universities. The next section provides information on the methods of data collection and analysis.

3. METHODOLOGY

This section discusses the research approach adopted in this study. It details the study areas, sample selection techniques, questionnaire design and validation process, variables, and measurement. The details of government programmes and initiatives that have bearing on innovation and knowledge transfer among the elements of the innovation system were also highlighted.

3.1 Study Design

A study of this nature requires data from an individual faculty member and university-level, particularly the existence and perception of faculty members on the relevance and operability of existing innovation infrastructures in the universities. The innovation infrastructure here includes facilities, equipment, programme, policies and incentives that is/are capable of engendering entrepreneurship, technology transfer and commercialisation. Specific innovation infrastructure captured in this study includes the technology transfer offices, technology business incubators, science parks, innovation labs/hubs, centres of excellence, business resource centre and centre for entrepreneurship studies. The soft components of innovation infrastructures include policy incentives, entrepreneurship training opportunities for the faculty members, innovation funding in diverse forms and other forms of non-pecuniary incentives such as institutional recognition and award. From the policy perspective, OECD (2019) has identified a variety of financial, regulatory

and soft instruments for boosting knowledge transfer between knowledge institutions and industry. The regulatory instruments include intellectual property regimes, researchers' regulation on spin-off activities, and research staff mobility. The financial instruments include research and innovation grants, tax incentives with a focus on collaboration, and financial support to recruit talented doctoral and postdoctoral students (OECD, 2019). The soft instruments are awareness creation, networking events and guidelines to address ethical concerns. Other emerging policy mix for knowledge transfer include knowledge co-creation hub based on joint efforts between the university and industry, and societies, the creation of buffer organisations such as incubators, science parks, and R&D centres; and key digital platform that is capable of bringing knowledge supply and demand actors together. In some of the universities that participated in the survey, there are those with IP policy but the extent of awareness of such policy among the faculty members is important to encourage technology transfer and commercialisation. D'Este and Perkmann (2010) have observed that one of the critical channels to encourage technology transfer between academia and industry is joint research with industry, although it may end up in joint academic publications. However, where the relationships tend to involve far closer collaboration between academic researchers and industry partners, patenting and spin-off company formation are motivated exclusively by commercialisation (D'Este and Perkmann, 2011). To further stimulate academic entrepreneurship in the universities, Link and Siegel (2007), Adelowo et al. (2015) and Adelowo and Surujlal (2020) have advanced the establishment and strengthening of existing incubation programmes, science parks and provision of competitive grants within the Nigerian research system.

For the purpose of this study, thirteen universities (including public and private) were selected to participate in the study, with specific emphasis on faculty members from science, technology and engineering faculties. These faculties were selected based on assumption that the majority of the academic staff conduct R&D that has the potential to generate inventions, leading to intellectual property for commercialisation. Information and data needed to achieve the research objectives are not available in the national database, this necessitates the use of a cross-sectional survey among the selected participants. In total, three hundred and fifty copies of a well-structured and validated questionnaire were administered to academic staff of the selected departments who were on ground at the time of the survey (Adelowo and Surujlal, 2021; Adelowo and Henrico; 2022). After several reminders and visits to the ever-busy survey participants, two hundred and twenty-nine copies were retrieved, representing 65.4% response rate. The ethical issues relating to the survey were sufficiently addressed, as the purpose of the study was explained to the faculty members, and they gave informed consent to complete the survey instrument. They were assured of anonymity and that the data would be reported in aggregate.

3.2 Variables and Measurement

The principal variables of interest in this article are the support structure for innovation and academic entrepreneurship in the universities. Some of these support structures, as earlier highlighted, include but not limited to TTOs, incubators, science parks, and centres of excellence, incentive schemes, technology transfer policy, recognition and award among others. These facilities and incentives are seen as pivotal to influencing their involvement in academic entrepreneurship activities in the universities. To capture the variables, a list of these entrepreneurship facilities was made and faculty members were asked to tick those ones that they

know exist in their university. This question helps to identify two important things, the first is the level of awareness of these facilities and whether they understand what they are meant for. The questionnaire items also contained a list of government initiatives to support academic entrepreneurship in the research system. The faculty members were asked to rate their level of awareness of these initiatives on a five-point Likert scale of '1' to '5' depicting 'very low' to 'very high' respectively. Building faculty's entrepreneurial capacity through training and exposure is germane to the development of their entrepreneurial inclination and competencies. The kind of entrepreneurial training attended and the relevance of such training to their entrepreneurial capacity were measured on a Likert scale of '4' very useful to '0' not applicable. Understanding what university rewards most are also indicative of whether the emphasis is placed on entrepreneurial activities or not. In this case, faculty members were asked to rate their output activities based on how the university rewards them on a Likert scale of 'very high' 4 to 'not at all' 0. The data were analysed using descriptive statistics. To support the primary data collected, some policy documents and programmes initiatives to support academic entrepreneurship in Nigeria were reviewed and extensively discussed more succinctly to improve the understanding of the phenomenon in Nigeria.

4. RESULTS AND DISCUSSION

This section presents the results of the primary data collected through a survey conducted among the faculty members in the thirteen selected universities; in addition to the narrative analysis of policy documents, programmes and initiatives of the government to support academic entrepreneurship in Nigeria. Details of the demographic analysis of the faculty members and their fields of research have been extensively discussed in earlier articles (Adelowo, 2018; Adelowo and Surujlal, 2020; 2021; Adelowo and Henrico, 2022). Here, we present the level of knowledge of the existing support structure for innovation and academic entrepreneurship in the universities and whether the faculty members are aware of some government programmes and initiatives to promote innovation and entrepreneurship in the knowledge institutions. Thereafter, we gauge the faculty's perception of activities mostly rewarded by the university to understand whether the emphasis is placed on innovation and academic entrepreneurship. Urban and Gamata (2020) have highlighted some key institutional support for academic entrepreneurship and innovation in South Africa including management support, rewards and time allocation to entrepreneurial activities. The results of their study showed that the reward system provided a significant and high influence on academic entrepreneurship compared to other factors considered. The incentive systems, therefore, determine to a great extent how and where faculty members will concentrate their efforts for maximum benefits. For instance, in a university where innovation and entrepreneurship are rewarded or recognised, faculty members could be more confident to seek industry collaboration for technology transfer and commercialisation than otherwise. So, the university-wide incentive scheme matters when innovation and entrepreneurship are to be promoted and encouraged among the faculty members. Literature has also established that academics who work in universities where there are rewards for entrepreneurial endeavours tend to possess and exhibit a higher level of commercialisation behaviour (Chantson and Urban, 2018). The entire results of this study are discussed hereunder.

4.1 Knowledge of Faculty Members on Existing Innovation and Academic Entrepreneurship Support Structure in the University

Awareness and understanding of existing support structures for entrepreneurship and innovation in the universities have a way of stimulating interest and desire to be involved. Assessing the knowledge of faculty members about the existing innovation structure in the universities, Figure 1 shows that most of them (55.5%) are aware of the centre for entrepreneurship and development centres in their respective universities. The centre was established as a mandatory requirement for all universities in the country in 2006 with the aim of stimulating entrepreneurship culture among students and faculty (Adelowo et al, 2021; Olofinyehun, Egbetokun and Adelowo, 2022). Although the percentage of faculty who understand the centre as supporting innovation in the universities is high, however, there is a need to improve the understanding of many more academics, particularly those in science, engineering and technology fields. Moreso, the compulsory entrepreneurship education programme has been on in higher education institutions across the country for close to two decades. Few faculty members identify centres of excellence (30.8%), Business Resource Centre (29.7%), patent offices (25.8%) and innovation centres (21%) as important structures to foster innovation and academic entrepreneurship in the universities. As expected, fewer faculty members have knowledge of technology incubators (20.7%) and science parks (20.1%) as existing mechanisms for promoting innovation and entrepreneurship in the university. Although, there are diverse centres of excellence across Nigerian universities, for instance, Obafemi Awolowo University is home to a Centre of excellence in software engineering while Redeemer university has a centre of excellence in Genomics. These centres are known for churning out innovative research outputs with potential for commercialisation (products and providing cutting-edge services). As for the patent office, most universities in the country now have intellectual property and technology transfer offices to serve as collation hubs for innovations within the universities and to also support industry collaboration for research uptakes. A recent assessment of these offices showed that for more than a decade since their establishment, the last five years have been the most productive in terms of activities undertaken and some inventions recorded (Adelowo et al., 2022). A limited number of the sampled universities have facilities close to incubators or accelerators or hubs for promoting entrepreneurship among students, however the percentage of faculty members with requisite knowledge of their existence are few.

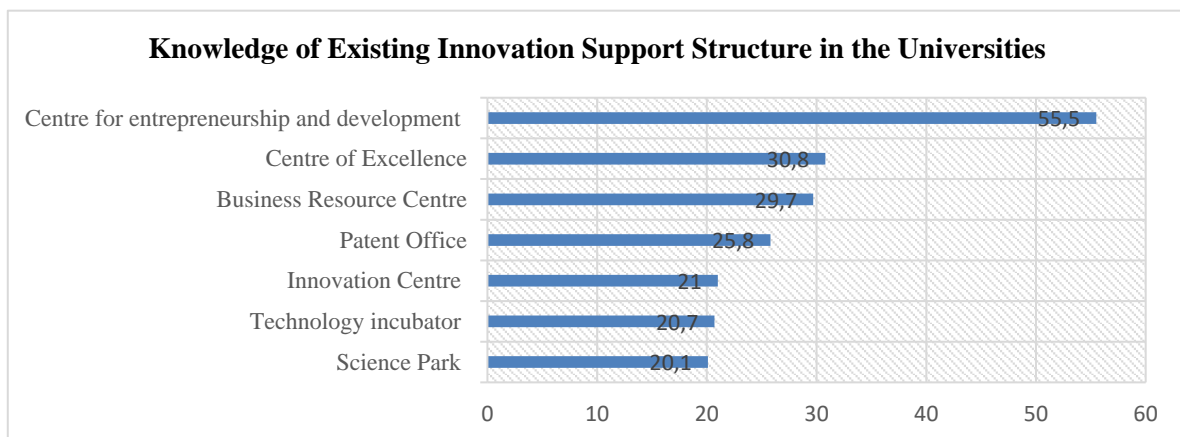


Figure 1: Percentage Response of Faculty members on their knowledge of existing support structure for innovation and academic entrepreneurship in the universities.

4.2 Faculty Members’ Awareness and Knowledge of Government Initiatives to Support Academic Entrepreneurship

On the awareness of government initiatives to support innovation and academic entrepreneurship in the universities, Figure 2 shows that most of the faculty members (50.5%) are actually aware of them. Although those aware are more, the rate of those who are not aware of these initiatives is considered to be relatively high as well. The awareness of these initiatives becomes relevant in the context of our discourse because faculty members can only consider taking advantage of what they know is in existence. Moreso, on the level of awareness of each of the support structures, Figure 3 shows that there is a high (57.2%) level of awareness of technology transfer offices among the faculty members. As noted earlier, the technology transfer office is one of the initiatives of the government to promote technology commercialisation in universities and research institutes. The initiative was championed by the Federal Ministry of Science, Technology and Innovation through one of its cardinal Agencies-National Office for Technology Acquisition and Promotion. There are about fifty-five technology incubation centres across Nigeria as of 2021 but only a few of them are established near or within universities and research institutions. Odei and Stejskal (2018) and Odei and Novak (2022) affirmed that the proximity of spin-off facilities, particularly incubators, to the universities and academics is a strong lever for innovation and academic entrepreneurship. However, where incubators exist, and the faculty members are not aware of their existence could create a dilemma in the system. In this study, the result indicates that about 41.9% of the faculty members are very much aware that incubation centres, one of the initiatives of the government to bolster innovation and academic entrepreneurship in Nigeria, exist. This result suggests that most of the faculty members’ awareness level is low. From a policy perspective, few faculty members (34%) have high awareness of a science technology and innovation policy. The policy made provision for the establishment of the National Research and Innovation Fund (NRIF) which is meant to bridge innovation barriers in the country. In fact, a critical component of the NRIF is the need to provide competitive grants to researchers and innovators for the purpose of commercialisation. In addition to the NRIF, there is also a TETFund Research Foundation planned for the commercialisation of research outputs from universities and research institutes through industry collaboration and partnership. The two funding mechanisms, if implemented, have the potential to boost knowledge transfer and technology commercialisation in the universities.

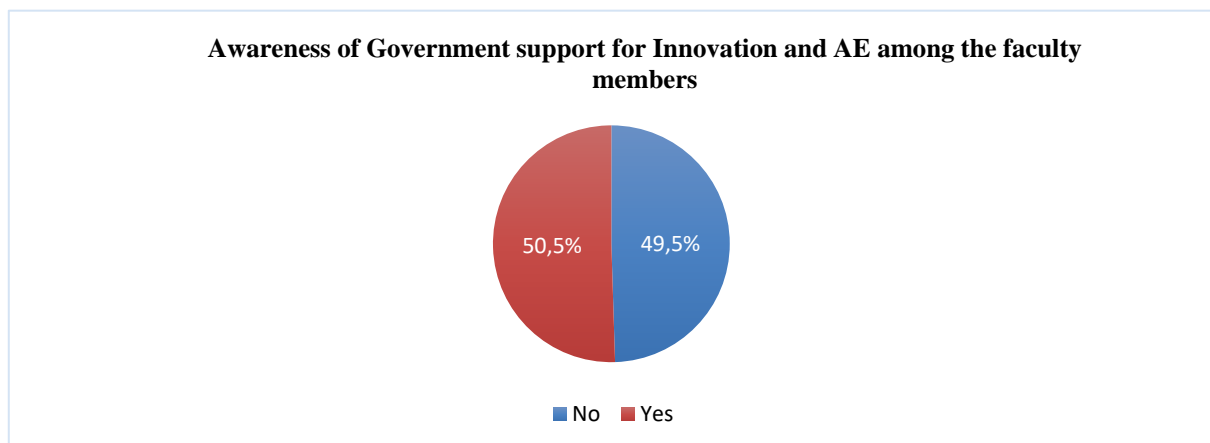


Figure 2: Percentage Response of Faculty members on their awareness of existing support structure for innovation and academic entrepreneurship in the universities.

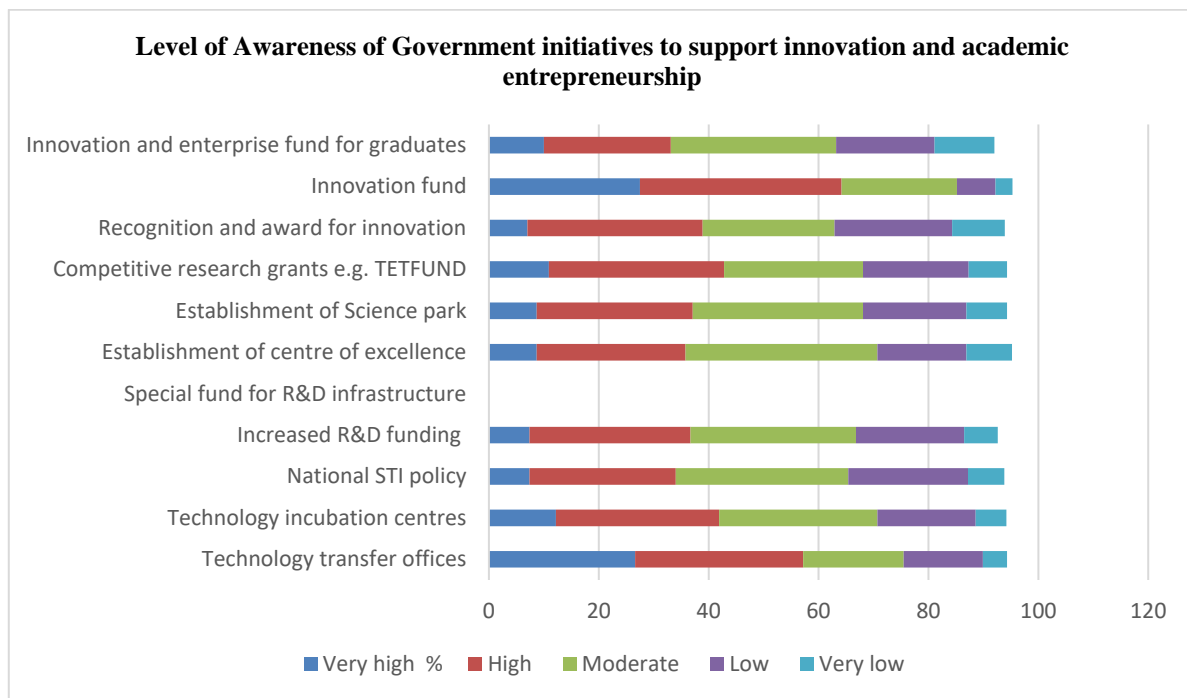


Figure 3: Percentage Response of Faculty members' level of awareness of existing support structure for innovation and academic entrepreneurship in the universities.

About 64.2% of the faculty members reported high level of awareness of innovation fund in the universities. The results reflects recent efforts by the government through the NUC to establish Directorate of Research and Innovation in all universities across the country, emphasising technology commercialisation as the game changer in the universities' effort to improve entrepreneurship and innovation climate or ecosystems. Faculty members did not provide any response to the special fund for R&D infrastructure in the university, probably because such intervention does not exist in the country. About 42.8% of them reported high level of awareness of TETFund while only few of them (10.2%) reported low awareness. Moreover, about 33.1% of the faculty members reported high awareness of recognition and award for innovation as parts of the initiative of government to promote innovations in the universities across the country. In fact, there are two main national awards initiated to support inventors and innovators in Nigeria. The Presidential Standing Committee on Inventors and Innovators (PSCII) annually present awards to outstanding inventors or innovators after careful assessment of their products, processes and services submitted for evaluation. For instance, series of awards worth eighty-one million naira (#81.5m⁶) was awarded to one hundred and twenty-six inventors from across the country. As expected, most of the awardees are researchers and scientists from universities, research institutes and independent/private inventors. Secondly, the Federal Ministry of Science, Technology and Innovation (FMSTI) usually organize the Technology Expo (Tech Expo⁷) within the first quarter of every year to showcase invention and innovation from research institutes and universities. This is done to deepen collaboration with industry partners on research commercialisation.

⁶ Approximately \$200,000

⁷ Tech Expo represent a platform to bring together government, industry and academia mainly to showcase inventions and innovations for uptake by the industrial sector. The platform is also used to stimulate

During the heat of Covid-19 pandemic in 2020, series of funding mechanisms were orchestrated by the government to improve R&D activities, specifically in the areas of pharmaceutical fields. To improve small business development among the teaming youth, several grants and enterprise funds were set up and strengthened, including the existing innovation and enterprise fund to boost entrepreneurial activities among young graduates. Application to these funds is also open to faculty members with commercialisable inventions or research outputs. Generally, there is insufficient awareness among the faculty members about the initiatives of government to promote and strengthen innovation and academic entrepreneurship in Nigerian universities. This lapse could limit the potentials of academics to pursue innovation and academic Entrepreneurship since they do not have sufficient knowledge of existing structures that could support them.

4.3 University Reward System and Academic Entrepreneurship: Faculty Members' Perception

The rewards are important motivational mechanisms that play critical roles in stimulating the faculty's interest in and commitment to entrepreneurial activities (Hayter, 2011; Hayter et al., 2018). The reward system in the universities plays significant roles in stimulating innovation and entrepreneurship intention among the faculty members. For instance, the Bayh-Dole Act of 1980 motivated US universities to engage in knowledge transfer and academic entrepreneurship (AUTM, 2021). Similar policy in Europe also helped to combat the popular 'European Paradox' and improve technology transfer and commercialisation of research outputs (Adelowo et al., 2022). In the selected universities, as presented in Figure 4, the rewards system is largely based on paper publications, particularly single authorship with an average mean rating of 2.9 while joint publications ranked second with a mean rating of 2.82. This result reiterated the syndrome of 'publish or perish' that is prevalent in Nigerian universities (Adelowo, 2018; Siyanbola, 2019). The mindset is now changing to 'publish, patent and prosper' with greater emphasis on translating research outputs to products and services in the market. There is also a great implication for placing a higher emphasis on single authorship rather than on joint publication. Joint publication allows, to a large extent, great collaboration with either colleague in the same or other university or industry players. Meanwhile, research that will culminate into commercialisable products or processes is usually interdisciplinary/multidisciplinary in nature, requiring researchers from diverse research fields to work together. Academics, who collaborate and co-publish with industrial partners, have been found to be more productive as they have access to research facilities outside the university (O'Shea et al., 2005; Zhou et al., 2016). Grant attraction and community service are also perceived to be among the highly rated rewardable activities in the universities. They both have a mean rating of 2.68 each. Interestingly, the result further shows that patenting is now recognised as an important component of rewardable activities among the faculty members, it ranked 2.6. All the last three activities including direct commercialisation (2.4), industry collaboration (2.41) and start-up creation (2.14) are reported to be perceived as low by the faculty members. The results suggest that those activities that represent innovation and academic entrepreneurship are not adequately rewarded. This could be one of the reasons the incidence of start-up creation was not a common practice in Nigerian universities. Bearing in mind that the survey data were collected between late 2015 and early 2016, diverse initiatives have been advanced by the government and university administrators to improve the ecosystems. For instance, the emergence of technology hubs in different universities, occasioned by the need to

leverage ICT for development, is a case in point. The Ministry of Communication and Digital Economy has championed the establishment of ICT hubs across universities through its core Agency- National Information Technology Development Agency (NITDA) to support start-ups among faculty members and students in Nigerian universities.

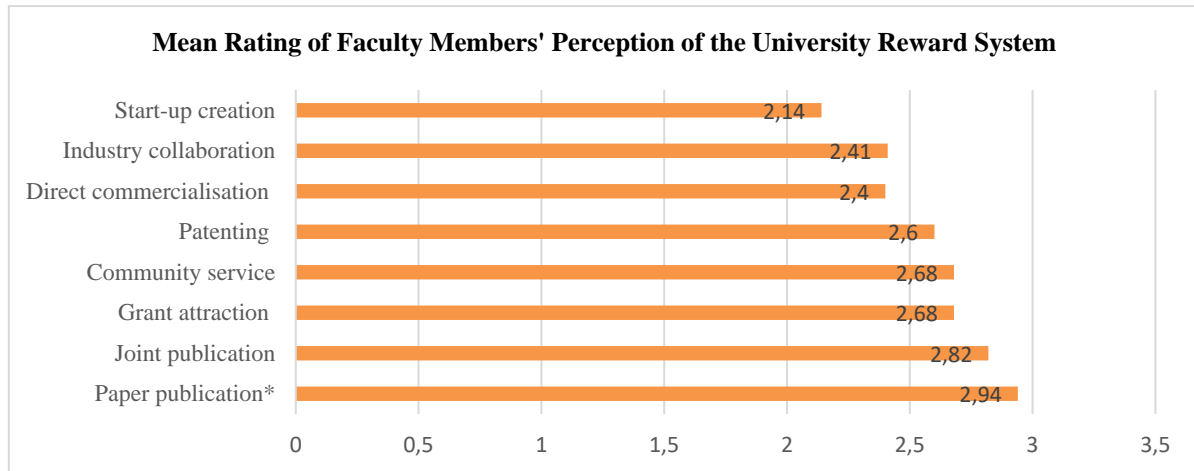


Figure 4: Mean rating of Faculty Members' Response to the perception of university reward system

Key: 0=not at all, 1=very low, 2=low, 3=high, 4=very high

*Single authorship

5. CONCLUSION AND POLICY RECOMMENDATION

This article sets out to examine the support structure for innovation and academic entrepreneurship in selected Nigerian universities using primary data collected through a cross-sectional survey and document analysis. With the growing interest of policymakers, government and researchers in turning research outputs from laboratories to products and processes in the industry, apt efforts are needed to create the much-needed infrastructure that will facilitate the process. Earlier studies have articulated that most faculties in Nigeria are interested in the commercialisation of their research outputs, not necessarily motivated by pecuniary benefits but intrinsic satisfaction to see their research results addressing some societal problems (Adelowo and Surujlal, 2020; Adelowo and Surujlal, 2021; Adelowo, 2021). For the interested academics to engage in technology commercialisation, there are fundamental hurdles to overcome including the physical innovation infrastructure such as incubators, technology or science park, and soft incentives such as IP policy, STI policy, grants and innovation funds among a host of other incentive schemes. How many of these support structures and incentives are available in the universities and to what extent are the faculty members aware of them? Providing information in response to these questions is an important step toward developing robust incentives and support structures for bolstering innovation and academic entrepreneurship in universities. In addition, this paper reviews some important government policies and initiatives, including the STI policy, the National research and innovation fund, the TETFund-Innovation foundation and the emergence of innovation hubs in Nigerian universities. From the theoretical perspective, the article is hinged on the promotion of entrepreneurial universities by improving key enablers within the entrepreneurship ecosystems (Etzkowitz, 2011; Audretsch, 2014). The results from the study show that the knowledge of key support structures for innovation and academic entrepreneurship in universities is generally limited. A little above half of the faculty members who took part in the survey claimed that they

were aware of some government support or initiatives for innovation. On the reward system in the universities, the promotion is still largely dependent on paper publications, although patent has equally gained prominence. However, most activities that are directly related to innovation and academic entrepreneurship are perceived to be poorly rewarded. For instance, start-up creation, industry collaboration and direct commercialisation of research outputs had low ratings based on the perception of the faculty members. To improve the innovation and academic entrepreneurship engagement within the universities, there is the need for universities to create intense awareness of the support structure and incentive schemes and to boldly rewards innovative activities among the faculty members. For instance, while awards and recognition are good to showcase innovators, creating an ‘innovation Hall of Fame’ where the inscriptions of innovators are displayed could go a long way to ignite innovation potential among academics. It should also be noted that the mere establishment of innovation infrastructure in the university is not a sufficient condition to improve the innovation activities, there should be concomitant mechanisms that will encourage publicity and access to these infrastructures.

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PROFILING WRIST-BASED FITNESS TRACKER USAGE AMONG SOUTH AFRICAN GENERATION Y CONSUMERS

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ABSTRACT

Wrist-based fitness trackers, such as sports watches and fitness bands account for the largest share of the fitness tracker market, possibly due to ease of access and convenience in tracking the users' metrics. The fitness tracker market is expected to reach a market size of US\$105.1 billion by 2027. However, limited research is available that profiles these users in terms of their preferences and usage, especially consumers from a developing country that ranks among the top five emerging markets, as well as a segment that is avidly using fitness devices, namely South African Generation Y consumers. This paper aims to close this gap and provides fitness tracker brands with a preliminary profile of wrist-based fitness tracker users in South Africa as a departure point. Quantitative data were collected using a self-administered questionnaire from 312 adult participants at three geographically separated Parkrun events. Data analysis comprised a frequency analysis, reliability analysis, descriptive statistics and a one-sample t-test using SPSS version 27.0 for Windows. The findings generated a demographic and wearable fitness tracker usage and preference-based profile that device manufacturers can use to produce fitness devices in accordance with this market's preferences. This profile further highlights the importance of participants' positive attitude towards and intention to continue or start using these devices in the future. Marketing practitioners should also note that device perceived usefulness, ease of use, availability, social image, brand name, perceived performance risk and cost play a vital role in Generation Y consumers' decision to use this technology.

Keywords: Attitude; behavioural intention; Generation Y consumers; wrist-based fitness trackers

1. INTRODUCTION

The wearable device industry is best described as a technology-intensive industry that is constantly introducing innovative and improved products to the consumer market (CCS Insight, 2019). There are numerous types of wearable technology devices, including activity trackers (Ellis, 2022), heart monitoring jewellery (Allison, 2018), epilepsy episode monitors (May, 2021), life log accessories (Hoyt, 2019) and interchangeable smartwatches (Hunter, 2022). The popularity of these devices has been increasing rapidly among consumers, as indicated by the market size of global wearable devices which reached US\$ 47.89 billion by 2021 (Grand View Research, 2022). Various wearable technology devices on the market have become mainstream, especially wrist-based activity trackers, such as wrist-based fitness bands, where approximately 232 million units have been sold by the end of 2021 (Research Insights, 2022). In addition, the wrist-based fitness tracker market accounted for 44.5 percent of the wearable device market in the first quarter of 2021, indicating a strong competitive advantage for the wearable technology sector (Statista, 2022). However, the

need for more features, diversity of devices and interactive screens will lead to greater expected sales (Zaluzny, 2018).

Wrist-based fitness trackers, the most popular type of wearable activity tracker, are compact devices that detect a variety of activity-related metrics, such as steps taken, active minutes, which indicate the intensity and pace of indoor and outdoor workouts, including walking, running, cycling and swimming (Henriksen *et al.*, 2018; Turhan, 2013). These fitness trackers are equipped with a variety of algorithms and mobile applications that facilitate the collection of health data, which display the recorded information visually (Henriksen *et al.*, 2018). Several wrist-based fitness trackers have companion applications that assist users with training plans, fitness monitoring and feedback on their overall performance (Lunney *et al.*, 2016). Users could also share their data on social media platforms, such as Endomondo, Strava, Facebook or WhatsApp, enhancing their self-image when they receive positive feedback for accomplishments (Muller *et al.*, 2018).

In terms of global fitness device sales, the youth accounted for 38.9 percent of users between the ages of 18 and 34, forming part of Generation Y, the fastest growing market segment for fitness devices (Statista, 2019). Strengthening the primary purpose of this study, which is to profile wrist-based fitness tracker usage among South African Generation Y consumers, Muller (2019) found that the Generation Y cohort is most likely to adopt wearable devices. This is no surprise since the Generation Y cohort is early adopters of innovative technology and finds advanced technological products, such as wrist-based fitness trackers, appealing (Rahulan *et al.*, 2015). In addition, 34.1 percent of South Africa's population was between the ages of 15 and 34 in 2021 (World Population Review, 2021). It is thus essential that wrist-based fitness tracker manufacturers take advantage of this dynamic market so that devices can be designed according to specific market demands for Generation Y consumers and marketing efforts can be targeted more effectively at device users.

2. LITERATURE REVIEW

The technology acceptance model (TAM) by Davis (1989) provides a theoretical explanation for individuals' acceptance of technology. The TAM is a robust and influential model for predicting consumers' tendency to accept innovative technology (Solomon, 2018), such as wrist-based fitness trackers in general (Hattingh, 2020). For the purpose of this study, the TAM was used as a theoretical foundation to explain a profile of the users that have or intend to purchase wrist-based fitness trackers. In the TAM, consumers' technology usage is influenced directly by behavioural intention to use, which is, in turn, influenced by their attitude toward using technology, as well as their perceived usefulness (PU) and perceived ease of use (PEOU) (Kim & Shin, 2015). Behavioural intention to use can be described as a measure of an individual's intent to follow through on a particular course of action (Fishbein & Ajzen, 1975). Accordingly, the intention of consumers to use wearable devices is primarily determined by the perceived benefits or value they could obtain when using these devices (Kim *et al.*, 2007). Attitude towards using technology can be described as the positive or negative value an individual has towards a technological device (Choi & Kim, 2016), which is strengthened as the benefits of using technology become more evident (Gao *et al.*, 2016). Therefore, if consumers' attitude toward wrist-based fitness tracker device usage is positive, they are more likely to develop an intention to make use of these devices (Lunney *et al.*, 2016). In addition to attitude, the TAM describes PU and PEOU as key factors of

technology acceptance (Davis, 1989). PU describes the benefits users believe they will receive from using a technological device, while PEOU refers to the extent to which users believe using the device will be effortless. From consumers' perspectives, PU can be described as the extent to which the use of fitness trackers would increase their personal efficiency, such as being more physically active and productive (Kulviwat *et al.*, 2007). Regardless of users' adoption tendencies and attitude, users believe devices are more useful and acceptable when they perceive them as easy to use (Davis, 1989), such as having limitless access that is uncomplicated, fast and provides timely access to their preferred data (Huang *et al.*, 2007).

Considering that 34.1 percent of South African consumers are members of the Generation Y cohort (World Population Review, 2021), these individuals are more likely to associate themselves with a higher social class and trends (Bevan-Dye, 2016), which ultimately increases their probability of adopting a wrist-based fitness tracker. In addition, they are more inclined to utilise advanced technology to monitor their physical activities, having grown up in a technologically advanced society. (Kurian, 2017). LaLonde (2018) further strengthens this statement by emphasising that Generation Y is most likely to adopt technology since they are physically involved in the development of the 'quantified self' that correlates directly with their sporting performance and tracking experiences (Koch, 2018). The use of wrist-based fitness trackers by members of Generation Y and the factors that influence their attitudes toward these devices must, therefore, be investigated. In order to gain an in-depth understanding of the usage profile of the South African Generation Y wrist-based fitness tracker users, the TAM has been extended to investigate their perception of social image (Huang & Chang, 2020; Jeong *et al.*, 2017), perceived cost (Park, 2020; Shin, 2010), perceived performance risk (Hwang *et al.*, 2016), brand name (Park *et al.*, 2018; Yang *et al.*, 2016), as well as the availability factor (Kim & Shin, 2015; Wu *et al.*, 2018).

It is widely acknowledged that perceived performance risk is a significant predictor of users' willingness to accept technological devices, as well as one of the key factors responsible for consumers abandoning the purchase of innovative products (Grewal *et al.*, 1994; Hwang *et al.*, 2016; Park *et al.*, 2005). Perceived performance risk can be described as the possibility that a product or brand will not perform as intended or deliver the anticipated benefits (Nasir & Yurder, 2015). Chen and Hsiao (2018) suggest that consumers' perceived risk will decrease when manufacturers improve the performance and quality of their products. Despite the advancements in technology, wrist-based fitness trackers can still be improved in terms of performance by implementing faster processors, enhanced monitoring functions and communication systems which are readily accessible (Chen & Hsiao, 2018). In light of this, Wolf *et al.* (2018) suggest that marketers should emphasise the benefits of wearable devices, such as reduced levels of risk associated with these devices, since consumers will not accept wearable devices without some assurance of their performance (Yang *et al.*, 2016). It is also common for consumers to compare the benefits that products provide with the cost of products, which may be influenced by the price of the item or the effort and time expended to obtain it (Shin, 2007). In accordance, perceived cost is the degree to which a consumer perceives that using a given technology will be expensive, or how they perceive prices in comparison to their disposable income (Moore & Benbhasat, 1991). In some cases, the price of a product is burdensome and, therefore, creates an issue for non-users, regardless of whether the product is perceived as useful or enjoyable (Shin, 2009). It is also evident that many wearable device users may not purchase a specific device due to the high price barrier and the fear that the device might not live up to their expectations (Wu & Wang, 2005). Muller

(2020) advises that manufacturers, business organisations, as well as e-commerce sites should create and produce inexpensive wearable devices to reduce financial risks.

A key psychological factor determining whether wrist-based fitness tracker users are likely to use these devices is the availability factor (Kim & Shin, 2015; Shin, 2007). With respect to fitness trackers, availability refers to a sense of convenience and immediacy that facilitates easy access to information, specifically in monitoring physical activities (Huang *et al.*, 2007). The availability of particular features and capabilities is a determinant that influences the adoption of wearable devices (Adapa *et al.*, 2018), considering that timely access and availability of information on consumers' activities are some of the greatest benefits for users' technological experiences (Pagani, 2004; Shin, 2009). Moreover, it is also interesting to consider that the Generation Y cohort examines product brands according to impression preferences, such as the physical appearance of the product (Eastman *et al.*, 2014). The brand name of a product influences factors such as quality and reliability and, therefore, Generation Y consumers perceive the brand name as a factor that conveys a message about their personal preferences and who they are (Morton, 2002). It is also considered an effective tool for the communication and enhancement of self-image, which encourages consumers to identify themselves with particular brand names that express status and identity (Yang *et al.*, 2016).

The results of previous studies have shown significant relationships between the brand name and social image relating to the use of wearable devices, suggesting that it would be worthwhile to examine social image in the context of wrist-based fitness trackers (Muller *et al.*, 2018; Yang *et al.*, 2016). Social image can be described as the degree to which users may acquire respect and admiration from their peers through the use of wearable devices (Yang *et al.*, 2016). Lin and Bhattacharjee (2010) point out that social image can be a predictor of usage intention, whereas beliefs have an effect when mediated by attitudes towards technology. It is evident that an acceptable image of wearable device users influences the perception of peers and friends in such a profound way that wearable device users keep up with the latest fashion trends to experience a sense of belonging and acceptance (Rauschnabel *et al.*, 2016). Given the influence of social image on wearable device use, manufacturers and marketing professionals can focus on the aesthetics of wrist-based fitness trackers and the perceived social influence that it may have on the Generation Y cohort. Therefore, it is important for manufacturers of wrist-based fitness trackers to gain specific insight into the South African Generation Y cohort that will positively influence their attitudes and future intentions to use these devices, allowing them not only to manufacture fitness devices according to market demands but also to target this opportunistic market.

3. METHODOLOGY

This study utilised a descriptive research design based on a single cross-sectional sample of parkrunners forming part of the South African Generation Y cohort.

3.1 Sampling and data collection

The target population was defined, at the time of data collection, as male and female South African Generation Y members, aged between 18 and 33 years, who participate in official parkrun events. Only the adult portion of the cohort could participate in the study. To gather the data for this study, a judgement sample containing three registered parkrun events in the Free State and Gauteng

provinces were selected. A non-probability convenient sample of 450 members was deemed sufficient for data analysis and 150 questionnaires were subsequently distributed at each of the parkrun events to ensure equal representation. The researcher made prior arrangements with the parkrun officials on duty at the respective events and had a stand at the finish line, where parkrunners were invited to complete the questionnaire voluntarily. Once the questionnaire was completed it was returned to the researcher immediately.

3.2 Measuring instrument

This study used a self-administered questionnaire comprising three sections: Section A gathered demographic information; Section B gathered background information relating to wrist-based fitness trackers usage; and Section C comprised the scale responses in order to profile the participants in terms of their perception of nine specific factors. The cover letter explained the nature and purpose of the research and requested voluntary participation and was, subsequently, achieved by means of informed consent provided by the participants who decided to complete the questionnaire. For the purpose of profiling the Generation Y consumer cohort in terms of their wrist-based fitness tracker usage, nine specific perception factors were retrieved from previously published research to measure participants' degree of agreement on a six-point Likert-type scale ranging from (1) strongly disagree to (6) strongly agree. These scales included attitude and usage intentions, measured using the adapted scales of Kim and Shin (2015), developed by Venkatesh *et al.* (2003) and perceived usefulness, measured by adapting the scale of Shin (2007) and Park and Chen (2007). The perceived ease of use scale was adapted from Kim and Shin (2015) and Kuo and Yen (2009), the social-image scale from Yang *et al.* (2016), the perceived cost scale from Kim and Shin (2015) and Shin (2009a) and the perceived performance risk scale from Yang *et al.* (2016) and Grewal *et al.* (1994).

3.3 Data analysis

The captured data were analysed using the IBM Statistical Package for Social Sciences (SPSS), version 27.0 and comprised a Mahalanobis distance test, frequency analysis, reliability, descriptive statistics and a one-sample t-test to determine the significance of the scaled items. The purpose of the Mahalanobis distance test was to remove any outliers, where scale reliability was tested by computing Cronbach alpha (α) values for each scale and the overall scale to ensure internal consistency reliability, where values of 0.70 and above are indicative of acceptable reliability (Malhotra *et al.*, 2012). The descriptive statistics analysis paired with the one sample t-test sought to uncover the mean values of each scale and, subsequently, determine its significance in relation to the sample's perceptions of these factors relating to wrist-based fitness tracker usage.

The level of statistical significance was set at $p < 0.05$ and since these items were measured on a six-point scale and the one sample t-test test value was set at 3.5.

4. RESULTS AND DISCUSSION

From the 450 questionnaires distributed at the three parkrun locations, 407 were returned. After data screening and cleaning, followed by a Mahalanobis distance test, several cases were identified as multivariate outliers, according to Tabachnick and Fidell (2013), and were subsequently removed, resulting in 312 usable questionnaires, which translates to a 69.3 percent success rate.

To profile the Generation Y cohort in terms of wrist-based fitness tracker usage, first a sample profile needs to be generated and in accordance with the demographic and background information obtained for this study, this profile is shown in tables 1, 2 and 3 and Figure 1.

Table 1: Demographic profile of Generation Y consumers associated with wrist-based fitness tracker usage

| Gender | % | Age | % | Home language | % | Province of origin | % |
|----------------------|------|-------------------------|------|---------------|------|--------------------|------|
| Male | 49.7 | 18-24 | 45.5 | Afrikaans | 53.8 | Eastern Cape | 2.2 |
| Female | 49.0 | 25-33 | 54.5 | English | 20.8 | Free State | 34.0 |
| Missing | 1.3 | Ethnicity | | IsiNdebele | 0 | Gauteng | 48.4 |
| Qualification | | Black/African | 28.8 | IsiXhosa | 3.8 | KwaZulu-Natal | 1.6 |
| < Grade 12 | 9.9 | Coloured | 5.4 | IsiZulu | 3.5 | Limpopo | 4.5 |
| Grade 12 | 35.9 | Indian/Asian | 2.2 | Sepedi | 2.6 | Mpumalanga | 3.2 |
| Diploma | 16.7 | White | 60.3 | Sesotho | 6.7 | Northern Cape | 1.3 |
| Degree | 21.2 | Other | 0.6 | Setswana | 2.9 | North West | 3.2 |
| Post-graduate | 16.0 | Missing | 2.6 | SiSwati | 1.9 | Western Cape | 3.2 |
| Missing | 0.3 | Parkrun Province | | Tshivenda | 2.6 | Missing | 0.3 |
| | | Free State | 45.2 | Xitsonga | 0.6 | | |

Table 1 shows that Generation Y wrist-based fitness tracker users, who participated in this study, were in almost equal parts male (49.7%) and female (49.0), where 45.5 percent were between the age of 18 to 24 years and 54.5 percent between the age of 25-33. The latter meaning that there is almost an equal representation of younger and older Generation Y consumers who attend parkrun events. Therefore, further data analysis can be attributed to the entire participating Generation Y cohort. However, since the data were collected using a judgement and convenience sample, it is no surprise that most participants originated from the Free State (34.0%) and Gauteng (45.4%) provinces, which coincide with the province of the parkrun attended, with minor, yet complete, representation from the remaining seven provinces. As such, data should be interpreted with caution. Most of the sample had obtained their Grade 12 certificate, 21.2 percent a degree, 16.7 percent a diploma, 16.0 percent a postgraduate qualification and 9.9 percent not yet Grade 12. From this, it is evident that wrist-based users can be associated with a higher level of education and it could be argued that these individuals are mostly of medium- to higher-income level. The ethnic makeup of this particular sample comprised more white (60.3%) and black African (28.8%) individuals, with minority representation from other ethnic groups. In terms of home language, all but one official language of South Africa was represented, namely IsiNdebele. The large representation of Afrikaans-speaking individuals (53.8%) coincide with the ethnic representation. English speakers (20.8%) and African languages including Sesotho (6.7%), IsiXhosa (3.8%) and IsiZulu (3.5%) were also somewhat represented in this sample. The demographic profile, even if limited to two provinces, demonstrates the diversity of the country.

Table 2: Physical activity trends among Generation Y consumers

| Parkrun attendance | % | Main reason for attending parkruns | % | Training regime (weekly) | % |
|--------------------|------|------------------------------------|------|--------------------------|------|
| First time | 19.9 | Family time | 18.6 | Never | 13.1 |
| Occasionally | 31.7 | Healthier lifestyle | 49.7 | 1-2 days | 34.3 |
| Once a month | 9.3 | Medical aid points | 10.9 | 3-4 days | 35.9 |
| Twice a month | 14.4 | Insurance discount | 0.3 | >5 days | 16.3 |
| Weekly | 24.4 | Weight loss | 6.1 | Missing | 0.3 |
| Missing | 0.3 | Rehabilitation | 0.6 | | |
| | | Training | 11.5 | | |
| | | Other | 1.0 | | |
| | | Missing | 1.3 | | |

It is evident from Table 2 that Generation Y consumers are, to a large extent, physically active, where 24.4 percent participate in parkrun events on a weekly basis and 14.4 percent at least twice a month and for 19.9 percent, the occasion when data were collected, it was their first event. Furthermore, only 13.1 percent of the sample does not follow a training regime, where 35.9 percent train at least three to four times a week, while 16.3 percent train more than five days a week. The majority, or 49.7 percent, of the participants indicated leading a healthier lifestyle as the main reason for attending parkruns, where 18.6 percent used these events to spend time with family, 11.5 percent to train, most likely for marathons and 10.9 percent attended these parkrun events to obtain medical aid points. This physical activity profile of Generation Y consumers serves as a departure point for device manufacturers and especially marketing professionals to target consumers at sporting- and lifestyle events and to ensure that their devices can be integrated with medical aid plans. To build on the profile, Table 3 refers specifically to wrist-based fitness tracker usage among Generation Y consumers.

Table 3: Wrist-based fitness tracker usage among Generation Y consumers

| Ownership | % | Reason for non-ownership | % | Valid % | Consider owning | % | Valid % |
|------------------------|------|--------------------------|------|---------|-----------------|------|---------|
| Yes | 47.8 | Expensive | 35.3 | 75.3 | Yes | 40.4 | 81.3 |
| No | 52.2 | Unreliable | 1.0 | 2.1 | No | 9.3 | 18.7 |
| | | Unfashionable | 1.0 | 2.1 | Missing | 50.3 | |
| Preferred brand | | Complicated tech | 4.8 | 10.3 | Spend | | |
| Apple | 18.9 | Fad/seasonal trend | 3.8 | 8.2 | <R500 | 13.5 | |
| Fitbit | 17.6 | Other | 1.0 | 2.1 | >R500-R1000 | 21.8 | |
| Garmin | 24.7 | Missing | 46.8 | | R1001-R2500 | 27.2 | |
| Polar | 11.2 | | | | R2501-R5000 | 27.2 | |
| Samsung | 21.2 | | | | >R5000 | 10.3 | |
| Suunto | 1.0 | | | | | | |
| TomTom | 2.9 | | | | | | |
| Other | 0.6 | | | | | | |
| Missing | 1.9 | | | | | | |

Table 3 displays wrist-based fitness tracker usage among participating Generation Y consumers. At the time of collecting the data, 47.8 percent of the participants already owned at least one type of wrist-based fitness tracker, where 52.2 percent did not. As such, when interpreting the reasons for no ownership and considering ownership, it should be noted that n=163 maximum. In this case, it is more relevant to report the valid percentage. The foremost reason that Generation Y consumers do not own a wrist-based fitness tracker is because these devices are perceived as being too expensive (75.3%), followed by viewing this as complicated technology (10.3%) and a fad or seasonal trend (8.2%). Despite these reasons, 81.3 percent of the non-owners consider buying a wrist-based fitness tracker in the future, which is promising for device manufacturers, marketing professionals and resellers. These stakeholders are subsequently tasked to either manufacture more affordable devices, offer alternative payment options such as a six-month interest free contract or better communicate the benefits to match the price tag of these devices. When considering this, the results show that most of these individuals are willing to spend between R500 and R5 000 for a device and their preferred brands are Garmin, Samsung and Apple, Fitbit and Polar.

Another aspect to consider in understanding this consumer segment is the perceived importance of wrist-based fitness tracker features, as displayed in Figure 1.

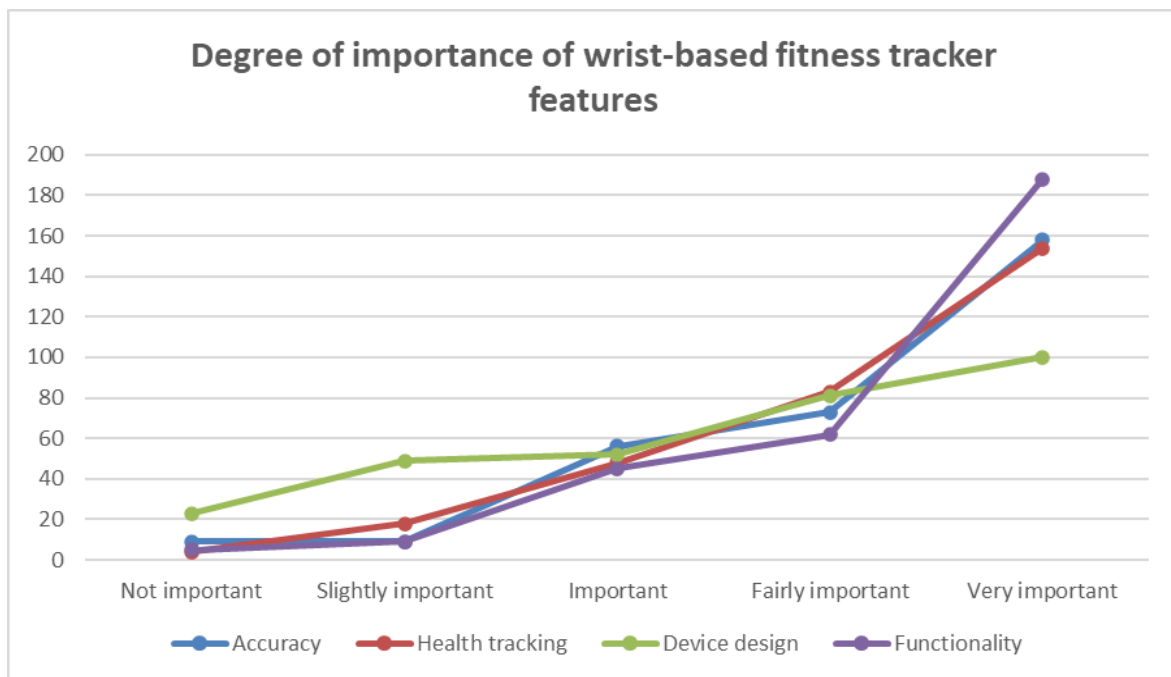


Figure 1. Importance of wrist-based fitness tracking device features among Generation Y consumers

Figure 1 shows the degree of importance of four specific device features. From this table, it is evident that most of the sample deem device accuracy, ability to track health metrics, the design of the wrist-based tracker and especially its functionality as very important. Device design was, however, not regarded as important as the other features. Device manufacturers should consider these findings and develop wrist-based trackers that contain these features in order to appeal to the Generation Y consumer segment.

To understand Generation Y consumers better, this study also investigated certain attitude, intention and perception-related factors on a six-point Likert-type scale and through reliability, descriptive statistics and a one sample t-test aimed to determine the significance of these factors in relation to their wrist-based fitness tracker usage. These results are displayed in Table 4, building a perception profile of these consumers.

The reliability for the 37-item scale was $\alpha = 0.889$ and paired with the mean inter-item correlation value of 0.178 and the Cronbach alpha value for the independent factors all above 0.70, indicates internal consistency reliability. With scale reliability established, descriptive statistics combined with a one sample t-test shows that all factors are statistically significant for Generation Y consumers' wrist-based fitness tracker usage.

Table 4: Descriptive statistics, t-values, p-values and Cronbach alpha's

| Latent factors | Mean and Std. dev. | t-value | p-value | α |
|----------------------------|--------------------|---------|---------|----------|
| Attitude | 4.92 ± 0.88 | 28.526 | 0.000 | 0.890 |
| Perceived usefulness | 4.78 ± 0.87 | 26.610 | 0.000 | 0.883 |
| Perceived ease of use | 4.84 ± 0.80 | 29.557 | 0.000 | 0.872 |
| Usage intention | 4.89 ± 0.98 | 24.945 | 0.000 | 0.903 |
| Social image | 3.90 ± 1.27 | 5.623 | 0.000 | 0.917 |
| Brand name | 4.57 ± 1.00 | 18.872 | 0.000 | 0.822 |
| Perceived availability | 4.73 ± 0.84 | 25.787 | 0.000 | 0.852 |
| Perceived cost | 2.71 ± 0.98 | -14.240 | 0.000 | 0.781 |
| Perceived performance risk | 2.84 ± 1.14 | -10.275 | 0.000 | 0.892 |

Notes: Statistically significant at $p < 0.05$

Table 4 shows that Generation Y consumers have an overwhelmingly positive attitude towards wrist-based fitness trackers (mean = 4.92 ± 0.88 ; $p=0.000$), perceived them as useful (mean = 4.78 ± 0.87 ; $p=0.000$) and easy to use (mean = 4.84 ± 0.80) and most likely to purchase and use such devices in future (mean = 4.89 ± 0.98 ; $p=0.000$). Furthermore, Generation Y consumers, interestingly, are not as driven by the notion of maintaining a social image (mean = 3.90 ± 1.27 ; $p=0.000$) when considering the use of wrist-based fitness devices, but a reputable brand name (mean = 4.57 ± 1.00 ; $p=0.000$) is very important to them. These consumers also believe that using wrist-based devices allows them to access health- and activity-related information quickly and easily, given their response to perceived availability (mean = 4.73 ± 0.84 ; $p=0.000$). Despite many responses pointing towards the expensive nature limiting current adoption, these consumers believe that wrist-based fitness trackers offer value for money and are not just an expensive gimmick (mean = 2.71 ± 0.98 ; $p=0.000$), where a lower mean value for this factor is preferred. Similar to this finding, Generation Y consumers also have a low perceived performance risk (mean = 2.84 ± 1.14 ; $p=0.000$) regarding these devices and trust that they present accurate and trustworthy fitness-related metrics.

5. CONCLUSION

This study sought to profile South African Generation Y consumers in terms of their wrist-based fitness tracker preferences and usage. The findings suggest that South African Generation Y consumers, albeit the represented sample, are individuals who enjoy participating in parkrun events, specifically to spend time with family and live a healthy lifestyle and are very physically active individuals. These consumers are well-educated and medium- to high-income earners, where 48.7 percent of the sample owns a wrist-based fitness tracker and 40.1 percent are considering using one in the future. Furthermore, these individuals are willing to spend between R500 to R5 000 for a device and they emphasise the importance of specific features, namely accuracy, health-tracking ability, design and functionality. While the top preferred brands are Garmin, Apple, Samsung, Fitbit and Polar, there are barriers to adoption, this being perceived as too expensive and complicated technology.

Nonetheless, Generation Y consumers generally have a positive attitude towards wrist-based fitness trackers, perceiving them as easy to use (most likely those who currently own them and those who are tech-savvy) and useful to them, where they will most likely adopt these devices in the near future. While not as susceptible to peer pressure, they will purchase a device with a reputable brand name since these devices also provide easy accessibility on their wrists. Finally, Generation Y consumers, although considering these devices to be expensive, do not perceive them as a waste of money, nor do they regard these devices as a performance risk when measuring their health- and activity-related data.

As a result of the abovementioned findings, numerous practical implications have been identified in this study. Device manufacturers and their marketing teams need to change the perceptions among the non-users with a value-benefit promotion paired with the option to use them on a trial basis, risk-free. They also need to generate tutorial booklets or video content showing how easy they are to use. More importantly, the findings of this study have the potential to benefit wrist-based fitness tracker brands, such as Garmin, Samsung, Apple, and Fitbit, as a clear indication of

the profile of Generation Y consumers is given and could be helpful to these brands to target these consumers effectively in accordance with market preferences.

With this profile of Generation Y consumers, wearable device manufacturers, marketing professionals, resellers and academics can use this information to better strategise and successfully target this consumer segment. However, to increase the value of this study and subsequent profile generated, a larger sample, including all citizens of South Africa, is needed to generate a more accurate profile of wearable fitness tracker preferences and usage.

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THE RELATIONSHIP BETWEEN BANKING SECTOR AND STOCK MARKET DEVELOPMENT IN SELECTED SOUTHERN AFRICAN COUNTRIES: A PANEL DATA APPROACH (1995-2017)

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ABSTRACT

This article is based on a study that investigated the relationship between banking sector development and stock market development in Southern Africa, with special focus on the Southern Africa Development Community (SADC). Using the Seemingly Unrelated Regression (SUR) and System Generalised Methods of Moments (SGMM) on data from 9 SADC countries, the article results show that banks and stock markets complement each other in funding economic growth in the region. The article further examined how regional integration in the SADC region impact the interaction between banking sector development and stock market development. The results reveal that regional integration through the trade protocol and the finance and investment protocol improves the complementary effect of banks and stock markets on economic growth. This implies that regional integration contributes positively to economic growth in SADC through enhancing the complementary role of banks and stock markets in financing economic growth.

Keywords: Banking sector development, stock market development, regional integration, SADC, complementarity

1. INTRODUCTION

The positive effects of financial depth on economic growth particularly for developing and low-income countries are well documented (IMF, 2016), but what decides financial development and ways to develop financial markets is still a grey area (Huang, 2010). This study is motivated by existence of conflicting results and lack of consensus on how the major components of financial markets, which is banking sector development and stock market development relate. Most studies have failed to produce conclusive results, instead, just as before, researchers have piled more conflicting outcomes on the existing stock, leaving pertinent issues unresolved.

Studies that have examined the relationship between banking sector and stock market development (Arize et al.; 2018; Hassan & Kalim, 2017; Nyasha & Odhiambo, 2015; Odhiambo, 2010) suffer from several methodological limitations. These limitations include failure to consider a broad range of dimensions of banking sector and stock market development, ignoring the endogeneity problem, focusing on individual countries and failure to consider the impact of regional integration. According to the authors' knowledge, there are no previous studies that have examined the interaction between banking sector development and stock market development in a regional economic community and examined the effect of regional integration on the interaction of these two components. Therefore, this article contributes to literature by filling this research gap. The rest of the article is organised as follows: Section 2 provides a survey of literature. Section 3

presents the research methodology and describes the data utilised in the study. Results and discussions are presented in Section 4 while Section 5 concludes the article.

2. LITERATURE REVIEW

The debate about finance and growth has received a lot of attention, focusing on the role that finance plays in stimulating economic growth and vice versa, for countries at various levels of development. The supporting view, Schumpeter (1911)'s supply leading hypothesis suggest that financial sector development positively affect economic growth through facilitating easy transacting, risk management, savings mobilisation, efficient resource allocation, funding start-ups and employment creation (IMF, 2016; King & Levine, 1993; McKinnon, 1973; Rad & Etemadmoghaddam, 2014; Shaw, 1973). This positive effect should be more pronounced for countries in lower income brackets (IMF, 2016). Other benefits include product innovation, reducing information asymmetry, consumption smoothing, reducing poverty and better monitoring of management actions (Beck et al.; 2011; Chenery et al.; 1986; IMF, 2016; Naceur & Ghazouani, 2007). Funding supplied by the financial sector stimulate and support economic growth such that countries with developed financial markets should have higher and sustainable growth rates.

Contrary to this view, Roubini and Sala-i-Martin (1995) highlight the detrimental effects of finance on growth. They argue that restrictions put in place by regulators discourage savings and reduce productivity of capital. Also, volatility in financial markets drive away investors from participating in the financial markets while at the same time causing instability in economic growth (Lucas, 1988). Other theorists believe that it is economic growth that led financial development not vice versa. For instance, Robinson (1952) and later Lucas (1988) were of the view that institutions like banks respond passively to economic growth. Their view is that banks develop because of growth in the real sector due to the demand of financial services from firms and citizens. This view is regarded as the demand follow hypothesis (Patrick, 1966).

Whilst focusing on the role of the financial sector in stimulating growth, other authors tried to find that which is more important between banks and stock exchanges in supporting economic growth (Naceur & Ghazouani, 2007; Odhiambo; 2011; Saci, Giorgioni & Holden, 2009). Earlier on, Boyd and Prescott (1986) postulated that banks improve allocation of resources and reduce information asymmetry. While Allen and Gale (1999) advance that stock markets on the other hand reduce monopoly power of banks and improve innovations that enhance growth compared to banks that are usually conservative. Bhide (1993) and Stiglitz (1985) opined that the desirable scenario is that banks and stock markets should coexist with each other in supporting growth since they offer different services. In support of this argument, Lee (2001) suggests that it is neither banks nor stock markets that handle development of financial markets and the economy; a combination of the two reduces information asymmetry, transaction costs and cost of capital. However, despite these pronouncements, the classification of financial systems as either bank or market based, indicating whether a country relies more on stock markets or banks for mobilization and allocation of resources to various users (Dermiguc-Kunt & Levine, 2001; Goldsmith, 1969) indicate that countries have failed to facilitate balanced existence between banks and stock markets such that countries must rely on one sector than the other. This scenario could be explained by a number of factors including policies put in place in different countries, which favour or promote the development of one sector at the expense of the other or by the very nature of these two sectors

such that they are not capable of coexisting as suggested prescribed by Bhide (1993), Lee (2001), and Stiglitz (1985). The key research point therefore is driven by suggestions that banks and stock markets act as substitutes or compliments in funding growth (Bhide, 1993; Gubler, 2011; Stiglitz, 1985; World Bank, 1989).

1.1 Banks and stock markets as substitutes

Banks and stock markets have traditionally been viewed as competitors in providing funding to those in need of capital (Diamond, 1997; Jacklin, 1987; Jacklin & Bhattacharya, 1988). The notion of substitutability between banks and stock markets has its foundation in firm capital structure decisions. This is so because firms that need to raise capital can do that by either issuing out equity or debt to fund their operations (Brogaard, Ngo & Xia, 2019). A company's choice to include more debt and less equity in the capital structure or vice versa has a bearing on the quantity demanded for each source of capital. Literature on corporate finance consider debt and equity to be substitutes. When stock markets develop, funding company operations using equity become cheaper compared to debt hence firms will raise more equity than before. This result in lower debt to equity ratios (Demiguc-Kunt & Levine, 1993). In the same vein, Baumann, Hoggarth and Pain (2005) also note that corporates tend to switch their demand for capital from capital markets to banks during periods when yield spread widens thereby propping the amount of credit issued out by banking institutions.

The substitution hypothesis used to explain the relationship between remittances and financial development can be borrowed to explain substitutability of banks and stock markets. According to the substitution hypothesis, when credit markets are less developed remittances come in to fill the gaps by providing alternative sources of capital for poor households to fund investments and for consumption smoothing. Under this scenario recipients of remittances can self-finance consumption and investment thereby reduce demand for credit from banks. Therefore, remittances substitute underdeveloped markets in funding growth (Calderon, et al., 2007). As a result, there exist an inverse relationship between remittances and financial depth in funding growth (Giuliano & Ruiz-Arranz, 2009). Similarly, banks can act as substitutes for stock markets by providing long term capital to firms seeking funding when stocks markets are not able to provide such funding due to challenges such as low liquidity and high volatility, among others. On the other hand, when banks are rationing credit, levying higher charges, charging excessive interest premiums, or advancing short term credit, firms can turn to capital markets to fund their operations in a cost-efficient manner. This will result in less demand for bank products, effectively reducing the contribution of banking sector to economic growth.

In the same vein, surplus units that intend to save and invest can buy shares from the stock market, invest in money market instruments offered by banks or other intermediaries such as hedge funds and mutual funds (Berlin, 2012). When the financial system is characterised by illiquidity, investors prefer to put their funds in less risky and more liquid assets provided by banking institutions. The more equity markets become liquid enough to provide guarantee against liquidity shocks the more depositors are likely to shift their funds to the stock markets (Diamond & Dybvig, 1983). Gubler (2011) bring out that banks and stock markets also provide same risk management facilities that allow consumers to alternate between banks and stock markets.

Neil (2016) zeroed in on regulation, technology and properly functioning financial systems as the determinants of whether banking sector development and stock market development are

complements or substitutes. For example, new regulations in USA such as Foreign Accounts Tax Compliance Act, Common Reporting Standards and Base Erosion and Profit Shifting requiring banks to disclose detailed account information to tax authorities, identify foreign accounts and increase intensity of bank ground checks can tilt the terrain in favour of stock markets as companies and individuals shift funds to less regulated sectors (Damgaard, 2018). Considering enforcement costs associated with these new regulations, bank bottom lines are likely to be adversely affected against little or no incremental benefits derived from these measures. Song and Thakor (2009) focused on technology, propounding those developments in one sector create competition between stock markets and banking sector as customers switch to where there is technology advancement. Customers seek convenience, safety and less costs involved with technology driven transactions. In this regard innovations in stock market such as automation, online trading, setting up of alternative exchanges for micro-small to medium enterprises and establishment of electronic security depositories could revolutionise how these markets operate and trigger an avalanche of movement into securities markets.

2.2 Banks and stock markets as complements

The signalling hypothesis is the idea that many actions taken by economic agents are motivated chiefly by the wish to send a positive ‘signal’ to other agents, rather than by their ostensible purpose. It explains the complimentary relationship between banking sector and stock markets through transfer of signals that influence activity in both markets. Fama (1985) theorises that banks can gather confidential information about firms accessing credit better than other market participants. Since borrowing firms are usually depositors, banks find it cheaper to use deposit history to screen, certify and monitor borrowers. Therefore, when a firm access credit from the bank, it sends positive signals to other market participants due to more information possessed by banks. Diamond (1991) modelled bank’s advantages in funding smaller firms that are less known in the markets. Through accessing credit from banks, these smaller firms create a reputation that will allow them access to public equity markets at a later stage. The model suggests that banks guarantee the creditworthiness and excellent quality of the borrower to the stock markets.

When banks tighten credit conditions, negative signals are sent about prospects of the broader economy, resulting in investors reducing their supply of capital on the stock markets (Bergabrant, Bradley & Hunter, 2017). When tightening credit standards signal increased market risk, investors demand higher compensation, or they move funds to less risky assets (Gorton & He, 2008). Also, suppliers of bank capital are the same suppliers of equity funds such that information on credit restrictions can have a direct effect of reducing supply for equity funds (Bergabrant, et al., 2017). Further to that, reduction in lending reduce firm debt to equity ratios such that any attempt to raise new equity can be seen as an attempt to substitute debt with equity against firms’ optimal leverage ratio hence equity holders might not be willing to extend funds (Leary, 2009).

Almutair and Ibu Muhammad (2015) extended the signalling hypothesis by explaining the impact of stock prices on the demand and supply of credit. They discoursed that stock price movement impact banking lending through two channels: (1) Rising stock prices increases demand for bank loans as investors chase high returns against lower cost of borrowing, (2) a bullish stock market signal better prospects for companies and this can induce them to demand more credit from banks. Through the supply channel, *ibid* suggest that the surge in stock prices increase the supply of loans

for the following reasons: (1) Banks are prepared to lend more due to expectations of brighter prospects, (2) price increases generate capital gains for banks holding equity, allowing them to cushion their assets against losses. This induces them to issue out more loans.

Through funding of investments, Demirguc-Kunt and Levine (1996) suggest that banks provide much of the project finance to firms, and this positively affect stock markets as companies raise more long-term finance. Larger, mature, and older firms use the stock markets to raise finance while smaller firms use banks to raise capital. As is the norm, smaller companies start by accessing loan financing from banks before they qualify to list on stock markets. However, as firms grow further, they need access to capital markets that can provide long term capital (Peterhoff, Romeo, & Calvey, 2014). In this sense, banks provide a platform that facilitate growth of smaller firms so that they can graduate into stock markets. Chinn and Ito (2006) posit that complementarity is also observed when banks can extend more credit to firms with a strong capital base due to equity raised from stock markets. Banks prefer to extend credit to firms that have more equity capital because they show capability to raise more capital even to repay the debt when need arises. Ibid notes that access to capital markets provide a source of fresh capital that can be taped into by firms when debt on their balance sheet is falling due. As a result of this process, equity markets provide cover for banks. Also, stock markets can facilitate the development of other risk management assets such as options, forwards and futures contracts that will facilitate the growth of intermediaries such as banks and credit rating agencies (Demirguc- Kunt & Levine, 1993). This happens as banks can generate more business through selling such assets over the counter.

Song and Thakor (2009) came up with the co-evolving model which suggest that stock markets and banking sector are competitors when they are looked at from a standalone point of view. When their interaction is taken into consideration, they are complements. They noted that during securitization, banks carryout certification through analysing the credit worthiness of the client and the markets will then do the financing part. This process lowers transaction costs, cost of raising finance and improves liquidity. At the same time, it encourages investor participation which in turn lead to developed capital markets (Osoro & Osano, 2014). Using equity markets, banks on the other hand can alter their risk sensitive capital, allowing them to serve elevated risk borrowers that were previously unserved (Song & Thakor, 2009). The ability to raise more equity capital and the inclusion of high-risk borrowers pushes banks to invest in better technology meant for credit analysis. These processes create a feedback loop where markets lower financing friction while banks reduce certification friction, allowing a virtuous cycle of interdependence hence co evolving. (Osoro & Osano, 2014; Song & Thakor, 2009). Besides trading opportunities for banks, the new products pushed to the markets by banks through securitisation create new markets and business for organised exchanges and in the process meeting the needs of firms as well as improving efficiency of stock markets (Gubler, 2011).

The systemic scale economies hypothesis advances that banks operating in economies with larger stock markets face lower cost in absorbing risk because of availability of more risk management tools. Also, the cost of reputation signalling is lower compared to banks in markets that have smaller capital markets (Bossone & Lee, 2004). The authors highlighted three channels through which these benefits materialise: (1) Capital markets provide more information that help in screening and monitoring their investments. Also, banks can send signals that pertain to firm reputation using fewer financial resources than would otherwise be required. These banks need

lower capital to asset proportion to obtain protection from monetary loss and reputational signalling effect, (2) there is need for less non-financial resources in managing capital in instances where banks choose to increase output and (3) large capital markets generate more quality information and investors in such markets also exhibit better capacity to interpret information signals. This makes it cheaper and more efficient for banks to send signals to the market.

Chung (2012) sight underwriting services provided by banks as another channel through which they complement stock markets and vice versa. Commercial banks can directly affect operations of financial markets through provision of underwriting services to participants in equity markets. Combining lending and underwriting provide economies of scope through using the same information already gathered for various purposes (Saunders & Walter, 1994). These factors result in lower cost of intermediation (Drucker & Puri, 2005). As such firms intending to raise equity or debt (through bonds) capital may find it cheaper, particularly smaller firms that usually avoid equity markets due to high floatation costs. These relationships increase access to capital markets through lower underwriting fees and yield spread at issue (Datta, *et al*; 1999; Drucker & Puri, 2005).

2.3 Empirical Evidence

Odhiambo (2010) examined the relationship between banking sector and stock market development in South Africa using the Autoregressive Distributed Lag (ARDL) approach. The results show a positive relationship between banking sector and stock market development both in the short run and long run. Arize, Kalu and Nkwor (2018) used the ARDL model to find a co-evolving relationship between banks and markets in Nigeria. Results show bidirectional causality between credit to private sector and stock market capitalisation both in the long-run and short-run, suggesting complementarity between banks and stock markets. They further recommended more studies to be replicated in different countries, using different methods to test the relationship.

Hassan and Kalim (2017) studied complementarity between markets and banks in countries characterised by low human capital development. They used mean and common mean group estimators on data from 1989 to 2013. They found banks and stock markets to be complements in 10 low human capital development countries namely Zimbabwe, Zambia, Uganda, Tanzania, Kenya, Nigeria, Pakistan, Papua New Guinea, Bangladesh, and Cote d'Ivoire. Brogaard, Ngo and Xia (2019) used 19 525 loan deals for listed firms and 1876 private companies for a period covering 1993 to 2018. They utilised stock market liquidity to measure development of stock markets and loan syndication as development in banking sector. The results show that increase in liquidity positively affect loan syndication among banks. The channel is through provision of more information by stock markets which in turn increases the willingness of banks to take part in syndication. Soliman and Obi (2017) assess bank capitalisation and stock market liquidity in Nigeria using bivariate VAR-GARCH (1.1) model on yearly data from 1986 to 2014. Their study results show that bank capitalisation level positively affects liquidity of stock markets. They note that well capitalised banks can extend more credit to economic players through their capability to absorb more risk and in turn this impact stock market liquidity through increase in turnover.

On the other hand, Nguyen, Avram and Skully (2011) used the System Generalised Method of Moments (SGMM) estimator to study the interaction between banks and equity markets using panel of 106 countries from 1980 to 2007. They found that when using domestic credit to GDP

and stock market turnover ratio as measures of bank and stock market development respectively, the relationship shows substitutability. Cheng (2012) used debt to equity ratio to study whether banks and markets are compliments or substitutes after financial liberalisation. Using data from 1973 to 2007, the results show that the substitution effect increased in Taiwan after financial openness. Nyasha and Odhiambo (2015) studied the interaction between bank based and markets systems in United States of America, Brazil and Kenya using the ARDL approach on annual time series data from 1980 to 2012. They saw that banks and stock markets are complements in USA and Brazil while in Kenya they work as substitutes. In Kenya and Brazil, the results were confirmed only overall while in America it was both overall and short run. In Malaysia, Ho (2017) found a substitutability relationship between banks and stock markets. Using the ARDL bounds testing procedure on data from 1981 to 2015, *ibid* found a positive relationship in the short run and a negative relationship overall.

The studies reviewed in this section show that there is no consensus on the nature of relationship between the banking sector development and stock market development. There is evidence of results being sensitive to countries studied, proxies used, and techniques applied. As a result, there is need to carryout studies in SADC using a variety of proxies and techniques. No previous studies have covered SADC as a regional economic community therefore it provides an opportunity to examine the impact of regional integration on the relationship between banking sector development and stock market development.

3. METHODOLOGY

The current section presents the research methodology adopted in the present study. It provides detailed explanation with regards to the research design adopted, sources of data used in the study, tests done on the data, empirical models estimated, and the estimation techniques used to meet the aims of the study.

3.1 Research design

The study adopted a quantitative research design that make use of statistics to explain relationships between economic variables. The classification of the study as a quantitative study is due to use of hard data and statistical models to measure the relationship between banking sector and stock market development (Neuman, 2006). The study period is covering 1995 to 2017 for the following reasons: (1) some SADC countries had no stock markets before 1995 and (2) it is the most recent period for which data research variables was available.

3.2 The empirical model and data collection

Secondary data utilised in this study was obtained from both multilateral and public institutions from the individual countries in SADC. Data on inflation, GDP, labour force, gross fixed capital formation and total net resources rent were obtained from World Development Indicators. Other variables were obtained from IMF, SADC, and World Bank.

The primary objective of this study is to examine the relationship between banking sector development and stock market development in a regional economic. The economic model (1) used to estimate this relationship shows that current economic growth rate (GDP_{it}) is explained by lagged values of economic growth rate (GDP_{it-1}), stock market development ($SMDI_{it-1}$), banking

sector development ($BSDI_{it-1}$), labour force (LF_{it-1}), gross fixed capital formation ($GFCF_{it-1}$), inflation rate ($INFL_{it-1}$), trade openness (TO_{it-1}) and the interaction term between banking sector development and stock market development ($[SMDI*BSDI]_{it-1}$) as measured by composite indexes.

$$GDP_{it} = \beta_0 + \beta_1 GDP_{it-1} + \beta_2 SMDI_{it-1} + \beta_3 BSDI_{it-1} + \beta_4 LF_{it-1} + \beta_5 GFCF_{it-1} + \beta_6 INFL_{it-1} + \beta_7 TO_{it-1} + \beta_8 [SMDI*BSDI]_{it-1} + \varepsilon_{it} \dots\dots\dots (1)$$

In a bid to test for complementarity or substitutability between banking sector and stock market development in funding economic growth, the research adopts a model utilised by Giuliano and Ruiz- Arranz (2006) and later Bettin and Zazzaro (2011) to test complementarity between remittances and financial development on economic growth. So, the study includes an interaction term of banking sector development and stock market development $[SMDI*BSDI]$ and their stand-alone indicators in the growth equation. The coefficient (sign and significance) of the interaction term will determine the complementarity and substitutability hypotheses. If $\beta_2 > 0$ and $\beta_8 < 0$ then increase in stock market development promote growth only when banking sector development is poor developed. On the other hand, when $\beta_2 < 0$ and $\beta_8 > 0$ or when they are both positive and significant then a better developed banking sector will support stock markets in financing economic growth (Bettin & Zazzaro, 2011). To ensure robustness, the banking sector, stock market index variables and their interaction term are substituted by single dimension measures PCDMB, SMC and the interaction term, respectively.

GDP_{it} denotes gross domestic product growth rate for the countries included in the model. The variable GDP_{it-1} is meant to capture the dynamic nature of economic growth. The variable GDP_{it-1} is expected to positively impact economic growth. All the other regressors are lagged for one period to control for simultaneity when using the SUR estimation technique. SMDI is the stock market development index that is expected to have a positive or negative impact on economic growth in line with empirical evidence. When stock markets are developed, they enhance economic growth by providing liquidity and allocating resources to high-return long term projects that would otherwise be left unfunded (Levine, 1991). On the other hand, when the stock markets are less developed, they retard growth due to high volatility, low liquidity, and depressed prices. Banking sector development measured by BSDI is expected to enhance economic growth through reducing information asymmetry and lowering transaction costs between borrowers and lenders (Leyland & Pyle, 1977). The activities of banks ensure that firms are well funded while at the same time capital is allocated to the most productive use. $SMDI*BSDI$ is an interaction term measuring complementarity and substitutability between banks and stock markets in funding growth. Literature and empirical evidence are replete with conflicting views on whether banks and stock markets are substitutes or compliments. The impact of the interaction term on growth is taken to be ambiguous.

Labour force participation (LF), gross fixed capital formation (GFCF), inflation (INFL) and trade openness (TO) are control variables. Labour force is part of the four essential factors of production in any economy. Increase in labour force participation enhances economic development (Kargi, 2014). It supports growth through provision of a diversified skills base. Gross fixed capital formation (GFCF) is a measure of domestic investment that emanate from new investments made by domestic firms either existing or new market entrants. Higher levels of investment are expected to increase employment and spur a country's productive capacity through increase in aggregate

demand (Tobin, 1965). Both labour force participation (LF) and gross fixed capital formation are expected to have a positive effect on economic growth.

A low level of inflation is desirable because it promotes economic growth through supporting investment and efficient use of resources (Ahortor, et al., 2011). However, theoretical explanations show that the impact of inflation on economic growth is not clear cut. It can have a negative, positive, and neutral effect based on whether money complements capital (Fischer, 1981), substitute capital (Tobin, 1965) or is super-neutral (Sidrauski, 1967). Due to more evidence showing the negative effects of inflation on economic growth in low-income countries, the current study expects higher levels of inflation (INFL) to subdue economic growth.

Trade openness (TO) can enhance economic growth via several channels that include: (1) provides access to a wider variety of goods and services, (2) improve factor productivity by facilitating dissemination of knowledge and technology diffusion and (3) enhance efficiency in resource allocation (Barro & Sala-i-Martin, 1997). However, it can also subdue economic growth through increasing inflation and lowering exchange rates (Cooke, 2010). For less developed countries that produce primary goods and low-quality products, exposure to competition can increase vulnerability (Hausmann, Hwang & Rodrik, 2007). Following these theoretical explanations and mixed evidence (Keho, 2017), the effect of trade openness on economic growth is taken to be ambiguous.

Further to that, the research controls for regional integration by including dummy variables TP, FIP and TP*FIP in the model. The motive is to find out how regional integration affect the relationship between banking sector development and stock market development in funding economic growth.

In line with Abdelaziz, et al. (2019), Mahawiya (2015), Novalina, et al. (2019), and Sumer (2012) the banking sector, stock market and economic growth equation were estimated using Seemingly Unrelated Regression (SUR). The choice of SUR method was motivated by the additional efficiency obtained in estimation by combining information from different equations. This method results in small standard errors particularly in larger samples. Since the method can be utilised in both cases where there is a single dependent variable or different dependent variables (Abdelaziz, et al.; 2019; Novalina, et al.; 2019; Sumer, 2012; Zellner, 1962), it was deemed appropriate for this study. The model is also appropriate in panels with long T and small N, which is the case in this study. The SGMM technique was chosen for robustness check because of its ability to deal with endogeneity between finance and growth and between banking sector and stock market development as well as the use of the lagged dependent variable as a regressor (dynamic term). The method is also handy in controlling for country specific effects, heteroskedasticity and autocorrelation (Pedroni, 2000; Rioja & Valev, 2004). The following section will show presentation, analysis, and discussions of the estimation results.

4. DISCUSSION OF RESULTS

The growth model was run with the aim of figuring out the interaction between banking sector development and stock market development in funding economic growth. Table 4.1 show results from the SUR model while Table 4.1 show the results from the GMM estimator used for robustness. Tables 4.1 and 4.2 show that banking sector development index (BSDI) positively influence economic growth in the region. The results support the supply leading hypothesis which

postulated that the banking sector positively influence economic growth through channelling financial resources from surplus units to deficit units.

When the BSDI is substituted by private credit from deposit money banks (PCDMB) the results confirm the positive effect, showing that credit extend to the private sector by banks enhances the productive ability of firms thereby improving economic growth. The findings agree with theoretical pronouncements showing that the banking sector support growth through pooling savings, reducing the cost of distributing savings, lowering information asymmetry and funding investments into productive assets (Levine,1997; Swan,1965). These results are in line with findings in SADC by Taivan and Nene (2016) and Mahawiya and Dramani (2020) though they contradict Bara, et al. (2016) and Moyo and Le Roux (2020). The results also show that controlling for regional financial integration and trade integration using protocols does not significantly alter the effect of banks on economic growth. The weak effect shown by the results signal low levels of development of banking sector, thereby not having a robust impact on growth.

With regards to stock markets, the results show that 2 of the coefficients for SMDI under the SUR estimator are negative against 1 that is positive. However, all the 3 coefficients from the GMM estimator show that SMDI has a significant positive effect on economic growth. Since most regressions show a positive effect, the results imply that stock market development could enhance economic growth in SADC. Controlling for regional integration using the trade protocol and the finance and investment protocol show that integrating with regional countries significantly increased the coefficients. For instance, under the SUR model, including the interaction of financial and trade integration changed the coefficient from negative to positive. However, the low effect depicted by small coefficients show that stock markets are not contributing to economic growth as expected. This could be explained by low level of stock market development characterised by small size, few listed counters, illiquidity, and elevated levels of volatility except for South Africa.

When the SMDI is replaced with stock market capitalisation (SMC), the results show that stock market size has a positive effect on economic growth. Results from both estimators confirm that stock markets are positively associated with economic growth though the size is low. Studies by Abel, et al. (2021) and Auckbarally and Subadar (2015) also found comparable results in SADC. Similar with the case for SMDI, controlling for regional integration increases the coefficients under both approaches, suggesting that regional integration enhances the effect of stock market development on economic growth. The interaction term between SMDIBSDI is meant to test the complementarity or substitutability between banking sector and stock markets in funding economic growth. The coefficient of the interaction term is positive, showing that banking sector development and stock market development are compliments in funding economic growth. The implication of these results is that having developed banks and stock markets is beneficial to economic growth as the two support each other in providing funding to the diverse types of firms in the economy.

After controlling for trade and financial integration using the trade protocol and the finance and investment control, the results show that regional integration increases the complementary effect of banks and stock markets on economic growth. This is evidenced by increase in the magnitude of the coefficients in 3 of the four regressions measuring this effect. The coefficient of SMDIBSDI increased from 2.721 to 6.457 when trade protocol (TP) and finance and investment protocol (FIP)

dummy variables are put as independent variables. When the interaction term TPFIP is put, the coefficient of SMDIBSDI increased to 6.267 under the GMM model. The same trend is also observed under the SUR approach.

When the SMDIBSDI interaction term is replaced with SMCPDMB, the result show that stock market capitalisation and private credit by deposit money banks have a combined positive effect on economic growth. The result implies that stock market size and banking sector depth complement each other in funding economic growth in SADC. These results confirm the complementary relationship shown by the broad measures of banking sector and stock market development. Consistent with results for the SMDIBSDI interaction term, regional integration increases the complementary effect of stock market capitalisation and credit extension on economic growth. This is shown by an increase in the coefficient of the interaction term (SMCPDMB) from 0.00414 to 0.00736 and 0.00702 after controlling for the trade and finance and investment protocol and their interaction term, respectively. Though the effect is marginal (0.322% and 0.288% change), it shows that regional integration enhances the complementarity of credit extension and stock market size in funding economic growth in SADC.

The control variable labour force (LogLF) has a negative insignificant relationship with economic growth. These results could be attributable to low levels of human capital development in SADC countries. In line with results obtained by Abel, et al. (2021), the study found that trade openness (TO) has a negative influence on economic growth in the region. Both estimators show a significant negative effect, suggesting that opening to global trade is inhibiting growth in SADC. Contrary to expectations, savings as a percentage of GDP has a negative effect on economic growth rate. Out of the 12 regressions, 11 confirm a significant and negative effect on economic growth while 1 show a positive and insignificant effect. The results appear to suggest that increase in savings reduce economic growth, showing that savings are reducing the levels of consumption thereby reducing growth. In line with priori expectations, gross fixed capital formation (GFCF) has a positive effect of economic growth. This suggest that GFCF is stimulating economic growth through enhancing the countries' productive capacity consistent with Bara, et al. (2016). Inflation (INFLN) has a negative and significant effect on economic growth in SADC. These results are not only in line with evidence obtained by Bandura, et al. (2019) and Bara, et al. (2016) but also agree with theory which suggest that inflation reduces economic activity through weakening consumption and investment. Foreign direct investment as a % of GDP (FDI) has an insignificant negative effect on GDP growth as shown by majority of the regressions Out of the 12 regressions only 3 show a positive effect while 9 show a negative effect. These findings are in line with results obtained by Mahembe and Odhiambo (2015).

The regional trade integration dummy variable (TP) has an ambiguous but insignificant effect on economic growth. Results from the SUR model shows a positive but insignificant effect while the GMM approach show negative but insignificant effect. Though contradictory, the results show that the trade protocol does not have a material impact on economic growth. This result is supported by low levels of intra-SADC trade as well as lack of beneficiation. Similarly, the measure for financial integration (FIP) has a negative insignificant effect on economic growth according to both estimators. The results suggest that finance and investment protocol is not yet affecting growth in a material way but could have detrimental effects in the region. The interaction term (TPFIP) has an insignificant effect on economic growth suggesting that the joint

implementation of the trade protocol and finance and investment protocol is not affecting economic growth materially. This could be explained by the infancy of the FIP, small economic size of the SADC, undiversified economies, incomplete implementation of the protocols, underdeveloped financial sector, and low levels of industrialisation.

The Breusch-Pagan test of contemporaneous correlation show the equations are correlated, rejecting the null hypothesis of no contemporaneous correlation. This shows that the SUR estimator is a suitable model. The Sargan test for over showing restrictions under the GMM model show that the instruments are valid. This is due to failure to reject the null hypothesis, implying that the model was correctly specified. The AR (2) statistic shows absence of higher order autocorrelation, showing validity of the estimations.

Table 0.1: SUR economic growth model results (Author compilation)

| Variables | GDP (1) | GDP (2) | GDP (3) | GDP (4) | GDP (5) | GDP (6) |
|--------------------|------------------------|----------------------------|------------------------|------------------------|---------------------------|----------------------------|
| GDP _{t-1} | 0.285*** (0.0719) | 0.284*** (0.0722) | 0.285*** (0.0704) | 0.285*** (0.0714) | 0.283*** (0.0707) | 0.285*** (0.0720) |
| SMDI | -0.0122* (0.0610) | | -0.0124 (0.0616) | 0.0173** (0.0628) | | |
| BSDI | 0.0153** (0.0646) | | 0.0157** (0.0652) | 0.01482** (0.7444) | | |
| LogLF | -1.1903 (0.7974) | -1.0989 (0.7982) | -1.1876 (0.7521) | -1.1873 (0.7624) | -1.0897 (0.7841) | -1.1016 (0.7968) |
| GFCF | 0.151*** (0.0581) | 0.149** (0.0585) | 0.151*** (0.0570) | 0.151*** (0.0577) | 0.148*** (0.0574) | 0.149** (0.0584) |
| INFLN | -0.0903*** (0.0257) | -0.0899*** (0.0259) | -0.0902*** (0.0252) | -0.0899*** (0.0258) | -0.0897*** (0.0253) | -0.0899*** (0.0258) |
| TO | -0.0283** (0.0113) | -0.0282** (0.0113) | -0.0282** (0.0110) | -0.0283** (0.0112) | -0.0280** (0.0111) | -0.0282** (0.0113) |
| SMDIBSDI | 0.000602 (0.0603) | | 0.000757 (0.0609) | 0.00154 (0.0587) | | |
| S | -0.0586** (0.0268) | -0.0578** (0.0270) | -0.0589** (0.0263) | -0.0588** (0.0266) | -0.0580** (0.0265) | -0.0579** (0.0269) |
| FDI | -0.151 (0.0957) | -0.152 (0.0962) | -0.152 (0.0937) | -0.151 (0.0949) | -0.153 (0.0940) | -0.152 (0.0959) |
| SMC | | 0.000484** (0.00510) | | | 0.000576** (0.00533) | 0.000495** (0.00503) |
| PCDMB | | 0.000580** (0.00420) | | | 0.000614*** (0.00439) | 0.000557** (0.00415) |
| SMCPCDMB | | 0.0000266** (0.0000932) | | | 0.000029** (0.0000961) | 0.0000253** (0.0000933) |
| TP | | | 0.0358 (0.0873) | | 0.0462 (0.109) | |
| FIP | | | -0.0467 (0.118) | | -0.0517 (0.124) | |
| TPFIP | | | | -0.0123 (0.0699) | | -0.00540 (0.0408) |
| Obsv | 144 | 144 | 144 | 144 | 144 | 144 |

Breusch-Pagan test of independence: chi2 (15) = 2036.063, p value = 0.0000

Table 0.2: GMM economic growth model results (Author compilation)

| Variables | GDP (1) | GDP (2) | GDP (3) | GDP (4) | GDP (5) | GDP (6) |
|--------------------|--------------------|------------------|-------------------|------------------|-------------------|------------------|
| GDP _{t-1} | 0.403** (0.167) | 0.243 (0.432) | 0.420* (0.196) | 0.348 (0.329) | 0.372* (0.172) | 0.312 (0.255) |
| SMDI | 0.0712* (0.408) | | 0.283* (0.784) | | 0.316* (0.780) | |
| BSDI | 0.407* (0.425) | | 0.839* (0.815) | | 0.826* (0.746) | |

| Variables | GDP (1) | GDP (2) | GDP (3) | GDP (4) | GDP (5) | GDP (6) |
|----------------|-----------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| LF | -0.789 (1.340) | -13.16 (13.57) | -1.045 (2.723) | -20.34 (23.37) | -0.986 (2.600) | -17.91 (18.65) |
| GFCF | -0.0171* (0.0917) | 0.305** (0.379) | 0.103*** (0.130) | 0.728*** (0.807) | 0.0877** (0.112) | 0.608** (0.438) |
| INFLN | - 0.00363*** (0.0571) | -0.0231*** (0.199) | -0.0401*** (0.124) | -0.0602*** (0.425) | -0.0115*** (0.0945) | -0.0878*** (0.404) |
| TO | -0.0190** (0.0293) | -0.282** (0.337) | -0.0400** (0.0606) | -0.544** (0.515) | -0.0353** (0.0553) | -0.463** (0.372) |
| SMDIBSDI | 2.721** (0.919) | | 6.457** (2.526) | | 6.267** (2.643) | |
| S | 0.0168 (0.0450) | -0.148* (0.146) | -0.0659* (0.0807) | -0.309* (0.349) | -0.0689* (0.0865) | -0.267* (0.283) |
| FDI | -0.0627 (0.210) | 0.219 (0.110) | -0.0702 (0.338) | 0.306 (0.482) | -0.0939 (0.365) | 0.282 (0.401) |
| SMC | | 0.300** (0.299) | | 0.506** (0.609) | | 0.481** (0.539) |
| PCDMB | | 0.0635*** (0.165) | | 0.195*** (0.270) | | 0.178*** (0.236) |
| SMCPCDM | | 0.00414** (0.00443) | | 0.00736** (0.00859) | | 0.00702** (0.00767) |
| TP | | | -1.362 (2.158) | -1.400 (2.770) | | |
| FIP | | | -3.609 (2.860) | -0.342 (1.569) | | |
| TPFIP | | | | | -4.324 (2.522) | -0.730 (1.292) |
| Sargan p value | 0.300 | 0.575 | 0.913 | 0.574 | 0.922 | 0.710 |
| AR (2) | 0.136 | 0.334 | 0.922 | 0.258 | 0.979 | 0.205 |
| Obsv | 144 | 144 | 144 | 144 | 144 | 144 |

5. CONCLUSION

This article looked at the relationship between banking sector development and stock market development in funding economic growth in the SADC region. Considering that SADC is classified as a regional economic community, in which policies to promote regional integration have been pursued, the article endeavoured to examine how these policy measures impact the relationship between banking sector development and stock market development. The article concludes that banking sector development and stock market development have a complimentary relationship in funding economic growth. This entails that development in the banking sector support development of stock markets in funding economic growth. Similarly, stock markets support the development of banks. In other words, these two segments co-evolve. Therefore, it is plausible to conclude that policies that foster banking sector development should positively affect development of stock markets. The article further reveals that the complementary effect between banking sector development and stock market development is amplified by regional integration through the trade and finance and investment protocols, suggesting that regional integration is supporting growth through increasing the complementary effect of banking sector and stock markets.

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ANALYSING THE IMPLICATIONS OF IMPLEMENTING ADVANCE PRICING AGREEMENTS IN SOUTH AFRICA: A CRITICAL REVIEW

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ABSTRACT

Advance pricing agreements (APAs) have become a popular option for pre-empting transfer pricing compliance disputes. This paper aims to contribute to APA policy development in South Africa by making recommendations regarding the benefits and obstacles of implementing APAs legislations in South Africa. A critical review methodology to assess the usage, implementation, benefits and drawbacks of APAs globally was carried out through four phases: the design, conducting, data abstraction and analysis, structuring and writing of the review. The aim of the review guided the inclusion criteria. A total of 50 studies had material that was considered suitable for this review. The results from various searches were sorted by relevance and data abstracted were in the form of descriptive information, such as authors, years published, topic, or type of study, or in the form of effects and findings. The results of the analysis showed that despite a robust growth in APAs in recent years, South Africa and the vast majority of other developing countries do not have APA legislations even though these emerging economies seem to need APAs the most. This is so because these countries experience capital flight on a scale that is unheard of in developed nations and rely far more on earnings generated by corporate taxes. It is recommended that the South African government not only speed up the provisions for APAs within the country, but also take measures to entice interested parties to focus more on bilateral and multilateral APAs, given the advantages that these two hold over unilateral APAs. This is particularly important for South Africa, taking into consideration the fact that South Africa will find it hard to emerge a winner in any sort of cross-border dispute regarding the applicability of unilateral APAs.

Keywords: Advance pricing agreements; base erosion; capital flight; corporate taxes; emerging economies; transfer pricing disputes, the arm's length principle

1. INTRODUCTION

Since its emergence in the United States (US) in the early 90s, the use of advance pricing agreements (APAs) as a negotiating tool to mitigate the complexities and frustrations around transfer pricing has spread to more than 30 countries (Ernst & Young, 2017). For instance, within the EU, active APAs quadrupled from 390 in 2012 to 1 252 in 2015 and almost doubled again to 2 053 by early 2017 (Ryding, 2018). The EU countries with the most extensive use of APAs in 2016, according to Ryding (2018), were Belgium (1 095) and Luxembourg (599). According to Brychta and Sulik-Gorecka (2019:210), the objectives of an ideal transfer pricing regulation must be threefold: The preservation of the host country's tax base; the establishment of clear and concise rules that ensure consistency and transparency in trade with related parties by multinational

enterprises (MNEs); and dispute-resolution that aims to satisfy all parties involved – the MNE and the tax authority. Transfer pricing is a field that is loaded with a plethora of operational, tax and legal obstacles; the complexities and controversies around transfer pricing and the pitfalls surrounding fiscal compliance by MNEs can never be overstated. Several studies (Cools, Emmanuel & Jorissen, 2008; Nguyen, Tham, Khatibi & Azam, 2020; Sundaram, 2012; Vega, 2012) detail the difficulties that both tax authorities and taxpayers (MNEs) grapple with, in regard to acceptable transfer pricing. In an ideal world, MNEs would prefer to use transfer prices that engender both financial objectives like profit maximisation and managerial objectives like performance evaluation and goal congruence (Siewe, 2016).

Amidst all the uncertainties, one unavoidable fact is that as MNEs have grown larger and more complex, the use of transfer pricing as a vehicle for profit reallocation has become more prevalent and nations have subsequently tightened their transfer pricing legislation substantially, beginning with the US in the early 1990s (Avoseh, 2014). Many developed and developing countries apply transfer pricing regulations to thwart the perceived tendency by MNEs to erode the tax base of host countries via shifting profits from high-tax countries to low-tax countries (Choi, Furusawa, & Ishikawa, 2020). Despite the fact that the OECD prescribes the arm's length policy (ALP) as the cornerstone of what should be acceptable transfer pricing practice (Eden, 2015; Siewe, 2016), several studies (e.g., Kofler, 2013; Oguttu, 2006a; Sundaram, 2012; Yao, 2013) have documented challenges that MNEs face in terms of compliance with the ALP. Moreover, the absence of clear guidelines regarding how acceptable transfer prices should be arrived at, viewed holistically along with the complexities of transfer pricing regulations and the multi-layered nature of MNEs and their operations, provides the basis for the recent uptick in transfer pricing audits. Ernst and Young (2017), in their survey, found that transfer pricing disputes/conflict between the tax authority and the taxpayer, because of perceived breaches of transfer pricing compliance regulations, have increased dramatically. This is further evidenced from the results of a survey conducted by Deloitte on 261 MNEs in 2015, which indicated that respondents considered the tax aggressiveness of authorities as one of the top issues in the development and application of transfer pricing policies (Nguyen et al., 2020).

Ulmer, Ethridge and Marsh (2013) posit that the only safe zone within the topsy-turvy world of transfer pricing is APAs, despite its concerning shortcomings. Their argument is buttressed by Becker, Davies and Jakobs (2016), who, in their survey on the economics of APAs, observe that there has been a sharp increase in the use of APAs between 2009 and 2012, with the number of agreements increasing from 798 to 2 055. This study, however, only focused on the trend for MNEs operating within the developed world, paying scant attention to Africa and other emerging regions. The statistics from a study conducted by Wier (2020) indicate that South Africa's corporate tax receipts comprised approximately 25.5% of GDP, comparative to 34% for OECD countries. Furthermore, corporate tax receipts in South Africa occupy 19% of total tax receipts, compared to an average of 11% for developed nations (Wier, 2020). This indicates that South Africa falls in a common category for developing nations that are overly reliant on corporate taxes and for whom the effects of transfer mispricing are particularly damaging (Crivelli, De Mooij & Keen, 2015), even when there is evidence, as posted by Wier (2020), that transfer mispricing on the movement of goods is the same for South Africa as it is for developed countries. Crivelli et al. (2015) further estimate that the revenue losses to profit shifting by MNEs for developing countries like South Africa are equivalent to approximately 1.3% of GDP. This is obviously exacerbated by South

Africa's reliance on this particular revenue stream. The questions, therefore, are: Why are APAs not as attractive or prevalent within emerging nations, specifically in South Africa, which is Africa's largest economy, as they are in other, developed countries? Secondly: What are the advantages and disadvantages of using APAs?

Despite the prevalence of studies on the application of APAs in other parts of the world, there is scant literature assessing the importance, applicability and benefits, or the lack thereof, of APAs within the context of emerging economies. This paper aims to first address the gap in the literature regarding the applicability of APAs in emerging economies, specifically in South Africa. Secondly, the paper will make recommendations on the potential role of APAs in reducing transfer pricing uncertainty and transfer pricing disputes within the context of South Africa. Thirdly, the study will appraise reasons why developing nations seem reticent to foster APAs, even though they are ever-more common in developed countries.

2. LITERATURE REVIEW

2.1 Origins and objectives of APAs

The OECD defines an APA as '*...an arrangement that determines, in advance of controlled transactions, an appropriate set of criteria (e.g., Method, comparables and appropriate adjustments thereto, critical assumptions as to future events) for the determination of the transfer pricing for those transactions over a fixed period of time. An APA is formally initiated by a taxpayer, one or more associated enterprise, and one or more tax administrations*' (OECD, 2017:214). Cooper, Fox, Loepnick and Mohindra (2016:316) apply a more succinct definition noting that an APA '*...is an agreement, which specifies the transfer pricing approach that the taxpayer will use for intercompany transactions*'. In the rest of this paper, the term advance pricing agreement (APA) will imply a binding arrangement between the MNE and the tax authority, stating the terms of trade for specific future cross-border transactions. Ehrstedt and Alm (2011) point out that Japan was the first country to institute APAs in the 1980s. The US followed suit thereafter in 1991, when the Internal Revenue Service (IRS) started getting into bilateral agreements with MNCs regarding the future application of transfer pricing methodologies (Eden, 2009); these agreements were typically binding for a fixed period. Osborn and Khripounova (2016) predicted that more MNEs were bound to take a keener interest in APAs after tax authorities began implementing the OECD report on BEPS in 2015, given that the report significantly added to the already-high levels of uncertainty surrounding transfer pricing. Ndirangu (2015) notes that in India, a developing nation, more than 200 applications for APAs were filed within two years after it was first legislated in 2012.

2.2 Types of advance pricing agreements

The APAs that MNEs can enter into range from unilateral (with one country), bilateral (with two countries) or multilateral (with more than two countries), depending on whether these countries have an existing tax treaty (Brychta & Sulik-Gorecka, 2019; Cooper et al., 2016). One could infer that bilateral and multilateral APAs circumvent the issue of double taxation that MNEs operating in multiple tax jurisdictions face (Nielsen, 2015). Markham (2020) and Oktaviani and Tambunan (2021) caution that even though unilateral APAs are less costly, easy to negotiate and as such, less time-consuming, they offer little protection against future audits, given that any form of cross-

border trading requires at least two tax authorities, and the unilateral APA only involves one tax authority. The MNE can thus very easily become the ‘ham in the sandwich’ between two opposing tax jurisdictions, where a unilateral APA is signed (Kerschner & Stiasny, 2013). This explains why statistics provided by Nielsen (2015) indicate that in the US, between 1991 and 2013, 459 unilateral APAs were filed, whereas 993 bilateral APAs were filed. Avoseh (2014) observes that tax authorities in developed nations like the US, Canada, Japan and Australia began getting into APAs with MNEs to enable the host governments to protect their tax base and also provide a medium for these MNEs to mitigate the inherent difficulties of compliance with transfer pricing regulations that are based on the ALP.

Eden and Byrnes (2018) summarise the procedure for establishing an APA into three phases: the pre-filing phase, during which an APA form is requested by the MNE; the due-diligence phase, during which the taxpayer submits an application and agreement between the parties involved is reached; the last phase consists of the signing of a binding agreement between all parties involved. In his doctoral dissertation on the APA process in the United Kingdom (UK), Avoseh (2014) points out that while more and more countries were legislating APAs, other countries continued with APA programmes without any specific legislation in place. He, however, does not mention any trends or statistics relative to how the two forms of accommodating APAs are applied globally. In their study on the use of APAs as an unintended form of state aid, Eden and Byrnes (2018) observe that in 2016, there were at least 1 500 APAs in existence within the European Union, signed by more than 200 MNEs operating in the region and that in 2018, there were approximately 400 APAs being actively used by just over 400 MNEs in the US. In her examination of APA trends following the BEPS initiative by the OECD, Markham (2020) further found that there were a record-breaking 203 applications for APAs in the US in 2018. This confirms the attractiveness of APAs in the eyes of MNEs. Nielsen (2015:13) indicates that APAs increased in popularity as a result of “...*the increased scrutiny of transfer pricing (TP) and the uncertainty and scope of potential TP-related penalties levied by taxing authorities.*”

2.3 Objectives of advance pricing agreements

APA is one of several actions that MNEs take to pre-empt transfer pricing controversies and disputes, as well as to avoid double taxation (Avoseh, 2014; Fan, 2008). Other techniques include negotiation with tax authorities to settle transfer pricing disputes/audits, safe harbours and competence authority assistance (Avoseh, 2014; Chugan & Kumar, 2010; Cooper et al., 2016; Fan, 2008). Becker et al. (2016) further argue that APAs are typically negotiated between the MNE and one or several high-tax countries, with low-tax countries notably remaining passive. This observation is substantiated by Ryding (2018) who states that low tax ‘source’ countries often do not have any interest in tax avoidance. However, their study fails to consider a scenario where an MNE may have to choose amongst several equally attractive low tax countries. Chugan and Kumar (2007) posit further that the objective of APAs is to create an environment in which MNEs can come to an understanding with tax authorities regarding the future application of the ALP such that the fear of an audit is dispelled.

Emerging countries and the South African landscape

South Africa, as a developing country, stands at a risk of losing revenue through capital flight. Ndirangu (2015) reports that emerging countries lose more than \$80 million in taxable revenue

each day to capital flight. Furthermore, in a study conducted by UNCTAD (2015) in 2014, it was estimated that developing countries lose on average \$90 billion of taxable earnings annually to profit shifting. The report points to transfer mispricing of digitised intangibles as the main tool used by MNEs to execute this profit shifting. In a related vein, Kurauone et al. (2020), report in their survey on 37 African countries that at least 54% of MNEs operating on the continent under-report their taxable revenue. It goes without saying, therefore, that emerging nations face a far more urgent need to implement measures to curb revenue leakage through BEPS. Sikka (2017), however, warns that many developing countries are simply not well-equipped sufficiently to develop and implement transfer pricing regulations to rein in the MNEs operating within their jurisdictions. According to South African tax law, multinational corporations (MNCs) operating in the country must declare any APAs that they currently have, even though South African tax law does not make any provisions for APAs.

South Africa's legislation on transfer pricing is enshrined in Section 31 of the Income Tax Act 58 of 1962, together with Section 25 of the Tax Administration act No. 28 of 2011 (Income Tax Act 58, 2017). Unfortunately, the legislation is somewhat vague on the issue of ex ante transfer pricing dispute resolutions (Radhakrishna, 2019). Gray (2017) contributes further to this observation by stating that the Tax Administration Act of 2011 does not give the South African Revenue Service (SARS) the wherewithal to consider 'advance rulings' on transfer pricing matters and no reasons are provided for this. It should be pointed out here that that a cornerstone of SARS's efforts to establish and improve certainty regarding transfer pricing and the complexities thereof is Practice Note 7 (PN7), issued by the institution in 1999 (Mqina, 2022; Gray 2917). Tambunan et al. (2020) take the view that the acute shortage of technical ability, administration capacity and the ability to develop, execute and maintain an APA framework account for why there are no domestic APA regulations in place yet. This, despite the best efforts by SARS to create an atmosphere of relative certainty within its tax system especially in terms of specific transactions; for instance, by providing extensive clarity and guidance on Mutual Assistance Procedures (MAP) in order to fast-track assistance to MNEs in areas such as dual residence of individuals, the allocation of profits of a permanent establishment and adjustment requests related to transfer pricing (Radhakrishna, 2019). Radhakrishna (2019) further echoes the observations by Tambunan et al., by directing the spotlight upon the recommendations of the Davis Tax Committee (DTC) as an indicator of the skills scarcity plaguing SARS. The DTC was an offshoot of the 2013 OECD research on BEPS and the Committee was tasked with evaluating the readiness of the tax system in South Africa with regards to BEPS (Gray, 2017; Radhakrishna, 2019). One would infer here that South Africa's willingness to incorporate the prescripts of the OECD with regards to transfer pricing regulations in general has yielded some benefits, even though the country's tax legislation falls well short of the establishment and implementation of binding regulations that provide certainty with regards to cross border transactions and the spectre of double taxation, which piggybacks upon that; but the tax system equally does not make provisions for and certainly does not have the technical and administrative capacity to institute proactive solutions to transfer pricing disputes.

3. METHODOLOGY

This research follows a critical review process. The aim of a critical review is to demonstrate that the writer has extensively researched the literature and critically evaluated its quality (Grant & Booth, 2009). A critical review provides an opportunity to 'take stock' and evaluate what is of

value from the previous body of work. As such, it may provide a ‘launch pad’ for a new phase of conceptual development and subsequent ‘testing’ (Grant & Booth, 2009). Such a review serves to aggregate the literature on a topic and the resulting product is the starting point for further evaluation (Grant & Booth, 2009). On the other hand, a systematic review seeks to systematically search for, appraise and synthesise research evidence (Grant & Booth, 2009). It often adheres to guidelines on the conduct of a review and aims for exhaustive, comprehensive searching. Quality assessment may determine inclusion/exclusion and typically has a narrative with tabular accompaniment (Grant & Booth, 2009). The analysis looks at what is known, recommendations for practice, what remains unknown, uncertainty around findings and recommendations for future research (Grant & Booth, 2009).

In using a critical review process, the status quo on APAs in South Africa is reported.

The review process was carried out through four phases: the design, conducting, data abstraction and analysis, structuring and writing of the review. The process started with a search in various databases (Google schola, Bielefeld academic search engine (BASE), Microsoft Academic, Elsevier (business management and accounting), Mendeley, Google books, Worldwide science.org, refseek) following keywords and phrases. Search items included citations, journal publications, patents, repository publications, conference publications, books, book chapters and theses. Search criteria were that the articles should be written in English, published after January 2010, have transfer pricing complexities; the challenges of transfer pricing; the challenges of the ALP; BEPS; transfer pricing and APAs; APAs in emerging economies; APAs in the European Union; advantages of APAs; APAs and transfer pricing compliance; guide to APAs; EU statistics on APAs; advantages and disadvantages of APAs, transfer pricing abuses, profit shifting in developing countries APA. The aim of the review guided the inclusion criteria. The results from various searches were sorted by relevance after scanning article abstracts. Data abstracted were in the form of descriptive information, such as authors, years published, topic, or type of study, or in the form of effects and findings. A total of 50 studies had material that was considered suitable for this review.

Table 1: Summary of literature review

| Author(s) | Year | Focus area |
|-----------------------|------|--|
| Nielson, J. M. | 2015 | <ul style="list-style-type: none"> • Fundamentals of APAs. • Procedure for establishing APAs under US law • Types of APAs |
| Sundaram, J.K. | 2012 | <ul style="list-style-type: none"> • APAs as an option for resolving/pre-empting the conflicts that arise from transfer pricing. |
| Piper, D.L.A. | 2017 | <ul style="list-style-type: none"> • APA and MAP country guide • Summary of APA and MAP policies/legislation in 39 countries with transfer pricing footprint |
| Ado, M. | 2015 | <ul style="list-style-type: none"> • Dissertation on the viability/feasibility of implementing APAs in Kenya. • Outlines the origins, advantages and disadvantages of APAs • Overview of the implementation of APAs in selected countries (US, India, China, Japan) |
| Afik, Z. and Lahav. Y | 2016 | <ul style="list-style-type: none"> • The effect of APA negotiations on profitability of subsidiaries, relative to parents. • The implications of implementing a risk-transfer premium during APA negotiations. |

| Author(s) | Year | Focus area |
|---|------|---|
| Alm, M. and Ehrstedt, H. | 2011 | <ul style="list-style-type: none"> Perceived benefits of implementing APAs by MNEs in Sweden. Focus is on bilateral APAs Comparative analysis Sweden and Germany |
| Avoseh, O.O. | 2014 | <ul style="list-style-type: none"> Cost vs benefits of APAs. Preserve of large MNEs The clarity – and lack thereof – of TP guidelines influences the certainty of the applicability of APAs The need for a standardised, generic template for APA applications to simplify the process |
| Becker, J., Davies, R.B. and Jakobs, G. | 2014 | <ul style="list-style-type: none"> The influence on APAs on after-tax profits and tax bases of corporations and government authorities respectively Comparison between the drawback of using APAs to reduce uncertainties (hold-up) and the principal agent problems that arise when these APAs are used. |
| Becker, J. Davies, R.B. and Jakobs, G. | 2017 | <ul style="list-style-type: none"> APAs increase overall profits Multilateral APAs are better than bilateral. There is a higher incidence of APAs for high-profit firms APAs do not reduce required audit capacity. APAs may encourage profit-shifting to low-profit locations |
| Borkowski, S. C. | 2008 | <ul style="list-style-type: none"> Trends in APA popularity from 2002 – 2006 Trends in APA and MAP completion times – degree of efficiency of completion. |
| Brem, M. | 2005 | <ul style="list-style-type: none"> Comparative analysis of the application of APAs between the USA and Germany. |
| Broomhall, D. | 2007 | <ul style="list-style-type: none"> Addressing issues surrounding the identification of relevant comparables that will be remain valid for the duration of an APA. |
| Brychta, K. and Sulik-Górecka, A. | 2019 | <ul style="list-style-type: none"> Comparative analysis of the legal provisions for the implementation of APAs in the Czech Republic and Poland. |
| Cooper, J., Fox, R., Loeprick, J. and Mohindra, K. | 2016 | <ul style="list-style-type: none"> Fundamental requirements necessary for APAs to thrive. |
| Chugan, P.K. | 2007 | <ul style="list-style-type: none"> Overview of APAs, procedures for setting them up, advantages and disadvantages |
| Chugan, P.K., | 2014 | <ul style="list-style-type: none"> Overview of Safe Harbour Rules and APAs and an in-depth discussion of their feasibility in India |
| Davies, R. B., Martin, J., Parenti, M. and Toubal, F. | 2018 | <ul style="list-style-type: none"> Overview of the origins of APAs in France |
| Deloitte | 2017 | <ul style="list-style-type: none"> Overview of the application of APAs in the USA, Europe and Japan Perceived benefits of such applications and expected future trends in APAs globally. |
| De Waegenare, A., Sansing, R. and Wielhouwer. J.L. | 2007 | <ul style="list-style-type: none"> In depth analysis of bilateral APAs (BAPAs) Circumstances in which BAPAs would be beneficial to all parties involved Circumstances in which BAPAs may be unattractive to MNEs. |
| Eden, L. and Byrnes, W. | 2018 | <ul style="list-style-type: none"> The unforeseen, negative consequences of APAs, The possible categorisation of APAs within the EU as illegal state-aid. |
| Ernst & Young | 2019 | <ul style="list-style-type: none"> Global trends in APAs: increasing popularity, benefits regarding risk avoidance and difficulties with extremely long processing times. |
| Ernst & Young | 2020 | <ul style="list-style-type: none"> Reference guide for transfer pricing and APA legislations across the globe |
| European Commission | 2018 | <ul style="list-style-type: none"> Statistics on APAs at the end of 2017 |
| Fan, X. | 2008 | <ul style="list-style-type: none"> Extremely high application costs Convolutd and often drawn-out application process Short period of validity Resource (human and material) unavailability to deal with complexities of APAs |

| Author(s) | Year | Focus area |
|---|------|---|
| Gray, M. | 2017 | <ul style="list-style-type: none"> Evaluation of the legislative framework and other variables influencing the possible implementation of APAs in South Africa |
| Hickman, C. | 1998 | <ul style="list-style-type: none"> Concerns surrounding the secrecy surrounding APAs and possible implications for competitors. |
| Ioana, I.N. | 2017 | <ul style="list-style-type: none"> The impact of core disadvantages of APAs (cost, time) on the willingness to apply for APAs. Correlations between APAs – or the lack thereof - and double taxation treaties. |
| Kerschner, I. and Stiastry, M. | 2013 | <ul style="list-style-type: none"> Overview, advantages and disadvantages of APAs Applicability of APAs in Austria |
| Khan, Z. | 2019 | <ul style="list-style-type: none"> Descriptive study – overview of APA landscape in the UK and India Evaluation of south Africa’s potential to implement APAs |
| Lohse, T. and Riedel, N. | 2012 | <ul style="list-style-type: none"> The potential/willingness for organisations to sacrifice after-tax profits for APA-founded certainty. Trends in BAPAs from 1999 – 2009. Impact of APAs on income shifting |
| Lohse, T., Riedel, N. and Spengel, C. | 2014 | <ul style="list-style-type: none"> Overview of APAs and progression from uni- to bilateral APAs. Role of APAs in attracting FDI Trends in APAs in Europe, Asia and American countries |
| Markham, M. | 2020 | <ul style="list-style-type: none"> Unforeseen/unintended implications of the 2013 BEPS action plan. Advantages of bilateral APAs over unilateral APAs. Emphasis on lack of resources as the major hurdle hindering APAs in Africa. |
| Ndirangu, L.N. | 2013 | <ul style="list-style-type: none"> Overview of APA application in the UK, the USA and India. Discussions of the possible benefits of APAs to the Kenya tax system. Recommendations for the successful integration of APAs into the Kenya tax system |
| Nielson, J.M. | 2015 | <ul style="list-style-type: none"> Overview of the procedure for applying for APAs within the US tax system |
| Oktaviani, D.T. and Tambunan, M.R.U.D. | 2020 | <ul style="list-style-type: none"> Origins of APAs in Indonesia Outlines the trends in APA application after the implementation of PMK/2015 – modified transfer pricing legislation. Discusses the strengths and weaknesses of PMK/2015 in relation to APAs. |
| Osborn, J. and Khripounova, E. | 2016 | <ul style="list-style-type: none"> Applicability of APAs in the wake of BEPS 13 |
| Piper, D.L.A. | 2019 | <ul style="list-style-type: none"> APA and MAP country guide Summary of APA and MAP policies/legislation in 39 countries with transfer pricing footprint |
| Radhakrishna, N. | 2019 | <ul style="list-style-type: none"> Analysis of the tax framework within which SARS can implement APAs in South Africa |
| Ring, D.M. | 2000 | <ul style="list-style-type: none"> Exhaustive exploration into the origins of APAs in the USA Impacts of the introduction of APAs on traditional transfer pricing interactions Benefits and shortcomings of APAs |
| Rossing, C.P | 2013 | <ul style="list-style-type: none"> An exploration of the downsides of APAs specifically in relation to organisational value chain/long-term strategy. |
| Ryding, M. | 2018 | <ul style="list-style-type: none"> Overview of the application of APAs in Europe. Negative connotations to the application of APAs Consequences for developing countries. |
| Snyder, A. | 1995 | <ul style="list-style-type: none"> Implications of measures taken by the US IRS to facilitate the incorporation of APAs to global operations by financial institutions |
| State Taxation and Administration, People’s Republic of China | 2018 | <ul style="list-style-type: none"> APA statistics in China up till 2018 |

| Author(s) | Year | Focus area |
|--|------|---|
| Tambunan, M.R.U.D., Rosdiana, H. and Irianto, E.S. | 2020 | <ul style="list-style-type: none"> • Outlines the APA proposal process, advantages and disadvantages. • Outlines the challenges faced in the implementation of APAs in emerging economies, all of which are committed to implementing BEPS Inclusive Framework (Action 14). |
| Tomohara, A | 2004 | <ul style="list-style-type: none"> • Measures that can be implemented by governments and MNEs to minimise inefficiencies in production decisions that may arise on the part of MNEs as a result of distortions attributable to BAPAs. |
| Tran, C. | 2019 | <ul style="list-style-type: none"> • Perceived benefits of transparency or full disclosure of APAs with the US IRS. |
| Ulmer, J., Ethridge, J. and Marsh, T. | 2013 | <ul style="list-style-type: none"> • Difficulties around the applicability of APAs specifically with regards to small firms and scenarios wherein BAPAs are not possible. |
| Valente, P. | 2020 | <ul style="list-style-type: none"> • A framework for applying MAP APAs in the European Union market. |
| Whitford, A.B. | 2010 | <ul style="list-style-type: none"> • The impact of inward/outward flows of FDIs on the incidence of APAs • The relationship between corporate tax rates and the incidence of APAs |

4. RESULTS

Findings from the survey conducted by Ernst & Young (2017) indicate that even though only 37% of respondents currently used APAs, 65% of respondents indicated that they would be making more regular use of APAs in future. The reasoning is simple: APAs provide certainty and thus minimises tax risk – the risk of a compliance audit. This implies that even though the tax authority may have to maintain its audit capacity, the number of audits will decrease, resulting in cost-savings for all parties concerned in the long-term. From the review of 18 authors who discussed the advantages and disadvantages of APAs, 94% mentioned the mitigation of uncertainty and controversy as the main benefit of APAs, followed by cooperation between taxpayers and tax authorities and reduction in audits and disputes (70%), prevention of double taxation (28%) and long-term cost-savings (22%). On the flip side, the primary disadvantages are the very costly application process (50%), the long-drawn-out nature of applications (39%) and the possibility that APAs, especially unilateral APAs, can lead to state-sponsored tax avoidance (22%). Every single author acknowledged though that APAs are on the rise, implying that the benefits outweigh the costs.

The APA statistics sheet, which the authors compiled using information from various sources, showed a strong correlation between the tax rate of a country and the number of APAs in that country. The countries with the highest tax rates tended to have the largest number of active APAs and APA applications, confirming the position taken by several authors that APAs are used to mitigate the rampant shifting of incomes from high-tax countries to low-tax countries. The statistics paint a glaring picture of how far back Africa is lagging other nations with regards to APAs: not a single African country has any active APAs in place. This is, of course, the opposite of what should be happening given that Africa and other developing regions experience the highest amounts of BEPS globally.

The statistics sheet also points to a huge backlog of applications due to the extremely long processing times. The longest processing time for multilateral applications was 61.6 months (Australia) for bilateral applications, 48 months in Canada and for unilateral applications, and 32 months (the US), for unilateral applications as well. Belgium ranked lowest in terms of unilateral applications processing times (3 months), Albania had the lowest processing times for bilateral applications (10 months) and Romania had the lowest processing times for multilateral applications (18 months). Unfortunately, many countries do not disclose a breakdown of

processing times according to the different types of APAs. There were 18 countries on the list that charged application/filing fees, with the US comfortably ahead of everybody else (\$60 000). None of the African countries charge any kind of application fee. This likely speaks to the desire to attract MNEs into the process. Markham (2020:7) proposes that the filing/application fee would be an attractive addition if the MNEs are assured that such payments would guarantee shorter processing times. Furthermore, countries like South Africa that face serious resource-constraints, should consider instituting filing fees in order to generate revenue that may be used to secure APA resources (Markham, 2020, 8). The term limits ranged from three to five years, with five years being the more common term limit after which the APA can be scrapped, reviewed, or rolled back.

5. DISCUSSION

5.1 Compliance

MNEs that engage in intrafirm trade across different tax jurisdictions indicated that the desire to comply with transfer pricing tax regulations and tax risk comprise two of their most concerning issues (Rossing, Cools, & Rohde, 2017; Ernst & Young, 2017; Ernst & Young, 2019). However, no statistical evaluation has been done to assess the extent to which APAs influence compliance with transfer pricing regulations. We believe that, given the uncertainties surrounding transfer pricing globally and in South Africa, as well as the significant outflows of capital from emerging countries through transfer mispricing, it is worthwhile instituting an APA programme in South Africa.

5.1.1 Disadvantages

Eden and Byrnes (2018) argue that, despite its best intentions – one of which is the expected decrease in compliance and administrative costs – APAs do have some unintended consequences. Several studies (e.g. Fan, 2008; Ulmer et al., 2013; Ernst & Young, 2019) observe that one of the most acute drawbacks of the applicability of APAs is the hefty costs involved. For instance, in the US, it costs \$50 000 to file for an APA, not to mention all the man hours and other administrative costs involved (Ulmer et al., 2013). The result is that many MNEs are hamstrung by these costs and inasmuch as they would want to, cannot apply for an APA (Fan, 2008). It should be noted though, as Ernst & Young (2019) further clarify from the findings of their survey, that MNEs were bound to take a deeper interest in APAs, given that the disclosure requirements of APAs were on par with the disclosure requirements arising from compliance requirements that were based on the OECD report on BEPS that was issued in 2015. Despite the substantial application and filing costs involved in negotiating an APA, one would do well to remember that APAs are not blanket agreements; they apply only to specific transactions with specific related parties in specific tax jurisdictions.

Pursuant to the preceding point, the findings from the study by Avoseh (2014) on the APA process in the UK, indicate that only five out of 37 respondents had active APAs in place. This aversion can be attributed to another theme from the findings of the study, which indicates that all 37 respondents ranked the inherent cost as the most significant motive for not getting into APAs (Avoseh, 2014). The findings from another study conducted in Mauritius by Beebeejaun (2019) indicate that the country's tax authority was hesitant to enter into APAs with MNEs despite the benefits, because the significant costs involved would place a debilitating strain on resources that

were already limited, mainly because of the huge financial, administrative and man-hour sacrifices that would have to be made. The logical deduction here is that even though APAs are attractive because of the future cost-savings they entail, the initial costs are prohibitive to a significant number of MNEs.

APAs accrue from an obscure and somewhat personalised negotiation process between an MNE and a tax authority and only a small number of MNEs successfully obtain APAs with tax authorities (Eden & Byrnes, 2018). The unintended consequence here is that the APA may be thoroughly abused by the MNE via a principal-agent relationship with the tax authority (Becker et al., 2016) since the tax authority never has full access to the internal workings of the MNE. Ryding (2018) corroborates this point by observing that since APAs are future-oriented, the tax authority is unfortunately obliged to negotiate a tax arrangement with no knowledge of the MNE's future tax returns and in so doing, creating a scenario in which the tax authority would be hamstrung in the face of clear evidence of tax avoidance by the MNE.

Ryding (2018) further observes that APAs are alternatively known as 'comfort letters' or 'sweetheart deals', because they have the potential to generate substantial benefits to the MNE involved, not least of which is negotiation of a unique and favourable tax rate. In a nutshell, since it is a special arrangement, the APA may end up being the perfect tool for the engenderment of regional hegemony by an MNE to the detriment of other MNEs and/or local businesses. Ryding (2018) argues that APAs may create scenarios in which the MNE pays less tax than local firms competing in the same sector without the benefit of such arrangements. It should be noted, however, that these studies failed to mention whether these shortcomings render APAs entirely unpalatable, or they should be viewed as necessary sacrifices that must be made by the parties involved. In addition to all of the above, Cooper et al. (2016) caution that completing an APA is a significantly time-consuming process; not all transactions are covered by APAs and there is no concrete means of evaluating the effects/benefits of an APA, contrary to audits wherein the performance of the audit team/ process can be assessed by the amount of money collected from the audit process.

5.1.2 Advantages

The benefits of APAs have been explored at length: Becker et al. (2016) and Khan (2019) indicate that by creating a framework within which future transfer prices can be negotiated and finalised in advance, APAs substantially reduce uncertainty. Eden and Byrnes (2018) concur with this position and point out that APAs minimise transfer pricing risk and in so doing, also serve as a buffer against potential transfer pricing penalties. The inference here is that where well-structured APAs are in place, there is bound to be at least some increase in foreign direct investment (FDI) as a result. This point of view is supported by Cooper et al. (2016) who present the findings of a survey conducted by Christian Aid, which indicated that between 2005 and 2007, the US and the European Union lost in excess of \$100 billion a year in tax revenues as a result of transfer mispricing. Similarly, another study by Oxfarm (Cooper et al., 2016) indicates that developing countries lose approximately \$50 billion a year to transfer mispricing.

Becker et al. (2016) argue that because APAs are future-oriented, they not only commit the user to specific transfer prices, but also to future investments. This implies that MNEs would not be too hesitant in their use of transfer pricing, even in cases where comparable transactions are not readily

available. Eden and Byrnes (2018) shed more light on the objective of APAs by labelling them ex-ante instruments that are meant to nullify future tax disputes.

Cooper et al. (2016) are of the view that APAs, unlike audits, necessitate a voluntary cooperative process between taxpayers and tax authorities in which the taxpayer takes the initiative in disclosing its internal business affairs to the tax authority. Furthermore, APAs create room for some flexibility on the part of tax authorities since they can either accept or reject the application for an APA and in cases where an application granted, the APA may be dissolved if no resolution is reached (Cooper et al., 2016). Brychta and Sulik-Gorecka (2019) further state that APAs, specifically bilateral and multilateral APAs, are essential tools for preventing double taxation for MNEs that operate in two or more countries with different tax rates.

These shortcomings, along with the heightened level of transfer pricing controversies as a result of the OECD's BEPS project in 2016 (DLA PIPER, 2017), are bound to be exacerbated in emerging economies that aggressively court MNEs but possess scant tools to curb wanton transfer mispricing. Nevertheless, the continuous upward trend in APA filings and applications indicate that the benefits of APAs outweigh the downsides: Kerschner and Stiastry (2013) advance the argument that despite the high application and administrative costs, APAs save MNEs from even bigger costs attributable to double taxation and audits, which often lead to contentious, long, drawn-out disputes. It should be noted, however, that there is hardly any literature that provides a statistical foundation for these advantages and disadvantages of APAs. This implies that there is very little evidence that MNEs agree or disagree that these are actually advantages and/or disadvantages.

6. FUTURE APPLICABILITY TO SOUTH AFRICA

Markham (2020) suggests that whenever countries are reticent in the implementation of APA legislations/programmes, it is likely due to a dearth of human and financial resources and technical capacity. The author makes particular mention of South Africa, amongst other African nations, but she does not provide statistics to support this hypothesis. However, there is no denying the strong correlation between her hypothesis and fact that on the entire African continent, only seven countries (Burkina Faso, Congo Brazzaville, Gabon, Morocco, Nigeria, Tunisia and Uganda) have active APA policies in place (Ernst & Young, 2020). Tambunan, Rosdiana and Irianto (2020) point to the acute shortage of comparable data for the establishment of arm's length prices and the significant volume of trade conducted by MNEs on the African continent as two urgent reasons why APAs should be a central focus for every country on the continent. Cooper et al. (2016) indicate that every tax authority requires at least some form of legislative authority to be able to conclude and ratify APAs. The authors, however, do not take into consideration the possibility that political uncertainty, which is quite common in Africa, may turn this into a protracted process, as indicated by Whitford (2010). In its Transfer Pricing Guidelines, the OECD recommends that MNEs choose amongst five transfer prices in intrafirm dealings: the comparable uncontrolled method (CUP), the resale price method (RP), the cost-plus method (CP), the transactional net margin method (TNMM) and the transactional profit split method (TPSM) (Bärsch, Heckemeyer, & Olbert, 2019; Rossing et al., 2017), with particular preference given to the CUP method (Choe & Matsushima, 2013). However, studies (e.g. Bärsch et al., 2019; Rossing et al., 2017) also indicate that there is very little documented guidance on how to arrive at the ideal transfer price

that will align with a tax authority's transfer pricing regulations. This of course creates room for confusion, uncertainty and conflict with regards to the applicability of transfer pricings and the evaluation of applied transfer prices by tax authorities.

Cooper et al. (2016) state that transfer pricing disputes normally arise as a result of a range of issues, including differences in the interpretation and application of transfer pricing regulations, aggressive measures by tax authorities to meet collection quotas and aggressive measures by MNEs to avoid taxes. As long as different tax jurisdictions have different tax rates, MNEs will always be motivated to shift taxable earnings from high-tax jurisdictions to low-tax jurisdictions (Becker et al., 2016). In her thesis on the applicability of APAs in Kenya, Ndirangu (2015) points out that the complexity and variability of transfer pricing regulations across the world, as well as the financial and administrative toll of disputes, had engendered the emergence and growth of APAs.

A key point of note is the fact that there is a strong correlation between the expertise and robustness of a tax authority's transfer pricing audit team and the degree of eagerness with which MNEs enter in APAs. The existence of a highly competent audit team that executes painstaking compliance management is bound to compel MNEs to seek APAs (Cooper et al., 2016). This implies that it may be rather difficult for MNEs to seek APAs when these MNEs are operating in emerging nations that do not even have transfer pricing departments, or in those nations that have transfer pricing departments that are too poorly staffed and ill-equipped to deal with the complexities of transfer pricing compliance. Tambunan et al. (2020) opine that South Africa's inability to institute a viable APA programme can be attributed to varied reasons, including issues relating to the creation and upkeep of a viable system, the unavailability of administrative capacity and the scarcity of technical skill. Furthermore, even though SARS can offer some semblance of certainty by issuing a private ruling on specific intrafirm transactions, these rulings have no legal bindings on the parties involved (Tambunan et al., 2020).

7. COMPARATIVE ANALYSIS

7.1 India

India, China and Russia are the members of the BRICS (Brazil, Russia, India, China and South Africa) nations that currently have legal provisions for APAs. South Africa and Brazil are the other two countries that do not have any such provisions. Kerschner and Stiasny (2013) argue that the increased policing of transfer pricing applications by authorities in India and China was bound to set the groundwork for an influx of APA applications. These views are supported by Chugan (2014), who indicates that in the three years spanning 2010 – 2013, transfer pricing adjustments in India amounted to \$55 billion per annum on average. Evidently, India's Central Board of Direct Taxes (CBDT) believed that more action needed to be taken to curb transfer mispricing. Unilateral, bilateral and multilateral APAs were introduced in India in 2012 (Khan, 2019) and they have since proven to be highly popular: in the first full year, the number of applications amounted to 146, which increased to 235 the following year (Ado, 2015). Khan (2019) observed that between 2012 and 2018, at least 1 000 APA applications were filed. Both Khan (2019) and Ado (2015) indicate that in the early years, unilateral APAs far exceeded the other two. However, in recent years, the number of unilateral APAs have been declining, while the number of bilateral APAs have been increasing, probably for reasons that have been discussed in other sections in this paper. APAs in

India have a term limit of five years and application fees range from \$1 500 - \$30 000, depending on the expected value of the international transaction (DLA PIPER, 2019).

7.2 China

According to Fan (2008), China's first foray into APAs began in 1998; then in 2004, the State Taxation and Administration of China issued more comprehensive regulations regarding the different phases of APAs that were to be adhered to by MNEs. Similar to India, unilateral, bilateral and multilateral APAs are available in China (DLA PIPER, 2019). According to the State Taxation Administration of China (2019), 13 unilateral APAs and one bilateral APA were signed in 2005; whereas in 2017, three unilateral APAs and five bilateral APAs were signed. This follows a pattern of increasing popularity of bilateral APAs in other regions of the world. Tambunan et al. (2020) state further that between 2005 and 2014, at least 113 APAs were concluded in total. However, the State Taxation Administration of China (2019) specifies that APAs are available, primarily, to MNEs with intrafirm transactions that are valued or will be valued at approximately \$6 billion and no application fees are payable. Moreover, as a result of the absence of reliably comparable information, priority is also given to MNEs that propose to use the TNMM in their APAs (Tambunan et al., 2020). The authors further observe that MNEs worry about the extended processing time (between 12 and 24 months, on average) and the possibility of sensitive information that has been provided being used in future audits of other transfer pricing cases that are/were/will not be covered in the APAs (Tambunan et al., 2020).

7.3 South Africa

In a critical study of transfer mispricing in South Africa, Wier (2020) found that pursuant to South Africa's legislative amendments to realign its transfer pricing regulations with those of the OECD in 2012, arm's length deviation by MNEs fell below 0.4 between 2011 and 2014, but subsequently rebounded to pre-2011 levels in 2015. The most viable explanation for this could only be the fact that even if they transgressed, the chances of an audit remained slim. This in turn points to the fact that SARS faces serious resource constraints when it comes to policing the transfer pricing transgressions of MNEs operating within the region. It would seem, therefore, that pre-emptive policies like APAs, that require very little expenses in terms of monitoring, would be an attractive solution. Despite promises made by SARS that APAs are forthcoming, there is no sign of them within the context of South African legislation yet. One could theorise that the dragging of feet is partially attributable to the financial sacrifices that the initial setup within SARS entails. Moreover, as with almost every other issue related to transfer pricing, the successful conclusion, implementation and monitoring of APAs requires substantial technical, financial, tax and legal expertise, which may not be immediately available in South Africa in the required numbers. However, there is no denying the fact that the enormous losses that South Africa and other emerging countries suffer as a result of profit sharing and transfer mispricing will no doubt be mitigated if APAs are in place. The urgency of this issue is somewhat contextualised by Tørsløv, Wier and Zucman (2018), who chart a decline in corporate tax rates around the world in recent years – case in point, the US decreasing its corporate tax rate from 34% to 21% – with the principal objective of attracting corporate profits and capital from other countries. This implies that for South Africa, with a corporate tax rate of 28%, the motivation for tax-based transfer mispricing is likely very high.

It is recommended that the South African government not only speed up the provisions for APAs within the country, but also take measures to entice interested parties to focus more on bilateral and multilateral APAs, given the advantages held by these two over unilateral APAs. This is particularly important for South Africa, taking into consideration the fact that South Africa will find it hard to emerge a winner in any sort of cross-border dispute regarding the applicability of unilateral APAs, given South Africa's current fragile economic state. According to Oguttu (2006b), APAs have become popular in recent times because far less manpower and financial resources are required to negotiate, implement and monitor APAs, which would be the case for transfer pricing compliance, audits and dispute resolutions. This would definitely be a boon for resource-scarce countries like South Africa. In its discussion paper on APAs, the South African Revenue Service (2020) admits that South Africa has lagged behind its continental neighbours in relation to the institution of APA policies; however, in a clear attempt at self-consolation, the paper goes on to state that even though a handful of other African countries have APA regimes, none of these regimes are truly active (South African Revenue Service, 2020). The South African Revenue Service (2020) contends though, that until such a time that its transfer pricing capacity has been adequately built, it cannot dedicate resources to APAs. Unfortunately, there is no detailed timeline regarding when this may be achieved. South Africa's largest trade partners are China, India, the US, the UK and Germany. These trade partners all have significant numbers of active bilateral and multilateral APAs in place. The onus is on the South African government to legislate and implement APAs that would enable the country to take advantage of these trade relationships.

8. CONCLUSION AND RECOMMENDATIONS

This review aimed at answering why APAs are not prevalent within emerging nations such as South Africa and what are the advantages and disadvantages of using APAs. We argue that APAs, despite their shortcomings, are beneficial to all parties concerned, particularly tax authorities in developing countries like South Africa. We further argue that South Africa will go a long way in reducing base erosion profit sharing (BEPS) by MNEs if APAs are legislated and the South African Revenue Service is able to secure the necessary resources to implement them where applicable. We propose that even though APAs are most often negotiated between MNEs and high-tax countries, as indicated by Whitford (2010), it is advantageous for low-tax countries like South Africa to have APA policies in place because of the extensive reductive effects on transfer pricing compliance uncertainties.

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EXPLORING THE USE OF BIOMETRICS IN GAUTENG INSTITUTIONS OF HIGHER LEARNING

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ABSTRACT

This paper argues for the design, development and implementation of portable and reliable fingerprint biometric systems in universities in Gauteng Province. The system could assist in eliminating inherent challenges associated with manual access control methods and alleviate problems such as uncontrolled access to university premises; monitoring class attendance; student card and examination impersonation or falsification; as well as in-person collection of results and certificates. The new system utilises a portable fingerprint scanner as the input for fingerprint images and notebook personal computers as the mobile terminal for the processing of the imaged records of attendance. It also includes a database to store students' information. Fingerprint biometrics will be used in the primary forms of recognition and identification.

Keywords: Verification, biometrics, fingerprint identification, falsification/forgery, access control

1. INTRODUCTION

The field of biometrics is technologically inclined and very helpful in the verification or authentication of individuals, based on their physical and non-physical attributes such as the face, voice, fingerprints, and behavioural characteristics (Hu, Ngo and Teoh, 2015:3). As a verification and authentication method, biometrics has been in practice in some form or another for many years. However, many institutions and industries in general have been slow to adopt to the technology, until the expanded use of mobile devices empowered the use of biometrics as a method to secure the device and restrict access to their data (Bock, 2020:4). Biometric authentication technology has also been used for various applications, such as physical access control and computer application login (Hu et al., 2015:3).

The biometric system could help in resolving problems linked to manual access control methods, and alleviating problems such as uncontrolled access to university premises; monitoring class attendance; student card and examination impersonation or falsification; as well as in-person collection of results and certificates. The new system utilises a portable fingerprint scanner as the input for fingerprint images and notebook personal computers as the mobile terminal for the processing of the imaged records of attendance (Rao, Allamsetty, Datti Jakkampudi and Kumar2022:1). It also includes a database to store students' information. Fingerprint biometrics will be used in the primary forms of recognition and identification.

Cheating in examinations, and especially in the examination venue, is a global scourge, and the attitude of some students and academic staff, and public perceptions to examination cheating, raises concerns with the moral decay that is manifesting in society worldwide. Universities now need to implement digital identity technology as one of the significant tools against online examination fraud and noting the constraints confronting universities are refocusing their efforts to promote academic integrity among students, as part of their strategy to enhance student's ethical

development and reduce the level of cheating on campus (McCabe, Butterfield and Treviño, 2012:11).

Institutions with honour codes may attract non-cheating students or encourage under-preparing of cheating by students. Still, there is some longitudinal evidence (i.e., with pre-test measures) that indicates that implementing honour codes students view cheating more negatively (Raman and Ramlogan, 2020 in Rettinger and Gallant, 2022:1). In addition, the honour code set expectations about standards of acceptable behaviour, and studies indicate that academic integrity standards influence students' misconduct behaviour (Curtis and Popal, 2011 in Rettinger and Gallant, 2022:1). The best evidence for honour codes reducing cheating seems to be when students are regularly reminded about the codes (Tatum and Schwartz, 2017 in Rettinger and Gallant, 2022:1).

We believe that faculty and administrators nab make a difference, if they are genuinely concerned about academic integrity and are willing to devote time and effort promoting it willing to devote time and effort to promoting it. An increasing number of colleges and universities are refocusing their efforts to promote academic integrity among students, as part of their strategy to enhance students.

Academic integrity refers to "compliance with ethical and professional principles, standards, practices and consistent system of values, that serves as guidance for making decisions and taking actions in education, research and scholarship" (Tauginienė, Gaižauskaitė, Glendinning, Kravjar, Ojstersek, Robeiro, Odineca, Marino, Cosentino, Sivasubramaniam and Folynek 2018:1).

Universities globally acknowledge that cheating techniques today have developed far beyond notes on pieces of paper, with technology proving to be a significant enabler of examination cheating activities (Ashbourn, 2011:16). Recognising the efficacy of smartwatches as 'wrist computers,' several universities have taken steps to exclude these from the examination venue. Interestingly, universities address the use of smartwatches rather differently. This is not surprising as the university approach to smartwatches and watches has reached South Africa a little later than its global counterparts (Magoma, 2020:1).

In Australia in 2014, Fairfax Media reported widespread cheating at universities across New South Wales (Baldwin, Daugherty, Rowley and Schwarz, 1996:1). Consequently, the University of Sydney conducted its own investigation on academic misconduct and confirmed that the problem of academic cheating in examinations is not minor (Baldwin et al., 1996:1). Highlighting the risk introduced by technology, the Deputy Vice Chancellor of Education at Wollongong University acknowledged that digitisation provided greater opportunities for the practice of cheating (Bagshaw, 2016:1).

No institution of learning in South Africa has adopted the use of digital identity as yet (Magoma, 2020:1). This is unsurprising as the university approach to smartwatches and watches has reached South Africa sometime after its global counterparts. For instance, the University of Cape Town explicitly excludes such devices on the person or desk of a student, whereas the University of KwaZulu-Natal prohibits them in the examination venue. Stellenbosch University permits students to enter the examination venue with a smartwatch, but then requires them to switch off the device and place it face down on their desk; the University of Pretoria adopts a similar approach, but it is further required that the device be switched off and placed on the floor, under a chair and out of the student's line of sight. Monash University (South Africa) also requires that all smartwatches

be switched off and placed in a bag on the floor. The rule at Rhodes University is that students found wearing a ‘questionable electronic device’ are required to clarify its function or remove it (Ashbourn, 2011:14).

2. LITERATURE REVIEW

2.1 Theoretical framework

In the terminology of Miles, Huberman, and Saldana (2014), theoretical framework it is topical research, identified through literature review that helps us to fill the intellectual bins that make up our conceptual framework, (it also leads us to create new bins.) but as they note, we are also interested in understanding the interrelationship among those bins. The purpose of a theoretical framework, which is a considerably more focused, refined, and bounded integration of formal theory and topical research more broadly (Ravitch and Riggan, 2016:9). Leonard (2002:1) designates the following theories:

2.1.1 Academic rationalism (humanism)

Jean Piaget, the father of genetic epistemology, observed that as the child grows older and becomes an adult, the combined process of accommodation and assimilation increases cognitive growth and maturation intellectually, socially, morally, and emotionally.

2.1.2 Act theory (cognitivism)

John Robert Anderson in 1976 espoused a complete theory of human cognition call ACT (Adaptive Control of Thought) theory, a cognitive architecture, in which human cognition is an interplay of declarative, procedural, and working memory. Dr. Anderson’s continue research focuses on two primary activities: (1) the enhancement of the ACT theory, which is essentially a production system architecture for learning, memory, and human problem solving, and (2) the application of the ACT theory to the creation of artificial intelligence learning systems for mathematics and computer systems programming.

2.1.3 Action learning (organisational learning)

Created originally by Dr. Reg Revans of the International Management Centres in the UK, action learning is an executive training and development strategy in which a management team, guided by a facilitator, works collaboratively on the following actions:

- Analyse a management problem.
- Develop a plan to address the problem
- Apply the solution
- Study the effects of the decision to determine what aspects were effective and ineffective
- Determine how to handle similar problems in the future.

The purpose of action learning is to help managers executives learn how to handle more effectively new management situations that continually occur in the workplace. Acting learning is a collaborative learning activity in which managers compare notes on how they handle new situation and learn from each other to find better methods for problem solving. Though an organisational

learning theory, it fits as well within construction in which knowledge is discovered through social interaction.

2.1.4 Active processing (cognitivism)

One of the three types of instructional methods for brain-based learning, active processing takes when the learner analyses and become aware of the form, meaning and motivation behind knowledge acquisition knowledge acquisition. The other types of brain-based learning methods are orchestrated immersion (immersing students in a rich learning environment) and relaxed alertness (minimising learner fear, while retraining a rich educational experience) (Leonard, 2002:3).

2.2 The field of biometrics and its value

Biometrics premises on the behavioural or physiological characteristics that are unique to an individual, and include fingerprints, iris patterns, and voice recognition (Dintwe and Zinn, 2015:39). A biometric system recognizes patterns and then determines whether the specific physical or behavioural characteristic is unique to the individual (Bock, 2020:17). The paper aims to address the following objectives:

- To identify the role of biometric technology in the institutions of high learning.
- To assess whether biometrics can provide benefits and accuracy in identifying, verifying and authenticating the student's identity.
- To identify and analyse the challenges present with the biometric entry-exit at the institutions of high learning.
- The paper indicates that it is important to note that a biometric system must first have a database of enrolled individuals from which to compare. Enrolment can be either of the following options:

Voluntary, where an individual willingly provides their biometrics identifier to the system, along with some personal information; or completed by someone who populates the database with information, for example, enrolling with a database if police identification photo (Bock, 2020:17).

2.2.1 Brief historical overview of biometrics

The use of the term biometric encompasses bio, or life, and metrics, or methods to measure (Bock, 2020:17). In 1883 Anthropometry was also becoming an interest, in addition to the fingerprinting method. Frenchman Alphonse Bertillon (1853-1914) viewed fingerprinting as cumbersome and its records difficult to review. He devised a new anthropometry method derived from physical measurements of the human body. Ashbourn (2011:8) states that Bertillon 1879 () upheld that anatomical measurements do not change over time, which led to the scientific community adopting Bertillonage, the science of taking the human body's measurements for the purpose of identification. Anthropometry was influential in the eventual recognition of fingerprints as a scientific method for personal identification (Ashbourn, 2011:8). Anthropometry entailed exact calibrations of different aspects, encompassing the head, body, and other particular features such as scars and tattoos (in principle, similar to the methods used by ancient Egyptians).

The methods of Bertillon were premised on a precise calibration that was consistent for each individual and yielded results that reliably verified the sought identity. In 1883, he created a

database of criminals in Paris by means of the anatomical measurements, which premised on undisguisable and unalterable features that enabled the recognition of repeat offenders. His reputation gained more prominence with his positive identification of an imposter later in the same year (1883). In 1884, Bertillonage was able to identify approximately three hundred criminals, which further elevated the stature of anthropometry in other countries outside of France. The success of the Bertillonage system, which then led to its adoption in France, and later in Britain and the USA. However, the Bertillonage system was found to be fallible, particularly with regard to the inconsistency of earlier calibrations conducted by a broad cross-section of police officers. However, Bertillon finally contributed in many ways with order and a scientific trajectory to identify authenticity in criminology (Ashbourn, 2011:9).

2.2.2 Value of biometrics

The basics of biometric technology and terminology compare various methods (Bock, 2020:15). Nowadays, when using a mobile device, there may be a need to use a fingerprint or face to gain access to the device. More and more companies are adopting biometric technology to provide password-free authentication for mobile devices, Internet of things (IoT) devices, and computer systems. For many, using biometrics has become commonplace, as biometric authentication is being used to sign into websites along with applications on your mobile device. Today, many other biometric techniques are being explored and developed to automatically recognize and authenticate an individual (Bock, 2020:16).

2.2.3 University context of biometrics

In the UK, as early as 2015, The City University of London already introduced rules to prohibit the use of all wristwatches during examinations, and Goldsmiths University required that all watches be stored under desks; and Southampton University required all watches to be placed in a clear plastic bag on the desk (Magoma, 2015:1). This is to show that universities globally acknowledge that cheating techniques today have advanced far beyond notes on pieces of paper, with technology proving to be a significant enabler of examination cheating activities. Recognising the efficacy of smartwatches as ‘wrist computers,’ several universities have taken steps to exclude them from the examination venue. What is interesting is that, notwithstanding the identified potential as an enabler of fraud, universities deal with the use of smartwatches rather differently.

2.3 Problem of cheating in the university context

Proper examination quality photographs are taken of each developed latent fingerprints. If there are multiple developed latent fingerprints on a single article, each developed latent fingerprints must be labelled to identify the location where the latent fingerprint originated from (Baxter Jr, 2015:202).

Bleay, Croxton and De Put, (2018:12) states that initial contact entails contact between the finger and an object or surface, which will determine the potential to identify marks that have been formed as follows:

- The finger’s application to the surface;
- Material being transferred between the surface and the finger; and
- The finger’s removal from the surface.

Experts (2021:47) confirm that cheating, including academic misconduct, is perpetrated through the intentional deception or inducement of a person to dishonestly or fraudulently cause the deceived person to consent to parting with their property or money. Usually, the deceived person is coaxed into believing in an empty promise or false gratification, to which he or she would not commit in different contexts.

Academic misconduct exists in two forms, namely, accidental misconduct and intentional misconduct (Bock, 2020:107). Table 1 depicts some examples of both forms of misconduct, although the list is not sufficiently inclusive of the other ways of student cheating. It is also noteworthy that Table 1 is emblematic of fraud and deception as some form of academic misconduct. For instance, contract cheating is not likely to be accidental, and manifests mostly in one student paying another to write their assessments on their behalf (Clarke and Lancaster 2006). Evidently, such a situation represents students’ attempt to be deliberately absent from an assessment and using money, its equivalent or third party as an exchange to replace themselves. Similarly, it is inconceivable that it should be a mistake when a student knowingly enters an examination room with unauthorized material or tries to communicate with someone who is not present in the examination centre (Lancaster and Clarke 2017:12). Furthermore, if a student writes an assignment using, for instance, an essay spinning instrument that alters the original language and then submits it in the altered version, such actions constitute an intentional goal to cheat (Lancaster and Clarke 2009:11). The various forms of academic misconduct are shown in Table 1 overleaf.

Table 1: Types of academic misconduct

| Unlikely to be committed accidentally | Possible to be committed accidentally |
|--|--|
| Contact cheating | Plagiarism |
| Exam impersonation | Collusion |
| Falsifying exam outcomes | |
| Research fraud | |
| Essay spinning | |

(Source: Lancaster and Clarke, 2009:11)

Some forms of academic misconduct are accidentally. For instance, a student could be charged with plagiarism not because of intentional deception, but due to negligible or incorrect referencing skills and not writing in words of their own. Moreover, some students could be regarded as colluding by working jointly on an assignment but commenced on their independent presentation of their findings ate in the process (Carter and Rosen, 2019:108).

2.4 Magnitude and manifestation of biometrics

2.4.1 Providing identification

Biometrics can be used to identify an individual, as it answers the question: who are you? Biometrics can be used in a number of different applications. For instance, to identify an individual, in which case the system first takes a biometric in which to compare, and then searches a biometric template database to attempt to correctly identify the person. Applications for biometric identification have many uses that include identifying criminals involved in a crime or recognizing a friend while face tagging on social media. Let’s start with how law enforcement uses biometric to apprehend criminals (Bock, 2020: 18).

In its most basic explanation, identification entails the process of identifying an object or person. This poses a challenge to an investigator who has to ensure that the guilty individual is identified, and the innocent is not held liable for an illicit deed they have not committed (Dintwe and Zinn, 2015:19).

2.4.2 Recognising criminals

Law enforcement has long used biometrics, mainly fingerprints, to solve crimes (Dintwe and Zinn, 2015:19). Other forms are used as well in forensic identification. Many individuals with a criminal past are in repositories such as the Federal Bureau of Investigation's (FBI) Integrated Automated Fingerprint Identification System (IAFIS). IAFIS is a powerful system that contains a vast number of records and includes fingerprints, faces, scars, and tattoos and helps law enforcement identify criminals. There are also other large biometric databases, including the Unique Identification Authority of India (UIDAI) is a governmental institution in New Delhi serving as the sole issuing authority for Aadhaar unique identification numbers (UIDs) and cards. Accordingly, the UIDAI is authorised by the government of India to identify and develop the required infrastructure for producing Aadhaar cards. The UIDAI also functions jointly with other registrar agencies such as state-owned departments and entities, as well as public sector banks and entities such as the Life Insurance Corporation of India and Registrar General of India, which is responsible for census data in India (Target, 2012:1).

2.4.2 Tagging faces

The social media giant Facebook has been using facial recognition for over a decade. Since 2010, Facebook has used the technology to suggest a tag on a face that looked similar and then used the data obtained to suggest more tags it perceived as a match. Facebook improved the technology over time, mainly because of the vast amount of data available from tagged faces in every possible setting, angle, and lighting variable. The science has evolved to become Deep Face, a nine-layer Deep Convolutional Neural Network (IDNN) that provides approximately 97.35 percent accuracy in matching identifying an individual (Bock, 202:18).

2.4.3 Face tagging

Police scroll through social media to check for potential transgressors, which raises surveillance concerns in an expanding online environment. Monitoring publicly posted images (visuals) and messages on platforms such as Instagram, Facebook, and Twitter Instagram is the usual means through which police departments gather information across the country about individuals involved in specific forms of nefarious activities (Malachi and Barrett, 2021:14)

2.4.4 Verifying authentication

Bock (2020:19) states that authentication is showing something to be true or proving your identity, as it answers the question, who do you claim to be? An easy way to look at verification versus authentication and how they are used in different ways is to consider the concept of access control (Cleaves, 2018:16). Access control solution usually consists of a card or fob which is assigned to an individual, sometimes along with a personal identification number (PIN) which only the individual knows. In addition, for a more enhanced solution, biometrics can also be implemented,

using biometric information from that particular individual to identify them such as iris scanning, fingerprints or facial recognition scanners.

2.4.5 Comparing a biometric feature

Authentication uses a one-to-one comparison by matching the captured biometric with pre-stored biometric template in the database. After the individual presents the biometric to the system, the features are extracted. The system will then determine whether or not there is a match (Bock, 2020:23).

Using a biometric to provide authentication can identify an attribute that is not only unique to the individual, but also defies duplication. Most modern devices now include fingerprint technology and facial recognition but can also include other methods such as voice recognition and haptics to provide authorized access (Bock, 2020:23).

2.4.6 Handling the biometric

After a biometric is captured, the identifier must go through the same steps as any other biometric system. This includes pre-processing, extracting the features, and then storing the template for later comparison. However, there may be additional challenges associated with dealing with a mobile device, as it's small, may be moving, and must be able to capture in varying lighting (Bock, 2020:19) A mobile biometric solution must provide the same or a better degree of errors and throughput that a standard system can provide. The device must be able to capture the biometric and remove any artifacts. This includes any ono-biometric data, such as background glasses, or jewellery (Bock, 2020:51).

2.4.7 Providing security and privacy

Although biometrics are widely used, and are more secure than a PIN or password, there is a need to be aware that there are security issues. Users may be concerned that upon enrolment, that may be required to provide additional information such as an address, phone number, and email, along with a password or PIN. In addition, the biometric data itself is viewed as our identity, which should not be compromised.

In some cases, the biometric data will remain on the device, or it may be sent to a server for processing. Whether on the device or on a server, the stored biometric data must be protected using encryption. If the data is sent to a server, any communication must be sent using Transport Layer Security (TLS) or another Virtual Private Network (VPN) which will encrypt the data while in transit (Bock, 2020:51).

2.4.7.1 What is the difference between confidential information and personal information?

Confidential information is a broader category than personal information. This means that, as a general rule all personal information is confidential and should be kept confidential, but not all confidential information is necessary personal information.

2.4.7.2 What are the main conditions of protecting personal information?

There are 8 conditions that must be complied with that is accountability; processing limitation, purpose specification; further processing limitation; information quality; openness; security safeguards; and data subject participation.

2.4.8 Encryption

Encryption is the foremost application cryptography that renders data incomprehensible for confidentiality reasons through the use of a key, which is an algorithmic secret value. Decryption of encrypted messages by any attacker cannot occur without knowledge of this secret value (Aumasson, 2017:1).

In South Africa, it is legal for criminal records to be checked and verified through digital capturing of fingerprints using systems such as the Automated Fingerprint Identification System (AFIS) for electronic fingerprint checking against the South African Police Services (SAPS) records and database. In this regard, Managed Integrity Evaluation (MIE) applies AFISwitch software to enable easier and quicker fingerprint capturing on SmartScreen and/or ePCV (Excessive Path Code Violation) and subsequently submits for checking of possible criminal records within two days, which is the approximated average time of turnaround. The Managed Integrity Evaluation, a reputable industry leader, has notes that background screening constitutes a crucial business consideration globally for ensuring employment of an appropriately skilled and honest workforce (MIE vetting solution, 2017:1).

The SA Police Service (SAPS) fingerprint clearances are performed by Afiswitch against the SAPS fingerprint database containing all known imprisoned and/or cases that await trial (Afiswitch, 2022:1). In South Africa, businesses and individuals are now enabled to undertake identity and criminal verifications through HURU, a user-friendly tech start-up virtual portal that only uses an ID number or passport for reference. HURU has raised an undisclosed amount of capital to roll out their cutting-edge solution across South Africa. With its Jetline strategic partnership, HURU provides fingerprint capturing terminals throughout the country. There is no need for bookings and cross-referencing of fingerprints is performed in conjunction with the Department of Home Affairs and the SAPS. With the use of ultra-secure digital consent, verifying the identity and criminal profile can be established through fingerprints being registered on Huru.co.za. Accordingly, HURU has become the first to develop a digital consent verification mechanism in South Africa, which is completely paperless from beginning to the end.

2.4.9 Classification of identification

Dintwe and Zinn (2015:19) state that the cumulative nature of identification is clearly reflected in the fact that a series of identification is sometimes required to establish the guilt or innocence of an individual. Identification is classified into various categories in order to assist in individualizing the specific and unique attributes of an individual. The investigator will select a specific identification category based on the specific crime, transgression or incident being investigated.

The various categories of identification include situation identification; witness identification; victim identification; imprint identification; origin identification; action identification; perpetrator identification; cumulative identification (Dintwe and Zinn (2015: 19).

2.4.9.1 Situation identification

Dintwe and Zinn (2015:19) states that situation identification (i.e. identification of the situation) specifically relates to the circumstances of the incident. To be more specific, the initial task of the investigator should be to establish whether an incident, a crime or a transgression has indeed taken place, and identify the specific incident. Situation identification can also be explained as a

psychological reconstruction of the situation of the incident. By reconstructing the events the investigator strives to form a realistic hypothesis about what happened. The reconstruction can be based on a deductive or inductive approach.

2.4.9.2 Witness identification

Evidence collection always starts at the scene of incident. Constitutional rulings are not the best guidance for legally regulating eyewitness-based identification; rather, such guidance is obtained through careful understanding and use of scientific evidence that directs fact-finding and decision-making (National Research Council, 2015). Witness identification includes the reliability of eyewitness identification, factors affecting the reliability of eyewitness identification, factors affecting the reliability of eyewitness identification, methods of improving eyewitness identification accuracy, and the effectiveness of safeguards designed to protect defendants from erroneous conviction resulting from mistaken eyewitness identification. (Cutler, Cutlern and Kovera, 2010:9).

2.4.9.3 User authentication

According to Ferguson (2015:156), authentication is a process by which people prove their identities. For example, presenting a driver's license or some other form of picture ID to prove that one's identity when checking in for a flight. In person, this is not typically difficult but over a network it can become much more complicated.

User authentication is a process by which users prove their identity over the network.

Something a user knows could be a password or the personal identification number (PIN) that corresponds to their smart card. Something a user has could be a smart card or a cryptographic key. Something a user would relate to biometric authentication, such as a fingerprint, voiceprint, cornea or iris scan, or a hand geometry print. You can also combine these factors to create even greater security (Ferguson, 2015:159).

3. METHODOLOGY

The study employed a phenomenological approach, which enabled the exploration and description of the purposively sampled university participants' perspectives concerning problems and limitations attendant to the current control systems.

3.1 Research design

A qualitative case design approach was adopted, according to which some selected contact and distance learning higher education institutions were utilised as case studies to determine the implementation of biometrics and the magnitude of examinations cheating and general identity theft on their campuses.

3.2 Sampling method

The non-probability purposive sampling technique was employed in the selection of the participating security and senior examinations officials in each of the sampled higher education institutions, based on the researcher's own judgement, experience, and knowledge of the research environment (Alvi, 2016:12; Habib, Pathik and Maryam, 2014:26). The Gauteng Province higher

education institutions participating in this study were sampled according to criteria that included the high rates of reported identity theft cases and examination cheating or fraud.

3.3 Research instrument

The semi-structured interview mode of enquiry was utilised to obtain relevant information from the selected security and examinations officials at each research site. This mode of enquiry is consistent with the qualitative research approach that has been adopted in this study (Habib et al., 2014:26). Microsoft word was used to gather the data. Data analyst did the transcribing of the audio-recorded interviews on Excel sheets and re-reading the transcripts and writing notes on initial topical trends observed.

3.4 Data collection

Separate interview schedules were used for each set of participants. Questions directed at the security officials focused mainly on issues of security breaches such as not being in possession of a university identification card on campus, or falsified identification cards bearing someone's else name and/ face, while the examination officials answered questions focusing primarily on falsified ID cards during examination.

Due to the current Covid-19 restrictions on direct physical contact between the participants and the researcher, participants were interviewed through Microsoft Teams individually on pre-arranged dates and times. At the time of producing this paper only half of the initial number of institutions had been consulted due to Covid-19 related disruptions.

3.5 Data analysis

The spiral method mentioned by Leedy and Ormrod (2005:150), as follows:

Organise the data: The researcher organised the data obtained from the experience and literature and broke down large bodies of text into smaller units in the form of sentences and individual words. The re searcher worked through all the data to decide which was relevant for this study. Both content analysis and thematic analysis were applied in this ongoing study. The researcher organised, categorised and analysed the content of the currently available information and data of the participants into themes for the generation of the results.

4. FINDINGS

The findings in this study are uncontrolled access to university premises; monitoring class attendance; student card and examination impersonation or falsification; as well as in-person collection of results and certificates. The researcher was a student at Vaal University of Technology, the use of student cards is not reliable because students can borrow the student cards from the other students and use them to gain enter the university premises. The researcher's observation is that the use of student cards cannot be authenticated, verified and linked to the owner of fingerprints or any other biometrics. The on-going findings reveal that there is overwhelming support for a biometric system to alleviate safety concerns and unregulated access and financial risks induced by impersonation and falsification of paper-based identifications. The system could assist in eliminating inherent challenges associated with manual access control

methods and alleviate problems such as uncontrolled access to university premises; monitoring class attendance; student card and examination impersonation or falsification.

There are lot of unanswered issues raised, such as cost to institution, reliability of the unit.... What if it cannot read my fingerprints, which is a problem I have on both my smartphone and iPad. How is it really better from any other form of identification, such as my staff card?

5. CONCLUSION

Safety is the main concern for Institutions of Higher Learning. The universities cannot afford to be a hub for diminishing integrity. This paper argues for the design, development and implementation of portable and reliable fingerprint biometric systems in universities in Gauteng Province. The system could assist in eliminating inherent challenges associated with manual access control methods and alleviate problems such as uncontrolled access to university premises; monitoring class attendance; student card and examination impersonation or falsification; as well as in-person collection of results and certificates.

Biometrics is vital for the full-scale development and implementation of portable and reliable fingerprint biometric systems in universities in Gauteng Province in order to eliminate the inherent challenges associated with manual access control methods, and alleviation of problems such as uncontrolled access to university premises; monitoring class attendance; student card and examination impersonation or falsification; as well as in-person collection of results and certificates. The new system utilises a portable fingerprint scanner as the input for fingerprint images and notebook personal computers as the mobile terminal for the processing of the imaged records of attendance. It also includes a database to store students' information. Fingerprint biometrics will be used in the primary forms of recognition and identification.

6. RECOMMENDATIONS

The emerged that issues of privacy and confidentiality of personal information should not be overridden by the justifiable preoccupation with technological innovations. Contract impersonation/ falsification is becoming crucial for academic integrity. Clearly, institutions have to continuously develop and review existing policy and procedures.

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EXPLORATION OF THE USE OF THE BIOMETRIC IDENTITY SYSTEM IN THE INVESTIGATION OF IDENTITY THEFT IN GAUTENG PROVINCE

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ABSTRACT

This study was conducted with the aim to critically analyse how the crime of identity theft can be identified to develop practical guideline to be used during the identification of this crime in Gauteng Province. In this study the researcher conducted a review of pertinent literature, both international and national, to gain an understanding of the problem being researched. The questionnaires were mailed, interview with uniform police officials, police detectives at the stations and the LCRC members. The researcher is of the view that this study (exploration of the use of biometric identity system in the investigation of identity theft in the Gauteng Province) presents a significant contribution to the identification of identity theft in the Gauteng Province and subsequently presents practical guidelines that can be used during the identification of this phenomenon in the Gauteng Province.

1.1 INTRODUCTION

Identity theft (also known as impersonation fraud) occurs when someone assumes some or all of your identity to engage in criminal behaviour (Welsh, 2015:13). Identity crime is a serious worldwide criminal act or deed in which global criminal networks, syndicates and individuals participate (Ahmed, 2020:1); South African Anti-Money Laundering Integrated Task Force/ SAMLIT, 2020:1). The magnitude of this problem, its forms of manifestation and levels of sophistication have been compounded by factors such as exploitation of the Internet and advanced cyber technologies and software used or applied by its organised perpetrators (Bilan, Elhoseny, Jude-Hemanth, 2020:1; SAMLIT, 2020:1). Furthermore, the social and economic impact or consequences of this sophisticated form of theft have necessitated that concomitantly advanced and sophisticated counteractive measures and systems be developed, adopted and applied by governments, relevant law enforcement agencies, financial institutions, as well as concerned Community-Based Organisations (CBOs)/ Non-Governmental Organisations (NGOs) across the world (Douglas, 2020:1; Southern African Fraud Prevention Service/ SAFPS, 2020:1). In this regard, applicable policy frameworks and proactive legislative orientation within and between countries appear to be among the most cogent (Gehl & Plecas, 2016:9; United Nations Office of Drugs and Crime/ UNODC, 2020:2). However viable mechanisms to thwart the scourge of identity theft from becoming one of the potentially disruptive forces of modern societies. On the other hand, socioeconomic and cultural progress and development, similar to the threat posed by international terrorism and drug trafficking (Gehl & Plecas, 2016:9; United Nations Office of Drugs and Crime/ UNODC, 2020:2).

It is against the above-cited broad context that the proposed research study intends to explore the use of the Biometric Identity System (BIS) in the investigation of identity theft by the South

African Police Service (SAPS) in Gauteng Province (GP), Republic of South Africa (RSA). The phenomenon of identity theft institutes the core and pivotal domain of the proposed research-based investigation, with the BIS serving as the most critical and foremost unit of analysis or variable associated with this investigated phenomenon of identity theft. However, these aspects or units of analysis are: the research problem, aim, objectives and attendant questions; key concepts; sampling; data collection and analysis processes; trustworthiness measures; as well as ethical issues and concerns.

1.1.1 Manifestation of Identity Theft

In essence, the term ‘identity theft’ (coined in 1964) refers to a crime by means of which someone’s authentic personal, financial or other pertinent information is stolen (SAMLIT, 2020:2). In such occurrences, the authentic personal information or details relates to identifiers such as (but not limited to) names of persons; numbers of an Identity Document/ ID; birth, marriage or death certificate; as well as financial and banking information or details such as credit or debit card numbers. Archer, Sproule, Yuan, Guo and Xiang (2012:2) acknowledge that identity theft flourishes mainly due to the manipulation or falsification of the real, truthful or legally authenticated identity of the actual owner whose details are stolen by the perpetrator or impersonator without his/ her permission.

Given that manipulation, falsification and impersonation constitute the fundamental *modus operandi* of identity theft, it is then both inevitable and to be expected that the identity thieves (impostors or impersonators) would commit this crime in virtually all aspects of people’s lives, leaving the victims emotionally and mentally devastated; usually with irreparable financial, credit and reputational harm (SAFPS, 2020:2). Personal identifiable theft is commonly to describe the impersonation of another person for financial gain. Personal identity criminals steals your personal identity and/or financial information and use it to purchase goods and services or access facilities in someone’s name (Okeke & Shah, 2016:23).

1.1.2 The Biometrics Context of Identity Theft

As mentioned at the beginning of the Introduction (Section 1.1), the nature, magnitude and effects of identity theft (as the core investigated phenomenon) is interstitially linked and intertwined with biometrics as a systematic and technologically advanced mechanism designed to counteract the threat posed by the trans-national spread of identity theft to regional peace and stability (Gehl & Plecas, 2016:9; UNODC, 2020:2). In fact, according to the ITRC Identity Theft Resource Centre (ITRC) of the USA, increases in impersonation or impostor fraud has magnified the importance and relevance of biometrics and its potential role in the protracted war against the scourge of identity fraud and its blemish on society (Schulte, 2021:2).

Biometrics is the systematic or automated utilisation of the distinctive or unique behavioural, physiological or biological attributes of an individual to identify and locate individuals with both precision and certainty (Smith, Mann & Urbas, 2018:16). The proposition or definition by Bilan et al. (2020:1) also allocate the field of Biometrics to a system of body measurements (metrics) and calculations which entail unique features that differs from one individual to the other. Meanwhile, Mehdi (2014:6) acknowledges the reliance of Biometrics on an individual’s unique

physiological, biological and/ or behavioural qualities that can be authenticated, verifiable and differentiated when compared with those of another person or individual.

The challenges linked to the identification and recognition of individuals by relying on witnesses' memory have played a role in the development and utilisation of Biometric Identification Systems (BIS) for technology-driven identification and recognition based on an individual's face, fingerprints or voice (Tistarelli & Champod, 2017:2). Since identification and verification (authentication) are the most fundamental elements of resolving the commission of the crime of identity theft or fraud, artificial intelligence has played a pivotal role in efforts to locate the perpetrators and bring them to justice (Becker & Dutelle, 2013:30; Motsepe, 2019:11).

The following section presents a contextualisation of the proposed study in terms of the background to identity theft and fingerprints as the primordial means of verification and authentication of someone's identity.

1.2 BACKGROUND/ CONTEXT OF THE STUDY

Consonant with the proposed research study and as indicated also in the beginning of the Introduction (Section 1.1), identity theft and use of the biometric identification system constitute the most critical research variables in this study. The background/ context in this section focuses on the antecedental parameters of these two critical units of analysis.

Ahmed (2020:25) asserts that identity may seem simple and obvious at first glance, it is a complex proposition that has been discussed in depth by philosophers, psychologists, legal experts, and sociologists for years. The development of the Internet with its "virtual communities" and its "faceless interaction" has resulted in more attention being given to the idea of identity as an asset that needs protection (Ahmed, 2020:25). However, urbanisation necessitated that a police force, penitentiary and courts be institutionalised to address the growing crimes among the crowded urban populations (Potgieter, Wiatrowski & Roelofse, 2016:104). The high level of the crime rates within crowded cities foreseen and create an ideal environment for criminals to grow and disappear without being seen. It is against such a background that the identification of criminals became an important part of the criminal justice system, especially upon the recognition that eye-witness accounts were subject to possible threats such as intimidation by those who were most likely to be identified as the wanted criminals (Potgieter et al., 2016:106).

It is worth mentioning that, for the purpose of the proposed research, the background/ context in this section does not necessarily present or adopt a historical-anecdotal approach. Rather, the inevitable and logical inter-connectedness of identity theft and biometric systems.

The history of identity theft (coined in the 1960 by the Federal Bureau of Investigations/ FBI) is centuries-old (Schulte, Douglas, 2020:1). Hence, the below-cited historical representation of the genesis of this fraud, eclectically combines with some (and not all) momentous developments in the sphere of fingerprints as an aspect of developments in biometric identification systems (Zhang, 2013:7). In 1998 meetings held in South Africa, the president of the International National Biometrics Society announced that the organisation had registered the word biometrics as a trademark in an effort too resist its use in the 'popular media' as a description of the new 'techniques being developed for identification of individuals'. The idea of biometric identification

refers to the automated recognition of individuals based on precisely measured features of the body (Breckenridge, 2014: 12).

1684: Dr Nhemiah Grew (1641-1712), the English plant morphologist presents the first scientific recognition of fingerprints in the West through his studies of the ridges, furrows and pores of the human hands and feet. **1858:** Sir William Hershel (1833-1917) is credited as the first European to realise the importance of fingerprints as a mean of personal identification.

1883: Anthropometry was also becoming an interest, in addition to the fingerprinting method. Frenchman Alphonse Bertillon (1853-1914) viewed fingerprinting as cumbersome and its records difficult to review. He devised a new anthropometry method derived from physical measurements of the human body (Ashbourn, 2011:9). **1918:** Edmond Locard, known as “the father of Forensic Science”, was also a student of Bertillon. In 1918, he established the first rules for the minimum number of ridges that should concur before a fingerprint match is declared in order to prove the identity of an individual by his/ her fingerprint. **1930s:** Identity theft by death and murder (ghosting) is identified as common in the USA.

1960s: Identity theft by phone was prominent. In the late 1960s, the FBI commenced the automatic checking of finger images. By the mid-1970s, many automated fingerprint scanning systems were installed and operational in the US, with the indentimat as the first commercially available. The system measured hand shape and length of the finger. Newer biometrics techniques were also developed during the **1970s**, such as recognition and identification by retina, voice, signature and facial verification (Zhang, 2013:7). **1980s:** Identity theft by garbage gains momentum. There was a protracted increase in the searching of garbage/ refuse to find any form of personal identifier that scammers could use. The production of the indentimat ceased in the late 1980s, but it had pioneered application of hand geometry biometric technologies generally. **1990s:** Identity theft by Internet grows exponentially with the rapid growth of Information and Communication Technologies (ICT). In 1998 the meeting held in South Africa; the president of the International Biometrics Society announced that organisation had registered the word biometrics as a trademark in an effort to assist its use in the ‘popular media’ as a description of the new ‘techniques being developed for identification of individuals’ (Breckenridge 2014:12). **2000s:** Identity theft by Radio Frequency ID (RFID) chip on the increase. The thieves or scammers (allegedly) used RFID to steal the encrypted details on the micro-chip of the credit card for their own fraudulent use on other fake cards. However, Grimes (2017:1) does not believe that RFID linked theft does exist.

1.3 THE PROBLEM STATEMENT

The terms ‘problem statement’ and ‘research problem’ are viewed and understood differently by different research scholars, depending on their intellectual persuasions or academic traditions and inclinations (Punch, 2014:118; Rani, 2016:7). On the one hand, these terms are viewed as synonymous and interchangeable, while on the other, they are viewed as separate (dissimilar), but complementary. In this proposed study, the researcher opts for reference to the problem statement, based on its inclusivity; that is, affording the articulation of the problem and stating the nature of the problem itself. Therefore, the various authors to which reference is made, also provide a relevant framework within which the actual problem is sufficiently articulated.

According to Butterfield (2012:8), a problem statement is a clear and concise description of the problem, as well as the effect or impact expected from the solution thereof. Such a perspective

entails that a problem statement, particularly in phenomenological or ethnographic research, encapsulates the need to know more about people whose experiences or the meanings they attribute to those experiences have a direct bearing on the issue/s the researcher is interested in (Mouton, 2014:27). Furthermore, the problem statement expresses the nature, context and significance of the investigated problem, while generally incorporating the particular terms and concepts embedded in a particular tradition of the inquiry (Profetto-McGrath, Polit, & Beck, 2010:228). For Leedy and Ormrod (2015:113), the problem statement should generally be broad enough to include the researcher's main concerns, but sufficiently narrow in scope to serve as a framework of the preferred research design.

In the context of the current proposed study, the investigated problem relates to, and is located within the capacity of the South African Police Service to address the scourge of identity theft and fraud by means of biometric identification systems. An interrogation of such capacity is critical, given the devastating and immeasurable social and economic impact of this crime. The problem is further compounded by the fact that the quarterly and annual crime statistics provided by the SAPS to the public do not show identity theft as a singular or specific category of crime identifiable by its own statistical occurrences and trends. Such a situation is problematic because the generalisation or bundling of identity crime makes it difficult even for the SAPS to determine whether or not its response measures and capacity are proportional to addressing identity theft since the introduction of the Automated Biometric Identification System (ABIS) in the South African Police Service.

Furthermore, no intensive research has been conducted to assess the impact of identity theft in the SAPS since the introduction of the Automated Biometric Identification System. Such research is critical to determine the extent of this biometric technology's implementation in addressing the identity theft challenges experienced by the SAPS and the country as a whole. Thus, the problem statement in the proposed study centralises the capacity of the South African Police Service to address identity theft and fraud decisively, given its magnitude and levels of organisation and technological sophistication adopted by its perpetrators.

1.4 RESEARCH AIM AND OBJECTIVES

1.4.1 Research Aim

According to Welman, Kruger and Mitchell (2012:23) the aim (purpose or goal) of conducting research is to define, explain and/ or predict human behaviour and its associated events, organisations and products. Meanwhile, Denscombe (2014:27) ascertains that the fundamental aim of research is to investigate possible solutions to real-life problem, or to improve procedures linked to the identified problems. On the other hand, and for the purpose of differentiation of the aim and the objectives of research, the proposed study adheres to the generality of an aim, purpose or goal.

Given the above statements of clarification, the aim or purpose of the proposed study is: *To explore, describe and analyse the use of the Biometric Identification System by the South African Police Service in its investigations of identity theft in the Vaal Region of Gauteng Province.*

1.4.2 Research Objectives

As opposed to the generality of the research aim/ purpose, the objectives of research relate to the specific or clearly stated intended activities in which the researcher will engage to achieve his/ her measurable outcomes within a defined timeframe (Grove, Burns & Gray, 2013:61; Holzbaur, Lategan & Dyason, 2012:67). According to Kumar (2015:88) and Punch (2014:118), research objectives entail an exploratory, descriptive, explanatory and predictive element, and are not mutually exclusive. As such, a particular study could entail more than one objective, which is the case in this proposed research study whose objectives are:

- To explore and describe the phenomenon of identity theft and its socio-economic impact;
- To explore, describe and analyse international experiences, trends and practices in the use of the Automated Biometrics Identity System (ABIS) in the investigation of identity theft and fraud;
- To determine the extent of ABIS usage in the South African Police Service;
- To explore, describe and analyse challenges experienced by SAPS forensic investigators with regard to implementation of ABIS in resolving identity theft; and
- To develop a framework of practical guidelines, procedures and recommendations for SAPS policy-makers in the implementation of ABIS when investigating crimes of identity theft.

1.4.3 Research Questions

The role of research questions is to organise and delimit the project, providing direction and coherence (Punch, 2014:65). Research questions are important as they will guide the rest of the research processes (Palmer & Thompson, 2022:5).

- What does the phenomenon of identity theft and its socio-economic impact entail?
- What are international experiences, trends and practices concerning the use of ABIS in the investigation of identity theft and fraud?
- To what effect or extent is the use of ABIS in the South African Police Service?
- What is the nature of challenges experienced by SAPS forensic investigators concerning implementation of the ABIS to resolve identity theft?
- How to develop a framework of practical guidelines, procedures and recommendations for SAPS policymakers in the implementation of ABIS when investigating crimes of identity theft.

1.5 DEFINITION OF KEY THEORETICAL CONCEPTS

The definition of key concepts enables clear understanding of the operational, contextual, disciplinary and practice-related usage and application (Scotland, 2012:10). Such definitions is also meant to ensure that readers optimally understand the intended meaning unambiguously and further appraise the degree to which the identified concepts are applied in a study (Saldanha & O'Brien, 2013:3). It is worth noting that the key concepts being defined here are thematically linked to the research topic in respect of it's the most important areas they address (Ruppel & Mey, 2017:1). Of further noting is the fact that the alphabetic sequence or order of the concepts does not in any way signify the order of their appearance in the study, nor any importance of one concept above the other/s.

1.5.1 Biometrics

Biometrics is the automated recognition of individuals based on their identified unique physiological and behavioural characteristics or attributes such as the face, fingerprints and voice/speech (Pato & Millett, 2010:1). In this regard, the field of biometrics relies and functions on the presumption of behavioural and physiological distinctiveness of individuals (Dunstone & Yager, 2008:4; Nait-Ali & Fournier, 2012:60). In the context of this study, biometrics encompasses the broader field of performing statistical measurements of unique algorithms and properties of the human body. When automated through technological methods, biometrics then encompasses an Automated Biometric Identification System, of which the Automated Fingerprint Identification System forms a part.

1.5.2 Criminal Investigation

The aspect of investigation (of the crime of identity theft/ fraud) is important insofar as it lends both credibility and momentum to interrogation of the capacity of the SAPS to fulfil its crime-fighting mandate (Madzivhandila, 2019:12) in respect of the biometric methods, in the case of the proposed study. Furthermore, the aspect of investigation is immediately justifiable on the premises that the SAPS already has an Automated Fingerprint Identification System in its repertoire of crime-fighting instruments.

The concept of criminal investigation relates to the systematic, objective, fact-finding inquiry into the material facts and circumstances concerning the commission of an unlawful act (Dintwe & Zinn, 2015:17; Ward & Heerema, 2013:7). According to Osterburg and Ward (2010:5), criminal investigation is the methodical collection of relevant facts and evidence in order to identify, apprehend, prosecute and finally convict the particular individual or suspected perpetrator or alleged offender beyond any conceivable doubt of wrong doing.

In the case of this study, criminal investigations pertain to the systematic examination of all the material facts, circumstances and other relevant factors relating to the commission of the crime of identity theft.

1.5.3 Evidence

Irrefutable evidence is relevant insofar as placing the suspect (identity thief) at the crime scene as an on-going component of investigating crime and preparing prosecutable cases (Bennett & Hess, 2012:235; Santos, 2017:111-112). In the context of this proposed study, evidence conforms to the definition provided by Bellengere, Palmer, Theophilopoulos, Whitcher, Roberts, Melville, Picarra, Illsley, Bizer and Roberson (2013:3), who define evidence as “any information that a court has formally admitted in civil or criminal proceedings, or at administrative or quasi-judicial hearings”.

Evidence serves as proof and responses to these questions: what happened, how it happened, why it happened, and by whom was it done? In the case of the proposed study, digital, electronic or computer-generated evidence is more relevant, which does not reduce the importance of other forms of evidence such as witnesses’ written and oral accounts.

1.5.4 Fraud

Fraud is defined as the act of intentionally concealing, omitting, or perverting the truth for purposes of gaining an unlawful or unfair advantage, causing or inducing or another person or party to incur a loss of rights or economic status or rights (Osterburg & Ward, 2010:21; Pato & Millett, 2010:1; Withrow, 2014:27). In the context of the current proposed study, identity theft constitutes the most profound form of fraud. Contrary to mainstream perceptions, fraud is not a victimless crime. People targeted by fraudsters suffer the devastating consequences and prospects of reputational harm (good name). They could lose their good credit ratings and face the time-consuming and costly challenge of re-establishing their legal and financial status (SAFPS, 2020:2; SAMLIT, 2020:2; Schulte, 2021:1).

1.5.5 Identity Theft

Identity theft involves the stealing of personal information and data of another person for the purpose of benefiting unduly (Bilan et al., 2020:1; Douglas, 2020:1; Magnet, 2011:16). Identity theft is a centuries-old crime whose growth in recent times is attributable to the Internet and e-commerce. Unsuspecting consumers may be tricked through “phishing” scams to provide personal data, which is then used for illicit purposes, to the detriment and disadvantage of the personal finances and emotional well-being of victims, as well as on the financial institutions and economies of countries (Biegelman, 2009:17; McNally, 2012:28).

1.6 VALUE/ SIGNIFICANCE OF THE STUDY

The value or significance of the study underpins its potential contribution in the epistemological, institutional/ organisational domains, as well as to society in general (Thanh & Thanh, 2015:24; Thomas, 2016). In the articulation of the problem statement (Section 1.3 of this proposal), the potential contribution of this proposed study was entailed or implied somewhat.

1.6.1 Epistemological Value/ Significance

In the epistemological domain, this research will contribute to the existing body of knowledge in the fields of identity theft and biometrics, which would enable other scholars, researchers and academics, as well as professional investigators and practitioners to appreciate the role of scientific and technology-driven approaches in the on-going battle against crime and criminality (Madzivhandila, 2019:12; Swanepoel, Lotter & Karels., 2014:19; Thanh & Thanh, 2015:26). In a fundamental sense, and as encapsulated in parts of Section 1.3, the proposed research ventures into an unexplored avenue or ‘uncharted territory’, particularly in relation to the evaluation of ABIS in the environment of forensic investigations within the South African Police Services. For validity and efficacy-related reasons, it is anticipated that the proposed study (based on its findings) will highlight existing practice-related gaps that demand further research within the SAPS.

1.6.2 Institutional/ Organisational Value or Significance

The institutional or organisational value is premised on the significance or contribution of the study in respect of certain specific bodies or interest groups with a direct link to the study. To this effect it is envisaged that the study will, first and foremost, be of immediate benefit to the SAPS, especially that the organisation already has the AFIS in its ‘arsenal’ of ‘weapons’ against crime in

general and identity theft in particular. At governmental level, Departments such as Home Affairs, International Relations and Cooperation could benefit from the findings and recommendations of the study. The Department of Home Affairs is relevant insofar as being the ‘repository’ of the documentary and fingerprint profiling for every citizen when applications are made for identification documents (IDS). On the other hand, both the Department Justice and Correctional Affairs and the Department of International Relations and Cooperation are respectively linked to the study insofar as anti-fraud legislation is concerned on the one hand; and extradition of wanted identity fraudsters, scammers and impostors, on the other.

In tandem with the last research objective as articulated in Section 1.4.2, the study is of significant value to the South African Police Service policy-makers and senior management insofar as its expected outcomes or output includes the development of a framework of practical guidelines, procedures and recommendations for SAPS policy-makers to use in the effective implementation of the Automated Biometric Identification System to buttress its capacity and responses to identity theft in the Vaal Region of Gauteng Province and the country at large. Additionally, the framework/ guidelines will also assist in addressing or ensuring innovation and continuity in the specialised training of SAPS forensic investigators based on the evidence and findings of the study and their emphasis on new technologies to keep abreast and be proactive in the detection, investigation, prosecution and conviction of identity theft networks and syndicates (Ramotowski, 2013:3; SAFPS, 2020:2; Swanson, Chamelin, & Territo, 2017:39).

The envisaged framework of guidelines encompasses propositions for a technologically driven 24-hour operational service that incorporates international best practice and technological features and aspects to resolve delays in the identification and recognition of perpetrators, scammers and impostors involved in identity theft and other forms of fraud locally and abroad.

1.6.3 Societal Value/ Significance

It is envisaged that the findings of the study will not conform to research-for-research’s sake, in terms of which the study serves only an academic or abstract purpose that is of no meaningful value to society (Santos & Taylor, 2013:512; Thanh & Thanh, 2015:19). Accordingly, the study and its findings and recommendation (in addition to the anticipated framework of guidelines) will be of value to commercial banks and fraternal organisations such as the South African Banking Risk Information Centre (SABRIC) and TransUnion. Furthermore, the CBO/ NGO sector organisations such as the South African Anti-Money Laundering Integrated Task Force (SAMLIT) and the Southern African Fraud Prevention Service (SAFPS) will also benefit from the study.

2. PRELIMINARY LITERATURE REVIEW

The preliminary review of relevant literature sources was helpful to the researcher insofar as providing different perspectives on the two core research variables, namely: identity theft and biometric identification systems. Moreover, the preliminary review enabled the structuring of the research proposal in terms of the identification of key concepts, the purpose and process of literature review, literature search strategy, main or dominant issues in the proposed field of research; as well as some identifiable gap/s in this regard.

2.1 LITERATURE REVIEW AND ITS PURPOSE

According to Machi and McEvoy (2018:2) and Mouton (2014:23), literature review pertains to the systematic and written proposition that espouses a certain thesis position by building the case for reliable evidence based on the previous investigations of others in the particular field of study. Accordingly, the reviewed literature also provides a background and context of current knowledge on the research topic for the logical defence of the thesis position adopted. For Mason (2014:26) and Munigal (2017:47), literature review is premised on the systematic and continuous search, consultation, processing (evaluation) and identification of relevant secondary sources of information (completed and recorded work produced by others). Meanwhile, Grove et al. (2013:64) and Marshall and Rossman (2011:19) emphasise that literature review is not a merely a bibliographic listing of references or information sources. Rather, it is the focused and emphatic search and identification of scholarship on a particular topic of interest, which is also supported and guided by particular methodologies to enrich knowledge and broader perspectives in the field of scholarship.

2.2 THE PRELIMINARY LITERATURE REVIEW PROCESS

The dominant literature review processes (which the proposed study espoused and applied to a large extent) entail the following major steps from the perspectives of Efron and Ravid (2018:6):

- Selecting a meaningful literature review topic in the researcher's field.
- Locating literature review sources that provide pertinent knowledge and information about the topic. This should be followed by the appropriate identification of key terms and keywords, as well as developing a relevant search strategy.
- Analysing and evaluating literature review source by reading each source to determine its relevance and value, and whether it should be excluded or included in the review. Thereafter, document, summarise and interpret the themes and topical issues deemed to be relevant to the research questions or objectives.
- Organising and synthesising the literature for building a thesis argument or statement in a persuasive, structured and comprehensive narrative.
- Developing 'authorial voice' through dialogue with the sources identified and discussed in the review.
- Writing, editing, and refining the literature review by integrating theory (where applicable) to practice and demonstrating thorough understanding of current knowledge in the field and its implications for the research question/s.

2.3 THEORETICAL FRAMEWORK

2.3.1 Theories for learning

2.3.1.1 Behaviorism

“Behaviorism is only concerned with observable stimulus-response behaviors, as they can be studied in a systematic and observable manner”

2.3.1.2 Cognitivism

Learning relies on both external factors (like information or data) and the internal thought process.

2.3.1.3 Constructivism

The learner builds upon his or her previous experience and understanding to “construct” a new understanding.

2.3.1.4 Connectivism

Informed by the digital age, connectivism departs from constructivism by identifying and remediating gaps in knowledge (Fairbanks, 2021:1).

2.3.1.5 Humanism

A “learner-centric approach” in which the potential is the focus rather than the method or materials. Deterministic leaning theory is mainly developed using concepts and theories of system identification, adaptive control, and dynamical systems (Wang & Hill, 2018:xiii). The researcher is of the opinion the constructivism suits this study better, as human beings we build on our experience to construct a new knowledge. The Department of Justice has defined identity theft as any crime in which one person uses another’s personal information fraudulently, typically for financial gain (Department of Justice, 2015:1) as this statement indicates identity theft we build on new knowledge to prevent identity theft.

2.4 MAIN ISSUES RAISED

In the course of its preliminary literature review, the researcher was exposed to the dominant parlance associated with the research field. In addition to Section 1.5, such parlance or terminological references also elevates the importance and centrality of such terms as impersonation, ID theft, BIS, ABIS and AFIS. Biometric identification systems basically verify the identity or a claim of persons on the basis of the automated measurement and analysis of their physiological (e.g. fingerprints, face, lips, iris) or behavioural (e.g. voice, signature) properties (Kindt, 2013:1). Whereas the proposed study is focused largely on the BIS in a generalistic manner, it is worth reiterating the following excerpt for clarification purposes:

“Two kinds of biometric protocols/procedures are commonly used by the police to identify suspects in an investigation ... biometric databases and matching systems are becoming more prevalent across the world, as countries increase ... biometrics in areas such as law enforcement and immigration/boarder control. Most of these systems can be categorised as either an Automated Fingerprint Identification System (AFIS) or an ABIS. An AFIS or ABIS generally functions the same way, although the latter is typically distinguished by the ability to employ more than one biometric modality. An AFIS/ABIS will maintain a core database of enrolment [sic] files, which include biometric collection on particular individuals, as well as varying amounts of additional textual information, including biographical information and information regarding the circumstances of each biometric collection” (Buhrow, 2016:143).

The brief historical overview presented in Section 1.2 was integral to understanding the eclectic intersection of the emerging main issues in respect of the evolvement of identity theft and its biometric antecedents. Most importantly, the reviewed literature enabled the identification of the main issues and/ or concerns raised in the fields of biometrics and identity theft, both internationally and locally (RSA context).

The study is in concurrence with the irrefutable literature-based facts and information concerning the global spread of identity theft.

2.4.1 An International Context and Perspective of the Prevalence and Magnitude of Identity Theft and Biometric Identification

In the modern era, the Internet of Things (IoT) has contributed to the accelerated rate of Internet-based identity crime/ cybercrime to an average of 5,233 times per month (FTC, 2020:1). It has also been reliably established that routers and connected cameras were the primary targets of IoT attacks in 2018 and accounted for approximately 90% of cybercrime activity. IoT attacks that involve connected cameras increased by about 12% in 2020 as well (FTC, 2021:1). Furthermore, phishing and ransomware attacks were the two foremost root causes of data compromise, while supply chain infringements increased by 32 new attacks in the second quarter when compared to 27 in the first quarter of 2021 (Schulte, 2021:1).

The Federal Trade Commission (FTC) of the United States further reported about 4.8 million identity theft and credit card fraud incidents in 2020, which resulted in a \$4.5 billion total loss to the national fiscus (FTC, 2021:1). This translates into a 45% escalation over the number of cases and money lost in 2019. According to the data breach analysis of the Identity Theft Resource Centre (ITRC) in the USA, there was a 38 % increase of identity theft cases in the second quarter of 2021, translating into 491 attacks or compromises; compared to the same year's first quarter (ITRC, 2021:1). The number of affected persons was 52.8 million, down by 20% over that same timeframe. Moreover:

- There were nearly 1.4 million known cases of identity theft in 2020, with nearly one-third being victims of similar attacks before;
- Identity theft increased by 53% between 2019 and 2020;
- Married women were the most commonly attacked victims of identity theft;
- Identity thieves impersonated or used other people's information for fraudulent purposes to an estimated \$200-\$500 billion in 2020 alone;
- In 2020, identity theft struck the 30-39-year-old age cohort the most, when young adults and the elderly were the main victims in a 'normal' year;
- There were nearly 400,000 cases of credit card fraud in the US in 2020 alone;
- "Card not present" fraud was one of the foremost forms of credit card fraud, and still increasing;
- Reported credit card fraud cases were 270,000 in 2019, increasing by a third in 2020;
- The USA is responsible for a third of the world's credit card fraud cases, translating into losses of about \$11 billion in 2020 alone; and
- Data breaches affected about 155.8 million American citizens in 2020 alone, with the victims ranging from ordinary consumers to senior officials in the US Marshals Service.

2.4.2 Global view on BIS

The Security Council of the United Nations has issued several Resolutions concerning the collection and sharing of biometric data for the purpose of counterterrorism. The Security Council Resolution 2160 (2014) encourages Member States to submit photographs and other biometric data of individuals supporting the Taliban to INTERPOL.⁷¹ Resolution 2322 (2016) broadened

the recommendation for biometrics-related data sharing to terrorists and terrorist organisations in general (Wendenhorst, & Duller, 2021:24).

2.4.3 International view on BIS

In the context of existing EU legislation regulating biometric techniques, the rights to respect for private life and protection of personal data⁷⁸ are particularly notable, as they have been invoked in several cases (Wendenhorst, & Duller, 2021:24).

2.4.3.1 Local (South Africa view on BIS

The value of fingerprinting when an individual is arrested and brought to the police station, their fingerprints are taken as part of the cook-in process. Fingerprints are either taken by using the classical paper-and – inkpads method, or the fingers and palms are rolled on a glass placed on located on the Live Scan Terminal. A scanner below the plate then reads the information from the prints. This information is electronically transmitted to a repository where a technician checks the prints for quality (Dintwe & Zinn, 2015:421).

2.4.4 The South African Context/ Perspective

Similar to patterns and trends in other illicit international forms of crime such as the drug criminal syndicates, many culprits have made South Africa their hiding place and go for years unnoticed, and without any arrest being effected expeditiously (Santos & Taylor, 2013:512; Smith et al., 2018:22). According to TransUnion (2021:1), many cases of identity theft come to light only when the victim starts receiving accounts and letters of demand for debts, or when their own application for credit is refused because of their disreputable credit records.

According to the SAFPS (2020:1), there was a significant increase in fraud listings (62%) and victim listings (54%); while impersonation fraud increased by 337%. According to the regulatory reports of the banking sector provided by financial intelligence units such as the Financial Intelligence Centre (FIC), South African banks issued 192 890 unusual and suspicious transaction reports, from a total of 299 256 the FIC has obtained in 2019/20 (SAMLIT, 2020: 16-17). It is estimated that identity theft costs the South African State about R1 billion annually (SAFPS, 2020:1). In 2019, there was a noticeable 99% increase compared to 2018 concerning the use of real names and Identity Documents (ID) for impersonation purposes.

Given all the multi-faceted discussions in this section, it is the proposed study's observation and contention that it is mostly the financial and socio-economic manifestations and effects of identity theft that are mostly reported and documented in copious literature sources and scholarship perspectives. Therefore, the gap that looms large is the sparse reporting and documentation of the emotional and psycho-social impact and scars of identity theft on those who have been scammed, traumatised and victimised.

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

The research design basically represents a practical plan or blueprint for the methods to be used in respect of the data collection and analysis, as well as the applicable sampling procedures and processes directed at resolving the investigated problem and its attendant research objectives and/

or questions (Harding, 2013:15). For Leedy and Ormrod (2013:74), the research design entails the philosophical parameters and decisions that informed or guided the management of strategies, methods, structure and data collection and analysis processes and procedures; all of which are in direct response to the research problem and questions. Meanwhile, Rubin and Rubin (2012:46) and Thanh and Thanh (2015:22) emphasise the philosophical rootedness of a research design as critical to informing all other processes of the study.

This study is guided by the phenomenological-constructivist philosophical worldview (perspective or paradigm), which is otherwise also referred to as the ethnographic, constructivist or ecological paradigm (Creswell, 2014:23; Donley & Graueholz, 2012:35; Kumar, 2015:114). This paradigmatic orientation of the study was informed by the participant-centred nature of the data collection which enables the acquisition of primary or empirical data about a particular phenomenon (e.g. identity theft) from the police investigators themselves in their own familiar surroundings, in their own words, and based on their own experiences, understanding and perceptions of the use of biometrics in identity theft cases.

3.1.2 Research Methodology

Based on the differentiation aspect mentioned in sub-section 1.8.1 (in terms of which planning, process and strategy loomed large), the research methodology then refers to the approach of the study as fundamentally directed by its philosophical path. For instance, a predominantly quantitative study would be directed by its positivistic (objectivity) paradigm from which it is provenant, while a mixed-methods research design approach would mostly be influenced by the pragmatic philosophical worldview from which it originates (Creswell, 2014:183; Thompson & Hickey, 2016:78). Suitably, the current proposed study has adopted the exploratory qualitative research design approach as the logical product of the constructivist-ecological philosophical perspective guiding the study. Such an approach is also most beneficial in situations where more information is still sought about an identified problem (Maxfield & Babbie, 2014:181; Patten & Galvan, 2019:89).

The qualitative research approach was preferred for the following reasons as proposed by Creswell (2014:21), Patten and Galvan (2019:89) and Thompson and Hickey (2016:84), among other authors:

The acquisition of pertinent information and data takes place in real-time, and in the naturalistic (ethnographic) setting (ecology or environment) in which the investigated problem is directly experienced, with the researcher actually seeing and hearing the participants while talking to them;

Enabling the acquisition of data from multiple sources, which enables the researcher to eventually organise the self-same data thematically;

The researcher collects the data herself, which enhances her familiarity with the participants' environment and real-time observation of their behaviour and attitudes concerning the meanings and perspectives they ascribe to their experiences of the phenomenon being investigated; and

Reflexivity and flexibility are enhanced, because the researcher's personal experiences and cultural background are overshadowed by those of her participants who are at any rate in the majority. As such, the likelihood of unfairly influencing the participants' viewpoints is minimised.

Qualitative research is especially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour (Devi, 2017:11). In this study qualitative research was employed.

3.2 Study population and sampling procedures

The study or research population is the complete class or group from which the required information is to be gathered (Dantzker & Hunter, 2012:110). However, De Vos, Strydom, Fouche' and Delpont (2012:333) and Rubin and Rubin (2012:47) add further to categorise the “group” as objects, units of analysis, individuals, events or elements from a larger group or superstructure about which the researcher wishes to learn more. Furthermore, the study population is viewed as simply the larger group from which a smaller number is sampled due to the logistical challenges of involving every member of the larger study population or group in the study (De Vos et al., 2012:334).

In this proposed research, the study population consists of police officials and detectives in the fourteen police stations in the Vaal-Rand and Sedibeng municipality districts, namely: Rathanda, Heidelberg, Orange Farm, Evaton, Sebokeng, De Deur, Meyerton, Sharpeville, Boipatong, Vaal Marina, Vanderbijlpark, Barrage, Vereeniging and Kliprivier.

3.2.1 Target Population

As indicated above, it is logistically impracticable and financially impossible to involve every member of the study population, especially in cases of larger groups. It is in this regard that the target population is required. The target population is the group about which the researcher wishes to make generalisable statements in relation to both the research problem and questions, or objectives (Welman et al., 2012:27). The target population is also viewed as a crucial feature of sampling on account of its possession of the homogeneity (similarity) of properties, traits or qualities that have been determined by the researcher as objectively appropriate for the study (Grove et al., 2013:79; Maxfield & Babbie, 2014:186).

For the purpose of this study, the target population consists of the selected or sampled participants (uniform police officials and detectives) at three police stations identified as ideal research sites, namely: Sebokeng, Vereeniging and Sharpeville. Sebokeng Police Station has 275 uniformed members, and 60 detectives, while Vereeniging Police Station has 300 uniformed members, 60 detectives and 30 Local Crime Record Centre (LCRC) members); and Sharpeville Police Station has 250 uniformed members and 40 detectives.

It should be noted that from this targeted population, the actual number of uniformed police officials and police detectives who will be sampled for actual participation in the study is shown in the ensuing sub-section 1.9.2.

3.2.2 Sampling Process and Sample Size

Sampling is the selection of a representative group of participants from a larger group in order to respond effectively to the research questions in accordance with suitably selected data collection and analysis instrumentation and processes (Grove et al., 2013:61; Saldanha & O'Brien, 2013:7). It is worth noting that the representativity aspect of the (smaller) sampled group is based on the

degree of homogeneous traits, features or qualities determined by the researcher (Efron & Ravid, 2018:193; Thompson, 2012:1).

For its sample size (actual number of sampled/ selected participants), the study will involve 54 police officials from the three research sites, constituted as follows:

Sample A1 (Sebokeng Police Station): 15 uniform police officials;

Sample A2 (Sharpeville Police Station): 13 uniform police officials;

Sample A3 (Vereeniging Police Station): 15 uniform police officials;

Sample B1 (Sebokeng Police Station): 3 police detectives;

Sample B2 (Sharpeville Police Station): 2 police detectives; and

Sample B3 (Vereeniging Police Station): 3 police detectives and 3 LCRC members.

Therefore, the anticipated total sample size is 54, constituted as 43 uniform police officials and 8 (eight) police detectives, and 3 (three) LCRC members as indicated above.

3.2.2.1 Sampling Strategy

The sampling strategy basically refers to the method or technique applied by the researcher in the sampling process, which could be of the probability or non-probability type of sampling. In non-probability sampling, the chance or opportunity for selection of the prospective participants are unknown or uncertain until the actual moment of selection has taken place (Denscombe, 2014:84). Therefore, non-probability sampling could be construed as less prone (but not immune) to researcher bias or 'favoured' participants. Examples of non-probability sampling include: purposive/ judgemental, convenience/ availability/ accessibility/ cluster, snowball and quota sampling. The uniformed police officials will form part of the sample because they are the community's first contact with the criminal justice system as they report or lay charges or complaints at the front desks attended by these police officials in uniform (Bennet & Hess, 2012:16). The detectives are considered relevant because they actually investigate reported (and unreported) crimes for the required crime scene evidence to finally arrest, prosecute and convict the wrongdoer or perpetrator of the crime (SAPS, 2017b:18).

In probability sampling, the participants' chances of selection are known, certain or probable, which could perpetrate selection bias on the part of the researcher (Creswell, 2014:126). Examples of probability sampling include simple random, interval/ systematic and stratified sampling. Accordingly, simple random sampling was preferred in this proposed study, because of the random-ness that will enable the elimination of preferred or favoured participants. Random sampling is considered the 'gold standard' of sampling, and entails that every population member has an equal opportunity or chance of being selected as a participant in the research project (Saldanha & O'Brien, 2013:4). Random sampling is an important technique and a relevant pre-requisite for statistical tests that can establish the repeatability or reproducibility of a pattern from one sample to another (Harding, 2013:17).

Following the due ethical processes (see Sections 1.13.1 and 1.13.4) the researcher will have three separate boxes, each bearing the names: "Sebokeng PS" (for police station), "Sharpeville PS" and "Vereeniging PS". Each box will be divided into two compartments, one for the uniformed police officials and the other for the detectives. For example, the "Sebokeng PS" box will have a compartment for the uniformed police officials marked "A1" with names of uniform police officials stationed there on pieces of paper from which the researcher will randomly raffle-choose

15 names. The same procedure will take place in the same “Sebokeng PS” box for the detective compartment marked as “B1”. Ultimately, the two other boxes marked as “Vereeniging PS” and “Sharpeville PS” will be subjected to exactly the same random process followed for “Sebokeng PS”. In other words, the random-ness of the sampling will be based on the filling of each compartmentalised box with pieces of papers of names that cohere with the figures indicated in the second paragraph of Section 1.9.1; from which to randomly select the ultimate sample numbers in their respective categories as shown in Section 1.9.2.

It is the study’s considered view that the random selection process described above represents an objective mechanism to access the uniformed police members and detectives in the Sedibeng district. The researcher resides in this area and is acquainted with the neighbourhoods in this cluster.

3.2.2.2 Sampling Considerations/ Criteria

The Vereeniging forensic officers (LCRC) will be sampled because they are South African Police Service personnel who use the Automated Fingerprint Identification System in their work and attend to the crime scenes.

For its exclusion or ineligibility criteria, the study will not include any uniformed police official, detective or LCRC member who is not stationed in any of the fourteen police stations in the Vaal-Rand and Sedibeng municipalities. Also excluded will be any LCRC member, police detective or uniformed police official who is not willing to participate in the study (Denscombe, 2014:68; Thanh & Thanh, 2015:28). Furthermore, any SAPS member in the Sedibeng district cluster who is not an LCRC member, police detective or uniformed police official will not be considered for participation in the study’s empirical data collection processes.

3.3 RESEARCH INSTRUMENT

The semi-structured interview mode of enquiry was utilised to obtain relevant information from the selected security and examinations officials at each research site. This mode of enquiry is consistent with the qualitative research approach that has been adopted in this study (Habib, Pathik and Maryam, 2014:26). Microsoft word was used to gather the data. Data analyst did the transcribing of the audio-recorded interviews on Excel sheets and re-reading the transcripts and writing notes on initial topical trends observed.

3.4 DATA COLLECTION

Data collection is crucial for gaining access to documents and people for research purposes, the absence of which will subject both the researcher and his/ her study to speculation concerning the research subject or field (Denscombe, 2014:70; Guest, Namey, & Mitchell, 2013:3). Data collection itself refers to the systematic accumulation of both primary and secondary sources of information to facilitate the process of converting or translating pertinent data into the ultimate evidence of the study (Kumar, 2015:121; Rubin and Rubin, Saldanha & O’Brien, 2013:7). In this predominantly qualitative research study, data collection was achieved through a comprehensive literature search strategy (for secondary sources), documentary review, interviews and utilisation of the researcher’s personal experience.

3.4.1 Literature Sources/ Secondary Evidence

Multiple literature sources were consulted through a search strategy for purposes of coordination. A literature search strategy refers to the approaches adopted in the systematic consultation and identification of relevant scholarship perspectives and other sources pertinent to the research topic (Denscombe, 2014:77; Efron & Ravid, 2019:6; Marshall & Rossman, 2011:51). In this regard, the proposed study's literature search strategy benefitted from academic books from reputable university libraries; published and unpublished dissertations and theses; scholarly research articles in accredited and peer-reviewed scientific journals in identity theft and biometrics; as well as reputable databases and search engines (e.g. Research Gate and GoogleScholar).

3.4.2 Documentary Sources

Documentary sources mostly relate to the non-academic materials consulted in complementation of the literature sources (De Vos et al., 2012:118). In this regard, the researcher also searched for, and consulted official government policy documents and legislation. Non-official or informal documentary sources included billboards and photographs of known personalities involved in 'legendary' identity fraud cases; as well as relevant newspaper and magazine articles. While the category of sources in the preceding paragraph (Section 1.10.1) is largely academic and intellectually inclined, the above-cited sources in this paragraph are less academic and topical.

Organisationally, the SAPS represents a formidable superstructure within the State and the country's law enforcement framework (Govender, 2017:17; Steinberg, 2014:171). Accordingly, a range of legislative/ regulatory, policy and institutional imperatives and dynamics ought to be understood in the context of identity theft and use of biometrics. It is in this particular regard that pertinent official government Acts and policy documents were consulted, identified and reviewed in relation to the research topic. The following documentary and legal sources were instrumental in addressing several issues and aspects concerning the research topic.

- The South African Police Act (No. 68 of 1995), for the mandate and obligations of the SAPS, as well as its institutional dynamics;
- Constitution of the Republic of South Africa (Act 108 of 1996), for its protection of fundamental human rights such as privacy, safety, peace and security within a democratic dispensation of policing in the post-apartheid era;
- The Prevention and Combating of Corrupt Activities Act (No. 12 of 2004) (PRECCA) for its articulation and clarification of issues of corruption, forgery and fraud, of which identity theft forms a part;
- The Consumer Protection Act (No. 68 of 2008) prevents the disclosure of any personal or confidential information concerning the affairs of any person;
- The Financial Intelligence Centre Act (No. 38 of 2011) (FICA) and the Prevention of Organised Crime Act 121 of 1998 (POCA) are the primary statutes that form part of the matrix of statute dealing with white-collar crime in South Africa.
- The National Development Plan of 2012, for the seminal policy imperatives adopted by government to in the broader context of combating crime (South Africa, 2012:218); and
- The Protection of Personal Information Act (No. 4 of 2013) (POPIA), supports or complements Section 14 of the Constitution of the Republic of South Africa (Act 108 of 1996) and its protection of every citizen's right to privacy. The POPIA preamble provides that the right to

privacy includes the right to protection against the unlawful collection, retention, dissemination and use of personal information;

- In the United States, where identity theft is one of the 21st century's fastest growing crimes, The Identity Theft and Assumption Deterrence Act ("ITAD") was enacted in 1998 in response to the growing problem of network crimes, including identity theft; and
- The Identity Theft Penalty Enhancement Act of 2004 was signed into law for tougher penalties. The Act established a new crime known as aggravated identity theft; the use of a stolen identity in document form or credentials to commit other crimes.

3.4.3 The Semi-structured Interview Mode

Interviews are basically a reflection of the researcher's engagement in organised, focused and coordinated dialogue or conversations with his/ her sampled participants (Kumar, 2005:76; Walliman, 2017:184). In this regard, the interviews constitute the primary and experiential/empirical data that complemented both the literature and documentary sources relating to identity theft and the use of biometric identification systems to combat this crime.

The researcher will conduct semi-structured (but non-physical) one-on-one, telephone and e-mail interviews with the participants (LCRC members, uniformed police officials and detectives) selected through the random sampling strategy. These interviews will provide the required responses based on the knowledge, perceptions and experiences of police officials who dealt with cases of identity theft and investigating officers who are tasked with analysing the fingerprints of suspected perpetrators. These interviews will be conducted to determine the methods, techniques and procedures applied by these authorities in identifying these crimes and dealing with cases of identity theft. Through a qualitative approach the researcher will further describe and explain the procedures followed by the various role players in identifying and investigating these cases of identity theft.

It is worth mentioning that no direct or physical contact will occur between the researchers and the interviewees in compliance with the University of South Africa's Covid-19 risk-adjusted strategies that require social distancing as one of the mechanisms to prevent the spread of the pandemic (UNISA, 2016; 2020a; 2020b). Given infrastructural challenges at some police stations, the researcher will only rely on computer-assisted interview mechanisms such as Microsoft Teams and Zoom technological applications. The Whatsapp voice messenger will also be used to forward interview questions to the larger group of 43 uniformed police officials. However, the smaller sample groups of 8 detectives and 3 LCRC members will definitely be arranged through one-on-one Teams and/ or Zoom interviews.

Each interview session will be of about an hour's duration during the participants' lunch breaks or after working hours by prior arrangement. An informed consent form will be sent in advance of the commencement of the actual interviews (Mills & Ratcliffe, 2012:148; Padget, 2012:24). Full disclosure of the study will be made, and the participants will also be informed of the requirement for voluntary participation; and that they were free to withdraw from the study at any time in the event they perceived the researcher to be violating their human rights.

3.4.4 Personal Experience

As a form of data collection, personal experience relates to the degree to which the researcher's own knowledge, experience, personal observations, profile, professional credentials and background contribute to the study itself, or some of its significant aspects (Padget, 2012:24; Creswell, 2014:116). Based on her personal observations, the researcher has observed and identified the paucity of research to assess the extent of identity theft since the introduction of the Automated Biometric Identification System (ABIS) in the South African Police Service. Such an evaluation is critical in determining whether the implementation of this biometric technology has effectively addressed identity theft challenges that the South African Police Service and the country encounter.

In 2003, the researcher enlisted for training as a police official at the SAPS Academy in Tshwane, where she also enrolled in the six-month basic police course. The researcher worked. From February 2004 until July 2011 the researcher worked at the Client Service Centre addressing various complaints at Evaton police station, which falls under the Sebokeng cluster, which is itself located in the Vereeniging cluster. As part of her duties, she attended crime scenes as part of house breaking investigations and theft where fingerprints were collected and taken to the LCRC for analysis and comparison. In July 2011, the researcher was internally transferred to the Detective Branch within the self-same Evaton police station, where she worked until the end of 2012.

The researcher's primary detective responsibilities included cases of motor vehicle theft, and stealing from motor vehicles. Forensic investigators would be called to collect the fingerprints on the motor vehicles. In cases where a suspect was identified, he/ she would be charged and the fingerprint taken to LCRC for analysis and comparison and storage on their database. Fingerprint analysis and comparison enables the establishment of whether or not the suspect could be linked to other crimes committed elsewhere in the country (Mabasa, 2012:24; Zulawski & Wicklander, 2016:111). Fingerprint information is important when it comes to the prosecuting of the suspects. However, delays in the processing of fingerprints provoked the ire of the both the victims and the community, who are doubtful on the capacity of the SAPS to execute its mandate (Motsepe, 2019:16). Therefore, it is against this background of observed and real-life experiences that the researcher was imbued with a strong desire and interest to scientifically investigate the capacity of the SAPS to address identity theft (which is unrelated to the personal experience described above), especially that the SAPS already has the AFIS in its own phalanx of crime investigation and intervention tools.

3.5 DATA ANALYSIS

All research requires logical reasoning (Leedy & Ormrod, 2013:97). In that context, data analysis draws from the systematic organisation, processing and categorisation of accumulated empirical information and its ultimate conversion or translation into meaningful statements relative to the research problem and questions (Fink, 2010:16; Holzbaaur et al., 2012:43). The analysis of data is preceded by its collection and management to ensure that it is not contaminated and kept in its raw or original form. According to Creswell (2014:112), Donley and Graueholz (2012:43) and Guest et al. (2013:17), data analysis could be conducted concurrently with data collection, but depends on the acumen and skills of the researcher. Furthermore, it is noteworthy that the analysis of data

is the preparatory phase for its conversion into a framework from which the study's findings accrue (Berg & Lune, 2012:28; De Vos et al., 2012:126; Machi & McEvoy, 2018:17).

In this proposed study, thematic analysis constitutes the primary method of analysing the verbal statements of the 54 sampled police officials in respect of identity theft and the extent of usage of biometric identification systems within the SAPS. The participants must complete the consent form. Accordingly, the researcher will adhere to the following analytic trajectory or framework proposed in Creswell (2014:12-14) and supported by Grove et al. (2013:68) and many other research scholars.

- Transcribing the audio-recorded interviews on Excel sheets and re-reading the transcripts and writing notes on initial topical trends observed;
- Identifying the observed topics with main focus on essential messages than on content;
- Listing and comparing identified topics, grouping them according to main recurring messages or themes;
- Reviewing the data and allocating alpha-numeric codes to the grouped topics;
- Converting the codes according to their inter-relatedness to the topic, research problem and questions or objectives; and
- Allocating themes to the various critical aspects of the research topic, research problem, and research questions or objectives they address.

3.5.1 Methods to ensure trustworthiness of the study

According to Carone and Bush (2018:2) and Cizek (2020:1) trustworthiness measures relate to processes and strategies applied by the researcher to ensure that the study bears a semblance of scientific rigour and methodological appropriateness from the perspectives of the academic community and the general public. As such, this proposed qualitative study has ensured its trustworthiness by means of the credibility, transferability, dependability, and confirmability measures as advocated by authors such as Carone and Bush (2018:2), Cizek (2020:1), Creswell (2014:68), Fink (2010:17), Khaldi (2017:19), Kumar (2015:171) and (Walliman, 2017:147).

3.5.2 Ethical considerations

Ethics in research pertains to the legal, moral and professional protocols or conventions that regulate or inform the researcher's conduct or behaviour in his/ her interactions with the participants (Miller, 2011:310; Neuman, 2011:196; Saldana & Omasta, 2018:192). In the context of the proposed study, the ethical considerations were focused on the institutional ethical reviews, participants' informed consent, protection from harm, right to confidentiality and privacy, and the researcher's honesty with professional colleagues.

3.5.3 Institutional Ethical Reviews

The researcher will abide by the ethical prescripts of the University of South Africa in terms of which the study will only commence after approval has been granted by the internal review processes of the College of Law (CLAW) (UNISA, 2016). The researcher will also adhere to UNISA's Covid-19 risk-adjusted regulations preventing any direct or physical contact between the researchers and their participants (UNISA, 2020a; 2020b). Such adherence is confirmed by the researcher in Section 1.10.3 relating to the manner in which the interviews will be collected as part of the data collection initiative.

In addition, the researcher will comply with the National Instruction 1/2006 of the South African Police Service and its stipulation of the procedures to be followed by members for the requisite authorisation to conduct research on SAPS premises and/ or seeking relevant information by interview its members. The instruction will be adhered to, including submission of the UNISA/CLAW ethical clearance certificate as proof that the study is only for reasons linked to the researcher's academic qualifications.

3.5.3.1 Informed Consent

Following approval through the UNISA and SAPS internal review mechanisms, the researcher will issue informed consent forms to both the Sebokeng, Sharpeville and Vereeniging Station Commanders and the SAPS national office in charge of research. The forms are a transparent means to the full disclosure of the study and the requested voluntary participation of SAPS members on the basis that they will be fully informed of the nature, purpose and use of the study and findings, after which they will be expected to sign the particular form as an indication that they agree to participate uncoerced (Ehrlich & Joubert, 2014:337; Saldana & Omasta, 2018:197).

Informed consent is also a form of recognition of the participants' human dignity and autonomy as individuals (adults) capable of making independent decisions. It is in that regard that the researcher will also inform them of their right to withdraw from any stage of the study if they felt that the researcher was violating their human rights in any manner during the interviews.

3.5.3.2 Protection from Harm

Research participants are the lifeblood of any study requiring human involvement for its empirical/experiential data (De Vos et al., 2012:109; Edmonds & Kennedy, 2012:66). The researcher will not lie to the participants for her personal gain. The researcher will also ensure that this 'lifeblood' is not physically, emotionally and psychologically harmed for the duration of the study. In requesting for permission to conduct the study at its three research sites, the researcher will also make a formal request for the allocation of a room or office for the use of the participants in order to ensure their emotional and psychological ease during the pre-scheduled interview sessions conducted virtually. For the telephone interviews, they will also be pre-arranged in order to alleviate the parallel pressures of work with the demands of the interviews at the same. The interview questions will not be intrusive, neither will they deviate into non-essential aspects of the intended purpose (Epstein & Carlin, 2012:898).

3.5.3.3 Right to Confidentiality and Privacy

Some research scholars and practitioners maintain that the principles of confidentiality, privacy and anonymity were virtually synonymous, since they were all cohesively linked by the extent to which the participants' identities were kept publicly unknown (Epstein & Carlin, 2012:898; Machi & McEvoy, 2018:11). Some studies seek information whose public disclosure could be detrimental to the participants as the key informants and providers of such information, despite that some aspects of such information is even publicly known or available; for instance, on the websites of the institutions directly involved in the study.

The researcher will ensure that none of the selected participants is made aware of the colleagues participating in the study, unless they obtain such knowledge by themselves or, of their own initiative. Moreover, the researcher will ensure that the names, workplaces and designations of all participants are not divulged in the study and to any other unauthorised persons or third parties.

Instead, they will be referred by the researcher's invented pseudonyms, such as "Participant X" or "Participant 1". The researcher will also treat the participants with dignity and respect, ensuring that their viewpoints remained confidential. In this regard, they will not be coerced or lured into disclosing anything unrelated to the study and its purposes. The participants will also be assured that, while the information they provide may be used by other researchers in their studies, those researchers were also bound by ethical protocols to keep the participants anonymous.

3.5.3.4 Honesty with Professional Colleagues

The above-mentioned principle is a reflection of both the researcher's acknowledgement and recognition of the role and contributions of other scholars and researchers in the field of investigations (Epstein & Carlin, 2012:900; Mason, 2014:29). Such recognition is also a preventive measure against plagiarism and its consequent effect of subtle self-elevation, or parading secondary and peripheral researchers or investigators as though they were the original 'founders' of the information and substantive issues addressed in the study.

4. RESULTS

Identity theft exemplifies the trans-national sophistication of crime and criminality irrespective of race, gender, socioeconomic status or cultural orientation.

In its original form, identity theft was basically a gruesome physical crime, in that the criminals would murder victims in order to steal or fraudulently obtain the personal information of their victims, such as their names, family history, career, social security number, and even their life story.

Dintwe and Zinn (2015 410) asserts that the delays in the implementation of the AFIS around the clock will continue to create an environment in which criminals feel they are above the law. At present there is no specific legislation in South Africa that specifically provides for establishment and administration of a national forensic DNA data base as a forensic investigative tool. A need was expressed by the South African government to introduce legislation that would provide a specific framework for collecting and processing comparative searches on forensic DNA databases. To this end the Criminal Law (Forensic Procedures) Amendment A 37 of 2013, commonly referred to as the 'DNA Act', was enacted on 27 January 2015 (Dintwe & Zinn, 2015 410).

5 CONCLUSION

In essence, this research proposal captures, amongst others, the researcher's interest in the field of identity theft and biometrics, as well as the potential of the study to make a meaningful contribution to the field of knowledge. Coupled with her personal experience, the research proposed also reinforces the researcher's ability and determination to execute the study to its completion.

Identity theft exemplifies the trans-national sophistication of crime and criminality irrespective of race, gender, socioeconomic status or cultural orientation. It is imperative for governments and law enforcement authorities across the globe to collaborate in efforts to curtail the uncontrollable spread of this menace before it becomes a serious threat to modern civilisation as we know it; similar to the ever-present threat of international terrorism and drug trafficking. Therefore, continuous professional development of police investigators, financial support for forensic

capacity, are some of the ‘arguments’ the proposed study intends to raise (again), albeit from the perspectives of those who are actually bearing the brunt of ‘fixing’ this problem.

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BUILDING RESILIENCE: SMALL BUSINESS DEVELOPMENT POST-LOOTING AND CHAOS IN SOUTH AFRICA

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ABSTRACT

South Africa's two provinces' main economic contributors were devastated by civil turmoil and mayhem in July 2021. Thousands of protestors vandalized shopping centres in several South African cities and towns. Small and large businesses were looted and set on fire, transforming many communities into absolute chaos. Several critical national highways were closed, and trucks set alight in an attempt to undermine the economy. This resulted in over 300 deaths, high unemployment and serious destruction of infrastructure. Small businesses already fighting to recover from Covid-19 effects were impacted the hardest, as the majority were uninsured and unable to swiftly recover. Civil unrest demonstrated how badly strained South Africa's public administration is, as well as growing tensions between the haves and have-nots. Accountability, trust and political will are required to fast-track recovery contributing to small business resilience in the short- to long-term. The research paper focuses on small business development post the civil unrest in South Africa. The design and approach are theoretical using secondary data analysis based on scholarly literature in the field. The study points to a severely challenged economic and business environment compounded by prolonged effects of Covid-19 and inept management of the socio-economic situation. This is anticipated to have a substantial impact on small enterprises, particularly micro, rural and township businesses that do not have the resources to fully recuperate to normalcy. Rising inflation, higher petrol and electricity hikes and escalating price of basic commodities amongst others, are collectively expected to hinder the recovery and weaken resilience and sustainability of many firms in the coming years. South Africa's economic performance has deteriorated in recent years, owing to recession, political mismanagement and lack of accountability exacerbating growing unemployment, poverty, and inequality. Collective efforts from business communities along with government financial assistance would significantly assist in restoring small business resilience.

Keywords: Civil unrest, looting, small business resilience, chaos, collective effort

INTRODUCTION

South Africa is rated as one of the most unequal countries in the world (Kalina, 2021) with the official unemployment rate standing at 35.3 percent in the fourth quarter of 2021 (Statistics South Africa, 2022). In the month of July 2021, South Africa suffered violent riots and social unrest marked by extensive looting of shops and businesses, as well as public and private property destruction, particularly in the provinces of KwaZulu-Natal and Gauteng (Africa et al., 2021; Kalina, 2021; Ngwane, 2021; Vhumbunu, 2021; Chipkin et al., 2022). The nine days of protest caused turmoil with the magnitude and intensity of the impacts still evident in recent times. The

protests cost significant damage to property, affected employment, destroyed peoples' livelihoods, and halted important services like medical services crucial in fighting the Covid-19 pandemic (Vhumbunu, 2021). Moreover, the several days of intense violence and looting, which resulted in serious damage to the nation's logistics, retail, and commercial centres, took more than 300 lives and resulted in more than 2,500 arrests (Kalina, 2021). This exposed how severely challenged the socio-economic environment of public administration is in South Africa, and perhaps the lack of a political will to take actionable measures. President Cyril Ramaphosa on the 16th of July 2021 admitted to the country that government was ill-prepared to deal with the unrest (The Presidency, 2021). The unrest exacerbated the issues caused by Covid-19, eroded public trust and exposed the lack of agile and responsive leadership. Politics, corruption, poor governance and accountability have negatively affected recovery with the marginalized sectors of society feeling the worst impact of the aftermath.

South Africa's economy continues to be in a state of decline, and the country's current economic predicament is difficult to navigate through. Hayward et al. (2009) cited in Reddy (2017) argues that political instability is the most important element contributing to a stressed economy. Political instability in South Africa has resulted in the country's economy experiencing poor growth over the past few years, with the country entering a period of recession. As such, small business owners face the most difficult task of all as a result of a failing economy (Rezaei-Moghaddam et al., 2021). The protests caused considerable financial and infrastructure damages (Vhumbunu, 2021), and of great concern is the continued escalation. Violence is seemingly continuing to be a problem in the country and if the security services are to deal with the violent and criminal aftermath of political struggle, they need more urgency and political backing (Chipkin et al., 2022). The lack of urgency in responding to this violence accompanied by the continued Covid-19 disruptions add more complexity in dealing with these challenges. Hence, the lives and livelihoods of small business owners and their business partners along with local supply chains and markets have been adversely affected (Pant & Jedrzejczak, 2022). A combination of factors, such as greater inflation, higher fuel and electricity costs and higher interest rates is projected to impede the recovery and decrease the resilience and sustainability of many businesses in the coming years. This is expected to have a significant effect on small businesses, especially micro, rural, and township firms, which do not have the means to properly and fully recover whilst returning to normality after the ensuing chaos.

Nonetheless, for many small businesses in KwaZulu-Natal and Gauteng, the path to complete recovery remains unclear. This is particularly true for many small businesses (formal and informal) and individuals in KwaZulu-Natal, which were getting back on their feet when the recent disastrous floods wiped away all forms of recovery from Covid-19 and the looting. The sustainability of local economic processes is thus dependent on the ability of small and medium-sized enterprises (SMEs) to deal with, adapt to, and take advantage of external environmental changes (Pant & Jedrzejczak, 2022). This is especially evident in the rural and township businesses where there is already a lack of diversity in rural employment and a high percentage of unemployment due to a lack of attention to the continual improvement of rural (Rezaei-Moghaddam et al., 2021) and township enterprise resiliency.

METHODOLOGY

The research paper focuses on small business development in South Africa following the civil upheaval that occurred in the country. The design and approach are based on theoretical and secondary data analysis, which is based on an evaluation of existing literature through open data initiatives. A desktop search was conducted, focused on locating literature locally on building resilience post looting and chaos in the country. The search involved online data sources including journals published between 2017 and 2022 with the key words searched for including ‘civil unrest’, ‘looting’, ‘small business resilience’, ‘chaos’ and ‘collective effort’. Scholarly literature reviewed included available research papers; peer reviewed journal articles; media briefs and reports. The various databases used in the search included databases such as Google Scholar; Sage; Sabinet; and Taylor & Francis, amongst others. The paper then starts off by providing a brief break down of the significant disruptions that led to state of disaster in the country. It follows by looking at the impact of these disruptions relating to the triple challenges of poverty, unemployment and inequality in the country. The paper argues that these disruptions have significantly impacted these triple challenges and exacerbated them. It then focuses on assistance available to small businesses post the socio-economic chaos. Lastly, the paper puts forward the question of whether small businesses can remain resilient in the midst of chaos and uncertainty, recommending collective efforts along with financial and non-financial assistance (for example, networking) as important aspects for due consideration in ensuring small business resilience.

STATE OF DISASTER: MAJOR DISRUPTIONS IN SOUTH AFRICA SINCE 2020

The state of disaster in the country with particular reference to some provincial focus is depicted in the following illustration, highlighting the greatest impact.



Figure 1: State of disasters declared in South Africa and KwaZulu-Natal

South Africa implemented its first national State of Disaster in March 2020 in response to a global health crisis that constituted a major threat to South Africans' lives and well-being. It permitted the government to take measures that avoided a large number of additional people from developing

severe illnesses and saved countless lives. Figure 1 demonstrates the three significant disruptions that happened in the country leading to the imposition of the state of disaster measures. The initial state of disaster in 2020 focused on providing measure for the country to curb the spread of Covid-19 and was implemented at a national level declared by President Cyril Ramaphosa. The second state of disaster in 2021 was declared by the Premier for the Province of KwaZulu-Natal (KZN) considering the civil unrest that left the province in severe strain. The most recent state of disaster was declared as a result of the floods that affected KZN by the President as a national state of disaster in an attempt to allow for the release of additional resources that would increase the capabilities and technical experience available for prompting a disaster response. These three events over the past few years have had significant impact on the lives of many South Africans and led to the death of many people, disruptions of business processes, infrastructure damage, increased social ills and severely affected the economy and employment. This is against the backdrop of a country that was already operating at a macroeconomic climate that had been characterized by policy uncertainty, weak economic development, and budgetary strain owing to an excessive wage bill and continuing state-owned firm bailouts (Khambule, 2021). Small businesses are now faced with a range of complex challenges and uncertainty as several of them are operating in a volatile and unpredictable environment. This is especially worrisome, as many small businesses lack the necessary strategic intelligence, decision-making capabilities and resources required to adapt and change in order to remain resilient. At the same time, there is a lack of leadership, and the political will in the country seemingly hampering business development.

Effect of COVID-19 disruptions

The Covid-19 pandemic has influenced almost every aspect of life, including the economic, social and political arena. The pandemic is having a negative effect on economies all over the world, from industrialized to emerging (Ebhuoma, 2021; Kumar & Gupta, 2022) and revealed shortcomings in government's abilities to deal with the growing uncertainties. South Africa, like many other countries around the world, has not been exempt from the onslaught and effects of the global pandemic (Statistics South Africa, 2022). Khambule (2021) suggests that the Covid-19 pandemic provided the ideal chance for the South African government to put its state institutions to the ultimate test by responding to the pandemic's unparalleled socio-economic consequences. The pandemic has the potential to exacerbate the country's triple challenge of unemployment, poverty, and inequality if the state's institutions are unable to effectively adopt counter-cyclical policies aimed at mitigating the Covid-19 impact and revive the economy towards inclusive economic growth. De Groot and Lemanski (2020) argue that the virus in the country has drastically exposed and amplified existing inequities in infrastructure accessibility. A lack of proper infrastructure, congestion and high density make it difficult for persons living in poverty in South Africa to make the necessary changes to their everyday lives. As such, the poor and marginalized in the country felt the fuller impact of the virus. The influence of Covid-19 on South Africa's social and economic climate cannot be understood in isolation, but within higher levels of unemployment, poverty and rising social and economic inequality (Khambule, 2021). Small businesses in the country have not been spared, with the pandemic having severe effects on Small and Medium Enterprises (SMEs) and entrepreneurship both locally and globally whilst costing millions of jobs and plunging many people into extreme poverty levels. Hitherto, Fairlie (2020)

discovered that social distancing limited demand and led to permanent closure of various businesses. Small businesses who were already struggling to recover from the consequences of Covid-19 were hit the hardest, since the vast majority were uninsured and unable to recover as quickly as larger corporations. The pandemic has immediate and long-term impacts on SMEs and entrepreneurs. As such, Igbinakhase (2021) suggests that, to prosper in an uncertain world, SMEs and entrepreneurs must learn from the Covid-19 pandemic and prepare onwardly for post-pandemic prosperity.

Riots, looting and chaos

Whilst protests, riots and looting are not new in the South African context, the destruction that occurred from the 8th to the 17th of July 2021 saw an unprecedented eruption of civil unrest since the country's democratization. Large sections of the KwaZulu-Natal and Gauteng provinces erupted into violence which saw over 300 individuals losing their lives in the chaos of destruction and pillage (Africa et al., 2021; Chipkin et al., 2021; Kalina, 2021). Critical infrastructure, equipment and properties were severely damaged, including malls and shopping centres; schools; roads; filling stations; medical centres; retail outlets and warehouses; trucks carry goods and vehicles torched and burnt to the ground. The country lost approximately fifty million because of the nine-day civil unrest (Africa et al., 2021). Protests against poor service delivery have become popular in many parts of the country, and as such, are a manifestation of rising frustration about the country's economic stagnation. These demonstrations are a result of the government's inability to provide basic amenities like water, electricity, and shelter to millions of poor people (Khambule, 2021). The July 2021 violence however, can be viewed in the context of several crises and issues affecting the country. Among these, are inherited high levels of poverty, unemployment and inequality; poor spatial planning leading to overcrowded and unsuitable living conditions for many; increasing tensions over race and class; and the continuous problem of poor service delivery and rampant corruption at various levels of government affecting the future stability and business confidence level of the country. Instigators of the riots waged war on the country and some sectors of the country were under siege and attack. This placed a bigger spotlight on the political factions and infighting, lack of urgency, and further exposed the state security and intelligence as they were left wanting and whose actions became questionable.

The looting and civil unrest were attributed to politics with the intention of causing economic sabotage. Chipkin et al. (2021) thus suggests that political instability and violence are exacerbated when the ruling party's elites engage in turf wars. The nation had indeed been divided over whether the 'Free Zuma' protests, looting and social upheaval were triggered by Zuma's detention (Reddy, 2021; Vhumbunu, 2021). Nevertheless, Vhumbunu (2021) points out that initial low-intensity and sporadic protests in sections of KZN over former President Jacob Zuma's arrest and imprisonment began the socio-political unrest and violence (Vhumbunu, 2021). Kalina (2021) maintains that regardless of the more insidious political factors, a recurring picture has evolved of a South African society that has reached its breaking point, especially with the poor majority. This breaking point is rooted in anger expressed by the unemployed, the have-nots and communities that have been poorly serviced (Kalina, 2021). Kalina (2021) elaborates this anger as: (i) the anger of the unemployed who have been left destitute and hungry amid the seemingly never-ending Covid-19 economic crisis; (ii) the anger of the have-nots, who have for too long been pushed to consider a lifestyle that they could never afford to live; (iii) the anger of communities that have been left

unclean and un-serviced, while the wealthier and smart districts nearby have had both services and facilities. These economic limits threaten societal cohesiveness and stability, as shown in and through the riots and theft of products ranging from essentials to luxury goods. Hillesund (2022) therefore argues that no rebellion or protest movement can be successful unless a significant number of people are involved. As a result of this, the author states that conflict researchers have thus created assumptions about how individuals become vulnerable to recruitment, such as grievances, greed, or (lack of) opportunity (Hillesund, 2022).

Protests in South Africa have largely been centred on issues of service delivery, unemployment, and poverty (Chipkin et al., 2022). These issues of contention have left many citizens frustrated and angry, leaving room for political instigators to exploit situations for their own ends. Anger of the populace could believe it is owed its own share (Kalina, 2021) as many are enraged by systemic corruption and the lack of accountability (Khambule, 2021). As the first step to getting back to normal, the country saw communities coming together to help clean-up, and collectively working with local government to sweep up (Kalina, 2021). Kalina (2021) argues that this notion did not necessarily solve the problem, especially amongst those who largely remain in poverty and lack access to basic services. There has rather been an increase in inequalities with the poverty and service delivery gaps being intensified. The author suggests strongly that inequality and poverty cannot easily be swept away. There is a greater need for the establishment and promotion of cleaner and sustainable communities, which requires a meaningful change (Kalina, 2021) and a strong will to drive such change. Vhumbunu (2021) then finds that, although the upheavals caused massive socio-economic damage across the country, it also provided valuable insights for future prevention and the management of conflict, violence, and socio-political instability in South Africa (Vhumbunu, 2021). The effects of the looting that took place recently in the country are still evident with the continued rise in prices of food, water, electricity, fuel and other services creating wicked problems in disruptions and growing inflation. The looting continues to harm many South Africans, from business owners to staff to residents who commute further to acquire products and services (Patel, 2021).

Impact and devastation of floods in KwaZulu-Natal

As many businesses and household pick themselves up after the Covid-19 effects and looting devastations of the previous year, KwaZulu-Natal continues to grapple and cope with the recent flood devastations. The Province was adversely affected by the worst floods in almost three decades which claimed the lives of over 400 people, left over 63 people still reported missing and destroyed significant infrastructure (such as roads and bridges) and properties of communities. Small businesses were negatively affected as business operations were suddenly halted. This saw the halting of one of the nations largest port and operations of the busiest national transport corridors. The damage has been estimated to almost a billion rand (Motsoere, 2022). Whilst local government works on limited budgets balancing out service provision and infrastructure provision, business development in the country remains heavily reliant on adequate infrastructure and service support (electricity, road, water and digital). Infrastructure and service provision in the country has been relatively slow with a number of service delivery protests observed over the past years. This along with the disruptions in electricity supply has had a significant impact on business development and sustainability. Furthermore, the floods exposed the inadequate investment and maintenance of infrastructure by government. Many municipalities have failed to adequately

invest and properly maintain their infrastructure including storm water drainage systems. This amongst others, has led to some of the floodings witnessed in towns such as Ladysmith, northern and southern parts of Durban, the Eastern Cape region and some sectors of Johannesburg. Small businesses have been adversely affected, as a result with some failing as others managed to survive, flourished and emerged stronger and more resilient (Parker & Ameen, 2018). The solution requires collective effort that includes partnership with business to support infrastructure provision and greater oversight and governance in maintenance management. This would invariably play a role towards creating support for small business to succeed, whilst remaining resilient to sporadic and frequent climate changes which affects business operation.

IMPLICATIONS FOR POVERTY, UNEMPLOYMENT AND INEQUALITY

A year after the July riots, following the aftermath of the loss of lives, communities are still reckoning with the cost thereof. Sectors of communities who lost their jobs are enduring financial consequences, and many families and businesses are scrambling to survive. The triple challenges of poverty, unemployment and inequality have been exacerbated (Francis et al. 2021; Kalina, 2021) by the recent spate of disasters. Inadequate personal income prospects have intensified poverty and inequality in South Africa in the 25 years since democracy (Wakefield et al., 2022). South Africa's inequities and high unemployment emphasizes major consequences on food security and nutrition notably being affected and plunging several households further into abject poverty. In addition to contributing to wider social ills such as crime, violence and poverty, high rates of unemployment pose a significant policy and social issue for the nation, including a major threat on the future of the fiscus. Godfrey (2021) finds that, South Africa as a developing country, grapples with these challenges as a consequence of its very linear, resource-extraction-based economy with little investment in local resources and very few resource returns into the economy. The author argues that this puts the country at risk of running out of resources or overusing them, which could have a direct effect on future development initiatives (Godfrey, 2021), and its prospects of growing employment opportunities and alleviating poverty and inequality. The global pandemic that hit the country in 2020 causing a state of disaster to be implemented nationally creating an added strained on the economy. This saw a lot of businesses shutting down, business operations temporarily stopped and several people losing their jobs. This was worsened by the July 2021 uprising disrupting business operations and destroying key economic infrastructure. The rioting and looting in KwaZulu-Natal and Gauteng provinces accounted for over half (48,9%) of all employment losses in the third quarter of 2021 as compared to the 2nd quarter of the same year (Statistics South Africa, 2021).

The country has battled to lower its unemployment rate for a considerable time. The official unemployment rate increased by 0,4 percentage from 34,9 percent in the third quarter of 2021 to 35,3% in the fourth quarter of 2021, reaching its highest level since the beginning of the Quarterly Labour Force Survey (QLFS) in 2008 (Statistics South Africa, 2022). This is especially worrisome, as South Africa already has the world's highest rate of youth unemployment at 53,2 percent (Van Lill & Bakker, 2022), with an increasing number of unemployed graduates ranking as one of the most unequal countries in the world (Francis et al. 2021). According to Van Lill and Bakker (2022), longer durations of unemployment are linked to increase in psychological suffering after the age of 50. Long-term unemployment causes young individuals to become discouraged workers, who are willing to work but have given up looking for jobs because they believe their

efforts would be fruitless (Van Lill & Bakker, 2022). Growth in labour demand has been too sluggish to absorb all the additional workers, some of whom are less educated and semi-skilled (Wakefield et al., 2022). In addition to contributing to a wide range of social ills, such as crime, violence, poverty and high rates of unemployment, these pose significant concerns over policy and social issues for the nation. Although reforms have been initiated since the democratic transition, policies intended to support small, medium, and micro enterprises (SMMEs), as well as education, skills development and productivity enhancement for less educated and trained persons in the workforce requires further attention (Wakefield et al., 2022). The economy is still struggling as it tries to recover from the economic strains caused by the outbreak of the Covid-19 pandemic in 2020. The subsequent looting in 2021 and recent floods in 2022 in KwaZulu-Natal continues to overwhelm and thwart any economic progress.

AID TO SMALL BUSINESSES POST-COVID-19 AND LOOTING

The South African government implemented a series of measures to alleviate the social and economic repercussions of Covid-19. These included wage support interventions through the Unemployment Insurance Fund (UIF), funding support for small businesses affected by the pandemic, the release of disaster relief funds, and tax relief for businesses after declaring the pandemic a national disaster (Khambule, 2021). With more individuals on social grants than working, the South African government took steps to assist its most disadvantaged citizens to safeguard the poor from the harsh economic shocks (Khambule, 2021). The state increased the child support grants, old age grant and the disability grants as a form of socio-economic relief measures. Furthermore, new grants were established under the Covid-19 Social Relief of Distress grant for those who were out of work for a period of six months or longer (The Presidency, 2020; Khambule, 2021). Regarding small business support, there are several funding support programmes developed by the various departments to support small business during these disruptions. The Department of Small Business Development through its agencies SEDA and SEFA provided both financial and non-financial support to small businesses and informal traders that were affected by the disruptions through targeted programmes. Additionally, the Department of Trade and Industry and Industrial Development Corporation (IDC) also assisted in this regard. These targeted programmes of note include:

- Debt Relief Finance Scheme established for small and medium-sized enterprises negatively impacted, either directly or indirectly, as a result of the Coronavirus outbreak. As a soft-loan facility, it is intended to aid current small and medium-sized enterprises (SMEs) to keep afloat during the Covid-19 epidemic, commencing in April 2020 and lasting for a period of six months.
- The Covid-19 Agricultural Disaster Support Fund to support smallholder and communal farmers.
- Tourism relieve fund as a one-time capped grant assistance to small, medium, and micro enterprises (SMMEs) in the tourism value chain to ensure their viability during and after the implementation of Covid-19 measures.
- The Township and Rural Enterprise Support Programme (TREP) which was initiated in 2020 to assist small businesses in townships and rural areas to recover as a result of Covid-19. The programme targeted various sectors and assisted in formalizing many informal businesses.

- The SEFA-SEDA Business Recovery Support Program (BRP) established in 2021 after the civil unrest targeted uninsured small businesses negatively affected by the turmoil, as well as small businesses that needed finance for operating capital, equipment, furniture and fittings. Funding was structured in two parts with a grant component (60 percent) and loan component (40 percent). The loan component had a 5% interest rate and 60-month repayment period. (Parliamentary Monitoring Group, 2021).
- The IDC Post Unrest Business Recovery Package provided financial assistance to businesses and communities adversely affected by the unrest.

While there were significant opportunities of funding support available for small businesses to access, this support however came with several concerns. There were concerns regarding the turnaround time as many of these businesses were in dire need of urgent financial assistance along with the compliance costs and regulatory burdens associated with meeting the requirements for the funding applications. Application procedures tend to be costly and time-consuming since businesses need to provide the same information to many government entities. The International Labour Organization (ILO, 2021) finds that, due to the fact that they are only involved in one of many steps, government departments and individual officers tend to be unaware of the overall complexity of the process. In most situations, simplification begins with a detailed mapping of the user's (business owner's) anticipated actions. Therefore, there is a lack of intra-governmental cooperation in the administration of compliance requirements, and this is one of the most prevalent reasons for inefficiency (ILO, 2021). As such, when it comes to supporting small businesses, government policies and programs need to adopt a holistic approach. It is imperative that funding be made easily accessible so that entrepreneurs and small businesses can build and grow their enterprises in a meaningful and sustainable manner. Accompanied by small business training programs which can focus on improving the effectiveness of entrepreneurs and small business owners in management, financial understanding, and business growth is a non-negotiable (Galawe, 2017).

FACING CHAOS AND UNCERTAINTY, CAN SMALL BUSINESSES REMAIN RESILIENT?

The ability to predict, avert, reconstruct, or otherwise minimize the impact and duration of a disruption produced by a threat or hazard is referred to as resilience (Gonçalves & Auret, 2021). Resilience necessitates the existence of interdependent and interconnected capacities (Gonçalves & Auret, 2021) with anticipation, resistance and adaptability as three key characteristics that contribute to it. This is why it is important to consider both the ability of SMEs to take advantage of risky conditions (such as a pandemic and natural disasters), as well as their ability to predict, manage or learn from risks and uncertainties, whilst eliminating the sources of vulnerability. As a result, small and medium-sized enterprises (SMEs) must have a proactive, dynamic, and optimistic approach to risk and uncertainty (Pant & Jedrzejczak, 2022). Businesses that integrate their strategy, risk management and business continuity operations to minimize delays in growth caused by unfavourable events naturally gain the ability to be resilient (Palm, 2020). To strengthen small business and entrepreneurial resilience, it is important to identify influential elements and their indicators, study aspects that create resilient behaviours, and provide contexts that are resistant to change (Rezaei-Moghaddam et al., 2021). Resilient organizations are therefore capable of promptly re-establishing operational continuity following a disruption or prolonged interruption.

This enables them to refocus on their development strategy and continue growing much more quickly than they would have ordinarily (Palm, 2020).

Developing knowledge may be used to improve an organization's ability to respond to crises by increasing improvisation capability, coordination, flexibility, and endurance (Habiyaemye, 2021). Organizational performance is enhanced through knowledge management, which plays a key role in the development of crisis management plans. However, how can small businesses, which may be affected by the impacts of a Covid-19 shutdown including civil unrest and floods best utilize knowledge management in order to remain competitive? Adaptive learning and tight collaboration between knowledge-producing units (such as specialist research units within businesses or external institutions) and users (small businesses) are necessary to overcome the challenge of a massive crisis with limited resources (Habiyaemye, 2021). A study focusing on entrepreneurial resilience of small and medium-sized businesses among rural women in Iran, Rezaei-Moghaddam et al. (2021) found that external and internal resources, creativity, opportunity and adaptation, risk management, and family support all contributed to rural entrepreneur women's business resilience. This study found that marketing strategy, marketing mix, marketing methodologies, business communication, business planning abilities, and supportive policies help improve business resilience. The findings of this studies are relevant and applicable to small businesses in South Africa to ensure that they are able to take note of the ability to adapt and remain resilient in times of crisis. What is proposed is a whole-of-society approach with all 'hands on deck' to address these wicked socio-economic problems in society.

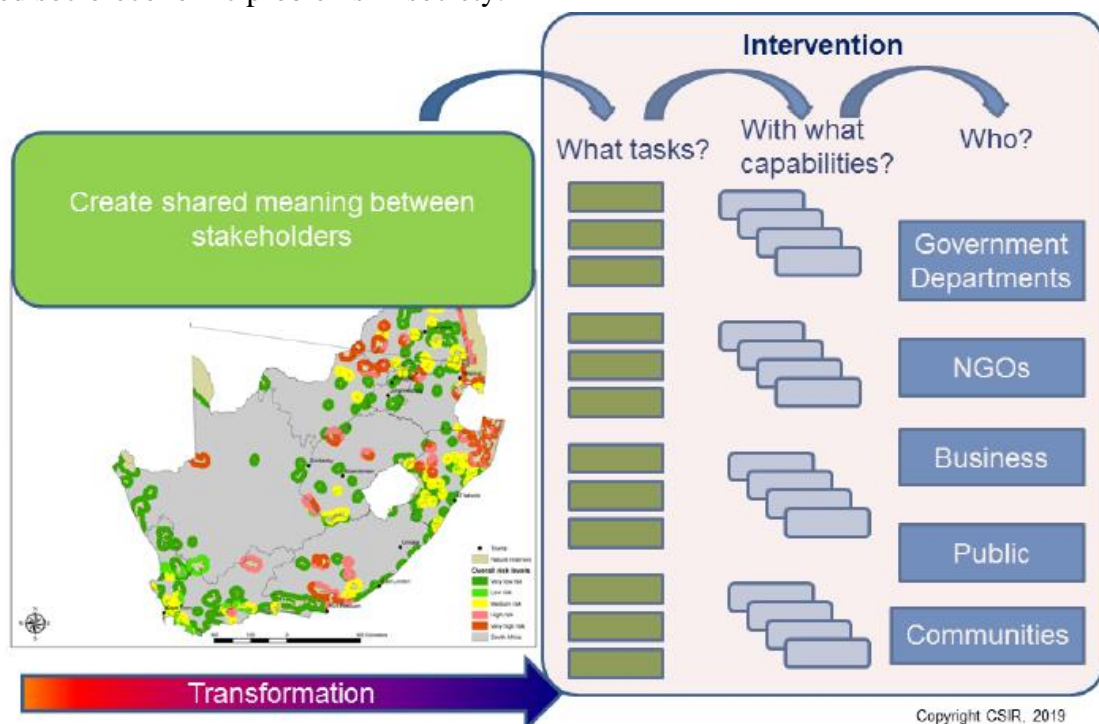


Figure 2: The whole-of-society approach (Gonçalves, 2021)

President Ramaphosa in his address, emphasised the need for a new social compact between businesses, labour unions, communities, and the government in order to restructure the economy and make it more inclusive. This compact, the President said would build on the cooperation that has been built up between all social partners during the Covid-19 crisis. Likewise, Gonçalves (2021) suggests that a holistic approach is of significance in tackling complex problems that

necessitates more long-term proactive solutions that fall outside the purview of any single department or agency, private organizations, or individual members of the public (Gonçalves, 2021). Figure 2 depicts the proposed holistic approach required to address complex problems and transform the country to achieve its desirable future. Gonçalves (2021) identifies the first step as identifying the interventions, which are the strategic tasks necessary to address a complex issue or achieve the desirable future. Managing many stakeholders is made easier through the use of interventions as these build on the shared understanding of the situation to co-create a solution to the problem (Gonçalves, 2021). This may also include the identification of new organizational capabilities that are required or closing the gap between required and current capabilities necessitating organizational-level governance (Gonçalves, 2021). The author then identifies the problem as linked, and notes that stakeholders only focus on the parts of the problem that fall within their remit. This creates new problems because the issues are merely being addressed in parts (Gonçalves, 2021). Non-governmental organizations (NGOs), the private sector, and communities have an interest in any given situation that the public is directly or indirectly involved in (Gonçalves, 2021). It stands to reason, that collective effort is required to achieve small business resilience accompanied with funding assistance to make sure that businesses recover sooner, more especially those located in rural areas and townships with inadequate access to funding and non-financial support. This would ensure that recovery and resiliency for small business is strengthened in an inclusive manner. Businesses, organized structures and communities have a major role to play in supporting government to fast-track recovery and strengthen small business resilience.

CONCLUSION

The civil unrest in South Africa revealed the country's severely overburdened public administration practice, and the rising chasm between the country's wealthy and poor sectors of society. As the country continues to grapple with the triple challenge of unemployment, poverty and growing inequality, business development and sustainability remains challenged with hope to address these challenges diminishing. Inevitably, there will be disruptions with the continuous challenge of electricity supply in the country and the impact of climate change adding to these challenges. There is therefore, a greater need for business and government to adapt to the changing circumstances and create opportunities for business improvement in order to overcome these challenges. Accountability, trust, and political will are essential to expedite the recovery process, which could contribute to small business resilience in the short- to medium-term addressing some of the socio-economic challenges the country currently faces. Notably, there is a growing demand for agile governance amidst the intensification of violence and flood disasters in the country, along with the impact of the global pandemic. As such, small businesses require assistance in managing uncertainty and complexities in the environment they operate under. This requires collaborative effort from government, business, organized structures and local communities in order to address the complex challenges that small business face in building resilience.

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CHALLENGES FOR SCHOOLS TO SUSTAIN A POSITIVE VIRTUAL SCHOOL CLIMATE THROUGH ONLINE TEACHING IN THE COVID PANDEMIC CONTEXT

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ABSTRACT

The well-established standards in the education sector got ripped off with Covid-19 resulting to initial tentative fumbling to newly adapted norms worldwide, thus impacting heavily on school climate. The purpose of this study is to understand the virtual challenges faced by school leaders and teachers during the Covid-19 crisis period to sustain a positive school climate. This qualitative study considers a phenomenological approach where the personal and professional experiences of stakeholders are interpreted and analysed through thematic and content analysis. Semi-structured interviews, focus group interviews and document analysis are used to encapsulate the two dimensions of school climate – teaching and learning and safety. Purposive sampling targets 42 teachers and 4 school leaders from 4 secondary schools. This study found that the initial asynchronous mode of online teaching adopted failed lamentably. The later zoom sessions with students' cameras off and muted, low attendance, delayed answers from students, parents' scrutiny, students and other members popping in and out made online teaching a challenging 'one-man show' task, more like a 'public climate' than a classroom teaching-learning climate. The reintegration into face-to-face learning witnessed oncoming challenges of sluggishness, lack of interest in studies, demotivated and unsettled spirit, increased cases of indiscipline but extra-curricular activities kindled students' enthusiasm and happiness, and teachers have become more resilient. This study raises awareness towards value system like working as an altruistic team, swift intelligent decision-making by school leaders, and strengthening of mutual dependence. All the stakeholders at the school level and the national crisis team should work in close collaboration for the successful adaptation to the new teaching and learning uncertain environment.

Keywords: Covid-19 pandemic; challenges; school climate; learning

1. INTRODUCTION

The COVID-19 ultimately forced abrupt but urgent changes to the daily lives of people all over the world. The World Health Organisation declared a global health emergency on 30th January 2020 (WHO, 2020) and, in Mauritius, all educational institutions were closed as from 19 March 2020 till they were re-opened on 1 July 2020. The Mauritian government passed a Bill for remote learning through digital device on 14 May 2020 so as to ensure uninterrupted learning and also avoid vulnerable groups from being penalised. We have had three lockdowns and the state mandated restrictive policies to endorse emergency remote teaching. On the one hand, the school closure has impacted more than 1.5 billion students in the world (UNESCO, 2020); but, on the other hand, the transition to emergency remote teaching and online teaching and learning brought

about uncertainties that made online teaching extremely challenging for teachers (Kim & Asbury, 2020). The Covid pandemic has had a devastating effect on school climate worldwide, disrupting the normal teaching-learning process and curbing on educational activities so as to abide by strict sanitary protocols (Mandapat & Farin, 2021).

Synchronous online classes with students and teachers working together but from different locations have been a novel 2020 experience in Mauritian secondary schools. The Covid-19 pandemic spread has been the driving force at different intervals behind such a teaching-learning mode. Oyedotun (2020) refers to the disparities, challenges and blessings witnessed by developing countries due to the abrupt drifting to online teaching with the Covid-19 pandemic and how these form part of the new norms in the academic world in developing countries. Teachers were compelled to adopt this new mode of teaching. So many years of conformed teaching practices underwent a complete metamorphosis. El-Soussi (2022) asserts that there was a changeover in the roles and practices of teachers be it in pedagogy, organizational and societal tasks, and teachers experienced a sense of insecurity in their attitudes, beliefs as conceived earlier to what had to be done in an online setting.

Navigating to remote learning or online teaching has become a recurrent practice in Mauritius owing to cyclonic weather, heavy rainfall, flooded areas besides the initial cause of Covid-19 pandemic spread. Hence, it is crucial to study the challenges faced by heads of schools and teachers to monitor remote learning. Besides, Alban Conto *et al.* (2021) stated that now that online teaching has become a frequent mode, it is possible to have progressive goals if executed with the appropriate assistance and that certain countries can lag behind if overlook quality teaching based on novelty and equity. The present study, therefore, aims at examining the challenges secondary schools faced with emergency remote teaching during the COVID-19 pandemic context and analysing their bearing on the sustenance of a positive virtual school climate.

The research objective is:

To analyse the perceptions of School leaders and teachers on challenges emerging from the emergent remote teaching (ERT)

2. LITERATURE REVIEW

In this section, we consider the literature that relates to the focus of the research of this paper. We intend to examine the findings from the literature on the challenges faced by schools in sustaining a positive school climate to ensure effective remote teaching and learning during the COVID-19 pandemic. With emergency remote teaching (ERT), which became the most essential and indispensable tool to ensure continuous education in secondary schools, the challenges were numerous. Most importantly, though teachers had a crucial role to play in providing quality learning opportunities to students (Choi *et al.*, 2021), they had to face taxing psychological challenges. Teachers faced a lack of resources to meet satisfactory and successfully the online teaching and learning requirements; they were not prepared pedagogically and technologically to shift suddenly and sustain remote teaching; and they did not get the leadership support from the school head and administration (Brooks *et al.*, 2022). They did not receive adequate support from their own school (Hanh, 2020). With the feeling of frustration, anxiety and guilt of their inefficiency and job inefficacy, they developed a low level of resilience which leads to a low ability to cope with uncertainties and problems (Richards *et al.*, 2016). Teachers suffered from the state of emotional exhaustion due to the additional stress that arose from the additional work they had

to do by adapting teaching and learning materials and giving feedback to students in the virtual learning environment (Estrella, 2022), especially the younger teachers, (Patino, 2021) and from the fear of the unknown (FOTU) (Carleton, 2016). Indeed, Brooks *et al.*, (2022) found that the COVID-19 pandemic intensified the teaching experiences of teachers due to the excessively high demands and expectations that arise from the curriculum delivery on web-conference platforms and the necessity to maintain the learning outcomes for their students. The emotional labour of teachers has been very challenging (de Ruiter *et al.*, 2021). It is also challenging for teachers to develop and adopt a trauma-informed pedagogy that would take into consideration the intersection of online teaching and learning, remote teaching and the pandemic-induced trauma of both teachers and their students (Moser *et al.*, 2021). Teachers are often left on their own devices to develop their coping strategies without any support and that may drive their spirit and motivation low. Pettit (2020) posits that they find it challenging to remain focused and productive in their teaching tasks.

Moreover, unlike developed countries, in most developing countries, there was the inconsistency in supplying power and low internet speed due to unprecedentedly high internet demand that could not be met by the internet providers (Oyedotun, 2020). In addition to poor internet connection and technological constraints, teachers and students lacked access to electronic devices (Salayo *et al.*, 2020). This impacted the teaching and learning process and interactions between the teachers and the students and among students. It was challenging to ensure that the use of ERT was technologically and logistically viable, to maintain the academic standards of online teaching and to ensure the equity of access for all students (Kinsella, 2022), so that “No child is left behind in online teaching and learning”.

Teachers also found it challenging to organise interactions in online teaching. Online interaction takes place in three ways, namely academic, collaborative and social interaction, whereby all three are based on learning, student satisfaction and student engagement (Jung *et al.*, 2002). However, in the context of the COVID-19 pandemic, pandemic pedagogy does not imply recording videos (Johnson *et al.*, 2020) and using quizzes (Atmojo & Nugroho, 2020), where the teacher uses a one-way transactional teaching approach and students are passively listening to the lectures. Pandemic pedagogy is transferring learning fully online, synchronously or asynchronously (Wong *et al.*, 2021), but ensuring that the curriculum design and the implantation of the pedagogical practices are aligned with online delivery (Brooks, Creely & Laletas, 2022). However, due to a lack of online pedagogical training in using the online platform for remote teaching, unstable internet connections, minimal technical skills, and a lack of school policy for online teaching and learning, there were little to no interactions in the online classes (Le *et al.*, 2022). On the other hand, students do not participate in online classes because they consider teachers to be the main provider of knowledge and they prefer clear instructions, detailed tasks for completion, specific learning outcomes and a very structured learning process (Bui, 2019). Yet, teachers struggled with their limited technological and pandemic pedagogical skills to navigate successfully the new normal of remote teaching (Rasheed *et al.*, 2020).

Previous studies found that there is a positive relationship between dialogue-rich teaching and the academic achievement and cognitive development of students (Howe & Abedin, 2013; Resnick *et al.*, 2015). However, in the context of remote teaching in secondary schools during the COVID-19 pandemic, Gutentag *et al.*, (2022) found that teachers used less academically productive talks

(APT) and this had a negative impact on their psychological well-being of teachers. Less APT means less classroom activities, less group work, less peer dyads and less questioning. Teachers used less APT during the COVID-19 pandemic because they were already energetically depleted on account of their anxieties related to the disease itself and the safety of their family members. Therefore, they could not make the extra effort required for APT (Muhomen *et al.*, 2021). However, those teachers who used more APT, used more interactive teaching formats, and thus, they had lower burnout, a higher level of job satisfaction and lower turnover intentions (Gutentag *et al.*, 2022). The need to feel connected to their students was badly felt by teachers (White & Van Der Boor, 2020) and that challenging need could only be overcome through more APT in the online classes.

Furthermore, monitoring the student learning and the evaluating of the effectiveness of the instruction was challenging in remote teaching that takes place in the virtual learning environment. Fauzi and Sastar Khusuma (2020) found that teachers were dissatisfied with remote teaching and learning mainly on account of their inability to plan and evaluate online learning. In the same vein, Saha *et al.*, (2022) found the significant challenges in online teaching during the COVID-19 pandemic were the difficulty for teachers to monitor practical work, assess them and provide sufficient feedback. Doing the assessment and grading the work of students were difficult with the pandemic-based inconveniences. However, assignments were considered to be the most appropriate alternative assessment strategy than online examinations (Selvaraj *et al.*, 2021).

Another challenge for secondary school teachers in creating and sustaining a positive school climate is student disengagement in remote teaching and learning. Moser *et al.* (2021) assert that teachers find it difficult to engage students in natural conversational turn-taking and cannot support comprehensive input through body language and gestures. They also found that teachers cannot obtain the parental interaction and support that would motivate the students to be more involved in the learning process virtually. The high level of absenteeism and the high number of irregularities of the students in the virtual learning environment is also very discouraging for school and college teachers (Pal *et al.*, 2021). Without the physical presence of the teacher, students do not remain focused in remote teaching and learning (Estrella, 2021); teachers cannot force the latter to turn their cameras on and they may simply not respond to their questions (Jurez-Diaz & Perales, 2021; Tomczyk & Walker, 2021). It is, therefore obvious that teachers cannot be sure of the involvement and active engagement of students in virtual learning.

3. METHODOLOGY

Hermeneutic phenomenology is suitable for this study since it gives the value of understanding to experiences lived and a richer analysis to the phenomenon under the study (Kagimu, 2019). It gives the opportunities for interpretation of the context towards the authentic existence of the teachers and school leaders (Martinkova & Parry, 2016). The current study focuses on the working experiences of teachers and school leaders after the introduction of OTL as a replacement for traditional schooling. Heidegger (2001) cautioned that effacing individual convictions is inconceivable in explaining the experiences of others (Kagimu, 2019). To mitigate the potential sources of bias, data has been recorded, transcribed and cited exactly as experienced by participants by using thick descriptions. Triangulation of data collected further ascertained the veracity of the situations lived.

A purely qualitative research design was conducted to examine the challenges faced by teachers in shifting to remote teaching and learning. This design is most appropriate for this study as it reveals what is happening in the real-life situation of people who are involved in their natural setting (Denzin & Lincoln, 2020). Moreover, it provides the opportunity to investigate the meanings that teachers attach to their personal and social problems as well as their professional problems in schools (Creswell, 2014). To achieve this, in-depth interviews were conducted with teachers and school leaders in selected secondary schools. An interview protocol that investigates into the challenges faced by teachers in practising online teaching during the COVID-19 pandemic was used to gather information from key informants about the phenomenon. Semi-structured interviews, focus group interviews and document analysis were used to encapsulate the two dimensions of school climate, namely, teaching-learning and safety.

3.1 Sampling and Data collection

This study used the purposive sampling technique as it is a widely used in qualitative research whereby those cases most likely to be information-rich, in regard to the aims of the study, are selected in an attempt to use limited resources (Patton, 2002). Indeed, informants are selected based on their particular knowledge of, and experience with the phenomenon under study (Robinson, 2014). The sample is illustrated in Table 1 below:

Table 1: School categories, population sample and research instruments

| SN | School Category | Sampling Population | Research Instrument |
|----|--|---|---|
| 1 | Low Performing Regional secondary school | School Leader 6 educators 6 educators | 1 Semi-Structured Interview 1 Focus Group Interview 1 Focus Group Interview |
| 2 | Academy | School Leader 6 educators 6 educators | 1 Semi-Structured Interview 1 Focus Group Interview 1 Focus Group Interview |
| 3 | Academy | School Leader 6 educators 6 educators | 1 Semi-Structured Interview 1 Focus Group Interview 1 Focus Group Interview |
| 4 | Average Performing Regional secondary school | School Leader 6 educators | 1 Semi-Structured Interview 1 Focus Group Interview |

The information related to the research aims was gathered in four secondary schools as indicated in Table 1. The four research sites indicate 3 secondary school categories, namely, 2 Academies, 1 regional average performing school, 1 regional low performing school that have been selected. Four school leaders and 42 teachers formed part of the sample for the in-depth interviews. The selected teachers and school leaders needed to have a direct experience of emergency remote teaching and be available time simultaneously for a focus group interview and semi-structured interview respectively.

To maintain the anonymity of participants, abbreviations have been used; ‘SL’ stands for school leader and ‘T’ for teacher.

Pilot focus group interview at the initial stage was carried out aiming to examine the feasibility of the approach meant for the larger scale study. This exploratory phase is crucial to test the appropriateness of the questions scheduled. The Sage Handbook on Qualitative Data Collection (2017) drives home that through pre-test, the functionality of the interview questions is checked, giving space for amendments and also to crosscheck on the rational link between research questions and interview questions

Before the data collection, a letter was sent to the Ministry of Education to seek its permission for data collection from the secondary schools which operate under its aegis. Following all the sanitary protocols set by the government, as per the Quarantine Act 2020, the official letter of approval from the Ministry was presented to the gatekeeper of each school for the purpose of having access to the research setting and the key informants. The consent of the selected participants was obtained through emails. Each of the interviews lasted for a maximum of one hour.

3.2 Data analysis

The information gathered from the individual interview with the school leaders and the focus group interview with the teachers were subject to thematic analysis (Braun & Clarke, 2006). Themes were identified, examined and organised; then, codes were analysed and interpreted into categories; the similar categories were grouped into subordinate and superordinate themes. The emerging themes related to the challenges faced by School Leaders and teachers in remote teaching were of interest to the data analysis and interpretation. This process helped to structure the findings of the study to answer the initial aims of the study.

To ensure the trustworthiness of the findings, a debriefing was used with the participants before the interviews and member-checking were used with the participants after the data collection and analysis and interpretation for validation purposes. Besides, thick descriptions were used in terms of verbatim statements. The findings of this study are not generalisable due to the small sample. Yet, they are transferable to the extent that the reader may find the profile of the research settings and the participants are similar to theirs.

4. RESULTS AND DISCUSSION

The findings from the study are presented and discussed in this section. From the qualitative research information gathered from the teachers and the school heads, themes related to the research objective - To analyse the perceptions of School leaders and teachers on challenges emerging from the emergent remote teaching (ERT) - were obtained and they are discussed with reference to the Mauritian school context during the COVID-19 pandemic.

4.1 Online Teaching and Learning (OTL) invasion of schooling: A reality

The invasion of COVID-19 pandemic in the world dumped OTL as a substitute for normal teaching in school system in Mauritius. OTL brought about drastic changes in schooling causing panic and uncertainty among school leaders and teachers, given the absence of adequate resources, skills, planning and preparation. They all unanimously complained that OTL was imposed on schools. This has been elucidated by School Leader 2:

“It was a phase of panic, no planning at all. We were just given instructions to go online. And there was no guidance about the platform”.

School Leader 3 summarised this feeling of helplessness by blatantly adding:

“It was just thrust upon everyone.”

In the same vein, teachers expressed their concern over the sudden OTL unilateral decision from the Ministry of Education by stating:

“All of a sudden we are told to do OTL. It was very difficult because we were not able to manage.” (T19). Teacher 30 categorically pointed out:

“Ministry imposed certain things on us.”

The Mauritian experience correlates with Ukraine. With sudden crash of the Covid-19 pandemic, teachers and school leaders were taken aback and was compelled to immediately seek other alternative systems (Donnelly *et al.*, 2021). Besides in-house training by ‘champion teachers’ who received training from Ministry on Microsoft 365, even new recruits, IT conversant teachers strived to support colleagues during OLT. Each stakeholder came up with his own resources, devices to monitor, conduct, and follow online teaching.

In one Academy school, with 90 % of highflyers and 80 % of the students coming from good, financially stable families with only one student facing connectivity problem which eventually got resolved through the purchase of package reflects one extreme. On the other hand, a low performing school with many disadvantaged students, not even having access to a device and few could not follow OTL reflects another extreme. Indeed, OTL experience reflects two extremes – those economically secure and committed as opposed to those facing scarcity and low learning thrust. OTL shows a marked difference in aspects of discipline, attendance, behavior in students in different categories of schools. From the above finding, the unavoidable question would be as follows: “Was there equity in home learning climate if one learner used a laptop, the other learner fixed on a mobile screen the whole day and still another had to share with siblings in the course of the online teaching?”

4.2 Nature of OTL teaching climate

From the study, it was found that OTL schooling offered a confusing, chaotic set up of ‘home in a school or school in a home’. Home teaching climate during OTL was invaded by non-student intruders harassing teachers through foul language; parents cynical remarks; intimidation caused by virtual presence of parents and siblings; and embarrassment of home visibility especially for the economically disadvantaged students. This was highlighted by the school leaders and severely criticized by teachers. School leader 3 averred:

“To intruders, password is given resulting to messages, swear words and all these things.”

Students considered the virtual OTL environment to be a platform where they were free to do anything they wished. From this perspective, School Leader 1 was very critical of the climate: *“There is probably a virtual wall between students and the educator. They thought that everything is permissible.”*

Teachers were desperate for the non-conducive teaching and learning climate. The dilemma of a male teacher whether *“Is it ethical to ask girls to switch on camera?”* (T19) was very resounding. Other teachers’ complaints were as follows:

“We have phantom students” (T17); *“I was talking to screen or to students, I don’t know”* (T10); *“I find myself engage in monologue for 1 hour”* (T4).

This finding shows that teachers had absolutely no control over the students putting to question the teaching climate phenomenon during the ERT. These numerous challenges teachers face from being under parents’ scrutiny, a switched off camera zoom meeting and lack or delayed responses from students are elements that put off the motivational level of teachers to conduct online teaching. This is consistent with the findings of Alonso-Tapia and Ruiz-Díaz (2022), which maintained that teacher’s degree of motivation could account for variations in the classroom

climate. Furthermore, Chui (2021) posits that a motivational positive classroom climate as generated by the teacher can promote the psychological, emotional, cognitive development of the learner, and enhance students' commitment, building up of skills.

In addition, the major concern of school leaders was the effectiveness of virtual teaching and learning. They voiced out their concerns in the following statements:

“Teaching is taking place but the question is – is learning taking place?” (SL 3)

“Whether we can assess if learning has taken place.” (SL4)

The Mauritian OTL experience was not the typical ‘work from home practice. This existed long back in other countries. Disturbances like kids prying and noise around do not build up the proper teaching climate. Both school leaders and teachers affirm that such home environment is not conducive for OTL and OTL interferes with the privacy of family life. This is why OTL with teachers at school and students at home in normal circumstances seems ideal for Ministry of Education, school leaders and teachers. In the practice of OLT, the marked differences between vulnerable groups and highflyers coming from the privileged home background were obvious. If OTL failed lamentably for the former, it worked successfully for the latter, proved by their readiness for Cambridge examinations. Policy decision to extend the academic year 2022 as third term becomes justifiable. School leaders that monitored OLT, provided support, a devised mechanism for smooth integration into OLT, and prompt intervention on disciplinary matters, in such schools, teachers felt secure knowing there was a supporting pillar. However, school leaders who did simply the basic of mailing instruction, forwarding mail from Ministry without the additional touch of communicating, bonding with teachers, the latter had to struggle on their own. The actual instruction could not be monitored.

4.3 Digital Revolution in pedagogy and management

The initial lack of digital expertise evolved into the exploration of innovative practices for both the school Leaders and teachers, yet many teachers did borderline efforts of passively sending notes on WhatsApp adopting the asynchronous mode of teaching at the beginning phase. Few not being techno savvy, were not prepared to make the abrupt shift to online teaching though keen to explore on technology (Alenezi *et al.*, 2022).

The initial uncertainty of school leaders and teachers was clearly observed in the statements of the two school leaders:

“Nobody knew exactly what it was all about.” (SL 2)

“Now what is online? How to go about it?” (SL 1)

However, this uncertainty and the urgent need to continue education and to prevent learning regression from the students galvanized into experimentations of modern digital devices and approaches like the School leader's use of Google Form (a survey administration software) for overall monitoring of attendance, daily record of teacher's online work, updating data on syllabus coverage, vaccination, option form; and the use of jitsi, a video conferencing software like zoom, Google Meet, viewed as a well-suited interface having user friendly services and high quality of video.

Zoom, Google Team, WhatsApp were the most popular applications adopted by school leaders and teachers. Communication processes evolved to the point of conducting online meetings - disciplinary Committee, PTA and teaching staff. Teachers applied all their resourcefulness to improvise through varying teaching modes and innovative practices like the assessment of students' coursework organized by the Travel and Tourism department, as described by T 36 as follows:

“The presentation was like a guided, virtual tour, having a blend of PowerPoint and video. The difficulty of virtual exams was that all criteria cannot be met. There were many loopholes like not assessing the body language, not facing an audience.”

Other practices included a game-like approach to teaching called ‘4 pics one word’; using sketchpad under the camera lens to carry out explanations; experimenting online assessment; know-how on specific digital learning applications like flashcard applications; use of Google classroom; and online Physics practical using a particular software. Teachers showed their positive appreciation of having the opportunities to enhance the teaching and learning experiences of their students. Teacher 5 made this obvious and encouraging statement:

“Through online teaching, we can insert videos where students could see the circulation of blood. On Whiteboard it is not the same. Visualization leaves its mark”.

The education authority's attempt to support schools through the Microsoft 365 failed since teachers found it too complex and even training at school could not help. Besides, the broadcasting TV educational programmes for lower grades was viewed as standardized and not individualised as per the teacher's own style of teaching.

A Pilot project fully coordinated by the Ministry conducted in one school under study, tested whether in the future OTL can be conducted with teachers at school and students at home and also OTL school management. The statement of School leader's experience of remote learning illustrates the remoteness and the feeling of loneliness in an actual online class:

“I was just walking through all the corridors. I just see the educators in the empty class. She was doing online classes.”

Despite the ‘soul-less’ atmosphere of the empty classroom with only a teacher, the Pilot Testing supported by Ministry of Education proved to be a strongly meaningful OTL experience with astounding positive results – successful experience, smooth monitoring, teacher satisfaction, controlled attendance, presence of authority, availability of necessary tools, stress-free school environment.

It is evident that in the Mauritian context, the school culture got digitalized, modernized and more effective in schools with dynamic school leaders and teachers. Such schools have developed with enhanced and fast-tracked connectivity, and enriched school database. Teachers' experience of OTL makes them more competent in online teaching delivery and little online teaching experience is related to poor performance (Martin *et al.*, 2019; Bellinger *et al.*, (2019). Some teacher's resourcefulness bloomed through the exploration of digital applications and software and innovative pedagogical approaches. Others limited themselves to the basic digital tools just for the sake of doing online teaching.

4.4 OTL side effects: Emotional shock, Impact on physical health and security

OTL during confinement and school closures was accompanied by critical, life changing incidents - death of a dear one because of Covid; deprivation of emotional support usually provided during school days by school personnel, the student care and counselling desk; provision of a daily meal, stationaries and other materials by Needy Student Committee denied; privacy of home environment of student and teachers becoming public; vulnerability of teachers' identity. All these left their scars on the teacher and student psyche. There was a case of student suicide caused by the trauma of confinement.

The squeezed online learning timetable drove teachers to the brink of exhaustion developing health issues like severe gastric problem, eyesight getting affected and undue stress. This was highlighted lamentably by teachers:

"I started wearing glasses." (T6)

"Because of screen focus, I had to go to the optician." (T23)

Confinement at home was a taxing experience driving students into a vulnerable state for they would often seek the help of their teachers even calling at night, lunch time of 1st January 2021, needing a shoulder to cry. As per teachers, the break in socialization with peers impacted student personal development. Indeed, student online engagement is stimulated by peer influence and violation of privacy and security upset the participation of learners (Kim, 2020).

This study confirms that OTL created a clash in teachers' family life and professional life. Teachers, as well as school leaders, were congruent with this disturbing disbalance in their life, as pointed out:

"We wear many hats while doing online teaching at home." (T38)

"Teachers are parents. They have to look after children. And these days should be lived with the family also. As it is they are always with their mobile phone." (SL 3)

From another perspective, teachers were placed in a vulnerable situation where their security was put at stake; their contact number made public; their professionalism questioned; their home privacy invaded; emotionally scarred; witnessing circulation of screened photos of some teachers. They complained about the obvious fear that they were under public scrutiny and they had the feeling of being unfairly judged by the public:

"Anybody could just do anything with teachers online. Misuse that and put it on other social platforms." (T30)

"Nobody got into our personal rights as educators, to respect our rights that we are citizens of a democracy. Students and families can watch our teachings. To what extent have we been protected while teaching online? To what extent has our teaching been protected? We are supposed to be educating our students in class. But the same teaching could have been dispersed anywhere. This is something I personally felt, I was not protected." (T23)

"It was a psychological scar on us." (T34)

“Stressful, tedious, inhumane. It was sickening. It was like struggling with rough waves. If tomorrow we face a similar situation of videos being circulated on Facebook, twitter. Is there someone to protect us? Do we have to take support from police?” (T30)

There have been cases of teachers being harassed through videos in one Academy under this study and the culprits are under the disciplinary committee. The texted message of one student to teacher *“Miss, I am watching sex life now” (T4)* and teachers are subjected to humiliation with parent’s remarks *“Your teacher is funny” (T15)* are signs of undue harassment.

It was noted that in schools where dynamic school leaders intervened promptly on critical issues like student OTL attendance, teacher harassment, intruders in OTL classes, emotional support to Covid-19 personnel, these have down toned the negative effects of OTL for as teachers concurred leadership does make a difference. The element of trust exhibited by such leaders empowered the school to adjust to OTL within a week of its introduction.

4.5 Post OLT: A Trauma for students

Resumption of schooling did not indicate normalcy. Covid Pandemic was still there. Health, social distancing, shopping timetable, the fear of contamination and death still existed. A new nightmare started. The top-down post OTL decisions of the authorities to extend the Academic year as third term and postpone Cambridge Examinations, culminated in opposite reactions in schools. The committed students who made constructive use of OTL classes supplemented by OL tuitions, fully ready for exams were traumatized, lost interest in learning.

The school leaders of the 2 Academies lived traumatic experiences of the post OTL as elucidated below-

“... terrible, terrible. The problem was not online teaching. The problem was post online teaching. I had 2 cases of severe breakdown that we eventually had recourse to psychiatrist. There was a potential laureate who totally collapsed. The 90% highflyers were fed up, sick. They can’t see the book anymore. They can’t see their teachers anymore. They don’t want to solve any equations. Saturation!” (SL 2)

“Students were absent, fed up of the repetitions.” (SL 3)

Students in the selected schools suffered from complete burnout and they became “unwilling students” with low spirit and motivation to learn further. School psychologist and even the aid of experts on life coaching were sought in one Academy. Laureate’s dream got shattered. The school leaders of the four research sites were of the views that all the OTL that took place more or less satisfactorily to ensure continuous learning turned to have been a waste of OTL time. This desperation was manifested in the statements of these school leaders:

“With 4 potential laureates leaving ... school may not have laureates at all.” (SL 2)

“Two potential students won’t sit for the Oct exams. This will have an impact on the result.” (SL 3)

“It was not a normal school. No assembly. Students were undisciplined a bit. They had to have support of Student Care Counselling Desk. It has been a whole roller coaster ride for us, this online managing.” (SL 3)

“Students missed this social part of school ... not very happy. Later...sought help of school psychologists and Social Worker... side effects of OTL.” (SL 1)

While this official decision became a blessing to low-performers and students indifferent to studies. To them, it was a state of breaking free from confinement, ‘Holiday Mood’ as though happy to return to friends but not learning.

The side effects of Prolonged third term were spectacularly a source of freedom and over-excitement for students to get back to the funny part of meeting their peers at school. This brought about an increasing number of cases of a lack of discipline among students. This became obvious in the stressful statements of school leaders who were overwhelmed with the management of these side effects:

“It was an explosion; students wanted to be free to do everything they wanted in school, caught outside school. We had a serious in-discipline first day. Grade 10 consuming alcohol.” (SL 1)

“Grade 13 have not been coming to school. For them it is a repetition, they needed a break, they were fed up.” (SL 3).

OTL practice was a blessing in disguise in revealing the shocking reality of vulnerable student background. These students were victimized related to syllabus coverage during online teaching, hence the repetition. Whereas this decision was disastrous for highflyers who were subjected to frustration because of inability to prove themselves in the competitive exams. This resulted in ‘hate for classrooms’. In both categories, it was problematic. It is a terrible plight for the disadvantaged students from the low performing school for many failed to attend OTL during confinement, thus all progress reached to a standstill. Studies have stressed on the detrimental effect of Covid on student attainment, widening the gap between the disadvantaged students and their peers (EEF, 2022).

5. RECOMMENDATIONS

The findings of this study lay the foundations for recommendations that the policy-makers and decision-makers should consider for a more effective online teaching and learning in our secondary schools. Based on their lived experiences of unpreparedness, lack of know-how, modes of handling burning issues, all school leaders unanimously support OTL to be blended with face-to-face mode as an integral part of teaching and learning for the future. Proper planning ahead, and adequate availability of resources and skills are paramount. Ongoing OTL could be incorporated for the consolidation of learning. Future education demands IT-driven schooling in pace with fast-changing trends in education technology and IT. A wide range of software and applications for teaching and educational management can be explored for integration in the education system.

A convenient model for OTL could be with teachers working from school and students learning at home. A fast-developing work culture of sharing best practices using IT should be ingrained in the school ethos. Database on online learning and related teaching materials should be created to support teacher online teaching practice and provide for extracurricular activities. Furthermore, decision makers need to consider the realities and specificities of different schools while formulating common policy decisions on OLT. Decisions should be tailor-made as per the needs and requirements of the school. OTL should cater for the different abilities and family background of the learner. Finally, more advanced technical training is imperative on Microsoft team, Google

team, the making of small videos for better output. Training on trauma-informed pedagogy and exposure to crisis management skills are required to handle the critical situations efficiently. Students need to be coached in physical exercises like stretching, exercise for the eyes, sitting position to alleviate passive learning and to keep fit. They require training in the manipulation of IT devices.

6. CONCLUSION

This study aimed at gauging the impact of the sudden introduction of OTL in Mauritian secondary schools owing to the Covid confinement. It aimed at identifying good OTL practices, challenges and actual experiences lived by school leaders, teachers and students. There should be no oversight of the fact that OTL was shadowed by the Covid-19 pandemic and all its implications. The involvement of parents fell in the picture as OTL was conducted in the home environment. The dynamism of school leaders appeased the emerging problems of OTL through their prompt intervention and support. The conditions of OTL pointed to a lack of OTL equipment and materials, inadequate training and required skills as well as the indecisiveness like the digital tools to be used. As continuity in education is the demand, the impact of post OTL experiences could not be overlooked, especially because of the disparity between low performing to high performing schools.

All these revealed the specificity of OTL with Covid-19 pandemic in the background and recommendations for future OTL based on lived experiences of school leaders, teachers, students. The most appreciated form of OTL was a blend of face to face and online teaching as an in-built pedagogy.

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SUSTAINABLE LIVELIHOOD STRATEGIES OF FEMALE-HEADED HOUSEHOLDS IN RENOSTERBERG LOCAL MUNICIPALITY, NORTHERN CAPE, SOUTH AFRICA

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ABSTRACT

Migration, HIV/AIDS, widowhood and separation are among some of the circumstantial issues resulting in the increase of female-headed households (FHH) in South Africa. Of late, several studies seek to explore the sustainability of livelihood strategies mainly employed by marginalized groups in communities with heavy dependencies on the informal sector. The study uses a sustainable livelihood approach to understand the livelihood strategies better and give attention to the challenges experienced by FHH in a typical South African community. A qualitative research approach was utilised to engage an in-depth understanding of different complexities and survival strategies that characterise the experiences and challenges of FHH. Twenty (20) female participants were purposively sampled and interviewed. The findings illustrated that FHH result from unemployment, spousal death, sickness of husbands, husband leaving their families and unmarried females. Substantial streams of income to support these households come from part-time employment opportunities and child support grants, which prove insufficient as there are shortages in household utilities such as food, money, clothing and school materials. The study established how female heads are dependent on informal jobs and rely on jobs such as hairdressing to provide for their families. Most female heads indicated that they seek to continue their studies, whether matric or gain skills such as computer training that can help them secure better income opportunities and increase their income status bracket. The study realises a need for more concerted efforts from government-based support and private-civil society partnerships to improve the livelihoods of female-heads.

Keywords: Sustainable livelihoods; Renosterberg Local Municipality; female-headed households (FHH); survival strategies; South Africa

1. INTRODUCTION AND CONCEPTUAL FRAMEWORK

The “feminisation of poverty” (Chant, 2003:2) is on an upward spiral around the world, developing as a social trend in many low-income households in Africa, with South Africa being no exception to this phenomenon. The 2020 General Household Survey (GHS) Statistics SA, evaluated 7.2 million or 41.9% as households being headed by women, showing an increment from the 41.8% approximated by the GHS in 2019. Female-headed households are noticeably becoming more pronounced, with an ever-growing shift from the more traditional patriarchal setup with men as the heads of the house to an increment that is seeing more females rising to the top to fill this role (Chant, 2003; Schatz, Madhavan and Williams, 2011). At the helm of this growth are disease (HIV/AIDS), an increase in divorce, migration in search of employment, abandonment and death

(Oestergard, 1992). We argue that the general shift in gender roles is progressively being cemented, as illustrated by the duality in female-head roles as both the income generator and the caregiver. In traditional patriarchal African societies, the assumption was that first-born males would be the providers of their families, ultimately becoming the house heads, showcasing hierarchical status between and among family members. The house head can also be the member who provides more financial support granting them the authority in decision-making. According to Statistics South Africa (2018), the head is classified as the male or female who carries the economic mantle, leading most household decisions. In most sub-Saharan Africa and South Africa, household structures are often diluted with polygamy and the extended family due to men's economic migration, making it challenging to identify the head.

According to Armstrong (2016), females become the *de facto* household head in male absence, rising as significant providers in the households' economic prosperity (Islam et al., 2018). In Ghana, females contribute financial support to their male counterparts serving as an indicator that they potentially can become household heads (Asiedu-Amoako et al., 2016). Poverty and economic distress are often pushing factors that force widows, separated women, single mothers and married women with uncooperative men to pick up the responsibility of making a living to support their families. This alludes that aside from spousal death, women can take up a headship due to internal household conflict.

Several scholarly debates point to the positive association between poverty and FHHs, with females being more vulnerable to poverty than men (Clark, 1984; Dunga, 2020; Peters, 2020; Yoosefi Lebni, Mohammadi Gharehghani, Soofizad & Irandoost, 2020). Scholars argue that the burden of poverty is disproportionate in FHHs with widespread poverty heterogeneity (Brown & Van de Walle, 2021; Yoosefi Lebni et al., 2020). Other discourses depict the many controversies between poverty and gender, with general recognition of higher poverty in women. Rogan (2016) asserts that limitations in female employment showcase the multidimensionality of gendered poverty in South Africa, with women being highly disadvantaged, with a Gini coefficient of 0.63 in 2022 (World Bank, 2022). These studies show that FHH is a suitable target for poverty-relief strategies with decades of statistical linkages of poverty attributed to this group (Chant, 1997; Horrell & Krishnan, 2006). Moreover, cultural beliefs contribute to the marginalisation of women from decision-making, with the Poverty Vulnerability Report (Statistics SA, 2017) denoting that uniform living standards are resulting in increased inequality. However, FHHs have demonstrated significant resilience as compared to their male counterparts (Fuller & Lain, 2017).

There is extensive research on FHHs and poverty (Brown & Van de Walle, 2021; Nwosu & Ndinda, 2018; Yoosefi Lebni et al., 2020; World Bank Group, 2018); however, little has been done to document their livelihood strategies in resisting poverty, particularly in semi-rural areas. The Department for International Development (DFID) (1999) identifies livelihood strategies and 'adaptive approaches' as wide-ranging terms that signify the variability of activities adopted by people to achieve their envisioned livelihood goals. However, it is imperative to note that these are not to be confused with coping strategies implemented in times of crisis. Livelihood strategies are primarily influenced by institutions, processes, and laws that govern particular activities surrounding people's assets. Varying livelihood strategies reduce vulnerability to poverty risk. Nonetheless, as per the livelihood approach, these strategies are extensively controlled by the

assets (economic, social or natural) they own. Livelihood strategies such as informal trading of goods and services are adopted by the impoverished to evade vulnerability to poverty.

The study implemented the sustainable livelihoods framework (SLF) (Westoby and Botes, 2020: 84-85; Loison, 2015) to broaden the understanding of poverty and sustainable living methods of FHHs within the Renosterberg Municipality.

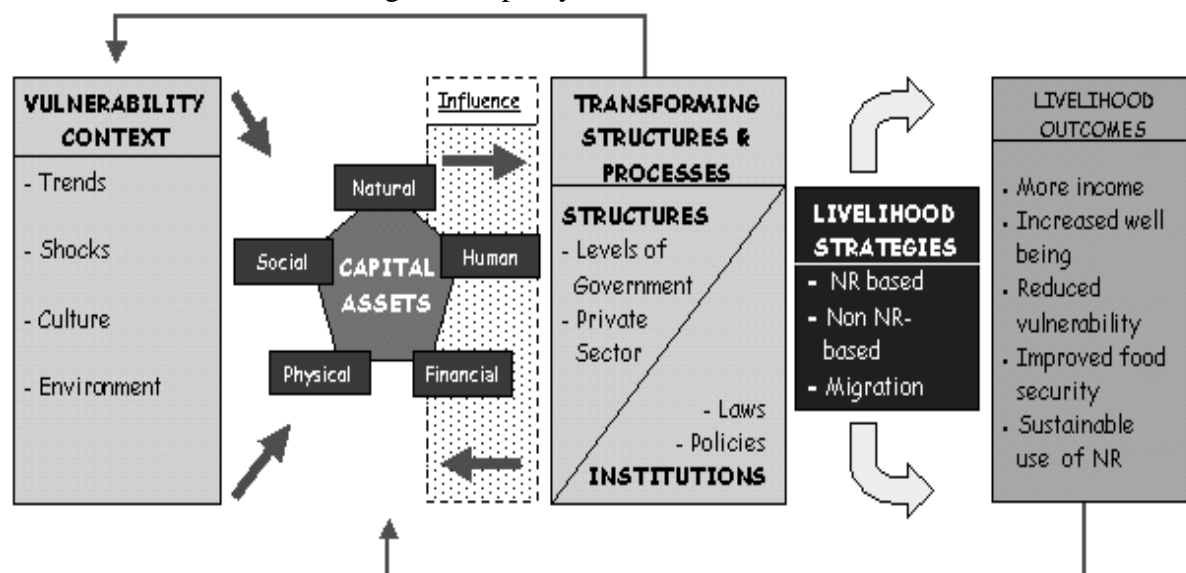


Figure 1. Sustainable Livelihoods Framework (Source: Carney, 2002)

The framework (See Figure 1) is used to assess how internal and external factors within a 'environment control its capabilities which are ultimately transformed into livelihood outcomes. The framework is rooted in Chambers and Conway's (1991) description of sustainable livelihoods, which posits them as viable ways of living which can be adaptable to changing environments that hail stresses and shocks but ultimately provide sustenance through enhancing assets and capabilities. Therefore, this article sought to provide deeper insights into sustainable livelihoods in the case of FHHs in Renosterberg Local Municipality to understand their survival strategies, which examines issues surrounding one's assets, namely income poverty and consumption scarcity in a holistic manner (Carney, 2002).

1.1 Problem statement

Poverty reduction is a major concern in international forums; however, there is an increase in marginality amongst female heads, as shown by the growing population in FHH figures. The phenomenon of female heads is maintained and regulated by local third world governments and international communities, pointing to a growth in female emancipation in one light with the growth of the socio-economic position of women, heavily contrasted on the other spectrum with household poverty. Rural poverty has offset the household structure with heavy rural to urban migration to improve one's capabilities fuelling the growth of FHHs, which the researchers acknowledge as a relevant issue in social development. The pull to migrate from rural areas increases the aspect of overcrowding in urban areas, increasing the number of FHHs (Kossoudji & Mueller, 1983:831), potentially increasing the inequalities between men and women as the latter strive for similar career opportunities. There has been an increment in the population of FHHs in South Africa with a projected 41.9% as of 2020 from the 37.9% in 2018 (Statistics SA GHS, 2020).

Uniform reports indicate a rise in FHHs, from 41.0% to 48.3% in 2020 in the Northern Cape Province, Renosterberg Municipality has placed more responsibility on the municipality with the need to meet the demands arising from the FHH cohort. Female heads in Renosterberg Municipality have risen to 1 225 from 1 041, a 0.4% (Statistics SA GHS, 2020) increase that intensifies the obligation to deliver on improved basic services such as education and schooling while creating the grounds for favourable employment opportunities. The lack of such basic amenities is at the root of increased unsustainability in livelihoods among vulnerable residents such as women (Saul, 2020). It remains unclear how women, in particular female heads, endure the challenges that come with being the breadwinner in such dire conditions of increasing poverty. There appears to be limited evidence that could help comprehend sustainable livelihoods and the survival methods utilised by female heads in Renosterberg Municipality. This deficit edges the researchers' interests in this article to investigate the effectiveness of policies set to improve the livelihood outcomes of FHHs, shedding light on their coping mechanisms to invoke a course of action to mitigate debilitating factors. We explore the existing gaps in trying to understand the sustainability of livelihoods and coping strategies of FHHs in Renosterberg, Northern Cape, South Africa.

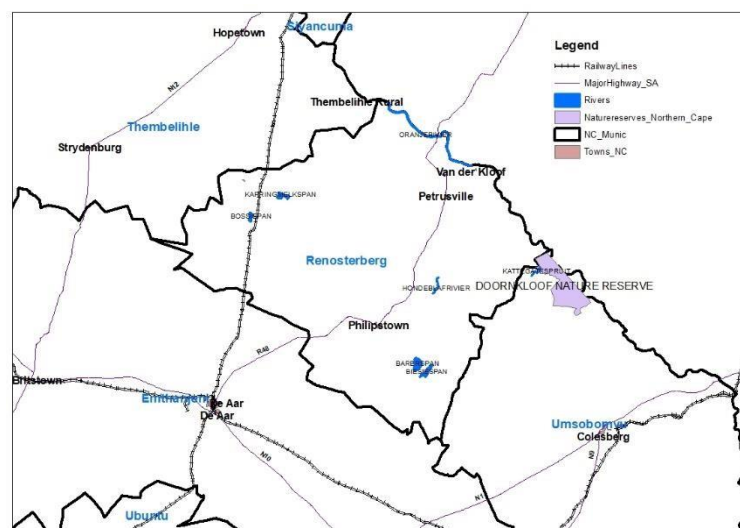


Figure 2. Locality map of Renosterberg Municipality

1.2 Aim of the study

The study sought to examine the various sustainable livelihood strategies and ensuing coping mechanisms of female-headed households in the municipality of Renosterberg in the Northern Cape of South Africa (See Figure 2).

1.3 Significance of the study

Activism on women's rights, gender-based violence and feminised poverty has paved topical relevance pushing for the improvement and generation of policies that aid in increasing gender equality and equity, empowering women to emancipate themselves from the shackles of deprivation. Female impoverishment is rampant in rural communities with low-value activities offered, which set women in positions of weak competitive advantage (Mishi et. al, 2020). Most studies neglect the lived experiences of female heads, taking a more statistical approach to the multidimensionality of female poverty by comparing households in a broad sense which

encompasses multiple structures. Kabeer (1994) asserts that challenges are best related to the persons facing them in their day-to-day lives from their perspectives and contexts. Consequently, the study unpacks the lived experiences of female heads and the sustainable livelihood strategies they are using coping mechanisms in rural communities.

2. RESEARCH METHODS

A qualitative case study design was utilised in this study to gain new insights into female-headed families (Alharahsheh & Pius, 2020). This allowed the study to explore the views of participants in their natural settings using in-depth interviews. An interview guide was administered in the local language to gather relevant data. The responses were voice recorded and later translated and transcribed by one of the researchers together with the field notes, which enabled the researchers to probe respondents clarifying ambiguous points surrounding their livelihood strategies. All the translations were validated by one of the researchers who happened to speak the native language of the interviewees.

2.1 Sampling and data collection

Of the approximately 3 563 households in Renosterberg Local Municipality, 34.8% are headed by females. The population consists of a subset of people forming the group under study from which a sample is drawn (Bryman, 2012). All-female heads in Renosterberg Municipality were categorised under the study group but only a small selection of the FHHs was chosen for the research which made it feasible to carry out the study regarding limited finances, time and the implemented methodology.

Purposive sampling was used to select and interview 20 female household heads who were above the age of 18. We sourced records from the Department of Social Development with the aid of a gatekeeper letter accepted by the department which translated to a list of female-led households in the municipality. Ethical clearance for the study was obtained from the General Human Research Ethics Committee of the University of The Free State (UFS-HSD202/1819/21). All COVID-19 protocols have been adhered to during the data collection.

Furthermore, we focused on female-led households as the government has an ongoing initiative focussing on the empowerment of females through providing basic services such as child support grants in anticipation of the improvement of their sustainable livelihood strategies.

2.2 Data analysis

Thematic content analysis was utilised to analyse the data collected. The data from the interview schedules were systematically broken down into smaller manageable chunks of research data and themes; a method implemented to integrate the various elements of the results. The study followed McShane & Böckenholt's (2017) applied process to analyse, illustrate and interpret data by reading through the field notes, documents and transcripts. The process allowed for an exploration of common phenomena and investigation of differences in terms of shared perspectives and existing studies. The data was transcribed verbatim to English, ensuring that no data was lost in the process. Themes and sub-themes were produced from the interviews by one of the researchers through coding to enhance the evaluation, giving names that enabled the associations and links to the concepts and writing up the insights. The other researcher validated and verified the process as an

experienced senior researcher. As a method often used in thematic data analysis, information was identified, analysed, and reported in thematic form from the gathered results. Thematic data analysis nominally organises and describes data-rich detail (McShane & Böckenholt, 2017).

3. FINDINGS

Income deprivation in FHHs has presented most challenges being further exacerbated by the COVID-19 pandemic. FHHs voices highlighted how most of their challenges vacillate around unemployment, food shortages, poverty and debts, struggles in developing businesses, poor accommodation facilities and income challenges highlighted in Table 1 below.

Table 1: Female headed-households voices on experienced challenges

| Participant | FHHs voices on the challenges they face |
|----------------|---|
| Participant 7 | Employment opportunities are lacking since I have a child that has completed grade 12 but is unemployed. |
| Participant 12 | There is a shortage of food and employment opportunities. |
| Participant 2 | I have unresolved issues with creditors and it is difficult to pay what I owe whilst continuing to make a living for those I cater for. |
| Participant 1 | I am doing some needlework and selling to the public, but it is a struggle to sell and also to get to potential customers. |
| Participant 13 | My house roof is leaking because it is old, and the fencing is not in good order and allows the thief to do break-ins. |
| Participant 19 | I'm unable to pay the monthly taxi fee for my child to go to school. I struggle with the school stationery on its own, where then can I source everyday money for the transportation to school? |

The overall findings of this study reflected the reasons for FHHs, sources of income and livelihood, other activities engaged by FHHs to maintain household livelihood, and other support sources of income for FHHs in Renosterberg Municipality.

3.1 Reasons for female-headed households

The research distinguished numerous reasons leading to female-headed households. Some of the participants indicated that the death of their husbands led to them heading their households. Another group of the respondents revealed that they never married, whilst a few pointed out that their parents passing resulted in them not marrying. Many of the deaths identified in the study were attributed to diseases such as HIV/AIDS and the COVID-19 pandemic. Another group of the participants revealed that divorce had elevated them to the position of the female head, whilst a small group of the participants indicated that their husbands had just abandoned and left the responsibility of the household to them. The participants noted that some of their husbands were abusive hence the inability to accommodate them, and others just left without explanation. Divorce statistics in South Africa are on the rise, as in other countries the world over, being characteristic of early marriages in which women become aware of female empowerment, gender equity and women's rights. A small group of the participants conveyed that their husband's sickness had made them unable to work to provide for their families. The female counterpart had to pick the mantle as head of the household and support their families.

3.2 Sources of income and livelihoods in female-headed households

Most of the participants in the study mentioned more than one source of income. The majority of the participants (15) revealed that they received child support grants regularly from SASSA, while a few received a child support income from fostering the children's grandparents. An additional small group of participants underscored disability grants and old-age pensions as their source of income. In some cases, some female heads were caregivers to their old aged relatives, giving them charge over their finances. Almost half of the participants receive a stipend from part-time employment opportunities presented through government-led projects in their communities, youth centres or nearby petrol stations, working two (2) days a week. Finally, three (3) participants were permanently employed with two (2) working at an early child development centre and one (1) being employed at the South African Police Services (SAPS). Women are often affiliated with the caregiver role; hence this can be a leading factor in prior mentioned employment situations; however, it is important to note that they do not earn much and most of their income was stripped during the COVID-19 lockdowns. One participant highlighted remittances as her source of income whilst another reported her earning an income from selling vegetables and meat.

3.3 Other activities engaged in maintaining household livelihoods

Half of the participants solely rely on the main activity without actions to supplement their income. The findings illustrate that for some, most of their time is taken up by the main activity leaving no room for extra activities, or they will be too fatigued to take part in other sources of income. Others asserted that they had given up the hopes of finding additional income streams in such a small-town economy.

Four (4) participants had part-time or "piece jobs," which included hairdressing, training youth in a development programme in vocational skills, and janitorial work at the Department of Social Development. One (1) participant sold milk and meat in the community. Three (3) participants took part in sewing, needlework and selling to the community; however limited finances slowed these activities to buy material in the case of sewing. A few participants engaged in selling tobacco and illegal substances such as home-brewed beer, which seemed to be the only option to provide for their families.

It is imperative to note that despite taking on other activities to supplement the main source of income, it was still insufficient to provide for their families, considering that one (1) participant was the only one working to support the whole family having to make ends meet. Eleven (11) participants reported not having other plans to survive. The lack of basic services in the municipality such as water supply has derailed activities such as vegetable gardening as noted by two (2) participants. Two (2) female heads identified survival through the borrowing of cash loans, having to pay them back with their wages at the end of the month; however, this poses problems of continuous debt as female heads often must borrow money being compelled to work when they already took their salaries in advance. Consequently, the female heads are often met with a lack of financial aid to establish micro-businesses that would help augment their income and rely on advance payments from employers to support their families. Other participants highlighted that; they have had to assume several odd jobs as a survival mechanism which included domestic chores to selling small goods such as snacks and refreshments. This predicament negatively supported the

stereotype of females having to work in selling minor goods and cleaning environments to support themselves and their respective families.

3.4 Support sources to main income

The female heads pointed to receiving food parcels, remittances, social grants, and skills training to improve employability and raise their incomes. A small group of the participants obtain assistance through remittances from a family member and social grants although these are irregular. Concerning, many of the participants stated that they do not receive any support, further supporting evidence that FHH's livelihoods are negatively affected by low incomes and a lack of other forms of support. Food allocations from the Department of Social Development and the Premier's office supplemented their main income. In addition, intermittent support to FHHs came in the form of the payment of basic utilities or food from other family members and friends. Other participants also highlighted support received from the Department of Agriculture through provisions of seeds for subsistence farming although this effort was discontinued due to COVID-19.

4. DISCUSSION

4.1 Challenges faced by female-headed households

Poverty is reaffirmed in FHHs due to the constant income loss experienced by female heads (Posel & Rogan, 2012). Men provide significant incomes in households, which are eroded by their death or abandoning their families, leading to poverty. Schatz & Madhavan (2007), highlight how demanding it becomes for female-headed households; scanty salaries are easily affected by transformations in the work environment or other shocks such as disease (Posel & Rogan, 2012; Rogan, 2016). Alluding to the need to redefine employment environments in organisations to be more female inclusive to allow women to provide for their families. The researchers argue that FHHs suffer from indifference and a lack of support from society by being led by women. There is little investment by the government to support female enterprises, which would allow for female emancipation through empowering their participation in matters which affect them. The Poverty Vulnerability Report released by Stats SA (2017), correspondingly identified women to be more vulnerable and impoverished because of cultural norms and beliefs that berate women as third-class citizens without rights to decide. Demonstrating the need to reform cultural beliefs in gender-inclusive ways, empowering women to support their families.

Several livelihoods are looming in poverty as many survive on a dollar per day, emanating from a single source of income (Soudien, Reddy & Woolard, 2019). Participants noted that their incomes were insufficient to support their families, echoing similar sentiments amongst the participants about being in frustrating positions. In most cases, supplementary activities proved inadequate in complementing the main sources of income in FHHs, being unsupported by society or the government.

Many FHHs are exposed to financial problems because of divorce from their spouses. We found that men constitute a large part of financial support, often breadwinners in most families. Therefore, debt and impoverishment are exacerbated by salary advancements female heads sought, leaving them liable to their employers and other creditors. According to Brown and Van de Walle (2020), following dependency on the husbands' income, many females who experience divorce

have financial constraints, which quickens their susceptibility to poverty. Unfortunately, such an incidence leaves the women at a disadvantage whilst the husbands enjoy their incomes without considering their families, hence the need to encourage financial freedom amongst women as the future is uncertain.

The findings indicate that female heads, unlike men, often find themselves in low-income inferior jobs (Glynn, 2019) or completely unemployed, having to join informal jobs (“piece jobs”) or in the service industry (housekeeping). 26% of the unemployment rate in 2017 constituted many women (StatsSA, 2018). This poses a serious challenge in FHHs as many female heads need to provide for their families. In addition, women were pushed into low-income jobs due to lower educational levels, which was one of the causes of financial inadequacies amongst female heads. Hence there is a need to avail more educational opportunities for women to launch them into more prominent, better-paying jobs. In contrast, FHHs in Botswana were discovered to have more financial stability, allowing them to support their families (Moepeng & Tisdell, 2008), with 55 % of FHHs falling between the middle and upper classes.

The findings revealed that female heads adopted illegal coping mechanisms such as brewing illicit beer, jeopardising their freedom as they faced fines and lengthy jail time, endangering the families they had to support if they got caught. However, Nedziwe (2017) states that female heads' involvement in illegal activities for their livelihoods is not a new phenomenon. Other studies in Southern Africa show illegal cross-border jumping to acquire employment by female heads although the nature is different, the risks are similar.

The study shows that reliance on aid tends to cripple FHHs' capabilities in their livelihood strategies as they start depending on remittances and grants from their family members or society. Similarly, Jotham (2018), asserts that women have experienced decades of social protection which has seen them rely on social support instead of adapting to improved survival strategies. However, this is an unsubstantial claim as the grants prove inadequate to cover the basic needs being irregular as are remittances leaving them in a position of deprivation in both instances.

Despite the strategies put in place by female heads to secure their livelihoods, the participants conveyed those initiatives such as subsistence agriculture have been setback by scarce water supplies. In line with this, the sustainable livelihood framework (SLF) emphasises natural resources: air, soil, water and plants, should be used prudently as they formulate day-to-day living striking a balance in the global environment (Rakodi & Lloyd Jones, 2002). However, despite them providing natural capital for different ways of life, the municipality is falling short in providing basic services such as water to the most vulnerable in Renosterberg, particularly the female heads. Limitations in basic service provisions such as water heavily restrict livelihood sustainability for instance growing their vegetables.

4.2 Livelihood strategies of female-headed households

Female heads in the study proved to be resilient, adopting several survival strategies such as growing and selling vegetables, meat, milk and tobacco, enabling them to maintain their sustainable livelihoods. Findings indicate that the Department of Agriculture supported the female head by providing farming implements such as seeds to allow them to nurture the enterprise of subsistence farming. Several studies indicate that female heads undertake on-farm livelihood strategies (Alemu, 2012; Neves and Du Toit, 2013) and non-farm activities. On-farm livelihood

strategies are categorised as agriculturally and land-based activities (Eneyew & Bekele, 2009; Geremew, Sangho & Fellizah, 2017) and the non-farm, which involve formal and informal economic activities through which activities female household head generate their survival strategies.

The respondents underscored social grants as another stream of income for FHHs. This highlighted that many female household heads take advantage of maintenance funds, child support grants, and the old-age pensions of their parents or grandparents to substantiate their livelihood strategies with their dependents. Similarly, in a study on social protection in South Africa, Lalthapersad (2002) expresses that social protection has witnessed a significant rise since the post-apartheid era, as statistics show more than 18 million recipients of social welfare amongst South Africans (Magubane, 2021). Social welfare support such as social grants lessens the vulnerability of female-headed households, making them increasingly independent breadwinners of their families. Seemingly, there is a gap amongst those female-headed households who are not receiving social protection services to improve their livelihoods. Studies such as those of Neves & Du Toit (2013) and Neves (2017) substantiate this claim going further in saying non-labour resources sources of revenue inclusive of remittances from residing abroad or in urban areas, social grants and welfare and non-income sources as societal aid, are of importance FHH livelihood strategies. Thus, the literature indicates that social capital is the glue that unites FHHs and not-for-profit organisations. The results indicate that female heads could sustain their livelihoods through the handouts that they received from their children working elsewhere in urban areas. The society (friends and well-wishers) was very supportive of FHHs with contributions put forward to assist female heads in paying utility bills, such as electricity and food parcels. Although this is an unreliable livelihood strategy in the long term, the findings indicate that it boosted the women's morale, aiding them to support their families with cash and kindness.

Regarding the education of FHHs, the findings revealed that some female-led households had advanced educated persons who could make a living through permanent employment. Some of the participants revealed themselves as law enforcement agents, such as police officers, armed with qualifications that permitted them to work in early learning centres. Other participants alluded to having taken part in social development programmes that allowed them to further their education and obtain numerous professional skills, such as administrative and computer skills. Correspondingly, Neves and Du Toit (2013) assert that FHHs' way of life is grounded in wages. Employment in the formal sector proved to be a resourceful way of life for FHHs, and the residents in Renosterberg, Pixley Ka Seme District were of a similar view. It is, therefore, imperative to find ways to involve many women in the formal sector as they make up a sizeable number of female heads.

Many income-generated projects were adopted by female household heads to increase and maintain their livelihoods (Abimbola and Oluwakemi, 2013) which proved to have a bearing on their skills. The participants' expertise in needlework initiatives proved particularly useful in sewing masks in the COVID-19 pandemic. As per the sustainable livelihood approach, there is a need to be observant of people's capabilities as they may have insurmountable potential which can prove to be resourceful. By being attentive to these skills, marginalised groups such as FHHs can sustain their livelihoods. Housekeeping activities such as domestic chores and part-time jobs formed the basis of the livelihoods of female heads. The sustainable livelihood approach states

that sustainable activities are best established from holistic approaches, which are dynamic in shaping livelihood strategies (Serrat, 2017). In the instance of FHHs, the findings depicted those female heads participating in odd jobs, which formed part of their livelihoods, contributing to sustainability in their way of life. Therefore, we establish that female heads should partake in jobs that offer security to generate and maintain the experience of sustainability for themselves and their families.

4.3 Mechanisms in response to challenges experienced by female-headed households

The findings illustrate the survival strategies which have been adapted to answer the challenges and pressures faced by female household heads. Lalthapersad (2002) maintains that social protection is a social development scheme that hails a powerful strategy that reduces the limitations of sustainable livelihood strategy among female heads. The study noted that social grants should be appropriated among the initial SASSA cardholders to tackle issues such as false entitlement by those who benefit from the strategy when the initiative is not directed for them. Thus, when focused on the intended recipients, it will yield positive outcomes such as food insurance as documented by many social protection programmes and policies (Knowles, Davis & Tirivayi, 2013; World Bank, 2014).

The findings illustrated that the respondents sought to participate in government-led initiatives such as agricultural interventions on which FHHs embarked where possible. Renosterberg Municipality has a long way to go to contribute to its social responsibility of providing basic delivery of services such as water vital to agricultural projects and electricity. Many studies maintain that an agriculturally based household aided family sustainability and income generation (Barret, Reardon & Webb, 2001; Eneyew & Bekele, 2009; Geremew, Sangho & Fellizah, 2017). Therefore, it is paramount for the government to take cognisance of this through the municipality.

Government-supported loans would aid in resolving some of the challenges of female-led households as per the study findings. Unfortunately, the research illustrated that the government lacked supportive initiatives to boost businesses owned by female heads, favouring male-hosted business ventures. We argue that with adequate financial aid, female household heads would be able to overcome many of their hardships. Therefore, Leibbrandt *et al.* (2000), along with Urrehman (2008), recommend the delivery of financial aid from authorities to help support and sustain the livelihood ventures of FHHs.

We established that handouts to provide sustenance to FHHs, such as food hampers and cash allowances, were significant in lessening their plight and should be made available for regular reception. However, this support fosters a dependency syndrome, especially in those with no strategies or plans to expand their way of life. The study stresses the need for government interventions that increase the creation of employment opportunities that focus on empowering FHHs to support female heads in gaining reliable income streams for their families. Government-led interventions should adopt participatory approaches as per the sustainable livelihood approach to have people-centred initiatives which involve the people facing the challenges in coming up with plausible solutions which would improve their livelihoods in this case, female heads. This would be a significant step in supporting their assets through utilising the assets and abilities they already possess to secure their livelihoods. In other words, a strength-based community-driven

approach would be more progressive than a state-led one as it increases ownership among the female heads.

The participants concur with the sustainable livelihood approach indicating to empower women towards sustainable livelihoods, it is of great importance to eradicating inequality. Poverty reduction, as ascertained by the researchers, begins with showing respect and allowing people their freedom and the ability to choose from varying options. Tong (1989) asserts the need to redefine the patriarchal structure, allowing women to rise to recognition equal to men, seeing them as possessing the capabilities needed to beneficially exert their skills in organisations, and lending adequate loans to fund and sustain them.

The participants also insisted on the need to have the government avail educational prospects to all, be it females or males, which would guarantee better employment opportunities for women, particularly female heads. Supporting small female enterprises and availing educational opportunities through learners' bursaries would give the women a fighting chance against hunger, poverty and any financial challenges they could encounter. Furthermore, policymakers should advocate for promoting theories that support equality to be elevated into practice (Ndinda & Uzodike, 2012; Ndinda, 2009). Therefore, there is a need to encourage the government to create sustainable livelihood opportunities by advocating for systems that fulfil the targets created to fix (Chambers & Conway, 1991).

5. CONCLUSION

Female family heads are still to receive reputedly proper acknowledgement in South Africa. A huge gap exists between livelihoods and the sustainability thereof, with overarching illustrations that the government, local municipality and society at large deprive FHHs of the desired attention and support they deserve to progress in creating and maintaining sustainable livelihoods. Development programmes need to take on a female-centred approach that empowers women to take charge in their employment narrative by earning and sharpening the skills they gain. Gender equality and equity should be reworked in practice at the community grassroots level to rejuvenate the status of women raising them to be at par with men meaning better educational and employment opportunities. The study revealed that the resident female heads of Renosterberg Municipality were immensely traumatised by the many challenges they faced and struggled to cope with them. Despite the several presented livelihood strategies which are implemented by the female heads, the challenges they face continue to be insurmountable. The main factors that were attributed to the growth of FHHs in the municipality were the husband's death, rising divorce rates that saw women being left with family responsibilities, abandonment by a husband who, in some cases, was abusive, sickness of the husband, or never having been married. The Renosterberg Municipality served as a suitable case study that helped demystify and unearth the significance of municipalities in their role to create reverent livelihood opportunities for female heads which can be used in addressing the challenges found in female headed households. Although many strategies for sustainable livelihoods were identified female heads were weighed down by the problems presented in the study such as income loss, debt, and unemployment amongst others. Thus, recommendations were offered for the municipality and government to improve their service delivery to become beneficial to female-headed households.

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LIFE SATISFACTION AMONG THE ELDERLY: EVIDENCE FROM THE ELDERLY POPULATION IN MAURITIUS

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ABSTRACT

Mauritius is known to have the most comprehensive welfare system among African countries. Grounded on a welfare pluralism model, the welfare of the population is the top priority of the government. The country is however also known for the demographic time bomb created by the disproportionate representation of the ageing population, where its population structure is more skewed towards a growing proportion of older people. A further increase in life expectancy seems obvious and this demographic change requires effort to ensure the quality of life of the older population. Given this unique mix in terms of welfare pluralism and concern for the welfare of the ageing population, there is a growing interest to understand the determinants of life satisfaction of this group. Several academics considered life satisfaction as the best social indicator of the quality of life in a country as it is a good technique for tracking social progress, evaluating policy effectiveness, and finding criteria for a good life. However, life satisfaction reflects subjective perceptions of what predicts well-being and quality of life, and the definition and predictors of life satisfaction hence vary greatly from country to country and from individual to individual.

This research aimed to assess Mauritian elders' life satisfaction and look for possible links between five variables (socio-demographic, social support, spirituality, social participation, abuse) and life satisfaction. The study's objectives focused on Mauritians aged 60 and older, of both genders, living in both domestic and institutional settings. Due to the prevailing sanitary conditions in the country at the time this research was carried out, convenient sampling was deemed the best option for achieving the research objectives. This study interviewed 385 elderly recruited from both domestic/community settings and institutional settings (both charitable and private homes). The findings and discussions provide the support that life satisfaction is influenced by the five variables tested, and further revealed that this is stronger for those who age at home.

Keywords: Ageing, welfare of elderlies, quality of life among the elderly

INTRODUCTION

Ageing is one area that requires much attention at all levels. Elderlies are those individuals belonging to age 60 years and above, who represent the fastest-growing segment of populations throughout the world. Given that ageing shows a growing trend, it is expected that the near future will account for a high percentage of the world's population with the number of older adults (60 years and older) reaching more than 2 billion in 2050 (WHO, 2018). As much as it encompasses the "increase in age number" dimension, it has several other related social, emotional, and psychological aspects that also require utmost care. While some years back this stage of life was mostly associated as being the last stage of life, now there is growing interest in seeing it as the

number of years remaining and thus, focusing on how to ensure that people age in dignity and happiness (Nazari et al, 2021).

Many countries are witnessing challenges following the demographic bomb associated with a growing number of older people (Chan S.P., 2016). Growing old is a natural and biological phenomenon. Ayranci and Ozdag (2004) claimed that senescence leads to changes in the human body's structures, organisms, and functions and, reduces its ability to cope with stress and metabolic conditions as well. Ageing is thus often linked to functional, physical, and mental capacity deterioration in a person which then results in vulnerabilities due to disabilities and disease (WHO, 2020). The process of maintaining functional abilities is known as healthy ageing and allows for long-term satisfaction (WHO, 2020). And this is where concepts such as quality of life and life satisfaction among this group of people are receiving more interest in the research and practical sphere.

Mauritius is also experiencing this challenge in terms of how this is impacting its socioeconomic situation (MCB Focus, 2019). However, committed to the population through a comprehensive welfare approach, the government and the community both play a pivotal role in addressing the issue of ageing population. Major components in the Mauritian welfare paradigm include free health care for all people, free bus transportation for the elderly and students, and free education at all levels (pre-primary, primary, secondary, and tertiary). In 2008, a reform in the employment retirement age was made, raising it to 65 from 60 previously (Phaahla, 2014). Mauritius has adopted several strategies from the advocates of social justice and equality, the Marshal Plan (2016) and the UN Sustainable Development Goals Agenda 2030, and announced welfare initiatives to leave no one behind, encourage social inclusion along with development, eliminate all types of discriminations, promote human rights, enhance quality of life and promote wellbeing. This study evaluates what constitutes the life satisfaction of the seniors in Mauritius.

LITERATURE REVIEW

Globally, there is an escalating interest in learning the determinants of life satisfaction (LS) of the elderly. Papi and Cheraghi (2021) deemed it the best indicator of the quality of life (QOL). LS is a crucial metric of efficient adaptation to old age (Ackerman, 2018; Papi & Cheraghi, 2021; Wiest et al., 2013). QOL is a multidimensional concept that includes subjective well-being and happiness and considers personal characteristics as well as physical, psychological, and social aspects (Haas, 1999). Elders' life satisfaction reflects their sense of well-being, quality of life, and successful adaptability to the process of ageing. As previously stated, the terms happiness and subjective happiness are widely used interchangeably in various research around LS. However, the factors that influence life satisfaction differ from one person to the next (McHugh et al, 2017).

One of the main theoretical frameworks to understand well-being and its antecedents in old age is that of successful aging (Rowe & Kahn, 1998). Successful aging has been characterized as maintaining physical health, sustaining good cognitive function, having active engagement with other people, and productive activities (Berg et al, 2007).

LS has a wide range of determinants. They differ depending on the individual's perspective. Life chances (LC), course of events (COE), the flow of experience (FOE), and life evaluation are the four categories they fall into (Ackerman, 2018). LC denotes the opportunity to share economically or culturally developed things that are available in a society. It is influenced by a person's

socioeconomic standing, political affiliation, and family ties, as well as social equality, economic well-being, political freedom and democracy, culture, moral order, wealth, social prestige, social position, political clout, and physical fitness, among other factors. COE is concerned with how things happen in our everyday lives and how they affect our sentiments of satisfaction or dissatisfaction. Such sensations are influenced by factors such as company or solitude, wealth or need, safety or attack, honour, or disgrace among others. FOE refers to feelings and reactions to events that have already happened. Satisfaction or desire, love or loneliness, respect or rejection, excitement or boredom, safety, or anxiety, to name a few. Finally, life evaluation entails a review of all the events that occur in one's life. It entails comparing one's life to one's concept of a "good life" and weighing positive and negative experiences (Veenhoven, 1996; Ackerman, 2018).

THEORETICAL FRAMEWORK

Psycho-social theorists argue how the mental processes, emotions, attitude, motivation, and personality impact physical and social demands as people age. Also, on how the changing roles, relationships and status within a culture or society impact the elderly people's ability to adapt. Social theories of ageing discuss and analyse progressions from middle to older life based on social factors and attempt to explain the changing roles, relationships, status, and generational cohort impact the elderly person's ability to adapt. Psychological theories explain ageing in terms of mental processes, emotions, motivation, attitude, and personality development that is characterized by the life-stage transition. Associated with QOL and LS is the concept of 'active aging' which mainly aims to "optimize opportunities for health, participation, and security and thus enhance the quality of life as people age." (Wongsala et al, 2021). Active ageing is defined as an individual achieving physical, as well as social, and mental well-being by participating in society in ways that are appropriate for his requirements, goals, and skills, as well as receiving adequate care, protection, and security when needed (WHO, 2020). To achieve active aging, continuous participation in social, economic, cultural, spiritual, and civic affairs in the aging process is necessary.

This research is thus anchored on activity theory which contends that 'physical and mental activities are requisites for the psychological well-being of the elderly (Shaw et al, 1998). To be active, people need to be engaged, and engagement in an activity is found to be positively related to life satisfaction (Loue, 2008). Continuity theory thus takes a life course perspective in which the ageing process is shaped by history, culture, and social constructs (Diggs, 2008). It also explains that "in making adaptive choices, middle-aged and older adults attempt to preserve and maintain existing psychological and social patterns by applying familiar knowledge, skills, and strategies." The variables that were hence used for this study are discussed in the next section.

FACTORS INFORMING LIFE SATISFACTION

1. Socio-economic status

| Socio-economic Factor | Explanation | Reference |
|-----------------------|--|---|
| Living conditions | <p>A person's basic shelter where comfort, security, safety, freedom, and a sense of belonging are all provided.</p> <p>The living conditions in a country have a significant impact on LS.</p> <p>The elderly prefers to age in place in their own homes rather than in institutions.</p> <p>In China, living arrangements with children lead to higher LS among the elderly. The elderly gain from children's help with household duties, as well as emotional and financial assistance.</p> | <p>Ebersole & Hess, 2000</p> <p>Helliwell, Layard, & Sachs, 2017</p> <p>Ebersole and Hess (2000)</p> <p>Wu (2021)</p> |
| Age | <p>A U-shaped relationship between LS and age has been discovered in much research.</p> <p>LS is found to remain rather constant throughout one's lifetime, even when one is very old.</p> <p>LS rises till the age of 65 to 70, after which it falls.</p> | <p>Kutubaeva (2019); Clark (2007); Frey & Stutzer (2002)</p> <p>Gwozdz & Sousa-Poza (2010); Vestergaard et al. (2015)</p> <p>Mroczek & Spiro (2005)</p> |
| Gender | <p>Gender is described as a social construct of qualities, privileges, positions, and connections between men and women, rather than a biological structure.</p> <p>According to, women live longer, often alone after the death of their spouse, and have a wider network of friends as social support, which reduces the risk of social isolation and contribute to their LS.</p> | <p>Feenstra & Ozerol (2021)</p> <p>Ebersole & Hess (2000)</p> |
| Marital status | <p>Men's LS decreases following widowhood and divorce among Japanese elderly.</p> <p>In Europe, elders who were married or lived with a companion scored better on the LS scale than their solitary counterparts.</p> | <p>Takashi (2011)</p> <p>Buber & Engelhardt (2008)</p> |
| Education | <p>More educated countries have higher levels of senior satisfaction. As a person's ability to choose certain lifestyles grows, so does his contentment with life.</p> | <p>Salinas-Jiménez, Artés, & Salinas-Jiménez (2011)</p> |
| Occupation | <p>LS is higher in countries with good job prospects than in countries with high unemployment rates. .</p> <p>Occupational fulfilment contributes to LS.</p> <p>Male elderly LS are more affected by unemployment than female elderly LS</p> | <p>Helliwell, Layard, and Sachs (2017)</p> <p>(Ackerman, 2018)</p> <p>(Joshanloo, 2018)</p> |
| Income | <p>Satisfaction with life is higher in high-income countries than in impoverished countries.</p> <p>In China, it is observed that LS is linked to income among older women.</p> <p>In Korea, money has an impact on both male and female LS elders.</p> | <p>Helliwell, Layard, & Sachs (2017)</p> <p>Choi and Kim (2018)</p> <p>Lee et al. (2020)</p> |
| Religion | <p>Religion is a multidimensional and complicated phenomenon that includes characteristics of social identity, norms, behaviour, belief, and community involvement. Differences between wellbeing results and religious practices have been observed in some cross-cultural research.</p> <p>Religion marked the LS of men and women in distinct ways, according to academics</p> | <p>Hayward & Krause (2014); Papadopoulos (2020)</p> <p>Lee et al. (2020); Joshanloo (2018).</p> |

2. Social Support

Social Support (SS) is a key factor of LS in the elderly since they feel good emotions that improve their health and reduce their mortality risk (Gottlieb & Bergen, 2010; Kim et al. 2021). Other

people's care and support are included in SS, both in terms of perception and reality. Supportive behaviour includes instrumental aid (for example help in household chores or transportations or shopping), emotional concern, guidance, and counsel help from significant other, family, friends, neighbours, government's public assistance, co-workers, and caregivers among others (Dysktra, 2007).

SS is crucial and it depends from support comes from. The person closest to one's well-being is referred to as a significant other, that is, a spouse, mate, partner, better half, or consort (Dictionary Merriam-Webster, 2021). As such, close relationships, according to Papadopoulos (2020) and Krause (2004), give the necessary emotional support that improves QOL and psychological wellness in old age.

Family as well plays a pivotal role and solidarities within the family are known to assist in coping with transitions and crises (Ballesteros, Robine, and Benetos 2001; Connidis & McMullin 1993; Katz & Lowenstein 1999; Lee, Crittenden and Yu 1996; Pinqart & Sorensen 2000; Silverstein & Bengston 1991). The elderly's well-being is influenced by emotional proximity, intergenerational solidarity, and support sharing. In extreme instances such as the death of a loved one or widowhood, family support can help with coping with the loss and adjustment to a new phase of life.

Social networks of friends as well as the help and care that they provide have an impact on LS in the elderly (Antonucci et al. 1996; Ballesteros, Robine and Benetos 2001; Connidis & McMullin 2002; Pinqart & Sorensen 2000; Silverstein & Bengston 1991). Social links with other people are advantageous in later life and contribute to an individual's wellness. These relationships may aid in satisfying daily needs, such as assisting with health care or just maintaining the cleanliness of a home (Gottlieb & Bergen, 2010; Gray, 2009; Papadopoulos 2020).

It is also argued that children's assistance is useful at reasonable levels but can be harmful if it is given too intermittently or too repeatedly (Lee, Crittenden, & Yu, 1996; Silverstein, Chen, & Heller, 1996). This also calls for giving the elderlies their own space. Changes in family arrangements due to modernisation and other factors reduce kin assistance for the elderly (Ferraro, 2005). Hence, residential care homes are also included in the SS for the elderly. Charitable Homes, Private Homes, and Day Care Centres are just a few examples. Due to busy professional careers, migration, a lack of knowledge in handling difficult cases of morbidities such as bedridden, Alzheimer, or dementia, and the high costs of full-time caregivers, many families choose to place their elders in these institutions for their safety rather than neglecting them.

3. Spirituality

Spirituality can determine the lives of elderly people, define the meaning of their existence, and help them cope with unfavourable situations (Papadopoulos, 2020). Spirituality is related to the personal yearning for interconnectedness with humanity. It also portrays a person's quest to connect with the ultimate power, which can occur both within and beyond the setting of religion.

Spirituality and religious belief enhance the concept of a purposeful existence and social relationships, which contributes to well-being in old age (Papadopoulos, 2020). Several studies have found that participating in religious activities improves spiritual well-being and overall

psychological well-being in old age, as well as life satisfaction. Elders' LS is linked to a sense of fulfilment in their spirituality (Ackerman, 2018).

4. Social Participation

Social participation (SP) refers to the concept of 'active ageing,' and it has been shown to benefit both individuals and society (Baeriswyl & Oris, 2021; Walker, 2002).

SP is seen as a prerequisite for elders' life satisfaction. Individual involvement in activities involving interaction with others is characterized as SP (Baeriswyl & Oris, 2021; Levasseur et al., 2010). Participation in organizations, activities in the community, visits from family or friends/acquaintances, interpersonal interactions, and religious attendance all contribute to LS among the elderly (Baeriswyl & Oris, 2021).

In his studies with Chinese elders, Cai (2021) claimed that SP improves cognitive performance and contributes to LS. In their study on Japanese elders, Lu et al. (2021) put forward that social participation resulted in health-related advantages that improved quality of life and increased life satisfaction. In their cross-sectional study among the elderly in Europe, De Boissieu et al. (2021) revealed that social participation improves feelings of usefulness, support, and life satisfaction. Subramanien et al (2013) argue that participation in activities ensures continuity after retirement and a loss due to the death of a dear one.

5. Elderly abuse and neglect

Abuse of the elderly is referred to as a silent killer, a violation of basic human rights, and a severe public health issue. WHO (2021) reports that one out of every six people aged 60 and up has been subjected to such abuse. Typically, such violence goes unreported; just one out of every twenty-four incidences of abuse is reported (Gemeay, 2011; Yon et al., 2017, 2019; WHO, 2021). Mistreatment can take the form of a single act or a series of acts, incorrect behaviours, or a complete lack of action, and it occurs in trusted relationships such as caretakers and family members. It occurs both in the community and in institutions (Brain & Laura, 2005; Gemeay, 2011).

Verbal, physical, sexual, psychological, emotional, financial, and neglect are all forms of abuse (Alavijeh, Zandiyeh, and Moeini, 2021; PEPA, 2005; WHO, 2021). Chaoxin Jiang and Shan Jiang (2021) conducted a study with Chinese old people and found that maltreatment hinders their LS.

Physical abuse comprises acts of aggression that cause physical pain, bodily harm or impairment, and the misuse of drugs and physical restraints (Gemeay, 2011). Financial abuse is defined as financial manipulation, such as the unauthorized use of money or property (Gemeay, 2011). Torment by verbal or nonverbal acts also results in emotional or psychological abuse (ibid). Most elder abuse victims rely on the abuser (for example, a family member or caregiver) to meet their fundamental requirements. This trauma causes changes in the victim's behaviour, such as feelings of powerlessness, fear, despair, or withdrawal, as well as an increased likelihood of suicide ideation.

AIM AND OBJECTIVES

The purpose of this study was to explore the quality of life-related factors that contribute to life satisfaction among the elderly group.

The objectives of this study are therefore to: -

1. Explore the factors that contribute to life satisfaction among the elderly population
2. Examine the extent to which these factors contribute to life satisfaction.
3. Examine the extent to which older adults' perceptions of these factors are associated with their life satisfaction.

METHODOLOGY

Research Objective 1

In the first phase of the research, the objective was first to explore which factors are seen as contributing factors to achieving life satisfaction and quality of life in the Mauritian culture. A focus group discussion was conducted with representatives from private and public organisations which work for the welfare of elderly people in Mauritius. Some presidents of senior citizens' clubs were also invited to participate. The discussion lasted for around two hours and 12 people participated. Being elderly and/or working with elderly give a general idea of what makes them happy about their life and what not. This discussion allowed participants to reflect and voice their opinion through meaningful discussion. Once the data was collected, themes that depicted what counts for the elderly emerged and were captured through coding. The main themes included social support, social participation, abuse and neglect, and spirituality. Once these themes were identified, the next phase of the research was carried out and it was descriptive, with quantitative strategies used to collect primary data for analysis.

Research Objective 2

The study's objectives two and three focused on Mauritians aged 60 and above, of both genders, living in both domestic and institutional settings. As of June 30, 2020, the total number of elderly people in Mauritius was 232,935 (Social Security Statistics, 2021). The population sampling was determined using the Raosoft sample size calculator which yielded a recommended sample size of 385.

As people living in domestic and institutional settings are spread geographically, the convenience sampling method was used to collect data from areas that are close and reachable to the researcher. Winton and Sabol (2021) defined convenience samples as having selection bias. As the sample size grows, so does the statistical power of the convenience sample. As a result, a large sample was gathered for the estimates to become precise and generalizable.

Drawing from the literature and the findings from phase 1, a questionnaire that consisted of 6 sections to cover several domains of the life of an elderly was designed. Life satisfaction was the dependent variable and the independent variables were social support, spirituality, social participation, and elderly abuse for which, these required responses to assess the participants' level of agreement. A 5-point Likert scale was used with the following representation: '1=strongly disagree,' '2=disagree,' '3=neutral,' '4=agree,' and '5=strongly agree'. The inclusion of the pre-coded answer captured the field reality.

Section A covered the socio-demographic profile of the participants.

Section B measured the life satisfaction of the respondents.

Section C measured the satisfaction with social support of the respondents.

Section D measured the satisfaction with spirituality of the respondents.

Section E measured the satisfaction with social participation of the respondents.

Section F measured the impact of elderly abuse on life satisfaction of the respondents.

A total of 385 elderlies living in the northern region of Mauritius were recruited from both domestic/community settings and institutional settings (both charitable and private homes). Using the convenience sampling approach, including telephoning all residential aged care facilities in that region and the Presidents of elderly clubs, people aged 60 and above were contacted. They in turn informed the members about this survey and those who were willing were put into contact with the researcher. For data collection, 137 elders gave their consent for face-to-face interviews from eight different homes. In terms of those who reside in their own homes, 116 gave their WhatsApp numbers and opted for the web to submit their questionnaires by email, and the remaining 132 preferred hard copies of questionnaires which they submitted back after completion.

Research Objective 3

To capture the relationship between the dependent variable “Life Satisfaction” and the five identified independent variables, a multiple regression analysis was conducted with the following hypotheses: -

Ho: There is no relationship between socio-economic factors and life satisfaction

H1: There is a relationship between socio-economic factors and life satisfaction

Ho: There is no relationship between social support and life satisfaction

H1: There is a relationship between social support and life satisfaction

Ho: There is no relationship between spirituality and life satisfaction

H1: There is a relationship between spirituality and life satisfaction

Ho: There is no relationship between social participation and life satisfaction

H1: There is a relationship between social participation and life satisfaction

Ho: There is no relationship between elderly abuse and neglect and life satisfaction

H1: There is a relationship between elderly abuse and neglect and life satisfaction

DATA ANALYSIS

A total of 322 questionnaires were successfully filled out and returned to the researcher. Below is a representation of the demography of the respondents.

| Variables | N | Percentage |
|--------------------------------|-----|------------|
| <i>Gender (N=322)</i> | | |
| Male | 132 | 41 |
| Female | 190 | 59 |
| <i>Age group (N= 322)</i> | | |
| 60 to 64 | 130 | 40.4 |
| 65 to 74 | 121 | 37.6 |
| 75 to 84 | 47 | 14.6 |
| 85 to 99 | 20 | 6.2 |
| 100 and above | 4 | 1.2 |
| <i>Marital status (N= 322)</i> | | |
| Single | 39 | 12.1 |
| Married | 121 | 37.6 |
| Common law | - | - |
| Widowed | 141 | 43.8 |
| Divorced/separated | 21 | 6.5 |

Table 1: Demographic representation of respondents

60.2 percent of the participants earned less than Rs 15000. Followed by 14 percent with income between 15000 to 24999, 13.4 percent earned 25000 to 34999, 6.8 percent received 35000 to 44999, 3.7 percent from 45000 to 59999, 0.9 percent obtained 60000 to 79000, and another 0.9 percent earned between 80000 to 99999. The elderlies live either in community settings or institutional settings. 54 percent of the participants reside in their own house, 37 percent in charitable homes, 5.6 percent in private residential care homes, 2.8 percent were sheltered by children, 0.3 percent sheltered by relatives and 0.3 percent lived in rented houses.

The following tables 1 to 7 provide the descriptive statistics for the statements used to measure the different variables with a Likert scale of 5, ranging from 1 represented by “strongly disagree” to 5 represented by “strongly agree”

1. Life Satisfaction.

Table 2: Descriptive statistics for life satisfaction

| Variables and measures | Mean | Standard Deviation | Cronbach's Alpha |
|---|------|--------------------|------------------|
| <i>Life Satisfaction*</i> | 3.70 | 0.84 | |
| My life is close to my ideal in most of the ways. | 3.67 | 0.90 | 0.976 |
| My life conditions are excellent. | 3.69 | 0.89 | |
| I feel satisfied with my life. | 3.76 | 0.88 | |
| So far, I have obtained the important things I wanted in my life. | 3.76 | 0.88 | |
| If I could live over once again, I would change almost nothing. | 3.63 | 0.98 | |

2. Social Support

Table 3: Descriptive statistics for social support

| Variables and measures | Mean | Standard Deviation | Cronbach's Alpha |
|---|------|--------------------|------------------|
| <i>Social Support*</i> | 2.92 | 0.92 | |
| I have an especial person around me when I am in need. | 2.63 | 1.42 | 0.953 |
| I have an especial person around me with who I can share my joys and sorrows. | 2.63 | 1.41 | |
| My family help me when I am in need. | 3.16 | 1.22 | |
| An especial person is the real source of my com fort. | 2.86 | 1.18 | |
| I can count on my friends support when things go wrong. | 2.74 | 1.05 | |
| I can discuss about my problem s with my family. | 2.91 | 1.14 | |
| I have friends with whom I can share my joys and sorrows. | 2.69 | 1.05 | |
| I have an especial person in my life who cares about my feelings. | 2.82 | 1.11 | |
| My family want to help me make decisions. | 3.00 | 1.14 | |
| I can discuss about my problem s with my friends. | 2.77 | 1.09 | |
| Social support contributes to life satisfaction. | 3.88 | 0.75 | |

3. Spirituality

Table 4: Descriptive statistics for spirituality

| Variables and measures | Mean | Standard Deviation | Cronbach's Alpha |
|--|------|--------------------|------------------|
| <i>Spirituality*</i> | 3.90 | 0.78 | |
| My spirituality answers all the questions that I have about life. | 3.79 | 0.96 | 0.970 |
| The most important aspect of my life is to grow spirituality. | 3.89 | 0.88 | |
| My spirituality plays the most important role when I make important decision. | 3.94 | 0.85 | |
| The main motive of my life is spirituality, it directs all aspects of my life. | 3.90 | 0.87 | |
| Spirituality helped my personal growth as a mature individual. | 4.00 | 0.79 | |
| My spiritual beliefs influence every aspect of my life. | 3.89 | 0.89 | |
| Spirituality contributes to life satisfaction. | 3.93 | 0.82 | |

4. Social Participation

Table 5: Descriptive statistics for social participation

| Variables and measures | Mean | Standard Deviation | Cronbach's Alpha |
|--|------|--------------------|------------------|
| <i>Social Participation*</i> | 2.77 | 0.69 | |
| I am physically active and do sport/ go to a gym/ yoga class. | 3.49 | 1.14 | 0.852 |
| I usually go out to watch sport events or go to cinema or party or dance or restaurant or cafe. | 2.63 | 1.11 | |
| I visit my family or friends, or neighbours. | 3.14 | 1.67 | |
| My family or friends or neighbours visit me. | 3.38 | 1.09 | |
| I use the internet for social communication. | 2.47 | 1.40 | |
| I am a member in senior citizen association, and it is beneficial to me as I meet many friends and participate leisure activities. | 2.15 | 1.40 | |
| I am a member in a volunteer group. | 1.99 | 1.26 | |
| I am a member in a religious group. | 2.07 | 1.32 | |
| I prefer to withdraw from social participation and stay at home. | 2.16 | 1.28 | |
| The activities organised at the Elderly day care centres are well adapted for the senior citizens, they are sufficiently equipped and situated at easily accessible places. | 2.99 | 0.68 | |
| Social participation contributes to life satisfaction. | 3.97 | 0.55 | |

5. Elderly Abuse and Neglect

Table 6: Descriptive statistics for abuse and neglect

| Variables and measures | Mean | Standard Deviation | Cronbach's Alpha |
|--|-------------|--------------------|------------------|
| <i>Elderly Abuse*</i> | 2.09 | 0.37 | |
| In my old age I have experienced Verbal abuse. | 1.16 | 0.79 | 0.852 |
| In my old age I have experienced physical abuse. | 1.09 | 0.58 | |
| In my old age I have experienced psychological/emotional abuse. | 1.20 | 0.87 | |
| In my old age I have experienced financial abuse. | 1.09 | 0.58 | |
| In my old age I have experienced sexual abuse. | 1.93 | 1.69 | |
| In my old age I have experienced neglect. | 1.60 | 1.43 | |
| In my old age I have experienced self-neglect. | 1.02 | 0.31 | |
| I am dissatisfied with my current situation. | 2.18 | 0.97 | |
| My personal belongings are used without my permissions. | 2.23 | 1.43 | |
| I get angry with my caregiver as s/he is not attentive to my need. | 2.14 | 0.77 | |
| I am economically dependent on others. | 2.02 | 0.71 | |
| My wish to see my relatives remain unfulfilled. | 2.05 | 0.71 | |
| My sleep is poor for unknown reason. | 2.16 | 0.82 | |
| I am unable to make my own decisions. | 2.01 | 0.68 | |
| My privacy is not respected. | 2.06 | 0.75 | |
| I have unnecessary suspicions and ideation of being harmed. | 2.07 | 0.73 | |
| I want to isolate myself and withdraw from social activities. | 2.11 | 0.77 | |
| I have fears of specific persons or events. | 2.11 | 0.79 | |
| My personal belongings are destroyed. | 1.86 | 0.66 | |
| I feel pleased when I blame others. | 1.84 | 0.65 | |
| I receive or take improper medication. | 1.85 | 0.65 | |
| I am extremely dependent on my caregiver. | 1.98 | 0.80 | |
| I am forced to do things. | 1.98 | 0.66 | |
| I have feelings of shame, powerlessness, and loss of dignity. | 1.99 | 0.70 | |
| I am voluntarily left alone. | 2.07 | 0.74 | |
| Elderly Abuse impacts life satisfaction. | 3.83 | 0.88 | |
| The Welfare of Elderly Persons Protection Unit under the aegis of the Ministry of Social security are efficient in the intervention and protection of elderly persons against abuse. | 3.64 | 0.79 | |
| The elderly Mauritians are protected efficiently from any abuse by the Police Department. | 3.57 | 0.84 | |
| The existing legislation effectively protect the elderly Mauritians. | 3.67 | 0.76 | |

Table 7: Multiple Regression Analysis

| Hypothesized relationship | Unstandardised beta (Standard error) | Standardised beta | t-value | p-value | Model fit |
|---------------------------|--------------------------------------|-------------------|---------|---------|---|
| Socio-Demographic → LS | 0.110 | 0.122 | 2.356 | 0.019 | F=24.009; R ² = 0.275; Adjusted R ² = 0.264 |
| Social Support → LS | 0.065 | 0.232 | 3.223 | 0.001 | |
| Spirituality → LS | 0.055 | 0.337 | 6.572 | <0.001 | |
| Social Participation → LS | 0.084 | 0.55 | 0.782 | 0.435 | |
| Elderly Abuse → LS | 0.117 | -0.148 | -2.903 | 0.004 | |

DISCUSSION AND FINDINGS

The socio-demographic characteristics included gender, age categories from 60 to over 100, marital status, occupation, income level, education level, ethnic groups, and residence conditions, and the majority were satisfied. This variable corroborates with Meggiolaro and Ongaro (2013) who claimed that on average both genders are satisfied with their lives; Gwozdz and Sousa-Poza (2010) and Vestergaard et al. (2015) said that in old age one is satisfied with life. Though most of the respondents, that is 43.8 percent, were widowed, still the average of the seniors adapted successfully to ageing and responded positively to LS. Mauritius being a welfare state provides free health facilities, education is free at all levels and from 60 years every senior is entitled to a non-contributory benefit, and the official retirement age is 65 years since July 2008. These governmental supports positively contribute to their life satisfaction. 87.3 percent of the elderly respondents have acquired basic education and all of them had a source of income. The Mauritians have a conservative patriarchal multi-ethnic society where each one has freedom to practice their religion, cultures, and spiritual belief and this contributes to their LS. The results of the findings showed that the majority of the respondents (54 percent) were ageing successfully in their own house and the rest were also sheltered. As per Pynnönen et al. (2021), personal resources supported one's wellbeing. Lee et al. (2020) claimed that women and men are marked by religion in distinctive ways. According to Helliwell, Layard, & Sachs (2017), residence conditions in a country contribute to LS. Altogether the socio-demographic findings suggested they were important determinants of LS among the elders.

With regards to social support, the findings showed that the elders in Mauritius perceived the care, help and support of others as positively contributing to LS. According to attachment theory, a quality relationship with close ones is vital for solidarity in later life. Papadopoulos (2020) highlighted the importance to maintain relationships for support and care from significant other and close friends in later life.

Spirituality is another domain that becomes more prominent as people age. The constitution of Mauritius allows each one to practice their religion and endeavour for spiritual growth. Though it is a multi-ethnic country, and the Hindus are the majority there is a reign of political democracy, peace, and harmony. Mauritius offers a wide range of facilities through the various cultural and religious groups, promoting values around spiritual life. The result of this study supports the literature, for instance, for Papadopoulos (2020), spirituality gives meaning to life, and coping mechanisms in adverse situations; enhances social relationships by interconnecting people (Papadopoulos, 2020 & Villani et al., 2019); gave a feeling of fulfilment (Ackerman, 2018). Therefore, spirituality is indeed a pivotal aspect of one's life that brings tolerance, acceptance, hope, harmony, and peace and must be promoted at the national level by each and every one.

Congruent with the activity theory is the notion of social participation. In contrast, the relationship between Social Participation and Life satisfaction is insignificant. The statistics reveal that the elders in Mauritius are not actively participating in social life. This may imply that the elderly is not satisfied with the age-related recreational activities proposed to them. It may also indicate that due to recent sanitary conditions prevailing after the outbreak of Covid-19, the elders prefer to stay safe at home. Moreover, 42.6% of the participants were from institutional settings and have limited access to social participation compared to their counterparts residing in community settings.

Additionally, most of the respondents preferred to remain neutral relating to the activities organised by the Elderly Day Care Centres.

Finally, when it comes to abuse and neglect of elderly persons, the findings indicate a negative impact of elderly abuse on LS. Statistics reported 808 cases of elderly abuse in 2020 and by 30th September 2021 more than 808 new cases have already been registered and interventions have been carried out (MSS 2021, Social Security Statistics Mauritius). Additionally, the abusers were children or grandchildren, they were unemployed and had a penchant for substance abuse (ibid). WHO (2020) considers elderly abuse as a serious threat to public health and a silent killer, which violates human rights. Various types of mistreatments occur in both community and institutional settings and the victims are dependent on the perpetrator (Gemeay, 2011).

CONCLUSION AND RECOMMENDATIONS

Life satisfaction is a salient issue that is of interest to both the academic literature and practical spheres. This study has been able to demonstrate what are some factors that affect life satisfaction in Mauritius and how the elderly perceive that these are being met. One important factor that came up was spirituality and most agreed that this contributes to life satisfaction among the elderly population. It has to be noted everyone has the right to practice his religious beliefs and there are various activities such as facilities to go on pilgrimage, which is highly valued by elderly. One recommendation could be to give more support to this group so that they can draw on this factor to enhance their life satisfaction. Examples could be specialised pilgrimage programmes targeted to this group.

On the other hand, abuse cases are underreported, and this kills them silently. A more rigorous system of community watch through empowered police and social workers could help the identification and monitoring of cases. There is a need for more sensitisation so that the elderly become more aware of their rights and the various mechanisms that the authority makes provision for the welfare and protection of this group.

This research also bears some limitations and the main one is that the sample consists of the elderly population from a given region. Some factors might not be reported the same for those who come from other regions of the country. Studies could be carried out with a wider population which represents the whole population. The second limitation is the restriction to five factors. These factors have been selected from the literature and the result of the focus group carried out. Qualitative research would allow in-depth collection of data that could either confirm these factors or reveal others.

Lastly, with advanced statistical techniques such as modelling, the factors could be used to test determining and/or mediating factors, and could thus provide a model for life satisfaction among the elderly population.

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