REDEFINING CONSUMER DECISION MAKING IN A HYPER-CONNECTED WORLD: A SOUTH AFRICAN CONTEXT

by

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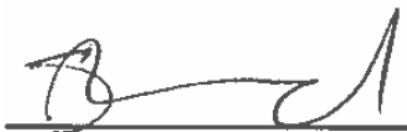Student number: 48814172

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ABSTRACT

This research aimed to determine the decision-making processes of the hyper-connected consumer in a world that is becoming increasingly hyper-connected, where consumers are 'always on' and connectivity is ubiquitous. The research followed a customer-centric approach in addressing the research objective and gaining greater insight into the behaviour of hyper-connected consumers in South Africa. In this way, the research study contributes to the academic literature on hyper-connected consumer and their decision-making. The research also provides academia, as well as business and industry, with greater insight into the profile of a hyper-connected consumer within South Africa and how hyper-connected consumers make decisions.

A post-positivist philosophy with a quantitative research approach was adopted for the research. The empirical investigation was conducted in two parts in which web-based questionnaires were sent out to consumers around South Africa. Part 1 of the empirical investigation focused on identifying and extracting latent factors that influence the decision-making of the hyper-connected consumer. Six latent factors were identified; personal insights and influences, social influences, subjective knowledge, sources/channels of information, price ad financial considerations and personal and family needs. The six factors were used to propose a conceptual model of decision-making for the hyper-connected consumer. Part 2 of the empirical investigation confirmed the structural validity of the underlying latent factors identified in part 1. The structural validity and model validation of the conceptual model proposed in part 1 was also determined in part 2. Confirmatory factor analysis with structural equation modelling was conducted and the analysis of the results confirmed the underlying structures of the proposed model. However, the results identified covariances between the factors, indicating that the decision-making of the hyper-connected consumer is not a sequential linear process as proposed, but rather an iterative circular multi-directional interaction. An adapted capricious and ubiquitous model of decision-making for the hyper-connected consumer was thus proposed. The research identified hyper-connected consumers as individuals who are accustomed to the use of technology in their everyday lives and rely on technology to interact with the world around them and to make decisions.

The results indicate that hyper-connected consumers do not follow a linear decision-making process, as such it is recommended that business and marketers align their marketing strategies to the unique decision-making of the hyper-connected consumer. It is recommended that business and marketers move their marketing channels towards hyper-connectivity, in a manner that allows hyper-connected consumers to connect anytime, anywhere and through any channel with the business.

Keywords:

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KEY CONCEPTS

'Always on' individuals	Individuals who have a continuous connection to the internet through a device.
Big data	Extremely large amounts of data that are collected and stored.
Connected devices	Several electronic devices that are connected to each other or to networks, which can operate autonomously.
Ethics	The moral principles that guide individuals and society in terms of what is good and bad. They include fundamental principles of what constitutes good human behaviour and character.
Engel, Blackwell and Miniard (EBM) model	Decision-making process with several stages: need recognition, search, alternative, evaluation, purchase, and post-purchase.
Data privacy	Any threats or harm caused by an individual when private and personal information is leaked to the public.
Digital device	Any device that contains a computer or microcontroller and can receive information, store it or send digital information to another device.
eGDP	The gross domestic product of a country as a result of the internet and hyper-connectivity.
Internet	The global network of computers that are connected, and that send and receive information from one computer to another.
Internet of things (IoT)	The wirelessly connected system of devices and objects using the internet and the web to link them together.
Internet protocol	This is the set of rules that govern the format of the data sent over the internet.
Hyper-connectivity	The continuous connection and communication between people and machines, devices and objects.
Hyper-connected consumer	Consumers who are constantly connected online through various devices such as smartphones, laptops, tablets, wearable devices and even desktop computers.
Identity privacy	Information such as the individual's name, physical address, telephone details, login details, password or biometric information required to access online websites or services that are recorded.

Location privacy	The disclosure of information regarding individuals' current and past location data recorded by a device or software application.
Mobile device	A handheld or portable computing device such as laptops, smartphones, tablets.
Microchip	An integrated computer circuit carried on a small piece of a semiconductor such as silicon.
Social commerce	A subset of electronic commerce that incorporates social media and supports social interaction in the purchasing and selling of products online.
The "filter bubble"	A phenomenon that can occur when individuals are exposed to limited information on the internet as a result of the use of algorithms that assume what information an individual is interested in.
Wearable device	Any device such as a watch and glasses that an individual will wear on their bodies.
Wireless	The incorporation of several technologies and devices to transmit data through the air rather than wires.
World Wide Web or web	An information system that links documents, graphics and audio that can be accessed over the internet.

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In the name of Allah, the most gracious the most merciful

CHAPTER 1
INTRODUCTION AND SCOPE OF THE RESEARCH

1.1 INTRODUCTION

Industry experts predict that by the end of the year 2025, the number of connected devices will exceed approximately 75 billion (Hamilton & Webster, 2018:252; Statista.com, 2020). The rapid advancements in technology, ease of internet connectivity, the evolution of the world wide web (web) and the exponential growth in mobile technology, as well as digital devices, have moved the world towards hyper-connectedness (Swaminathan, Sorescu, Steenkamp, O'guinn & Schmidtt, 2020:26). The Coronavirus pandemic (COVID-19), which affected the world in early 2020, has also created unprecedented disruptions and changes in consumer behaviour and has acted as a catalyst in moving consumers closer to the concept of hyper-connectivity (Costabile, Kallegias & Robins, 2020:2; Tripathi, 2021:75). The concept of hyper-connectedness can be described as the continuous connection and communication between people and machines, devices and objects (World Economic Forum, 2016:3; Beverungen, Buijs, Becker, Di Ciccio, van der Aalst, Bartelheimer, vom Brocke, Comuzzi, Kraume, Leopold, Matzner, Mendling, Ogonek, Post, Resinas, Revoredo, Rı´o-Ortega, Rosa, Santoro, Solti, Song, Stein, Stierle & Wolf, 2021:146). As a result of hyper-connectedness, individuals are more connected to each other and the world around them (Stephen, 2017:11; Zayas, Perez, Perez & Merino, 2018:1).

The increased and continuous usage of digital and mobile devices, access to the internet, and connectedness to the web have disrupted how consumers behave; they have changed consumer purchasing habits and even influenced consumer preference for online communication (Vecchi, 2017:140; Khan, Raj, Marwah, Agrawal & Kalani, 2020:283). According to Euromonitor International (2015a:3), the substantial use of technology and connection to the web and the internet have influenced consumers' behaviours and interactions with the world around them and led to hyper-connected

consumers. Hyper-connected[1] consumers are characterised as those who are constantly connected online to the internet on the web through the use of various digital devices (Ceccotti & Vernuccio, 2015:442; Thwaites, 2021:374).

Vodafone Limited (2015) and Growth from Knowledge (GFK) Global (2017) indicate that due to continuous reliance on technology and connectedness to the internet through various digital devices, consumers in countries such as Britain and India are increasingly becoming hyper-connected. A report by the World Economic Forum (2016:6) states that in South Africa, Germany, the USA, Brazil and China, consumers are increasingly connecting to the internet through various digital devices to communicate and interact with each other, search for information, shop, work and even partake in civic activities. The increased connectivity, communication and interaction have led to more hyper-connected consumers (World Economic Forum, 2016:6).

As the hyper-connected market increases in countries around the world, understanding the hyper-connected consumer's decision-making process will provide greater insights into the academic research community and enable marketers and businesses to serve the growing hyper-connected market better. Businesses can also identify market opportunities through a greater understanding of the hyper-connected consumer and their decision-making processes.

To gain a better understanding of the hyper-connected consumer, the research will focus on investigating, identifying, and extracting the latent factors that influence the decision-making process of the hyper-connected consumer. The research, therefore, proposes a theoretical model for the decision-making of the hyper-connected consumer based on an exploration of the literature and theory of consumer behaviour. The theoretical model is primarily based on the theoretical framework of the Engel, Blackwell and Miniard model of the consumer decision process, which is one of the most commonly used seminal decision-making models. The research also aimed to develop a profile of the hyper-connected consumer within South Africa.

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[1]It is acknowledged that the term hyper-connected is also spelt as hyperconnected. In the literature search, both spellings are used, however, this research will make use of the spelling hyper-connected.

In this chapter, the concept of hyper-connectivity is unpacked, followed by a discussion of the definition of the hyper-connected consumer. Consumers' behaviour and decision-making process will also be examined. Finally, the research question, research objectives, and methodology of the research will also be highlighted.

1.2 TOWARDS HYPER-CONNECTIVITY

The changing world of technology has facilitated a move towards ubiquitous connectivity, meaning that connectivity is becoming multidimensional and omnipresent in that it is available anytime, anywhere, and anyplace (Dhirana, Bhat & Kaushik, 2021:161). The ubiquitous connectivity is immersed in a sophisticated collection of networks that interconnect between people, devices and objects, which has fostered a hyper-connected world (Vermesan & Bacquet, 2018:19; Monaco, Minneman & Joseff, 2020:18).

The term hyper-connectivity arose from studies done by Quan-Haase and Wellman (2005) on person-to-person and person-to-machine communication in networked organisations and societies (Bell, 2021:1). Quan-Haase and Wellman (2005:284) defined hyper-connectivity as "the availability of people for communication anywhere and anytime", through computer-mediated communication tools such as social networks, email, and instant messaging. The definition of hyper-connectivity has since evolved, where Collins Dictionary (2021) now defines it as "the state of being constantly connected to people and systems through devices such as smartphones, tablets and computers - and sometimes through software that enables and promote constant communication." The World Economic Forum (2016), in turn, defines hyper-connectivity as "the increasing digital interconnection of people – and things – anytime and anywhere". Bringing these three definitions of hyper-connectivity together, one could thus describe hyper-connectivity as the continuous connection and communication between people and machines, devices and objects, as well as machines to devices, objects, and individuals. This definition is derived from the work of Oswald and Kleinemeier (2017) and Swaminathan et al. (2020).

Oswald and Kleinemeier, 2017:33 and Yoo, 2018:19203 indicate that hyper-connectivity consists of several key characteristics which includes that it is always on, interactive, information rich, always recording and continuous communication. Always on refers to the automatic and continuous connection between individuals through technology such as smart mobile devices that facilitate wider and faster internet connection (Leiva & Kimbre, 2020:33). Hyper-connectivity is interactive as everyone can contribute and create content on various platforms on the web and over the internet. Information rich refers to the immense quantity of information that can be accessed instantaneously (Brubaker, 2020:791). Always recording refers to the technology such as cloud computing and various software applications, that allows information such as individuals' online activities and communications to be constantly recorded and stored (Yoo, 2018:19203). Communication in a hyper-connected context refers to the communication from machine to machine, that is, communication between machines or devices that are connected and that send and receive information to each other (Oswald & Kleinemeier, 2017:33).

The concept of hyper-connectivity is not only about technology and the technology that facilitates communication; it incorporates the effect that the technology has on the everyday lives of people, on businesses and how businesses are run, and the impact the technology has on communities (Cheok, 2016:3). Hyper-connectivity is transforming how businesses operate as the business environment is now reflected in a connected landscape (Tripathi, 2021:77). Alan Marcus of the World Economic Forum (2016) describes the economic activity as a result of increasing internet usage as the eGDP (the gross domestic product of a country as a result of the internet and hyper-connectivity). Marcus estimates that as of 2016, the global eGDP was worth approximately 4.2 trillion dollars (World Economic Forum, 2016). The eGDP amount was approximately 3.5 times more than the oil and gas industries during 2016 (World Economic Forum, 2016). The eGDP has grown tremendously since 2016, and it is predicted by Inter-American Development Bank (2018) that by 2025, the eGDP will be worth $23 trillion globally. The International Monetary Fund (IMF) (2018) makes use of the term digital economy to describe the economic activity of a country as a result of economic transactions, actions and processes that result from any online connections between individuals, businesses, devices, data, and processes

(Deliotte.com, 2019). South Africa has a digital economy that makes up approximately 2% (R59 billion) of the country's economy (dtps.gov.za, 2021).

Hyper-connectivity has several benefits which include the following (SAP Digital Report, 2015:6; Khan et el., 2020:285):

- Big Data: Massive amounts of data are collected through constant communication between the physical and digital worlds. Companies that can access the data can use it to generate insights that will enable the companies to give consumers exactly what they want when they want it.
- Data-driven business approaches: Businesses can use the data gathered from the hyper-connected interactions to generate insights and automate tasks. This will save the business time and money and highlights new opportunities.
- Effective collaborations: Hyper-connectivity assists businesses in more effective collaborations with partners which span across geographies.
- Anytime-anywhere: Communication can happen anytime, anywhere; that is, it is ubiquitous. Consumers can contact businesses globally and businesses can interact with service providers and clients worldwide, 24/7. 'Time' and 'place' are no longer limiting factors.

While there are several potential advantages and positive outcomes of hyper-connectivity, there are also several inherent threats due to IoT and technology use. These threats of hyper-connectivity include (Genner, 2016; Lee, 2021a:28):

- Theft of information: Data that is gathered through hyper-connected interaction can be stolen by others and used in an unethical manner.
- Impact of atomisation: Hyper-connectedness has led to more tasks being atomised. As such, there is no need for an individual to do a specific task. This atomisation thus results in individuals losing their jobs.
- The digital divide: Hyper-connectedness provides opportunities for business, education, and development. However, more developed countries with easier and more affordable access to the internet and good infrastructure will see more of these benefits than developing or less developed countries (Genner, 2016:190; United Nations, 2021:104). During the COVID-19 pandemic, many governments worldwide

focused on closing the digital divide as the majority of learning, working, shopping and communicating was forced to take place online.

An example of hyper-connectivity can be seen during the 2019–2020 COVID-19 pandemic. Many countries, such as Taiwan, used IoT technologies and big data to assist in slowing the rate of infection within their countries (Broga, 2020). During the outbreak, Taiwan integrated the country's national health insurance database with the country's immigration database (Yourex-West, 2020, Duff-Brown, 2020). QR code scanning of flight tickets and online reporting of medical history was also used to collect travel and medical data. These data were used to create a management system that coordinated the health and travel data of the citizens (Yourex-West, 2020). The data were used to alert hospitals and clinics about the potential at-risk patients, which assisted in early diagnoses and treatment of the patient. The data were also used to identify potential cases of the virus before the individuals entered the country. The individual's travel route and medical history were tracked and analysed over the 14 days before entering the country. The individual was notified via text message if they were classified as high or low risk based on their travel routes. Those individuals that were classified as high risk were quarantined, and those that were classified as low-risk were given medical authorisation to enter the country (Duff-Brown, 2020). The high-risk individuals were provided with government-issued mobile phones, which monitored their location. If an individual left their designated location or turned off their mobile phones, authorities were immediately alerted (Broga, 2020). Artificial intelligence was also used to send out real-time digital updates, which alerted citizens about locations where the infection had been detected and reminded citizens to avoid these locations (Broga, 2020). Civil society used these data to create tools to assist citizens in tracking their exposure to the virus. One such tool makes use of Google Maps timelines to detect if an individual could have come into contact with an area where a case of the virus was detected (Broga, 2020). These technological interventions assisted Taiwan in managing the spread of the virus within the country.

As can be seen in the example of the Taiwanese government discussed above, the concept of hyper-connectivity is driven by the increase in internet connection and

mobile device usage. The next section provides an overview of the increase in internet connectivity and mobile device usage worldwide.

1.2.1 The increase in internet connection and mobile device usage

The commercialisation and expansion of the web (an information system that links documents, graphics and audio that can be accessed over the internet) from the 1990s spurred the growth in technology and has since become a key aspect of individuals' everyday lives (Tong, Hancock & Slatcher, 2016:16; Bottomley, 2020:2). Mobile devices (handheld or portable computing devices such as laptops, smartphones, tablets), faster networks, ease of connectivity, and affordable connections to the web, combined with the development of software applications, have converged to reshape how individuals interact with each other and with the world around them (Vermesan & Friess, 2015:2; Subhani & Amjad, 2020:105).

Internet statistics indicate that the world is increasingly becoming more connected to the internet and the web (Oyedemi, 2021:330). Internet statistics also show that more than half (65.6%%) of the world's population are internet users, and almost two-thirds (66.6%) of the world's population are mobile device users (Internetworldstats.com, 2022; We Are Social and Hootsuite, 2021a:133). Furthermore, more than half (53.6%) of the world's population are active social media users (We Are Social and Hootsuite, 2021a:79). During the 2020 Coronavirus (COVID-19) pandemic, worldwide internet traffic increased by 15–20% in June 2020 and subsequently decreased by 24% in May 2021, as lockdown restrictions eased worldwide, compared to restrictions in May 2020 (Clement, 2021).

Turning the focus to South Africa, more than half of the population (57.5%) are internet users, indicating that over 34 million people within the total population of South Africa are connected (Internetworldstats.com, 2022). More than half (60.71%) of the South African population accessed the internet through mobile devices by 2021 (Statistia.com, 2021a). Internet traffic in South Africa climbed since the COVID-19 restriction was implemented in 2020, with an increase of over 15% across the SEACOM network, which operates one of the major undersea fibre cables of South

Africa (Vermeulen, 2020). According to research conducted by Nielsen (2020a), the number of consumers who shop online in South Africa also increased by 29% in 2020 due to the COVID-19 lockdown restrictions.

The rapid increase in internet connectivity has also resulted in the growth of ownership of mobile devices that can connect to the internet, which are increasingly being used to assist individuals with everyday activities (Singh, Mondal, Singh, Sahoo & Das, 2020:2). For example, global positioning systems (GPS), available on mobile devices through applications such as Google Maps and Waze maps, allow individuals to find easy travel routes or locations in their vicinity or even further afield. People can also access e-mails (work e-mail as well as private e-mails) from a mobile device, search for information through a search engine such as Google, communicate and interact on social networking sites such as Facebook and even bank online (such as payments, checking balances, purchasing products) through mobile devices. The digital report by We Are Social and Hootsuite (2021a) indicates that 88.4% of internet users access social networking apps, 69.4% use shopping apps, 67.2% use entertainment and video apps, 61.8% use map apps and 52.9% use music apps on a mobile device.

Owing to the COVID-19 restrictions, social distancing measures and lockdowns of many countries, consumers are working and learning from home, making more online purchases, and consuming more streaming and online content (Mehta, Saxena & Purohit, 2020:294). Research by We Are Social and Hootsuite (2020a) indicated that during the COVID-19 pandemic and lockdown restrictions of 2020, there was a 76% increase in smartphone usage, 45% in laptop computer usage, 32% in desktop computer usage, and 22% in tablet device usage. The research by We Are Social and Hootsuite (2020b) also indicated that individuals spent more time conducting activities online: 57% spent time on shows or films on streaming services, 47% on social media, 46% on messenger services and 39% on listening to music on streaming services. The streaming service, Netflix, noted that the number of hours individuals spent on streaming increased by over 20% worldwide during the COVID-19 pandemic lockdown restrictions (Alexander, 2020).

Faster and more pervasive internet connectivity and mobile devices are not only bringing individuals and technology closer together, but they are also fostering the internet of things (IoT), which is enabling hyper-connectivity (Euromonitor International, 2015a:3; Khan et al., 2020:280). The IoT will be discussed in the following section.

1.2.2 The internet of things (IoT)

As technology advances and connectivity to the internet and the web increases, there is a move towards connectivity between communication devices and things or objects embedded with microchips, wireless and internet protocol (IP)[2]-based technologies, as well as between people and the devices and objects in question (Settembre, 2012:5; Subhani & Amjad, 2020:5). The connection between wireless/IP-based devices and objects is the IoT (Hamilton & Webster, 2018:252; van der Zeew, van Deursen & Jansen, 2021:3). The IoT, a term first coined by Kevin Ashton in 1999 (Koc, 2020:99), is essentially the wirelessly connected system between application interface devices and things to sensor-enabled devices and things using the internet and the web to link them (Chaudhuri, 2019:3). An application interface device or thing refers to any physical object such as laptops, smartphones, tablets, and wearable devices. A sensor-enabled device or thing refers to cars, kitchen appliances, clothing, and other objects embedded with microchips (a microchip is an integrated computer circuit carried on a small piece of a semiconductor such as silicon). Microchips have also been implanted even in humans (Baldini, Botterman, Neisse & Tallacchini, 2018:906). Anything onto which or into which a wireless IP microchip can be attached or embedded can be connected to all other devices connected to the internet. Figure 1.1 illustrates the IoT connection between application interface devices such as smartphones, smartwatches, and tablet devices used by people, the wireless and IP-based technologies such as Wi-Fi connection and sensor-enabled devices or things such as smart cars, smart home devices, and GPS enabled devices.

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[2]IP refers to the set of rules that govern the format of the data that is sent over the internet (World Bank, 2021:25).
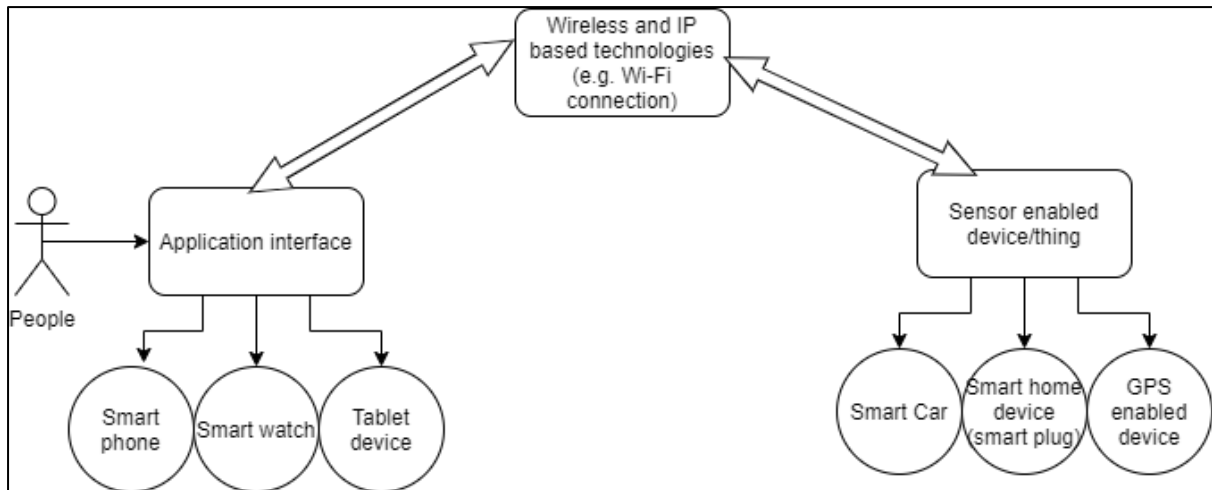
Figure 1.1: Illustration of IoT connection

Industries such as aviation, automotive, telecommunications, agriculture and manufacturing have started using IoT (Subhani & Amjad, 2020:15). IoT has enabled industries to increase efficiency and has assisted in transforming large amounts of data into valuable information (Guarda, Leon, Augusto, Haz, Cruz, Orozco & Alvarez, 2017:629). An example of how IoT is of great assistance can be seen in the aviation industry. The IoT functionalities allow airlines to monitor aircraft in real-time and collect essential data during the flight (Verma, Shula & Sharma, 2021:6). Sensors that are placed on the wings of the aeroplane can provide pilots with information on wind and temperate and can be used to improve fuel efficiency (Verma, Shula & Sharma, 2021:6). Another example of IoT technology is in the automotive industry, where IoT technology has assisted in making autonomous cars (self-driving cars) a reality. IoT provides autonomous cars with information about the road, such as the actual path, navigation, traffic ahead, and how the car should avoid any obstacles (Khayyan, Javadi, Jalili & Jazar, 2020:50). IoT sensors within the car collect data about the drivers' preferences and update the software accordingly (Khayyan, Javadi, Jalili & Jazar, 2020:50).

IoT is built to enhance the well-being of individuals in conducting activities. Technological devices based on the IoT are also assisting consumers in improving their everyday lives (van der Zeew, van Deursen & Jansen, 2021:1). An example of the IoT used to improve the consumer's everyday life include wearable devices. Wearable devices include any device that an individual will wear on their body, such as a smartwatch or glasses. Wearable devices are now being installed with sensors

and software that can collect data such as the individual's heart rate, fitness levels, stress levels, exercise progress, and even electrocardiogram (EKG) data (Thapliyal, 2017:66). The wearable device is linked to the individual's mobile device, such as a smartphone or tablet, and information is transferred from the wearable device to the mobile device.

The surge in the move towards increased connectivity between devices, objects, people, and machines prompts a move of the world towards hyper-connectivity (Vermesan & Friess, 2015:1; Pandey, Singh, Sharma & Sharma, 2020:45). The hyper-connected consumer will be discussed in the following section.

1.3   THE HYPER-CONNECTED CONSUMER

The world is moving towards a hyper-connected reality in which individuals and technology are constantly connected and communicating (Holmes, 2015; Lee & Kim, 2018:102). The continuous connection to wireless/internet-connected devices (i.e., IP) and objects, as well as people, has led to the hyper-connected consumer (Hwang, Suk, Kim & Hong, 2018:583).

The hyper-connected consumer refers to consumers who are constantly connected online to the internet and on the web through various devices such as smartphones, laptops, tablets, wearable devices and desktop computers (Ceccotti & Vernuccio, 2015:442; Piatrov & Kusá, 2020:790). Hyper-connected consumers are 'always-on' individuals (individuals who have a continuous connection to the internet through a device) (Khan et al., 2021:283). They are accustomed to using various digital devices (defined as any device that contains a computer or microcontroller and can receive information, store it or send digital information to another device) that make the purchasing process easy, effortless, and convenient (Tawfik, 2017:25).

According to research conducted by Euromonitor International (2015a) and GFK Global (2017), the hyper-connected consumer has several characteristics, which include the following:
• Continuous access to the internet

- Uses multiple digital devices daily (such as a smartphone, tablet, laptop or desktop computer)
- Daily internet access on at least one digital device
- Owns a smartphone and at least one other device that can connect to the internet (such as a tablet, laptop, desktop computer and wearable device)
- Spends more than four hours a day on a smartphone
- Has more than nine software applications used regularly on smartphones
- Makes use of a social communication application (such as WhatsApp) on a daily basis
- Visits a social networking site daily (such as Facebook or Instagram)
- Accesses e-mails daily through a digital device
- Regularly does banking online
- Regularly makes purchases online

Euromonitor International, (2015a) and Lee & Kim, (2018) confer that with the continuous evolution of technology, increased connectivity to the internet and access to the web, the hyper-connected market is growing. Research conducted by Vodafone Limited (2015:7) indicated that Britain's people are increasingly becoming a hyper-connected society. Consumer research in India conducted by GFK Global (2017) showed approximately 41 million hyper-connected consumers in India. The GFK Global (2017a) research report indicates that as India becomes increasingly connected, the number of hyper-connected consumers increases. According to the GFK Global's (2016) Connected Index for 2016, Hong Kong, North America and the United Arab Emirates had the highest score regarding how connected consumers are in those countries (GFK Global 2016). The COVID-19 pandemic accelerated the adoption of online channels and digital devices for learning, working, shopping, and entertainment. Many individuals rely on digital channels during isolation and the countrywide lockdown restrictions, fostering a hyper-connected environment (Evans, 2020a:3).

As the world moves increasingly towards hyper-connectivity, the more the hyper-connected consumer market grows. Gaining greater insights into the hyper-connected consumer and the way in which they make purchase decisions will contribute to the

academic literature and enable marketers and businesses to serve the hyper-connected market better. The current literature on hyper-connectivity (as can be seen in Table 1.1) looks at how the world and society are moving towards hyper-connectivity and discusses the technology behind hyper-connectivity. The select research discussed in Table 1.1 demonstrates that although hyper-connectivity has an influence on society, the current research does not focus on how hyper-connectivity impacts individual consumers behaviour and their decision-making processes. Table 1.1 indicates some of the available academic literature on the topic of hyper-connectivity.

Table 1.1: Select available literature on hyper-connectivity

Author(s)	Discussion
Yoo (2021)	Yoo (2021) researched the vulnerability to cyber-attacks in a hyper-connected environment. The research analyses the characteristics of hyper-connected society and the changes in security paradigms. The research indicates the importance of developing a security policy that focuses on the stability of the entire hyper-connected network system.
Khan, Raj, Marwah, Agrawal and Wani (2021)	The research aimed to determine the "effect of hyper-connectivity and its implications in various forms where the flow of data and information is very important in real quick time and can help to understand consumer behavior". The conceptual research indicates that IoT and the increased usage of technology and devices have brought individuals closer to hyper-connectivity.
Swaminathan, Sorescu, Steenkamp, O'Guinn and Schmitt (2020)	In the theoretical research study, the authors address branding in a hyper-connected world. The research asks the questions, "what are the roles and functions of branding?", "how is brand value co-created, and how should the brand be managed within a hyper-connected world?". The authors discuss how hyper-connectivity has led to new roles in branding and how traditional branding roles have changed due to hyper-connectivity.
Passarelli and Angeluci (2017)	The research looks at hyper-connected contemporary society. In the literature review, the authors study and discuss how technology has evolved with the key focus on the IoT, the shifts towards mobility and connectivity, as well as digital inclusion. The study focuses on the Brazilian centre at the University of Sao Paulo and provides a theatrical framework to guide the university's research in a hyper-connected society.
Bauer (2016)	In this research article, Bauer (2016) builds on previous research to build a socio-technical model that can be used to examine the contribution of hyper-connectivity to income inequality. The research focuses on digital connectivity and income inequality and how technology and connectivity can be used to enhance and create new economic opportunities.
Choi (2014)	Choi (2014) aimed to address IoT challenges and the technical requirements from service providers in moving towards a hyper-connected society. The research discusses the IoT and the technology that will bring about a hyper-connected world that disruptive technologies and rapid innovation will drive.
Bauer, Mammerle, Schlund and Vocke (2015)	This study examined the digital transformation that is leading to 'industry 4.0'. This digital transformation is leading towards a hyper-connected society and economy. Bauer, Mammerle, Schlund, and Vocke (2015) indicate that the organisations' approach towards hyper-connectivity and industry 4.0 should not only focus on technological transformation but also include skilled and qualified employees.
Settembre (2012)	Settembre (2012) discussed the technology and connectivity that is used to foster hyper-connectivity and that is leading towards a hyper-connected

	world. The research aimed to provide a scenario of a hyper-connected world and how the technology used can maintain consumer expectations, lead to economic benefits, and turn data into meaningful social benefits.

As can be seen from Table 1.1, there is limited academic literature and research that focuses on the hyper-connected consumer and how the hyper-connected consumer behaves and makes purchase decisions. A search on SCOPUS (one of the largest academic databases), using the keyword hyper-connectivity, was conducted in the subject areas of business management, economics, arts and humanities, and social science. The search results indicated 30 research articles that were reviewed for the research. A further search was conducted using the keywords consumer behaviour and consumer decision making, which resulted in four articles that were reviewed for the research. The results of the SCOPUS search support the limited academic research on hyper-connectivity and consumer decision-making and support the need for the current research study. In the next section, consumer behaviour and the consumer decision-making process will be discussed.

1.4 CONSUMER BEHAVIOUR AND THE CONSUMER DECISION-MAKING PROCESS

Understanding consumers' behaviours and their decision-making processes are essential to the success of a business (Hoffman & Bateson, 2017:90; Troise, 2020:2). Businesses offer consumers value propositions, that is, products and services that the consumer needs and views as valuable in their lives (Babin & Harris, 2021:2). To provide consumers with products and services that will add value to the consumers' lives, the business must know who their consumers are, understand their habits, why they purchase, how they purchase, and the processes they go through in making decisions (Cunningham, 2018:69).

Consumer behaviour is the study of how individuals think, behave, and make their decisions (Babin & Harris, 2021:5). It is the process of how the individual goes about searching for, purchasing, paying, and consuming products and services to satisfy their needs and wants (Sethna & Blythe, 2019:6). Engel, Blackwell and Miniard (2006:4) define consumer behaviour as "activities people undertake when obtaining, consuming and disposing of products and services". This definition is a generally

accepted definition that highlights what consumers do when they make purchase decisions (Sethna & Blyth, 2019:6).

Consumers are complex beings and how they interact with their environment and make their decisions is unique to each individual (Sethna & Blythe, 2019:6). The consumer's behaviour can be influenced by many factors, before, during and after consumption (Babin & Harris, 2021:289). Several factors influence the consumer's behaviour and, essentially, the consumers' decision-making process. These factors include the following (Hoyer, Macinnis, Peters, Chan & Northey, 2021:12):

- External influences: The external online and offline social or group factors that influence the consumer such as culture, reference groups, social class, family, and marketing activities such as segmentation.
- Internal influences: The psychological factors that will influence the consumer and includes factors such as perception, learning, motivation, lifestyle, attitudes, personality, and self-concept.
- Market characteristics: The physical environment in which the consumer lives and includes factors such as the economy, climate, government, and technology.
- Personal characteristics: The personal aspects of the consumer, such as their age, gender, and race that they are inherently born with. These are their biographical and physiological characteristics.
- Self-concept and lifestyle: The consumer's self-concept (consumers' images of themselves) and lifestyle (how consumers live their lives) develop various needs and wants. It is these needs and wants that then trigger the consumer's decision to buy a product.
- The consumer's decision-making process: All aforementioned factors will influence the consumer's decision-making process. The combination of these various factors (external influences, internal influences, market characteristics, personal characteristics, self-concept, and lifestyle) is reflected in how a consumer makes their choices.

Consumer behaviour is linked to the decision-making process that a consumer goes through when deciding to purchase (Dixit, 2017:48). Decision-making refers to the process that the consumer goes through to identify, research, and decide upon the

best alternative to fulfil the consumption needs of the consumer (Dixit, 2017:9). The next section will provide a discussion on the consumer decision-making process.

1.4.1 The consumer decision-making process

How consumers behave and make decisions have been of interest to researchers for decades (Bray, 2008:2; Voramontri & Klieb, 2019:212). As early as the 1700s, economists such as Nicholas Bernoulli started to examine how consumers make decisions (Crafter, 2015:24). Bernoulli developed the 'Utility theory', which views the consumer as an 'economic man' who makes rational decisions that can be predicted (Ranyard, 2018:20). Many consumer decision-making models have since been developed to understand and predict consumer behaviour (Santos & Goncalves, 2021:2).

Some seminal decision-making models, known as the 'grand models', include Reflective Thinking, The Simon Model, the Nicosia Model, the Engel, Kollat and Blackwell Model, and The Theory of Buyer Behaviour (Pantano, 2020:205). Table 1.2 provides a brief description of each model and its authors.

Table 1.2: Some of the 'grand models' of consumer decision-making

Author(s)	Name of the model	Description
Dewey (1910)	Reflective Thinking	This model, which stems from educational philosophy, proposes several consecutive steps aimed at assisting individuals in becoming more efficient in analysing and solving problems. These steps include 1) a felt difficulty; 2) its location and definition; 3) suggestions of a possible solution; 4) development by the reasoning of the bearings of suggestions; 5) further observation and experiment leading to acceptance or rejection.
Simon (1959)	Simon Model	In the Simon model, decision-making is viewed as a cognitive process: intelligence activity, design activity, and choice activity.
Nicosia (1966)	Nicosia Model	The Nicosia model focuses on decision-making after the consumer has been exposed to communication from the organisation. The model makes use of a flow of events that has different stages. There are four fields in this model: communication of information to affect the consumer's attitude, the search and evaluation process, a decision, and an outcome in terms of behaviour.
Engel, Kollat and Blackwell (1968)	Engel, Kollat and Blackwell (EKB) Model. It was later renamed the Engel, Blackwell and	It is an extension of John Dewey's (1910) problem-solving model. This model indicates that the decision-making process has several stages: need recognition, search for information, pre-purchase evaluation of alternatives, purchase, consumption, post-consumption evaluation and

	Miniard model (EBM).	divestment. The EBM model is further discussed in section 1.4.2 as well as in chapter 3.
Sheth and Howard (1969)	The Theory of Buyer Behaviour	The model, which focuses on choosing a brand when the consumer has limited information, was constructed to include a wide range of consumer purchasing scenarios. The major components of this model include input variables, intervening/hypothetical variables, exogenous variables, and outputs.

Source: Stankevich (2017) and Pantano (2020)

The seminal models discussed in Table 1.2 were each developed to try and gain a better understanding of consumer behaviour and consumer decision-making. The EBM model, compared to the other grand models, considers a wider range of factors and sub-factors that can contribute to the decision-making of the consumer. The EBM model is also the most adaptable to various contexts. Owing to the comprehensiveness of the model, the EBM model of the consumer decision process is adopted by most scholars (Chung & Lai, 2017:218) and will be used as the theoretical framework for the current research. The following section discusses this model.

1.4.2 The Engel, Blackwell and Miniard model of the consumer decision process

The EBM model was developed to extend John Dewey's (1910) five-stage reflective thinking problem-solving model (Sethna & Blythe, 2019:74). Dewey, an educator and philosopher, introduced a problem-solving model known as the 'reflective thinking' model, which consisted of several consecutive stages (Sethna & Blythe, 2019:74):

1 A felt difficulty

2 Its location and definition

3 Suggestions of a possible solution

4 Development by the reasoning of the bearings of suggestions

5 Further observation and experiment leading to acceptance or rejection

John Dewey's problem-solving model was applied to a consumer behaviour context by Engel, Kollat and Blackwell, who developed a theoretical framework to stimulate the consumer's decision-making process (Teo & Yeong, 2003:350; Sethna & Blythe, 2019:74). The EBM model of the consumer decision process essentially indicates that

consumers go through a continuous process when making decisions (Chen & Lin, 2016:780; Ghani, Halim & Rahman, 2020:221). Throughout the decision-making process, consumers are influenced by various stimuli which influence their decision-making process (Bhalerao & Pandey, 2017:1100).

Over the years, the Engel, Kollat and Blackwell (EKB) model of the consumer decision process has evolved and was also renamed the Engel, Blackwell and Miniard (EBM) model due to contributions from Professor P. W Miniard (Engel, Blackwell & Miniard, 2006:70). Throughout the research study, the model will be referred to as the 'EBM model' of the consumer decision process. The EBM model illustrates that consumers go through seven stages when making a purchase decision (Engel et al., 2006:70):

- Need recognition: The consumers' buying process starts when they have identified the need or a problem. The need can be triggered by internal (hunger, thirst) or external (advertisements) stimuli that the consumer is exposed to.

- Search for information: Once the consumer has identified a need, the consumer will start searching for information on how best to solve this need or problem. The consumer gathers information internally from their memories and experiences as well as externally from the marketplace or speaking to people.

- Pre-purchase evaluation of alternatives: The consumer will evaluate the alternatives that were identified during the search for information stage. How the consumer makes the comparison is dependent on the individual.

- Purchase: Once the consumer has the intention to make the decision, two factors will influence their actual purchase decision: the attitude of others and unexpected situational factors. The consumer's actual purchase of a product may be linked to what influential people think about the purchase. Unexpected situational factors such as income, price and expected benefits will also influence the actual purchase decision.

- Consumption: After the purchase, the consumer will take ownership of the product and consume it. At this stage, the consumer will use the product or service that was purchased.

- Post-consumption evaluation: Once the product or service is consumed, the consumer will evaluate the product and determine if they are satisfied or not with the product or service. Whether the consumer is satisfied or dissatisfied with the

product will depend on the consumer's expectations versus the product's actual performance.

- Divestment: Divestment refers to how the product or service waste, packaging or materials is disposed of after consumption.

Each stage of the EBM model consists of factors and sub-factors that influence the consumer and contribute to the consumer's decision at the specific stage. Table 1.3 indicates the stages of the EBM model as well as the factors and sub-factors.

Table 1.3: The stages of the EBM model and the factors and sub-factors that influences the consumer

Stage in the EBM model	Factors	Sub-factors
Need recognition	Memory	• Experience • Stimuli
	Environmental influences	• Culture • Social class • Personal influences • Family • Current situation
	Individual differences	• Consumer resources • Motivation and involvement • Knowledge • Attitude • Personality, values, and lifestyle
Search	Internal search	• Memory • Experience • Habit
	External search	• Stimuli from the market • Social groups (Friends, family, opinion leaders) • Information gathered from marketing promotion • Media reports • Online web search
Pre-purchase evaluation of alternatives	Evaluative criteria	• Price • Brand name • Country of origin • Emotions/feelings
	Determine choice alternatives	• Evoked (Consideration) set
	Assessing choice alternatives	• Cut-off's • Signals
	Select a decision rule	• Compensatory • Non-compensatory
Purchase	Intentions	• Fully planned purchase • Partially planned purchase • Unplanned purchase

	Individual differences and Environmental influences	• Motivation • Knowledge • Attitude • Personality • Values • Culture • Social class • Personal influences • Family • Current situation
Consumption	Consumption behaviour	• When the product is used • How the product is used • Where the product is used • How much is consumed
	Consumption experience	• How does it feel • How rewarding or punishing was the experience • Did it confirm or disconfirm expectations
	Consumption norms and rituals	• Consumption norms • Consumption rituals
	Compulsive consumption	• Uncontrollable behaviour
Post-consumption evaluation	Satisfaction	• Product performance • Consumption feelings • Expectations
	Dissatisfaction	• Cognitive dissonance
Divestment	Disposal	• Recycling • Selling • Outright disposal

Source: Adapted from Engel et al. (2006)

Although commended and widely used, the EBM model of the consumer decision process has some criticisms (Osei & Abenyin, 2016:267). The variables of the EBM model are too vague and restrictive to sufficiently account for all consumer's decision situations (Bray, 2008:18; Hanemaayer, 2019:181). The EBM model is also a rational process, while consumers may behave irrationally when making decisions (Stankevich, 2017:8; Ghani, Halim & Rahman, 2020:223).

Notwithstanding these outcomes, the EBM model of the consumer decision process will be used as a theoretical backdrop for the research. The next section will provide a discussion on the proposed theoretical model.

1.5 PROPOSED THEORETICAL MODEL

The EBM model of the consumer decision process has been used in many research studies to gain greater insights and understanding of consumer behaviour in various contexts. Over time, many scholars (Lantos, 2015; Schiffman and Wisenblit, 2019; Kotler, Armstrong and Opresnik, 2016; Hettiarachchi, Wickramasinghe and Ranathunga, 2017; Mehta, Singh, Banerjee, Bozhuk and Kozlova, 2020; Solomon, 2020 etc.) have amended the EBM model to focus on five core stages. These core stages are, need recognition, search for information, evaluation of alternatives, purchase decision, and post-purchase behaviour. Post-purchase behaviour combines the stages of consumption, post-consumption evaluation and divestment). Table 1.4 outlines a select few of the research studies conducted using the amended five-stage EBM model. Appendix C provides a more comprehensive list of research conducted on and with the amended EBM model of the consumer decision process. It is clear from previous research studies, as indicated in Table 1.4, that the five stages that have been condensed from the original EBM model are widely accepted as the core stages of the consumer decision-making process.

Table 1.4: Research conducted using the EBM model

Author(s)	Discussion
Phuan, Nguyen, Ha, Linh and Link (2021)	The research aimed to examine the effects of five factors (electronic word of mouth, attitude, subjective norms and perceived behavioural control) on the buying intention of clothing in the online-to-offline model. A conceptual model was developed, making use of the EBM model. The research found that attitude, subjective norms, and perceived behavioural control significantly affected online-to-offline purchase intention.
Ho and Law (2020)	This study investigated the decision-making process of students and the factors that influence their decision to choose hospitality and tourism degree programs. The authors make use of the 5 stages of the consumer decision-making process (need recognition, information search, alternative evaluation, purchase decision and post-purchase behaviour), as well as the 7ps of marketing. The results indicate that students' choice of the degree program is influenced largely by marketing communication.
Guo, Kim and Kim (2020)	Guo, Kim and Kim (2020) indicate five stages of the EBM, with the empirical analysis of their research focusing on the purchase decision stage. Their research aimed to investigate the effects of word-of-mouse (mouth) (WoM) information on the consumer's motivation and willingness to make a

	purchase. The results indicate that internet word-of-mouse (mouth) indirectly affects consumer behaviour by affecting the consumer's attitude.
Xu and Chen (2017)	Research conducted by Xu and Chen, 2017, indicated that the EBM five-stage model of the consumer decision process was used to understand consumers' purchase intention in traditional clothing purchase channels to develop corresponding marketing methods for traditional fashion stores to improve their marketing. Their research used structured questionnaires and hypothesis testing to identify a model with the key factors of the consumer clothing purchase decision-making process (Xu & Chen, 2017:1).
Osei and Abenyin (2016)	Osei and Abenyin (2016) applied the EBM model of the consumer decision process in their research in exploring the five stages in the decision-making process regarding which social media is more influential on the decision to travel to Ghana. The research made use of questionnaires that were administered to international tourists at three distinct tourist destinations in Ghana. The study found that the EBM model of the consumer decision process remains valid in studying consumer decision-making regarding consumer social media usage (Osei & Abenyin, 2016:272). The research results showed that consumers make use of social media in the entire decision-making process and more prominently during the evaluation of alternative stages (Osei & Abenyin, 2016:273).
Ashman, Solomon and Wolny (2015)	Ashman, Solomon and Wolny (2015) evaluated the EBM model of the consumer decision process to determine the relevance of the model in online culture. A conceptual study was done based on five stages of the EBM model: need recognition, search for information, evaluation of alternatives, purchase decision and post-purchase behaviour, by Ashman et al., (2015:127). These authors found that the EBM model of the consumer decision process is still relevant in that it provides useful insights into the consumer's decision-making process within an online context.

The proposed theoretical model for this study was developed based on the EBM model to determine the decision-making of the hyper-connected consumer. The EBM model and its factors/sub-factors (constructs) are also used to develop a measuring instrument to identify the latent factors that influence the decision-making of the hyper-connected consumer. The research proposes four stages of the decision-making process instead of the traditional seven and condensed five stages of the EBM model. It is noted in the research that the post-purchase behaviour stage of decision-making occurs once the decision has already been made (Fikiri, Pane & Ahmad, 2020:361). Post-purchase behaviour consists of the consumer's actions that are as a result of the consumer's satisfaction or dissatisfaction with the purchase. The consumer may write a review about their purchase experience on an online review platform, communicate their feelings regarding the product on social media or engage with the brand through various online and offline platforms to express their satisfaction or dissatisfaction. The consumers actions post-purchase often does not influence the current decision that is made and often feeds back into the decision-making process for future purchases (Fikiri et al., 2020:361). The post-purchase behaviour stage thus cannot be seen as a

dependent variable and, as such, does not apply to this study. The four stages of the proposed theoretical decision-making process of the hyper-connected consumer are:

Need recognition: A need is recognised when the consumer realises a discrepancy between their actual and desired state (Hoyer et al., 2021:26). A need is triggered by an internal search, environmental influences, and individual influences that a consumer is exposed to.

Search for information: Once the consumer recognises a need, they will start searching for information that will help them solve the need (Solomon, 2020:325). A consumer can search for information from internal or external sources.

Evaluate alternatives: When the consumer has gathered information about how to solve the need, they will then look at their various options (Solomon, 2020:325). The consumer will evaluate alternative brands and products based on criteria, standards and perceptions of value and quality.

Purchase decision: When the consumer has considered all their options, the consumer will make the final purchase decision and make the actual purchase (Solomon, 2020:325). The purchase decision will be influenced by the consumer's intention and environmental influences and individual differences. The purchase decision is nebulous as the decision itself occurs in the mind of the consumer. Consumption, however, is an indication of the results of the purchase decision. As such, consumption can be seen as a proxy of purchase decisions.
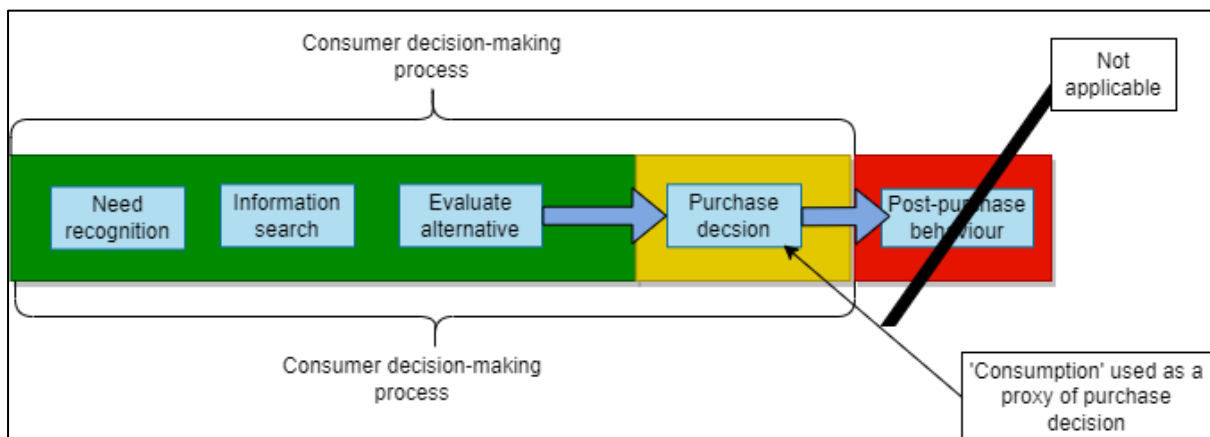
Figure 1.2: Constructs for the theoretical model to determine the decision-making process of the hyper-connected consumer

Figure 1.2 indicates the constructs for the theoretical model to determine the decision-making process of the hyper-connected consumer. Chapter 3 provides a

comprehensive discussion on the theory of the EBM model that is used to develop the theoretical model of the hyper-connected consumer's decision-making process as well as a detailed discussion and illustration of the proposed theoretical model of decision-making for the hyper-connected consumer. The next section addresses this study's research question.

1.6 PROBLEM STATEMENT

The increased reliance on technology is moving the world towards hyper-connectivity as consumers become hyper-connected (Euromonitor International, 2015a:4; Tripathi, 2021:75). The hyper-connected consumer is a growing market. Yet, there appears to be a lack of literature and research (both in the academic as well as the industry and business contexts) on the hyper-connected consumer and how they make decisions. A search on well-known academic bibliographic indices such as the Scopus, Web of Science, ProQuest, Google Scholar and EBSCOhost was conducted to identify any previous research. The results of the search indicated limited research, specifically on hyper-connected consumers and their decision-making processes. Although the existing literature as indicated in Table 1.1 does touch on hyper-connectivity, there is limited research on the hyper-connected consumer and the processes that they follow when making decisions. The lack of academic literature highlighted a gap in the research regarding the hyper-connected consumer and their decision-making process.

Understanding how consumers makes decisions is essential for businesses to be able to provide goods and services of value to their target market. In order to better understand the decision-making of consumers several decision-making models have been developed. The existing models have been developed in specific context and are often limiting in the context of hyper-connectivity. The problem that is thus highlighted is that there is no decision-making model to determine how the hyper-connected consumer makes decisions. The purpose of the research is thus to develop a conceptual model of the decision-making process of the hyper-connected consumer that can be used by both business and academia in better understanding the decision-making process of the hyper-connected consumer.

As the world changes and consumers evolve and become increasingly hyper-connected, the question arises as to how does the hyper-connected consumer makes purchase decisions?

The research question for this research is thus as follows: *What is the decision-making process of the hyper-connected consumer?*

The research objectives of the study, which are derived from the research question, are stated in the following section.

1.7 RESEARCH OBJECTIVES

The primary objective of the research was to determine the decision-making process of the hyper-connected consumer within South Africa to better understand the growing hyper-connected market.

The secondary objectives, which were derived from the primary objective, included the following:
- determine the profile of a hyper-connected consumer within South Africa,
- identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer,
- propose a conceptual model from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa,
- confirm the underlying factor structure of the proposed conceptual model of the decision-making process of the hyper-connected consumer, and
- determine areas of future research.

This study will be delineated to focus on the hyper-connected consumer in a South African context for practical and cost reasons.

1.8 RESEARCH METHODOLOGY

This section will provide an overview of the research design, the sampling techniques used, the data collection, data analysis and interpretation as well as the ethical considerations for the research.

1.8.1 Research design

The research design was approached using the 'research onion' framework proposed by Saunders, Lewis and Thornhill (2007:128). Saunders et al.'s (2007) 'research onion' consists of several research layers that assist in the selection of the data collection techniques and processes.

The research philosophy adopted was that of a post-positivist research paradigm and followed a quantitative research approach. A post-positivist research paradigm focuses on gaining more knowledge about a problem through precise and measurable methods that will provide factual knowledge (Brennen, 2017:9; Reinchenberger, 2021:5).

There are two approaches to theory development: inductive and deductive (Saunders, Lewis & Thornhill, 2019:152). The inductive approach entails the development of theory from the research, whereas the deductive approach starts with theory and tests the implications of the theory (Alturki, 2021:3). The research assumes a deductive approach as the research approach moves from theory to an empirical investigation.

To address the research question and objectives, the methodological choice adopted for the research is that of quantitative research. The descriptive research approach was considered appropriate for the research as it provided an in-depth description of the specific group being studied (hyper-connected consumers) (Gravetter & Forzano, 2020:315). Descriptive research also allows for identifying any patterns in the decision-making process of the hyper-connected consumer (Scharrer & Ramasubramanian, 2021:5).

The empirical investigation for the study consisted of two parts. The aim of part 1 of the empirical investigation was to identify and extract latent factors that influence the decision-making process of the hyper-connected consumer. Part 1 of the empirical investigation also validated the research instrument. The research strategy used for part 1 of the empirical investigation was that of an online survey administered to a database of consumers. The research instrument for part 1 was developed from the literature review. As indicated previously, the proposed theoretical model is based on the theory of the EBM model. As such, the items used in the research instrument originated from the theory surrounding the EBM model. Exploratory factor analysis was conducted to explore the factor structure of the proposed theoretical model for the latent factors that influence the decision-making process of the hyper-connected consumer. The survey included qualifying questions based on the characteristics of a hyper-connected consumer found within the literature review (see chapter 2), which was used to determine if the respondents were hyper-connected. The results of part 1 of the empirical investigation identified and extracted six factors proposed as the latent factors, which influence the decision-making of the hyper-connected consumer. The six latent factors that were identified were used to propose a conceptual model of the decision-making process of the hyper-connected consumer.

The aim of part 2 of the empirical investigation was to confirm the structural validity of the underlying latent factors identified in part 1 and to determine the structural validity of the six-factor conceptual model of the decision-making process of the hyper-connected consumer that was proposed in part 1. The questions for the questionnaire used for part 2 of the empirical investigation were the same as those used in part 1. The format and structure of some of the questions (question 8 was adapted from a ranking question to a Likert scale question) were, however, slightly adapted based on the results of part 1 to attain more granular feedback. Part 2 of the empirical investigation also provided more insight into the profile of the hyper-connected consumer and the decision-making process of the hyper-connected consumer. The research strategy that was used was that of an online survey. The online survey was sent out to a different database of consumers. The survey included qualifying questions based on the characteristics of a hyper-connected consumer found within

the literature review to identify the hyper-connected consumers from the database of consumers.

The time horizon of the research was that of cross-sectional as the data were collected at one point in time (Saunders et al., 2019:212). Once the data had been collected, they were analysed. The sampling approach that was used for the research is discussed in the next section.

1.8.2 Sampling approach

For the empirical investigation, a population census was not practical as the population was too large. Instead, a sample of the population was selected for investigation, and the findings from the sample were used to infer a view about the population (Gravetter & Forzano, 2020:111). The sample population, sample size, and sampling method used for the study are discussed in the following sections.

1.8.2.1 Defining the sample population

The sample population represents the larger population to which the research will be generalised (Hair, Page & Brunsveld, 2020:356). For the research, any individual who has ever made a purchase (online or in-store/traditional purchase methods) was considered a consumer and was included as part of the population of the empirical investigation. The sample population for both part 1 and part 2 of the empirical investigation included consumers between the ages of 18 and 65 and residing within South Africa.

1.8.2.2 Establishing the sample size

The sample size for the empirical investigation was determined by evaluating three methods often used to calculate sample size, the item-to-respondent ratio basic rule of thumb of 1:5, the sample size based on previous research, and the online Raosoft sample size calculator. According to all three methods of calculating the sample size, for the study to be measurable for both part 1 and part 2 of the empirical investigation, a minimum of 300 respondents was required for each part.

The sample frame refers to a list of the individuals within the sample population who are being selected to participate in the research (Struwig & Stead, 2011:109; Hair et al., 2020:356). The sample frame for both part 1 and part 2 of the empirical investigation consisted of consumers between the ages of 18 and 65, who resided within South Africa, and who were willing to participate in the research. The sample frame included a database that consisted of various consumers in terms of age group, gender, income, and location within South Africa. The database of consumers for part 1 of the empirical investigation was acquired with the assistance of a South African-based research and data consultant agency, iFeedback. During part 2 of the empirical investigation, the data consultant agency Springvale Online was used to acquire a database of consumers. Different data consultancy agencies were used as the research required a different database for each part of the empirical investigation to generate accurate results.

1.8.2.3 Determining the sampling method used

Probability sampling was used for both part 1 and part 2 of the empirical investigation. Its methods ensured that each element of the sample frame had a known non-zero probability of being selected to participate in the research (Arnab, 2017:4; Hair et al., 2020:102). Using simple random sampling, the researcher selected the consumers to participate in the research from the database. The simple random sampling allowed each element in the sample to have an equal chance of being selected (Brase & Brase, 2017:21). Simple random sampling makes it possible to generalise the results to the population (Hair et al., 2020:102).

1.8.3 Data collection process

The data collection method for both part 1 and part 2 of the empirical investigation involved an online, web-based survey (see section 1.8.1). An online, web-based survey was deemed appropriate as it provides access to a large group of potential respondents. The research instrument developed for part 1 of the empirical investigation consisted of questions linked to the constructs of the consumer decision process of the hyper-connected consumer identified from the literature. Likert scales were used to measure the level of agreement or disagreement with various statements

regarding the different constructs of the proposed consumer decision-making process of the hyper-connected consumer. The research instrument for part 2 of the empirical investigation consisted of the same questions used in part 1; however, the format, order and structure of some of the questions were slightly adapted. The data were automatically captured when respondents submitted their responses; this was also helpful to the researcher to complete the survey on their own time (Scharrer & Ramasubramanian, 2021:73101). In addition, being automated, responses were easily and instantaneously captured. Consumers who were selected to participate in the research were sent an email with a link to an online survey platform to capture the responses.

1.8.4 Reliability and Validity

Construct validity, content validity, and face validity was tested for the empirical investigation. To test construct validity of the instrument factor analysis was conducted for both parts 1 and 2 of the research. To access the face and content validity of the measuring instrument used for both parts of the empirical investigation, a pilot study was conducted to scrutinise the measuring instruments.

For the empirical investigation, Cronbach's alpha was used to test the reliability of the research instruments of both parts 1 and 2.

1.8.5 Data analysis and results

During the data analysis stage, the collected data were edited, cleaned, and coded, and missing data were dealt with (Hair et al., 2020:327). The data collected for part 1 and part 2 of the empirical investigation were analysed with the assistance of the statistical software Statistical Package for the Social Science (SPSS) 27 with AMOS. In part 1 of the research, exploratory factor analysis (EFA) was conducted to examine the factor structure of the theorised model of the decision-making process for the hyper-connected consumer. EFA was conducted to identify any underlying relationships between the variables identified from the literature based on the EBM model (Hair et al., 2020:395).

In part 2 of the empirical investigation, structural equation modelling (SEM) with confirmatory factor analysis (CFA) was conducted to validate the theorised model. CFA measured if the constructs used were consistent with the constructs identified in part 1 of the research. Descriptive analysis was conducted for parts 1 and 2 of the empirical investigation to provide more insight into the samples and develop a profile of the hyper-connected consumer.

1.9 ETHICAL CONSIDERATIONS

Ethics is an essential aspect of any research that will involve the participation of humans as respondents. The participants' rights, dignity, and interest were ensured and protected for parts 1 and 2 of the empirical investigation. The respondents' participation was voluntary, and respondents were able to withdraw from the research at any time. The privacy of the participants was ensured. To conduct the research, the researcher obtained permission from the Research Ethics Committee of the Department of Marketing and Retail at the University of South Africa (see Appendix D). The ethical considerations are revisited in chapter 4.

1.10 DELIMITATIONS

The primary limitation of the research is the lack of research regarding the hyper-connected consumer in terms of consumer behaviour and decision making. The lack of academic research on the hyper-connected consumer and decision-making process of the hyper-connected consumer leads to some difficulty in adequately describing and identifying hyper-connected consumers. Because this research focuses on the hyper-connected consumer, a lack of clear characteristics used to identify the hyper-connected consumer could limit the generalisability of the profile of the hyper-connected consumer.

A digital divide within the South African population could also be a limitation for the research as this could result in a small sample frame of hyper-connected consumers. A digital divide refers to a gap between individuals who have a readily available internet connection and access to a laptop, computer, smartphone, or any other device (Vimalkumar, Singh & Sharma, 2021:1058; Genner, 2016:190). Mobile

telecommunications as well as internet access is said to play a vital role in uplifting socio-economic activities, business development, education, financial inclusion and job opportunities (Arakpogum, Elsahn, Nyuur & Olan, 2020:2). The lack of infrastructure in South Africa as well as the high cost of data has created a digital divide that has resulted in a large portion of the population not having access to telecommunications technology and the internet (Vimalhumar et al., 2021:1058).

1.11 EXPECTED CONTRIBUTION TO KNOWLEDGE

Over time the world has transformed, the environment has changed, economies have risen and fallen, technology has advanced and consumers themselves have evolved. In the current digital age where the internet, the web, digital devices, and the IoT have moved the world towards hyper-connectivity, consumers, consumer behaviour, and their decision-making have also changed (Adobe, 2016:1). Understanding consumers and changes in their behaviours and habits is essential to business success. An in depth understanding of consumer behaviour will provide business and marketers with knowledge on the right products and services to offer their customers. As the hyper-connected consumer market increases, businesses and marketers need to better understand these hyper-connected consumers and how they make decisions. Knowledge of the hyper-connected consumers' decision-making process will provide businesses and marketers with a better understanding of serving the hyper-connected consumer market.

The hyper-connected consumer is continuously being targeted in business and the industry (Vodafone, 2015:5). However, there is limited academic research on hyper-connected consumers in terms of their decision-making processes. There is also a lack of academic research on the hyper-connected consumer in the context of a developing country such as South Arica. The existing literature discusses how technology and the IoT have led to a hyper-connected society as a whole (as can be seen in Table 1.1) but does not focus on the hyper-connected consumers themselves and their decision-making processes. This research will thus contribute to the body of knowledge by providing more insight into the hyper-connected consumer and their decision-making process. The research will also benefit the South African market by

providing knowledge on the decision-making process of the hyper-connected consumer and on how to serve the growing segment better.

The outline of the rest of the chapters will be discussed in the following section.

1.12 PROPOSED CHAPTER OUTLINE

Chapter 1 introduces the research study, provides background on hyper-connectivity and the hyper-connected consumer. The chapter provides the rationale for the research based on a preliminary literature review. The problem statement, research objectives, and broad research methodology are discussed in this chapter.

Chapter 2 provides an overview of the concept of hyper-connectivity and the hyper-connected consumer. Technology has had a significant impact on the world; this chapter discusses the evolution of technology and the movement towards hyper-connectivity. The hyper-connected consumer is defined, and the characteristics of a typical hyper-connected consumer are explained.

Chapter 3 provides an overview of consumer behaviour and the consumer decision-making process. Various consumer decision-making models are briefly discussed. The EBM model of the consumer decision process, which is the theoretical backdrop for this research, is discussed. The proposed theoretical model for the decision-making process of the hyper-connected consumer is proposed.

Chapter 4 explains the research methodology that the research followed. The research process followed will be focused on. The research design, the sampling techniques, data collection, and analysis techniques are explained, as outlined by Saunders et al.'s (2007) 'research onion'.

Chapter 5 presents the findings of part 1 of the empirical investigation. The data that is collected in part 1 of the empirical investigation will be discussed and analysed. Chapter 6 presents the findings of part 2 of the empirical investigation. The data that is collected in part 2 is discussed and analysed.

Chapter 7 provides the conclusion of the research and further recommendations for the study.

1.13 SUMMARY

This chapter introduced the concept of hyper-connectivity and explained the internet and IoT, which have led to hyper-connectivity. Subsequently, it discussed the hyper-connected consumer. The chapter defined consumer behaviour and discussed the consumer decision-making model used as the theoretical framework for the research and the EBM model of the consumer decision process. The aims and objectives of the research were indicated as well as the research methodology that will be used for the research. The chapter ended with an overview of the expected contribution to knowledge, the research's expected limitations, and the chapter outline.

As the research focuses on determining the decision-making process of the hyper-connected consumer, chapter 2 will provide an overview of hyper-connectivity and the advances in technology that have led to hyper-connectivity. The definition of a hyper-connected consumer will be discussed, and the characteristics of a hyper-connected consumer will be explained in chapter 2.

CHAPTER 2
THE MOVE TOWARDS HYPER-CONNECTIVITY

2.1   INTRODUCTION

The preceding chapter (chapter 1) introduced the research aims underpinning this study. The concepts of hyper-connectivity and the hyper-connected consumer, as well as the consumer decision-making process, were introduced. Chapter 1 also highlighted the research question, "*what is the decision-making process of the hyper-connected consumer*?". In addressing the research question, chapter 2 starts with the literature review to support the research, with a deeper discussion of hyper-connectivity and the hyper-connected consumer.

Human beings are inherently social creatures with a need to connect, communicate and interact with each other (Chan, 2020:61). As the world has evolved and technology progressed, how individuals connect, communicate and interact with each other has also evolved and has led to a stage where individuals can connect and interact with each other virtually, by using a digital device (Sashi, 2020:1644). Technology has made it possible for individuals to be connected at any time and place (ubiquitously) through devices that can connect to the internet using IP technology (Unni, 2020:272). As technology advances, the connection between individuals is being extended to enable them to connect to objects and things connected to the internet (Yan, Filieri & Gorton, 2021:7). These connections are also possible between the objectives and devices themselves via the internet. The connections are constant and ubiquitous; they can be accessed at any time or place. It is the constant connection between individuals and between objects and individuals that is leading the way towards hyper-connectivity (Thwaites, 2020:374).

Hyper-connectivity, coined by Quan-Haase and Wellman (2005), refers to the "continuous connection and communication between people and machines, devices and objects as well as machines to devices, objects and individuals" (Bell, 2021:1). Hyper-connectivity involves the rapid increase in the connectedness of individuals, organisations, devices and objects that have resulted from the growth of three phases

of technological advancements, the internet, mobile and wireless technology and the internet of things (SAP Digital Report, 2015:5; Pandey, Singh, Sharma & Sharma, 2020:25). Several characteristics are associated with hyper-connectivity; it is always on, interactive, information-rich, always recording and about communication between people, objects and things (Chung, Park & Lee, 2017:20). Hyper-connectivity has spurred a 'creative reinvention' of how consumers behave, make decisions and interact with the world around them and have led to hyper-connected consumers (PWC, 2018:2).

The coronavirus (COVID-19) pandemic of 2020 prompted an unprecedented increase in the use of technology, internet connectivity, online shopping, increased time spent on digital activities, as well as the use of digital devices globally (Sharma, Anand, Ahuja, Chakraborty, Mondal, Singh, Kohil & Venkateshan, 2020:171). Many countries worldwide went into a lockdown or quarantine to curb the spread of the COVID-19 and implemented strict social distancing, travel restrictions, non-essential business closures, and isolation strategies. As a result, individuals turned towards online channels and digital technology for shopping, schooling, work, fitness and entertainment (Evans, 2020a:6; Sharma et al., 2020:171). The rapid increase in connectivity and use of digital technology to conduct daily activities has accelerated the digital transformation worldwide and has been a catalyst for hyper-connectivity (Evans, 2020b:1; Sands, 2020:2).

This chapter will present a detailed theoretical discussion on hyper-connectivity and the hyper-connected consumer. The evolution of technology and the phases of technological advancements that have led to hyper-connectedness will be addressed. The chapter will continue by highlighting the impact of hyper-connectivity on society and consumers. Finally, a description of the hyper-connected consumer will be provided.

2.2   THE EVOLUTION OF TECHNOLOGY TOWARDS HYPER-CONNECTIVITY

Over the past three decades, the world has experienced incredible technological changes (Hynes, 2021:10). In the 1980s, few households around the world had access to a personal computer; the web was still being established and cell or mobile phones were just being developed (Fisher-Baum, 2017; Bansal, Nanda & Husain, 2021:199). During the 1990s, the web was introduced into the public domain, opening it up to anyone who had a computer (Grossman, 2018), and mobile phones became publicly available (Whitman & Mattord, 2021:7). The 2000s brought about many innovations in technology, such as portable touchscreen digital music players (iPods), touchscreen smartphones, social media platforms, wearable devices and even electronic currency (Graham & Dutton, 2019:26). Technology has progressively advanced between the 1990s and 2000s and has become part of individuals' everyday lives (Reinecke, Aufenanger, Beutel, Drieir, Quiring, Stark Wölfling & Muller, 2016:91; Whitman & Mattord, 2021:8). The advancement of technology has fostered easy and accessible communication and ubiquitous connection between individuals, devices, and objects, which has led to hyper-connectivity (Monaco, Minneman & Joseff, 2020:17).

Hyper-connectivity has been spurred by the growth of three essential advancements in technology: the internet, mobile and wireless technology, and the internet of things. These technologies will be discussed in the following sections.

2.2.1   The internet

The Internet was first started in 1969 as a networking project by an agency of the United States Department of Defence, the Pentagon's Advanced Research Project Agency (ARPA) (Hynes, 2021:11). The project's goal was to build a network that would allow scientists at different locations to share information and that would function even if part of the network were to be destroyed (Whitman & Mattord, 2021:7). The network, which was called ARPANET, consisted of four main supercomputers located in different universities around the United States. The four supercomputers served as the host (a computer that provides a connection and services to other computers on a network) for the network as a whole (Vermaat, Sebok, Freund, Campbell, & Frydenberg.2018:4). Dr Leanord Klieinrockon's study on "information flow in large

communication nets" where he developed technology and the mathematical theory of data communication was used in developing ARPANET (Calderon, 2020:65). Dr Leanord Klieinrockon is a graduate of the Massachusetts Institute of Technology. As the ARPANET project grew, the government, large corporations and more universities started linking to ARPANET. By 1984 over 1 000 individual computers were linked as hosts to ARPANET (Vermaat et al., 2018:4).

The internet, defined as the global network that connects computer systems across the world through telephone lines, cellular or satellite connections (Strauss & Frost, 2016:7; Britannica.com, 2021), has grown and become more widely available since it was first established in 1969 (Naughton, 2016:23; Murphy, 2019). In 1995, only about 0.4% of the world's population was connected to the internet (Carter, 2018). By the end of March 2021, approximately 65.6%% of the world's population had internet connectivity (InternetWorldStats.com, 2022). Figure 2.1 illustrates the growth of internet access worldwide.
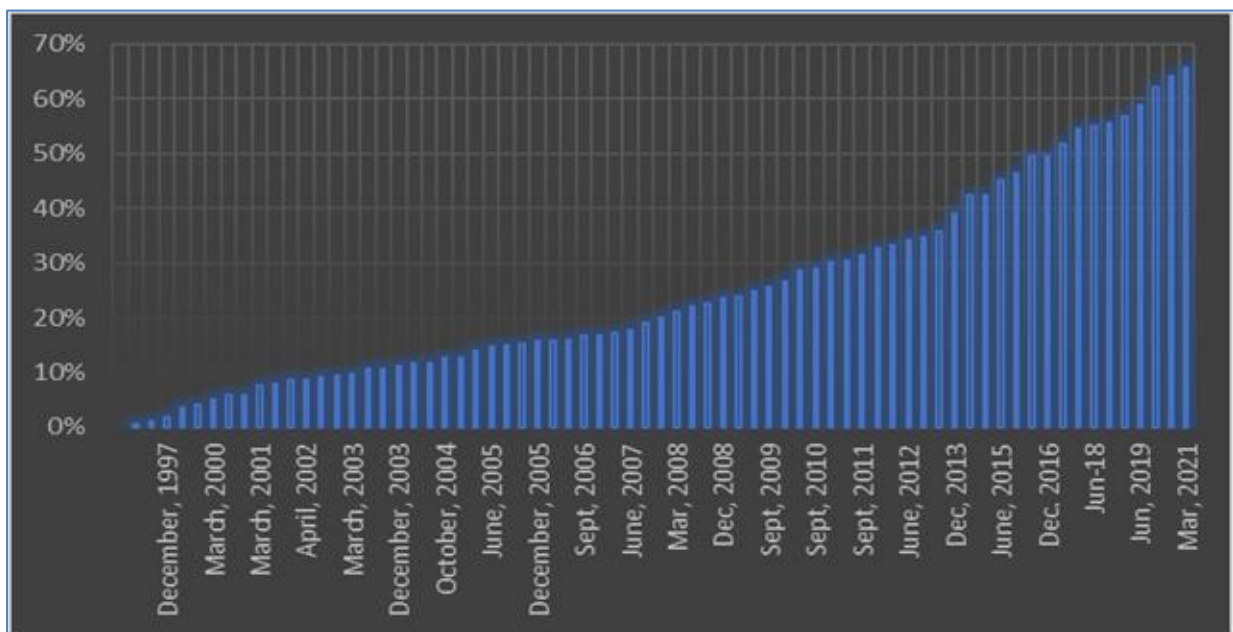
Figure 2.1: Internet growth statistics
Source: InternetWorldStats.com (2022)

In South Africa, the first internet protocol connection was made on 12 November 1991, between the computer centre at Rhodes University and the home of Randy Bush (who is considered a pioneer in the early days of the internet) in the United States (Leigh,

2019). Internet connectivity has since grown in South Africa. By the end of March 2021, more than 57.5% of the South African population was connected to the internet (InternetWorldStats.com, 2022). According to Seacom (one of South Africa's major undersea fibre cables), internet traffic within South Africa drastically increased since the national state of disaster and lockdown was implemented due to the COVID-19 pandemic in March 2020 by more than 15% (Seacom.co.za, 2020). The number of internet users grew by above 4.5% between 2020 and 2021 (Kemp, 2021).

The commercialisation of the web in the early 1990s was a factor that spurred the growth of the Internet (Naughton, 2016:8; Blair, Duguid, Goeing & Grafton, 2021:253). The web was developed as a subset of the internet and was created in 1989 by software engineer Sir Tim Berners-Lee at CERN (the European organisation for nuclear research) (Webfoundation.org. 2018; Whitman & Mattord, 2021:7). The web is an information system that links, using the concept of hypertext and hyperlinks and developed by Berners-Lee (Safdar, Javed & Amin, 2020:3375), documents, graphics and audio that can be accessed over the internet (Strauss & Frost, 2016:5; Merriam-Webster.com, 2021a). Several other factors that have driven the growth of both the internet and web include (Bothma & Gopaul, 2015:7; InternetSociety.org, 2021; Abbate, 2021):

- The expansion of local networks
- The development of global telecommunication infrastructure
- The growth in personal computers, laptops, tablets, smartphones
- The development of digital devices that can receive, store and send information from one device to another
- The ubiquitousness of the Internet Protocol

Ultimately, the growth of the internet and web has been driven by the convergence of the above technologies.

How the internet is accessed and used has evolved and changed and, the infrastructure of the network itself has also evolved and grown (Naughton 2016:18; Abbate, 2021). The evolution of the internet can be categorised into four essential phases; connectivity, networked economy, immersive experiences and internet of

things (Hanes, Salgueiro, Grossetete, Barton & Henry, 2017:5). These are discussed in Table 2.1.

Table 2.1: Phases of internet evolution

Phases of internet evolution	Discussion
Connectivity phase	The connectivity or digitised access phase connected individuals to web browsers, e-mail and made access to information easy through search capabilities.
Networked economy	The networked economy or digitised economy phase enhances business efficiency by enabling e-commerce and providing supply chain enhancements.
Immersive experiences	The immersive experience or digitised interaction phase digitised the face-to-face interactions. The immersive experience phase provided an extension to the Internet that allowed for more social interactions while being connected through a mobile device. Immersive experiences include technology such as augmented reality (AR), which enhances reality; virtual reality (VR), which immerses the user inside a digital reality, and mixed reality (MR), which uses elements from VR and AR (Maas & Hughes, 2020:232). Augmented reality uses a smartphone camera and screen to add a computer-aided simulation on top of the real world (Maas & Hughes, 2020:232). Virtual reality uses hardware that immerses the user in a digital reality with which they can interact (Maas & Hughes, 2020:232). Mixed reality uses sensors and imaging technology to allow a user to immerse themselves in a virtual world while allowing the user to interact with the real world (Maas & Hughes, 2020:232).
Internet of things	The internet of things phase is characterised by the connection between machines and objects and human beings. The internet of things will be discussed in more detail in section 2.2.3.

Source: Adapted from Hanes, Salgueiro, Grossetete, Barton and Henry (2017)

The internet has become an integral part of society, changing their lives into a dynamic space that fosters connectivity, communication, collaboration, commerce and expression (Internet Society, 2017:17). Individuals have started using the internet to partake in various activities, such as communication, business, shopping and even crime (Naughton, 2016:18; Evans, 2020a). Digital devices, such as smartphones, tablet devices, and laptops, that can access the internet have provided instant and ubiquitous contact and access to the world and have developed the user and touched every aspect of their lives (Lelouch & Gomez, 2020:311).

Figure 2.2 illustrates the most common activities that individuals worldwide partook in at any given minute on the internet during 2021. Figure 2.2 illustrates that individuals use the internet to communicate via various communication platforms such as text messages, WhatsApp, social media (Facebook, Twitter, Snapchat, Instagram), and e-mail. Individuals also spend their time watching television programmes on platforms such as Netflix, searching for information on search engines such as Google, and

shopping on various online stores. Figure 2.2 illustrates the importance and undeniable role that the internet plays in individuals' lives and businesses worldwide.
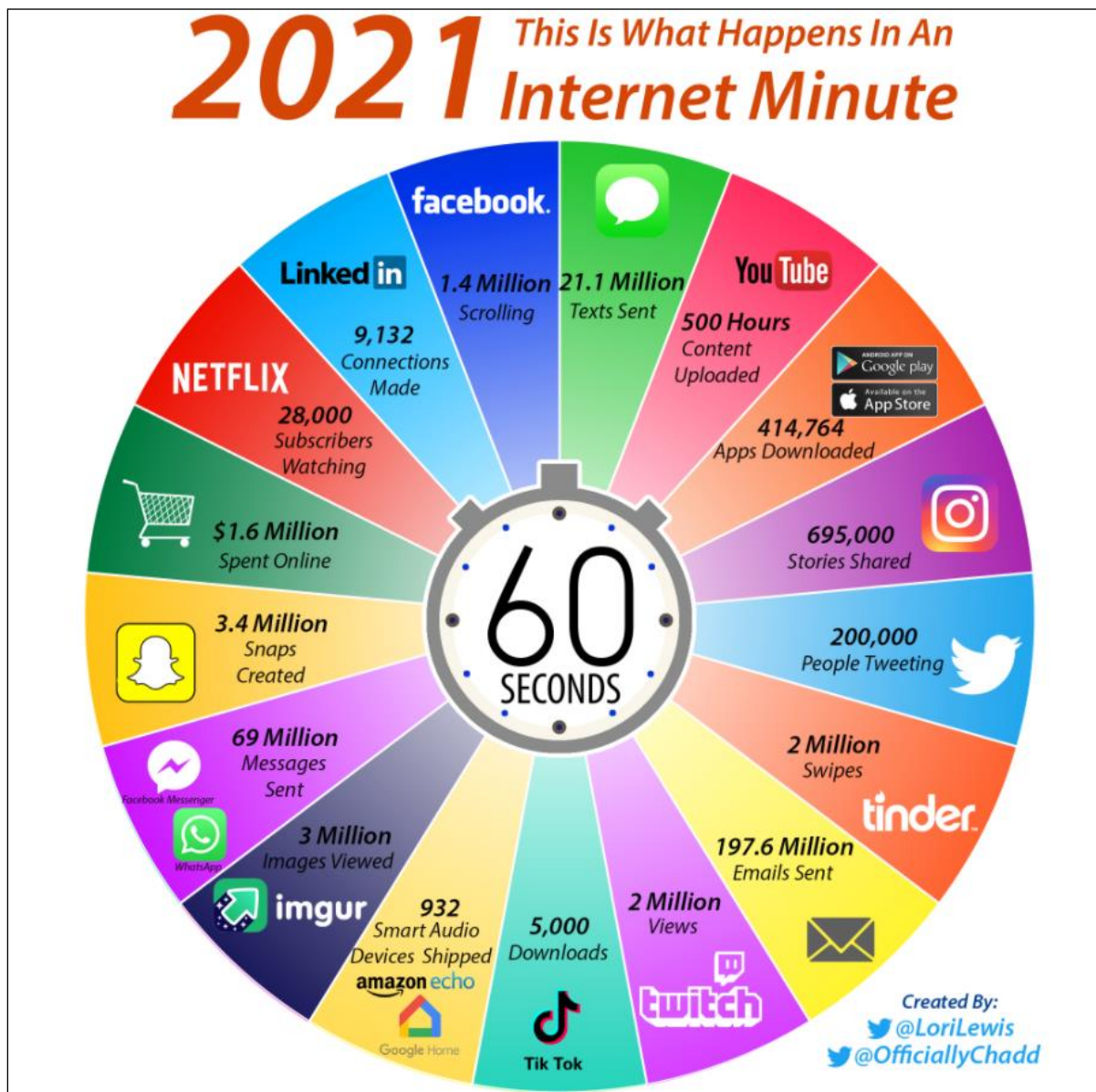
Figure 2.2: Activities that individuals partake in on the internet within a minute worldwide
Source: Lewis (2021)

According to World Wide Worx (2021), the most common use of the internet in South Africa is communication, followed by accessing social media platforms. Approximately 41% of the South African population are active social media users and 93.2% of Internet users use the communication application WhatsApp (We Are Social and Hootsuite, 2021b:10). The most visited websites in South Africa include Google.com, social media sites Facebook, YouTube, and Netflix (Davis, 2021). According to We

Are Social and Hootsuite (2021b:62), 89.3% of the South African internet users visited an online retail store and 57.7% of internet users in South Africa have made an online purchase through any device. The statistics discussed indicate that South Africans are accessing the internet to conduct activities in their everyday lives.

As the coronavirus spread throughout the world, individuals were forced into isolation. Nearly every aspect of everyday life was moved online, with individuals depending increasingly on software applications, internet connections and digital devices to socialise, work, learn, shop and have fun (Hutchinson, 2020). Even though lockdown restrictions were lifted by June 2020, many behaviours adopted during the lockdown have endured, increasing various digital activities (Kemp, 2020). Research by We Are Social and Hootsuite (2020c) indicates an increase of greater than 8% in global internet usage worldwide since July 2019. We Are Social and Hootsuite (2020c) also found that just over half (51%) of the world's population used social media, with 99% of individuals accessing social media through a mobile device. This is an increase of above 376 million new social media users since July 2019 (We Are Social and Hootsuite, 2020c:25). South Africa is among the top four countries worldwide that have experienced increased social media usage, with an increase of up to 50% (Simpson, 2020). The Philippines (64% increase), Brazil (58% increase) and India (55% increase) have also experienced a large increase in social media usage (Simpson, 2020).

We Are Social and Hootsuite (2020c) states that even though COVID-19 lockdown restrictions were lifted by the end of 2020 in many countries, there remained an increased usage of connected devices. GlobalWebIndex (2020a) found that 7 of 10 individuals continued with the increased usage of their mobile devices even after the lockdown restrictions were lifted in their countries. Research by GlobalWebIndex (2020a) indicates that individuals are increasingly using voice commands and image search to conduct search activities. Video conferencing has also increased tremendously worldwide, with greater than 300 million meetings per day occurring on the Zoom app alone (We Are Social and Hootsuite, 2020c).

2.2.2 Wireless and mobile technologies

Wireless and mobile technology are essential technologies that have revolutionised many industries such as business, communication, transport, industrial, and aeronautics (Qin, Chen & Peng, 2020:4). Wireless is essentially a broad term that incorporates several technologies and devices to transmit data through the air rather than over wires (Shinohara, 2018:1). Wireless technologies use electromagnetic (EM) waves (waves that are a result of continuous vibrations between an electric and magnetic field) to send information in the air from one device to another (Mohamed, 2019:53). Wireless technology includes broadcast radio frequencies, microwave radio, 1G, 2G, 3G[3] networks, Bluetooth, and infra-red.

Mobile technology refers to any hand-held, mobile or electronic device and any software application that facilitates access to information and communication between individuals (Awoyemi, 2018:355). Handheld, mobile or electronic devices include mobile phones (smartphones and featurephones), laptops, personal data assistants, tablet devices, game consoles. Mobile technology uses wireless technology as an underlying structure that facilitates the transfer of information and communication between devices and individuals (Mohamed, 2019:53).

First-generation mobile phones refer to the first generation of wireless communication technology that used analogue transmission techniques to transmit voice signals (Bozanic, & Sinha, 2021:1). Wireless communication technology soon advanced to 2G, 3G and 4G technologies. Second-generation or 2G technology used digital data, which increased the quality of phone calls and provided services such as text messaging, picture messaging, and multimedia messaging (Allam & Jones, 2021:2). Third-generation or 3G technology, which was first launched in 2001, provides a higher speed of data transfer, and it enables users various advanced capabilities such as broadband wireless data, video calls, a global positioning system (GPS), mobile television (Allam & Jones, 2021:3). In the late 2000s, fourth-generation or 4G networks were introduced. The 4G network and 4G long term evolution (LTE) networks were designed to provide a faster and more reliable connection and allow for mobile web

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[3]G refers to the generation of technology.

access, internet protocol (IP) telephony (the use of the internet protocol's packet-switched connection to exchange information such as making voice calls), and video conferencing (OECD, 2017:114; Temdee & Prasad, 2018:73). The next generation of communication technology implemented is fifth-generation or 5G. 5G networks encompass greater network speeds and more stable connections between different devices and applications (Tidke, Uttarwar, Dandwate & Tupe, 2020:61). These 5G networks can integrate elements such as networking, computing, and storage resources into a single unified infrastructure (Tidke et al., 2020:62). Table 2.2 provides a brief description of the wireless communication technology from 1G to 5G. The various speeds of the technology and type of connections of each generation of technology are indicated in Table 2.2.

Table 2.2: Illustration of the evolution of wireless communication technology

1G	2G	3G	4G	5G
1981	1992	2001	2010	2020
Speeds of approximately 2.4Kbps. The analogue voice transmission for basic voice service.	Speeds of approximately 64Kbps. Use of digital data and made provision for text messaging, picture messaging and multimedia messaging.	Speeds of approximately 144Kbps. The higher data transfer speed enables broadband wireless data, video calls, a global positioning system (GPS), mobile television.	Speeds of approximately 100Mbps. Faster, more reliable connection. Allows for mobile web access, IP telephony and video conferencing	Speeds of approximately 1GBps. Provide connections between any type of device or application, anytime, anywhere and for any individual.

Source: Adapted from Tidke et al. (2020)

As wireless communication technology has evolved, mobile technology such as mobile phones has also evolved from bulky and heavy devices with a battery that lasted up to 30 min, to multipurpose smart devices that have advanced computing power, connect to the internet and have much longer battery life and more storage space (Mäyrä, & Alha, 2020:4; Nei, Wang & Lei, 2020:2). Mobile phones have advanced from being substitutes for landline telephones into a device that is a computer, radio, camera, GPS, calendar, flashlight, alarm clock, and can connect the user to the internet and that can run powerful software applications (Nei et al., 2021:3).

Mobile technology and access to the internet are increasingly becoming more affordable and widely available, and, as a result, mobile device usage is growing globally (Granita, Surip, Harwani & Astini, 2021:1520). World population statistics indicate the number of smartphone users worldwide has surpassed more than six billion users (O'Dea, 2021; Worldpopulationreview.com, 2021). In South Africa, mobile phone penetration reached 168.5% in 2021 and 98.2% of internet users owning any type of mobile phone (smartphone and featurephone) (We Are Social and Hootsuite, 2021b:21). The most common mobile devices used by South Africans are televisions, smartphones, basic mobile phones (featurephones), laptops or notebooks, desktops and tablet devices (Galal, 2021). Devices such as wearables (smartwatches), VR headsets and applications on smart TVs have started entering the South African market and on average, consumers in South Africa have 1.5 networked devices that are connected to the internet (eMarketer.com, 2020:142).

The emergence and popularisation of mobile wireless technology and mobile devices (such as smartphones, tablet devices, and laptops) that are internet-enabled have fostered the growth of connectedness (Nie et al., 2021:1). Mobile devices have become part of individuals' everyday lives and are used for learning, work, entertainment, socialising (Cochrane, 2020:1). Mobile devices and wireless technology have been used to assist in managing the COVID-19 pandemic. Technology companies and countries worldwide developed trace-and-track technology and smartphone apps that indicate if an individual has been in contact with someone who has COVID-19 (Nield, 2020). The South African government developed a self-service portal called COVIDConnect, which was accessible on any mobile phone through WhatsApp and SMS (Voigt, 2020). The COVID Connect contract tracing system relies on COVID-19-positive individuals to provide the names and details of any individuals they have been in contact with. The South African government also implemented a more automatic contact-tracing application for smartphones, which uses Bluetooth technology to keep track of who an individual has been in contact with (provided the contacts also have the app on their phones) called the COVID Alert SA app (SACoronavirus.co.za, 2020).

With faster and more reliable wireless communication technologies such as 4G and future 5G networks, the more individuals are becoming connected to their devices and other individuals the more there will be a growth in hyper-connectivity (Afsarmanesh, Camarinha-Matos & Soares, 2016:561; Yan et al., 2021:2).

2.2.3 The Internet of Things (IoT)

The term 'Internet of Things' (IoT) was first used in 1999 in a presentation done by Kevin Ashton at Procter & Gamble. Kevin Ashton used the phrase to explain the use of radio frequency identification devices (RFID) in the linking of Procter & Gamble's supply chain to the internet (Hanes et al., 2017:5; Koc, 2020:99). In Ashton's presentation, he explained the evolution of the Internet as a point where humans empower computers with the ability to gather information "so they can see, hear and smell the world for themselves, in all its random glory" (Ashton, 2009).

As mentioned earlier in section 2.2.1, the internet is a global network of machines that connect and communicate with each other and to connect individuals (Greengard, 2021:32). The IoT, however, is a network that connects individual devices, objects and things to each other and to humans through wireless technology such as Wi-Fi and Bluetooth (Koc, 2020:99). In chapter 1 (section 1.2.2), IoT is explained as a wirelessly connected system between application interface devices and things to sensor-enabled devices and things (Chaudhuri, 2019:3). The IoT integrates various technologies and enables various connected devices to access data and communicate (Singh, Javaid, Haleem & Suman, 2020:522). As can be seen in the discussion above, there are several key terminologies associated with IoT. Table 2.3 provides an outline of the terminology used to describe IoT.

Table 2.3: Terminology used to describe the IoT

Term	Discussion
Application interface	This refers to any object or thing that allows individuals to interact with a computer, such as a tablet computer, smartphone, smartwatch.
Sensor enabled device	Any object or thing onto which a microchip sensor can be embedded into such as clothing, cars, fridges, light switches, and GPS enabled devices.
Device	Physical hardware that provides computing capabilities such as a smartwatch, tablet computer and smartphone (Ranger, 2020).
Object	An object is any material thing that can be physically touched, such as a car, computer, watch, fridge and clothing (Ismail, 2019:3).

Term	Discussion
Thing	A thing refers to any physical object such as clothes, smartwatches, and cars (Ismail, 2019:3).
Machine	A machine in the context of IoT refers to any computing appliance or devices such as a desktop computer, tablet device, or laptop computer (Ismail, 2019:5).

Through software and applications connected to the IoT network, the data collected from devices can then be analysed and various actions or tasks can be initiated from a device (Pandey et al., 2020:44). The IoT has several general characteristics (Table 2.4).

Table 2.4: Characteristics of IoT

Characteristic	Discussion
Flexible structures	The IoT platform is flexible in that it allows for third-party applications to be developed through an application program interface (API – API is software that enables the communication between two applications).
Interconnectivity.	It enables the connection between devices, objects, individuals and the internet, which facilitates communication between the devices, objects, and individuals.
Semantic sharing	The term refers to the ability of a device to share and exchange information or data with unambiguous shared meaning (Rhayem, Mhiri & Gargouri, 2020:1).
Scalability	The technology and devices used must be able to adapt to changes in the environment and the changing needs that may occur in the future.
Heterogeneity	The devices used within the IoT are diverse and are based on various hardware platforms and networks (Ahmid & Kazar, 2021:2). The devices can nevertheless connect and communicate with each other through different platforms and networks.
Flexible structures	The IoT platform is flexible in that it allows for third-party applications to be developed through an application program interface (API – API is software that enables the communication between two applications).

Source: Reka and Dragicevic (2018) and Greengard (2021)

IoT is increasingly integrated into various aspects of everyday lives (Javaid & Khan, 2021:210). Table 2.5 Indicates some examples showing how IoT is being used in homes to create smart homes, in the vehicle industry and the healthcare and sports industries.

Table 2.5: Examples of IoT use

Industry	Example
Home	Devices such as home appliances, alarm systems, multimedia equipment (televisions), lights, thermostats that can connect to other devices and the internet are used to create smart or connected homes (Reka and Dragicevic, 2018:95). Smart homes use IoT technology to monitor and control activities such as temperature control, lighting, security systems, appliances at any time and place through the internet from a mobile device such as a smartphone (Malche & Maheshwary, 2017:65).

Industry	Example
Vehicle	IoT technology is also being used to enhance vehicle performance making vehicles more efficient and reliable (Reka and Dragicevic, 2018:95). Vehicles are being equipped with sensors and devices that connect to each other and communicate with other devices such as smartphones (Steen-Hansen, 2016:764). Information such as fuel levels, tyre pressure and mileage, is then sent to an application on the user's smartphone. The user can also execute activities such as locking the car doors from the smartphone.
Healthcare	The healthcare industry has started using IoT technology to remotely monitor patients, manage patient information and track healthcare equipment (Javaid & Khan, 2021:211). Body sensor networks (BSN), which is a collection of wireless sensors used to monitor the patient's body functions and environment, are one of the IoT healthcare technologies successfully used in the healthcare industry (Subasi, Radhwan, Kurdi & Khateeb, 2018:29).
Sport	IoT is used in sports such as rugby and basketball to track player information in real-time (Chen, 2021:82). In rugby matches, players' clothes are equipped with wireless transmitters that capture the player's real-time position on the field, their movements, the way they tackle their bodies (Brookhouse, 2020). Health information such as their heart rate, breathing patterns and muscle activity is also tracked. The information is used to improve the player and the team's performance (Brookhouse, 2020).

Research within the IoT field indicates how IoT technology can be used to further enhance, simplify or maximise efficiencies in different industries. IoT is seen as a leap in technology that can enhance various industries, businesses, and societies, as illustrated in the select research examples in Table 2.5 (Ronaghi & Forouharfar, 2020:2). As IoT provides real-time information, it can assist in the efficient utilisation of resources and reduce the effort in conducting various activities. Additionally, it provides high-quality data and can lower costs and increase the productivity of businesses (Haaker, Ly, Nguyen-Thanh & Nguyen 2021:2).

There are, however, several major challenges that IoT is faced with: security, privacy and ethical considerations. IoT is essentially an ecosystem made up of connected devices that are sending and receiving information over a network. It leaves room for exposure to various security breaches (Ogonji, Okeyo & Wafula, 2020:4). Large amounts of personal information are sent through IoT networks, and it is essential that security and privacy be prioritised (Tawalbeh, Muheidat, Tawalbeh & Quwaider, 2021:2). The challenges of IoT are discussed in more detail later in the chapter (section 2.3.3). In the next section, the impact of hyper-connectivity will be discussed.

2.3   THE IMPACT OF HYPER-CONNECTIVITY

From the discussion in section 2.2, the world is increasingly becoming hyper-connected because of the interconnectedness that is progressively growing between objects, devices, things and individuals (Passarelli & Vetritti, 2016:187; Ruedas, Serrate & Munoz, 2021:935). Interconnectedness is blurring the lines between the virtual and reality. It facilitates access to an abundance of information and prioritizes interactions between objects, devices, machines, and individuals (Floridi, 2015:2). Various aspects of individuals' daily lives (such as social interactions, business processes, economic and political decisions, and behavioural activities) are increasingly being facilitated by the interconnectedness between objects, devices and things (Nirmalathas, 2018:335).

The more hyper-connected the world becomes, the more it creates opportunities and challenges that directly impact society (Tekinerdogan, Zdun & Babar, 2017; Goodell, 2020:5). Hyper-connectivity provides several opportunities for businesses and society to improve the way they function.

2.3.1   Hyper-connectivity in business

In the case of business, for example, hyper-connectivity increases efficiency and improves productivity, and even improves how services are delivered (Park, 2018:434). A study conducted by Hee in 2016 indicated that through hyper-connectivity, workers in the labour market could be more empowered. The study was based in South Korea and consisted of in-depth interviews revealed that hyper-connectivity could assist independent contractors and freelance workers by expanding the marketplace in which they operate (Hee, 2016:1). Chung, Park and Lee (2017) investigated how consumers, as well as companies, respond to the acquisition of information in a hyper-connected society. The research found that as society becomes hyper-connected, consumers become more active in acquiring information about the company and its products (Chung et al., 2017:20). On the other hand, companies have started blocking information for security reasons, making it more difficult for consumers to contact them directly (Chung et al., 2017:21). Companies are concerned that information exposure could leak company information (Chung et al., 2017:21).

Mercan, Cain, Cebe, Uluagac, Alonso and Cobangolu (2020) analysed the practical implications of hyper-connectivity in the service industry of hospitality. Mercan et al., 2020 posit that hyper-connectivity will assist the service industry of hospitality by reducing bottlenecks, inconsistencies, and variability in the service process.

Owing to hyper-connectivity, businesses have also been forced to rethink how they interact and communicate with their customers (Oswald & Kleinemeier, 2017:34; Bazzoum, 2019, 117). A literature study by Amer, Yahya and Jani (2014) found that hyper-connectivity is an important element that affects the user experience in electronic channel marketing. The research concluded that to meet the expectations of customers living in an increasingly hyper-connected world in which individuals are connected to everything, at any time of the day, at any location and with anyone or any object, businesses must use appropriate hyper-connected technologies to interact and communicate with their customers (Amer, Yahya & Jani, 2014:13). Chauhan and Sarabhai (2019) state that in a world in which the customer is hyper-connected, businesses must use IoT and hyper-connectivity to simplify engagement to offer individualised experiences. Beverungen et al. (2021) postulate that hyper-connectivity provides greater prospects for business processes. In their research, Beverungen et al. (2020) indicate that in a hyper-connected environment, real-time business activity monitoring can enable faster decision-making in reaction to different business situations.

Hyper-connectivity has facilitated big data collection (extremely large amounts of data), which can be analysed to identify trends and patterns (Magrani & de Oliveira, 2019:329). Customer Data that are collected in real-time from individuals' online interactions, social media interactions, from wearable devices such as smartwatches and the various applications on their mobile devices can be tracked and monitored to uncover insights about customers (Amado, Cortez, Rota & Moro, 2017:6). Kim and Hwang (2022) highlight that big data plays a role in connecting technologies that foster hyper-connectivity such as IoT. Ayokanmbi (2021) indicates that knowledge that is extracted from big data has been essential in developing a fact-based, data driven hyper-connected society. Insights that are derived from big data is used by business to drive personalised offerings to customers, develop more precise forecasts and

automate tasks (Blazquez & Domenech, 2018:100). Governments make use of big data that are collected during hyper-connected interactions to keep track of security threats and improve several public services such as health (Lofgren & Webster, 2020:3).

Hyper-connectivity has removed geographic and time limitations, enabling globalised interactions (Cheok, 2016:6; Swaminathan et al., 2020:26). Through hyper-connected interactions, businesses can effectively collaborate with global partners and interact with service providers and customers at any time and place (SAP Digital Report, 2015:6; Bazzoum, 2019:117). Hyper-connectivity also facilitates the formation of specialised communities, as individuals can engage with like-minded individuals from anywhere around the world on various platforms such as social media (The Economist Intelligence Unit, 2015; Fenton, Gillooly & Vasilica, 2020:3).

2.3.2 Hyper-connectivity in society

Colic-Peisker and Flitney (2018) state that hyper-connectivity has impacted how individuals learn, communicate, work, love, seeks entertainment, consume news, make purchases, travel, and even drive. Individuals in a hyper-connected society have instant access to large amounts of data; they create and share content online through social networking sites and often connect socially through devices and even create online identities (Piatrov & Kusá, 2019:790).

Eduardo and Kunaljit (2021) indicate that hyper-connectivity has transformed educational methodologies and protocols. Their research that presents a pilot educational framework, which "stimulates distributed learning through prototyping using remotely controlled mechanical systems," indicates that hyper-connectivity has produced virtual learning that presents a unique opportunity to teach locally and reach students globally (Eduardo & Kunaljit, 2021:567).

Social media is an element of 4IR that has had a big influence in fostering hyper-connectivity (Beverungen et al., 2021:147). Driven by user-generated content, social media encourages hyper-connectivity (Kapoor, Tamilmani, Rana, Patil, Dwivedi &

Nerur, 2018:532). Social media use has evolved from just keeping in contact with friends and family to an ecosystem that provides news, entertainment, shopping, product reviews and even education (Ehlebracht, 2022:44). Wirfs-Brock and Quehl (2019) highlight that due to developments in technology and the growth of social media, individuals have become designers and curators of their news information systems. Individuals in a hyper-connected society use technology and various social media platforms to consume news (Wirfs-Brock & Quehl, 2019:109). Larrea and Hernandez-Settano (2020) postulate that in a hyper-connected society that is revolutionised by continuous connectivity and evolving new technology, individuals can develop online digital identities that can be modified according to individual needs and wants. Individuals have various platforms to present themselves to different digital communities (Larrea & Hernandez-Settano, 2020:940). In their research, Larrea and Hernandez-Settano (2020) found that young people are particularly prone to using social networks to construct identities and build social relationships.

In the hyper-connected environment, which fosters a continuous connection and access to information online, a challenge facing consumers is getting trapped in a "filter bubble" (Wood, 2018:91). The "filter bubble" refers to a phenomenon that can occur when individuals are exposed to limited information on the internet because of the use of algorithms that assume what information an individual is interested in (Masrour, Wilson, Yan, Tan & Esfahanian, 2020:841). Search engines such as Google and social media sites such as Facebook and Instagram use specific algorithms to personalise content for an individual. Based on the individual's past interaction, algorithms filter information and expose the individual to content that the algorithm assumes is in line with the individual's thoughts and ideas (O'Conner & Lages, 2019:61). Individuals are thus unexposed to differentiating views, opinions, and content, thus isolating individuals in an online bubble that limits the individual to ideas and thoughts that they are familiar with (Barker, 2018:88).

The growth in hyper-connectivity can enhance many aspects of business and society; however, hyper-connectivity, as well as IoT, brings with it security and privacy as well as ethical concerns such as security breaches and information theft (Chung, Park & Lee, 2017:20; Curran, 2020:247).

2.3.3 Security and privacy concerns in a hyper-connected world

In July 2019, the technology company Google released a statement announcing that greater than 1 000 audio recordings of customer conversations with Google assistants were leaked (Monsees, 2019). Google Assistant is activated by phrases such as "Ok Google" or "Hey Google" or by physically triggering the Google assistant on a device. Once the Google assistant is triggered, the individual proceeds to ask the Google Assistant to provide information or perform tasks such as calling or timetable an appointment in their calendar. To improve the voice recognition system, Google uses subcontracted language experts who listen to recorded conversations and make corrections to the system (Monsees, 2019). However, leaked recordings revealed that some conversations were recorded without triggering the Google assistant (Haselton, 2019). Some recordings also revealed sensitive information such as individuals' addresses and medical conditions (Haselton, 2019).

The Google assistant example illustrates one of the biggest securities and privacy concerns within a hyper-connected era, leaking of private data. Technology such as IoT that facilitates hyper-connectivity enables the continuous connection and communication between devices. These devices are thus accessible through various connection points, leaving individuals vulnerable to security breaches (Eltayeb, 2017:88). Large amounts of data are also collected through the continuous connection and communication of devices, which lead to three major security and privacy concerns that arise due to the collection of data, data privacy, location privacy and identity privacy (Kumar, Liyanage, Braeken, Ahmad & Yliianttila, 2017:2; Humayun, Jhanjhi, Alruwaili, Amalathas, Balasubramanian & Selvaraj, 2020:4).

Data privacy refers to any threats or harm caused by an individual when private and personal information is leaked to the public (Skopik, 2017:230; Covert, Francis, Steinhagen & Streff, 2020:4379). A large number of individuals' personal data are being communicated in real-time from applications on devices such as banking applications, social networking sites, online shops, etc. to service providers (Information resource Management Association, 2019:125). These service providers are not always open or honest about why they collect and store a piece of certain

information. Service providers can also sell the data to third parties who may use the data for illegal purposes (Kumar et al., 2017:3). How the service providers store the data is sometimes not secure, which could result in consumers' personal data being leaked or hacked (such as the Google assistant example discussed above) (Dawson, 2018:4). The South African Government implemented the Protection of Personal Information Act 4 of 2013 (POPIA) on 1 July 2021 in order to regulate the processing of personal information. The purpose of the act is to "give effect to the constitutional right to privacy by safeguarding information when processed by a responsible part" (Protection of Personal Information Act 4, 2013). POPIA is meant to protect both businesses and consumers from unnecessary risk (Swartz, Veiga & Martins, 2021:2). The POPIA Act regulates how businesses process, store, and use the personal information of customers (Zenda, Vorster & Viega, 2020:2). POPIA allows for collecting big data; however, adequate procedures, policies, and a framework for protecting the data must be developed (Protection of Personal Information Act 4, 2013). All consumers that data are being collected from must also provide consent and the reason and use of the data collected must be known. Individuals must be given the option to opt-out as well as the ability to request that the personal information collected be deleted (Protection of Personal Information Act 4, 2013). POPIA indicates that any data collected that identifies an individual, that can be used to identify an individual or that can be linked to other information that identifies an individual must be removed (Protection of Personal Information Act 4, 2013).

Location privacy refers to the disclosure of information regarding individuals' current and past location data that are recorded by a device or software application (Lee, Vallent & Kim, 2018:11649; Luceri, Andreoletti, Tornatore, Braun & Giodano, 2020:2). Devices such as smartphones and tablets have GPS capabilities that can track an individual's movements (Kumar et al., 2017:4). The data are used by location-based applications to provide individuals with information such as the nearest hospital or police station within a specific location. There is, however, a risk involved as the information gathered from tracking an individual's movements can be used by criminals to harm or take the advantage of individuals (Jiang, Li, Zhao, Xiao & Iyengar, 2021:4).

Identity privacy relates to information such as the individual's name, physical address, telephone details, and login details, password or biometric information required to access online websites or services that are recorded (Strauss, 2019:82). Devices, applications, or websites that record identity information can be hacked or leaked, which can cause serious harm to individuals (idtheftcentre.org. 2019). Criminals often misuse technology to gain private information such as an individual's identity and credit card details to commit fraud (Maple, 2017:166). Criminals use phishing (fraudulent e-mails, text messages, advertisement links purporting to be from reputable companies to entice individuals to provide personal information) to steal credit card details and even the identity of an individual (Basit, Zafar, Liu, Javed, Jalil & Kifayat, 2021:141). The stolen information (identity and credit card details) is then used by criminals to fraudulently open up accounts and make purchases. The leakage of consumers' private data that are collected by organisations can negatively impact the organisation as well. Liberty Group, in 2018, was subject to a hack in which millions of their client's data were accessed by unauthorised third parties (Shapshak, 2018). The third-party individuals who gained access to the information attempted to extort Liberty by threatening to leak the data (Khumalo, 2018). The hack also resulted in the Liberty Group's share price dropping by 4% in value (Shapshak, 2019).

As the connection to the internet grows so does the threat to the security and privacy of individuals and companies worldwide. According to RiskIQ's (2020) research on threats on the internet, cybercrime will cost the world approximately $11.4 million (greater than R190 million) by the end of 2021. RiskIQ (2020) indicates that approximately 375 new cyber security threats appear every minute on the internet. RiskIQ (2020) states that the COVID-19 pandemic has also increased opportunities for cyber-crime with 14.6 COVID-19 related hosts relating to phishing sites created every minute. In South Africa, 37% of consumers reported being victims of COVID-19 related digital fraud (Geldenhuys, 2021).

As technology progresses and the world increasingly moves towards hyper-connectivity, new security and privacy approaches need to be incorporated into networks and devices to protect individuals and businesses from security threats (Ericsson, 2016:1). Miedema (2017:55) proposes that in a hyper-connected world, a

new model for consumer protection is necessary. Rodriguez-Baeza, Magan-Carrion & Ruiz-Villalobos, (2021) indicate that new taxonomies and lines of defence must mitigate security threats in a hyper-connected environment.

2.3.4 Ethical consideration in a hyper-connected world

Hyper-connectivity, which involves the use of IoT technology and systems, has brought about many opportunities in the social, economic, and political landscapes. However, ethical considerations arise due to hyper-connectivity such as privacy and security (which is discussed in section 2.3.3), abusing individuals' identity and permission to use individual's data (Magrani, 2018:154). Ethics refers to the moral principles, which guide individuals and society in terms of what is good and bad and includes fundamental principles of what constitutes good human behaviour and character (Pastor-Escuredo & Vinueasa, 2020:1).

Several ethical issues have appeared within the IoT, which will impact hyper-connectivity (AboBakr & Azer 2017; Mercan et al., 2020:256). These issues, including author identification, public and private borderline, and people's life attacks, are discussed in Table 2.6.

Table 2.6: Ethical issues identified in IoT that impact hyper-connectivity

Issue	Discussion
Author identification	In a hyper-connected environment, large amounts of data are collected about individuals and businesses, and the information can be used without the permission of the individual or business unethically (Kim, 2019:144).
Public and private borderline	Continuous connectedness can lead to a virtually transparent line between the public and private lives of individuals.
Peoples' lives attacked	Hackers or software viruses can lead to the loss of important data. Individuals' medical or financial information can lead to major consequences for individuals.
Digital divide	The digital divide that arises from the discrepancy concerning access to digital devices and internet connection results in a lack of knowledge of information communication facilities (Lee, 2021a:29). The digital divide is a problem of inequality between social groups.

Source: adapted from AboBakr and Azer (2017) and Lee (2021a)

To address ethical concerns of hyper-connectivity, legal regulations and ethics are required to ensure that individuals' privacy is not infringed by businesses (Kim, 2019:254). An organisation should also incorporate strong ethical cultures in how they design systems, software, and devices (Tzafestas, 2018:115). Codes of ethics should

be developed and adopted to ensure that organisations and individuals understand and conduct ethical behaviour in everything they do (Kim, 2019:254).

The internet, mobile technology and IoT are being interwoven into society and, as a result, leading to individuals becoming increasingly hyper-connected (Madni, 2018:5). Hyper-connectivity influences how individuals interact and communicate with each other, how individuals perceive reality and how individuals interact with reality (Passarelli & Vetritti, 2016:187). In the next section, the hyper-connected consumer will be discussed.

2.4 THE HYPER-CONNECTED CONSUMER

The continuous access to the internet and communication through various digital devices has resulted in a shift in consumers' behaviour and has led to consumers becoming hyper-connected (Khan et al., 2020:281). Costabile et al. (2020) state that there has been a surge in connectivity from the start of the COVID-19 pandemic as more individuals globally have started connecting to the internet. As a result, individuals and consumers worldwide are increasingly becoming hyper-connected. Hyper-connected consumers, as defined in chapter 1 (section 1.3), refer to consumers who are constantly or continuously connected online to the internet and on the web through various devices such as smartphones, laptops, tablets, wearable devices and even desktop computers (Ceccotti & Vernuccio, 2015:442; Brubaker, 2020:772). In unpacking the definition of the hyper-connected consumer, the characteristics that make up the hyper-connected consumer are outlined in the following section.

2.4.1 Characteristics of a hyper-connected consumer

Hyper-connected consumers cannot necessarily be distinguished on the basis of demographic elements such as age, income level, social class. The hyper-connected consumer is, however, distinguished based on specific key characteristics and behaviour (Solis, 2018). Stephan (2017:11) refers to consumers who are "always on and constantly connected," resulting in hyper-connectivity. Hyper-connected consumers are described by Solis (2018) as those individuals that live a digitally connected lifestyle, are mobile-savvy and use popular applications to communicate

and streamline their lives. Thwaites (2020) describe hyper-connected consumers as individuals who are connected all or most of the time through digital devices.

Hyper-connected consumers are described in literature and industry research as having several distinct characteristics (Euromonitor International, 2015a; GFK Global 2017; Thwaites, 2020; Brubaker, 2020; Khan et al., 2020). Table 2.7 presents these characteristics associated with hyper-connected consumers.

Table 2.7: Characteristics of hyper-connected consumers

Characteristic	Discussion
Continuous access to the internet.	The extent to which an individual connects to the internet, regularly or continuously, indicates how hyper-connected an individual is. The ease of access and affordability of mobile devices and advances in mobile communication technology has made it possible for individuals to have continuous access to the internet (Ceccotti & Vernuccio, 2015:442; Swaminathan et al., 2020). Individuals are always on, meaning that they are connected to the internet through a device (Brubaker, 2020:25). An individual, for example, who has 24/7 unlimited internet access (through Fibre or ADSL, or mobile network data) not only at home or at work, but anywhere.
Access the internet daily on at least one digital device	According to research conducted by GFK Global (2017), hyper-connected consumers access the Internet on at least one digital device daily. The most common device used to access the Internet is a mobile phone (smartphone or featurephone) (Johnson, 2021a).
Use multiple digital devices daily	Hyper-connected consumers use multiple digital devices such as smartphones, tablets, laptops, desktop computers, wearable devices, and even home appliances, daily (Betts, 2018). An individual may, for example, use a laptop for work, a smartphone for social media and a smartwatch to track their heart rate during gym.
Own a smartphone and at least one other device that can connect to the internet.	Consumers increasingly own at least one device that can connect to the internet, such as a smartphone (Parro & Jordan, 2017:6). Hyper-connected consumers typically own a smartphone and one other digital device that they can access the internet from and tend to rely on specific devices for different types of activities (Euromonitor International, 2015a:4). For example, consumers may use their smartphones to check their e-mails and a tablet device to watch videos.
Spend more than four hours a day on a smartphone.	Research conducted by GFK Global (2017) indicates that hyper-connected consumers, on average, spend four hours a day doing various activities on their smartphones. The convenience of smartphones has resulted in more activities being conducted and more time spent on a smartphone (McCrann, Loughman, Butler, Paunder & Filtcroft, 2020:2).
Have more than nine applications on their smartphones that they use regularly.	On average, hyper-connected consumers are said to use at least nine apps per day (The Economist Intelligence Unit, 2015; Ahmad, 2019). Research conducted by GFK Global (2017) indicated that hyper-connected consumers regularly use 16 applications on their smartphones. Apps allow individuals to determine and select what capabilities they require for their smartphones (Lupton, 2020:3). For example, an individual may require an e-mail app for work, a video call app such as Zoom to attend online conferences and a communication app such as WhatsApp for socialising.

Characteristic	Discussion
Use a mobile communication application daily	Individuals increasingly spend increasing time communicating with each other through mobile communication applications such as WhatsApp, WeChat, and Facebook Messenger. Hyper-connected consumers also use various mobile communications (i.e., cellphone) applications such as WhatsApp and Facebook Messenger to stay connected and to interact with each other, daily. WhatsApp is one of the world's most popular communication apps, with over two billion active users worldwide (Dean, 2021). Elareshi, Ziani and Shami, (2020), indicate that the mobile communication app WhatsApp is used every day by individuals for social communication, to get news, to conduct business activities and transactions, for pollical activities and even entertainment.
Visit a social networking site daily	Hyper-connected consumers visit at least one social network site daily. Brailovshaia and Teichert (2020) state that browsing, sharing, liking, commenting on social media sites such as Facebook, Instagram, Twitter has become part of an individual's daily routine. Individuals use social networking sites to connect to each other, to businesses, to find reviews and information about products, to shop. Individuals worldwide spent approximately 145 min per day on social media (Statista.com, 2021a).
Access e-mails daily through a digital device.	Hyper-connected consumers use various digital devices such as their smartphones, tablet devices to check their emails at least once a day. It is estimated that approximately 306.4 billion e-mails were sent out through various devices in 2020 (Johnson, 2021b).
Regularly bank online.	A study by Euromonitor international (2015a:5) indicates that hyper-connected consumers use devices such as laptops, desktops computers and smartphones to conduct banking activities. Approximately 1.9 billion individuals worldwide are reported to actively use mobile banking (Statista.com, 2021b). Online and mobile banking has allowed individuals to conduct banking activities such as making payments, transferring money to different accounts, extending banking limits and even opening new accounts anytime and anywhere.
Regularly make purchases online.	Hyper-connected consumers make online purchases from a device such as a laptop or desktop computer device regularly (Euromonitor international, 2015a:5). PWC's Global Consumer Insights Survey (2018:5), indicates that online shopping, and more specifically shopping from a mobile device are steadily increasing. In South Africa, online shopping has risen since the COVID-19 pandemic, with an estimated growth rate of 13% between 2019 and 2024 (Schaefer & Bulbulia, 2021:5).

Source: Adapted from GFK Global (2017) and Euromonitor international (2015a)

From the list of hyper-connected consumer characteristics identified in Table 2.8, four key themes are identified: internet connectivity; electronic devices ownership, the amount of time spent on these devices, and the use of applications (or apps) to conduct certain activities by consumers (van den Dam, 2014; Piatrov & Kusá, 2019; Swaminathan et al., 2020). These themes are elaborated below:

- Internet connectivity: This includes how often individuals access the Internet daily and if an individual is considered to be continuously connected to the internet. Continuously connected refers to individuals being constantly connected to the Internet through various devices without any interruptions (Stephan, 2017:12).

- Owned devices: Hyper-connected consumers own and often use multiple devices to connect to the internet and conduct activities.
- The amount of time spent on a device: Hyper-connected consumers connect to the Internet on at least one device and spend more than four hours accessing the internet daily are grouped as part of the theme.
- The use of applications (or apps) to conduct certain activities by consumers: Hyper-connected consumers are said to use their devices to conduct activities such as social media, accessing e-mails, conducting banking, and making online purchases regularly. Apps are often used to conduct these activities on various devices. As such, consumers are likely to have, on average, nine or more applications on a device such as smartphones that they use regularly.

How hyper-connected consumers interact with their environment has been influenced by their continuous connection to the internet and their reliance on technology (Hyder, 2018). Hyper-connectivity has empowered consumers, providing them with access to information, access to more options, and platforms to express their opinions and interact with businesses (Delaney, 2017; Evans, 2019). These hyper-connected and empowered consumers to expect immediacy insist on transparency and demand convenience from companies (Euromonitor international, 2015b:5; Chung et al., 2017:19). These elements of hyper-connectivity are discussed in more detail:

- Immediacy: Hyper-connected consumers expect every interaction or transaction to occur in real-time (Salesforce.com, 2016:14; Webster, 2021).
- Transparency: The hyper-connected consumers expect to have information readily available for them to access (Euromonitor international, 2015b:5). Individuals want to easily find product information, compare products and prices, and find independent reviews.
- Convenience: Hyper-connected consumers expect to interact with a company through any device at the click of a button (Euromonitor international, 2015b:5). They expect personalised communication that is communicated through a medium, at a time and place that is convenient for them (Donnan, 2018:5; Webster, 2021).

The discussion above indicates how hyper-connectivity has influenced consumer behaviour and how consumers interact with their environment. Consumer behaviour

incorporates how consumers make decisions within various contexts and includes several activities such as searching for product information, evaluating alternatives, making a purchase, using, and disposing of products (Mooij, 2019:24). Elements within the environment, the economy, personal aspects, and advancements in technology influence consumer behaviour and decision-making (Sastry, 2019:36). New technology, increased connectivity, as well as easy access to the internet have led to consumers increasingly incorporating technology into how they search for product information, how consumers evaluate competing products, how they purchase and pay for products and how they express their satisfaction and dissatisfaction with products (Yasav, 2016:4, Thwaites, 2021:374).

As consumers increasingly become hyper-connected (GFK Global, 2017; Brubaker, 2020:771), gaining a greater insight into the hyper-connected consumer and how they make decisions are necessary to provide businesses and marketers with more knowledge on how to better serve the hyper-connected market.

2.5   SUMMARY

The concepts of hyper-connectivity and the hyper-connected consumer were unpacked in this chapter. The three essential advancements in technology, the internet, mobile, and wireless technologies and the IoT that together have spurred the growth of hyper-connectivity were highlighted. How hyper-connectivity impacts the environment and society at large, as well as the security, privacy, and ethical concerns of living in a hyper-connected world, was discussed. The hyper-connected consumer was defined, and how hyper-connected consumers behave was explained.

As discussed in chapter 1, the research focuses on determining the decision-making process of the hyper-connected consumer. As such, the next chapter, chapter 3, will discuss consumer behaviour and the consumer decision-making process. An overview of the seminal consumer decision-making models will be provided, followed by a detailed discussion of a proposed model of the consumer decision process, which is used as the theoretical framework for the current research.

CHAPTER 3
CONSUMER DECISION MAKING IN A HYPER-CONNECTED WORLD

3.1   INTRODUCTION

The previous chapter (chapter 2) provided insight into one key component of the context of the study – hyper-connectivity. Having discussed hyper-connectivity, as well as the technology that has spurred its growth and the hyper-connected consumer in chapter 2, this chapter focuses on the second key component of the context of the study, namely consumer behaviour and the seminal models of consumer decision making. It also focuses on the changing behaviour of consumers in a hyper-connected world.

The fourth industrial revolution(4IR) is said to have been triggered by the increased connection between individuals, objects, and advanced communication technologies (Jee, 2017:225; Bigerna, Micheli & Polinori, 2021:1). Hyper-connectivity, a characteristic of the 4IR, is increasingly being incorporated into daily activities (Samsung SDI, 2019). As a result, how consumers behave and make decisions is also changing (Peteva, 2020:32). A consumer living in an increasingly hyper-connected world is more informed, conscious, demanding, and insists on convenience (Tkaczyk, 2016:354; Thwaites, 2020:374). The COVID-19 pandemic has escalated the move towards hyper-connectivity worldwide (Evans, 2020a:3). As a growing number of consumers become hyper-connected, understanding the hyper-connected consumer's behaviour and how the hyper-connected consumer makes decisions is essential for businesses to continue to cater to the needs and wants of the consumer.

This chapter will provide an overview of consumer behaviour and consumer decision-making. A summary of the seminal models of consumer decision-making developed over the years will be provided. One of these seminal models – the EBM model – is proposed as the theoretical framework of choice for the study as a whole. The EBM model of the consumer decision process, as well as its constituent factors, are unpacked in greater detail. The chapter will conclude with an overview of changing

consumer behaviour in an increasingly hyper-connected world and the proposed theoretical model used as a starting point for the empirical research that follows.

3.2   CONSUMER BEHAVIOUR AND DECISION MAKING

Irrespective of demographics, culture, social class, and nationality, all individuals are consumers to a greater or lesser extent (Ayantunji, 2016:1; Mothersbaugh, Hawkins & Kleiser, 2020:6). Consumers make purchases and consume products to satisfy a need or a want (Cunningham, 2018:67). A consumer will thus make a purchase decision based on the perceived value that the consumer will receive from the purchase (Ayantunji, 2016:1; Chae, Kim, Lee & Park, 2020:400). Schiffman and Wisenblit (2019:30) indicate that an essential factor of a successful business is the ability of the business in question to offer the consumer something of value that will satisfy the customer's needs and wants. The study of consumers' behaviour and how consumers make decisions are essential as it not only provides businesses with a better understanding of the customer and their needs and wants but also provides an indication of what consumers perceive to be a product of value (Engel, Blackwell & Miniard, 2006:140; Cunningham, 2018:67). As discussed in chapter 1, consumer behaviour is the study of how individuals obtain, consume, and dispose of products that will satisfy consumers' needs (Schiffman & Wisenblit, 2019:30). Consumer behaviour includes the decision processes that precede the actions of obtaining, consuming, disposing of products and services (Engel et al., 1995:4; John & Ravindran, 2020:104).

Changes in technology, economics, society, and the consumers' environment will affect how consumers behave (Peighambari, Sattari, Kordestani & Oghazi, 2016:2; Loxton, Truskett, Scarf, Sondone, Baldry & Zhao, 2020:2). As such, consumer behaviour has been of interest to researchers. Numerous studies on consumer behaviour in different industries, sectors and functional areas of business and life have been undertaken to understand consumers better, study how the consumer makes decisions and determine the factors that influence the consumers' decision making (MacDonald & Sharp, 2000; Maity, & Dass, 2014; Karimi, Papamichail & Holland, 2015; Bigne, Andreu, Hernandez, & Ruiz, 2018; Gupta, 2019; Mpotaringa, & Hattingh,

2019; Ho, & Law, 2020; Mishra, Singh & Koles, 2020; Ali, 2020; Eger, Komarkova, Ergerova & Micik, 2021). Appendix C lists select examples of previous research conducted on consumer decision making to illustrate the research in the field. The studies discussed in Appendix C emphasise the importance of understanding consumer behaviour and its impact on business and industry (Stankevich, 2017:10).

Several consumer decision-making models have been developed over the years to gain a better understanding of consumers' behaviour and how consumers go about making decisions. The seminal models of consumer decision-making will be discussed in the next section.

3.3 CONSUMER DECISION-MAKING MODELS

Many scholars have, over the years, attempted to explain how consumers behave and ultimately make decisions by using models that explain consumer behaviour. The models provide an abstract view of the consumer's decision-making process and usually simplify the consumer's complex behaviour (Teo & Yeong, 2003:350; Lou, Wang, Lu, Xiao & Xiao, 2020:2). Several seminal consumer decision-making models have been developed: the Simon model, the Nicosia model, the Theory of Buyer Behaviour, the reflective thinking model, and Engel, Blackwell and Miniard (originally named the Engel, Kollat and Blackwell) model. These models also demonstrate the evolution of the thought processes and illustrate the varying perspectives on how consumers behave and approach decision-making. Table 3.1 provides an overview of various consumer decision-making models (the seminal model and others) that have developed over the years.

Table 3.1: Consumer decision-making models developed over time

Author(s)	Description	Popularity/citations of model/authors
Reflective Thinking Dewey (1910)	John Dewey was one of the first educational theorists to delve into and explore reflective thinking and its process (Skarbek, 2016:138). In his book, 'How we think,' Dewey (1910) discusses two different mental processes that he labelled as "thought" and "Reflective thinking". According to Dewey (1910), the first thought process comprises of the human brain engaging in cognitive processes that consist of "uncontrolled coursing of ideas" or random thoughts or ideas coursing through an individual's brain. The second thought process is, however, more	Citations: 45

Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: |

	controlled, and focused, which is what Dewey (1910) referred to as reflective thinking. Dewey (1910:6), defined reflective thinking as "active, persistent, and careful consideration of any belief or supposed form of knowledge, considering the grounds that support it, and the further conclusions to which it tends." In his later work, Dewey (1933) indicates that the purpose of reflective thinking is to assist people in transforming a situation of doubt or uncertainty into a clear and coherent situation; that is, it is a process through which individuals analyse and solve problems. John Dewey's model of reflective thinking consists of logically distinct steps that outline how to solve a problem (Lane, Abigail & Gooch, 2016:203; Karakoc & Demir, 2020:14). The reflective thinking model was initially developed to address education and facilitate student learning (Lyons, 2010:10; Karakoc & Demir, 2020:14). The reflective thinking model consists of five sequential steps: a felt difficulty; its location and definition; suggestions of a possible solution; development by the reasoning of the bearings of suggestions; further observation and experiment leading to acceptance or rejection. *Relevance of model:* The focus of the reflective thinking model is education and to facilitate learning. The model was thus excluded when identifying a model framework for the decision-making of the hyper-connected consumer.	approximately 16400 results
The Simon model of decision-making process (1959)	Herbert A Simon was an economist and political scientist whose focus was on human behaviour (Kalantari, 2010:510; Visco & Zevi, 2020:4). According to Simon (1996:52), human beings have simple behaviour systems; however, the environment leads to the clear complexity of human behaviour. Simon aimed to find a reliable model of human behaviour and decision-making and attempted to empirically study the decision-making process through experiments and observations (Barros, 2010:460). Simon proposed that decision-making is a rational and cognitive process that can be divided into three sequential steps; intelligence, design, and choice (Stankevich, 2017:8; Archimede & Vallespir, 2017:89; Boyer & Touzard, 2021:2). In the intelligence phase a problem is identified and information about the problem is gathered. The design phase entails conducting a great deal of research in order to identify and develop several possible solutions. The choice phase leads to the selection of the best alternative solution using some criteria. The Simon model is not always linear and can often lead to a cyclical process that involves going back and forth between each step and their activities (Lin, 2017: 30). *Relevance of model:* Even though the Simon model encompasses essential aspects of the decision-making process, the model is limited as it does not go beyond the choice phase. The model does not incorporate aspects that involve the actual purchasing of the product. The model was thus not considered to be comprehensive enough to determine the decision-making of the hyper-connected consumer.	Citations: 4927 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: approximately 32900
Nicosia model (1966)	In 1966, Francesco Nicosia, an expert in consumer motivation and behaviour, proposed a comprehensive	Citations: 1538

	consumer behaviour mode that focused on the communication between the organisation and the consumer (Oriande & Robinson, 2017:114). Nicosia proposes that the organisation influences the consumer through their marketing communication and in turn the consumer influences the organisation through their purchase or lack of purchase. In his model, Nicosia indicates that messages such as advertisements from a firm influence consumers' partiality towards a product (Xu & Chen, 2017:2; Xiaoyang, Hui, Hongwei & Zhihui, 2021:1699). The consumer will form an attitude (viewpoint or way of thinking) regarding the product, and the consumer will search for more information about the product and even evaluate alternatives (Agarwal, 2017:93; Xiaoyang et al. 2021:1699). The consumer will make a purchase decision based on the consumer's satisfaction or dissatisfaction with the information gained after searching for information and evaluating the alternatives (Xu & Chen, 2017:2). The Nicosia model of consumer decision-making illustrates a flow of events that occur in different stages and consists of four fields: information communication to affect the consumer's attitude, search and evaluation process, decision and consumption, and feedback (Lin, 2018:559). At the information communication to effect attitude model assumes that the consumer has no prior knowledge of the brand (Xiaoyang et al. 2021:1699). *Relevance of model*: The Nicosia model focuses on decision-making of the consumer that is as a result of exposure to communication from the organisation. The model also assumes that consumers have no prior knowledge of the brand before the exposure from the organisation. The model is limiting as it does not consider stimuli from other sources that the consumer may be exposed to. The model was thus not considered as a framework for the decision-making of the hyper-connected consumer.	Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: approximately 11000 results
Engel, Blackwell and Miniard (1968) (Previously the Engel, Kollat and Blackwell model)	The Engel, Blackwell and Miniard model was initially developed by Engel, Kollat and Blackwell (EKB) (1968) and presented in their book 'Consumer behaviour'. Due to changes in the authorship and contributions by P. W. Miniard, the model was later renamed the Engel, Blackwell and Miniard (EBM) model of the consumer decision process. EBM model of the consumer decision process consists of a linear process that consumers go through when making a purchase decision. The model, which initially included five stages of decision making, need recognition, search for information, evaluation of alternatives, purchase decision and post-purchase behaviour has been modified by the authors since its inception. In developing a more comprehensive model, the authors included two new stages of the consumer decision-making process, post-consumption evaluation and divestment, making the model a seven-stage process. The EBM model considers various environmental and internal factors that could influence the consumer as well as the memory, information processing and positive and negative outcomes of a purchase (Martin, Pagliara & Roman, 2019:3). The EBM	There are ten editions of the Consumer behaviour book in which the authors present the consumer decision-making model (The EBM model). A search on Google Scholar indicates several citations for various editions. Not all the editions appear on Google Scholar. A sum of the citations of the editions that do appear on Google Scholar totals up to approximately 2484 citations.

	model is also flexible enough (consumers can go through each step sequentially, in a different order, or even miss certain steps during decision-making) compared to other models, and it is general enough to be applied to various situations and is easy to apply to contemporary concepts (Ewerhard et al., 2019:5; Mehta, Singh, Banerjee, Bozhuk & Kozlova, 2020:2). *Relevance of the model:* The EBM model is considered a comprehensive model and is widely used in academic research regarding consumer behaviour. The model is flexible and can be used in the context of hyper-connectivity to determine the decision making of the hyper-connected consumer. The EBM model of the consumer decision process is discussed in detail in section 3.4.	Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords (The author search included both EBM and EKB as the name of the model was changed): approximately 40700
The Theory of Buyer Behaviour by Howard and Sheth (1969)	The Theory of Buyer Behaviour was introduced by Howard and Sheth in 1969 and provided an integrating framework that attempts to explain consumer's behaviour rationally (Hulten, 2015:37; Thao, 2020:39). The Howard–Sheth model is specifically focused on explaining the buyer or consumer's brand choice when the buyer has a lack of information and limited abilities (Teoh & Gaur, 2018:3). Howard and Sheth (1969:27) classify the buyer's purchase decision into three categories, extensive problem solving, limited problem solving and routine problem-solving. The Theory of Buyer Behaviour is divided into four major components, input variables, intervening/hypothetical variables, exogenous variables, and outputs. In the Theory of Buyer Behaviour model, Howard and Sheth (1969) propose that inputs or stimuli, as well as external factors, can be critical in motivating the buyer's purchase decision. The model assumes that the buyer actively seeks information internally and externally from the buyer's environment and it is this information search that guides the consumer's decision making (Lopez, 2016:1334). *Relevance of the model:* The Theory of buyer behaviour was developed in the context of making a decision regarding a brand choice. The model is thus limiting as it does not consider decision-making that does not have to do with making a choice between brands. The model also focusses specifically on decision-making of individuals with limited information and capabilities and not on consumers who may already have information on the brands. The model was thus not considered as a framework for the decision-making of the hyper-connected consumer.	Citations: 9068 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 113800
An alternative conceptualisation for consumer behaviour and product performance. Narayana and Markin (1975)	Narayana and Markin (1975) provide a framework for consumer behaviour when faced with an assortment of brands. The authors indicate that consumers try simplifying their decision making by categorizing brands and products into three categories, the evoked set (the brand that the consumer will consider), inert set (the consumer has neither accepted nor rejected these brands) and inept set (brands that the consumer has rejected) (Kolodinsky, Lacasse & Gallagher, 2020:3). *Relevance of the model:* The model was developed in the context of making a choice between brands. The model focuses on the choice alternatives stage of	Citations: 478 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 325

	decision-making. The model is thus not considered for the research as it is considered to be limited.	
Mintzberg model by Mintzberg, Raisinghani, and Theoret, 1976	Mintzberg, Raisinghani, and Theoret (1976) developed a general model for strategic decisions. The model is grounded in rational decision-making and assumes that the decision-maker have complete knowledge about the problem and know every possible solution to the problem (Muzaffar, 2018:161). The model consists of seven stages that are divided into three phases. The three phases of the model are (Muzaffar, 2018:161; Jarco, 2019:4) • The identification phase: At the identification phase, two stages of decision making occur. At stage 1, the owners identify environmental changes that may result in a problem or an opportunity. Stage 2 involves the research and collecting information about the possible changes. • The development phase: The development phase incorporates two stages of decision-making. Stage 3 involves identifying alternative solutions from information gathered about the changes in the environment. At stage 4, potential solutions are developed to form new strategies. • Selection phase: At the selection phase, there are three stages of decision making. Alternative solutions are assessed in stage 5. Stage 6 involves screening the alternative solutions and stage 7 is when the final decision is made regarding which strategy to implement. *Relevance of the model:* The Mintzberg model was developed in the context of strategic decision making within an organisation. The model was thus not deemed appropriate for determining the decision making of the hyper-connected consumer.	Citations: 5696 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: approximately 1260
Keeney's four-stage decision-analysis model (1982)	Keeney (1982) developed a four-stage model in which the decision problem is formally and systematically examined. The purpose of the decision analysis model is to produce insight and to promote creativity that will assist decision making in making better, more informed decisions. Decision analysis has been applied and used in decision making in corporate and government organisations and focuses on finding solutions to part of a problem and not necessarily the solving the entire problem at once (Keeney, 1982:823). Keeney's model considers the individual preferences of consumers in their decision-making (Keeney, 1982:820). There are	Citations: 986 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 6700

	four stages of the model which include (Stankevich, 2017:9): • The structure of the decision problem: The generation of alternatives and specifications of objectives is included at the structure phase. • Assess the possible impact of different alternatives: The evaluation of each choice in terms of how it impacts the different alternatives is assessed. • Determine preferences (values) to decision-makers: The creation of a value model to evaluate the identified alternatives is determined. • Evaluate and compare alternatives: The stage at which the information from the previous steps is synthesised logically to determine the best alternative solution. *Relevance of the model:* The model is rooted in the context of decision-making in an organisation. The model focuses on the analysis of alternatives to find the best solution to a problem. The model was not seen as comprehensive enough to be used as a framework for decision-making of the hyper-connected consumer.	
Sheth, Newman and Gross model (1991)	Sheth, Newman and Gross (1991) developed a model to explain why consumers make their decisions. The model identifies five consumption values that influence consumer choice behaviour (Li, Kim, Liu, Mastromaryino, Wang & Zhang, 2020:4): • Functional value • Social value • Emotional value • Epistemic value and conditional value *Relevance of the model:* The model focuses on consumption values that influences the consumer choice when making decisions. The model was thus not applicable in determining the decision-making of the hyper-connected consumer.	Citations 4659 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 5160
McCarthy, Perreault, and Quester Model (1997)	McCarthy, Perreault and Quester's (1997) model is a modification of Engel, Kollat and Blackwell's (1968) model of consumer decision making (Loureiro, 2020:441). In their model, McCarthy, Perreault and Quester (1997) include criteria for choice. Criteria for choice are regarded as an important task in the unpacking of the evaluation and recognises that the setting up of criteria is separate from evaluating the alternatives (Rogathaman & Vasantha, 2017:37). *Relevance of the model:* The roots of the McCarthy model is based on the EBM model. As such, the root model (EBM model) was thus focused on for the research.	Citations: 8 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 630
Smith and Rupp's model (2003)	Smith and Rupp (2003) developed a model for consumer decision-making for online shopping. The model considers the various complexities of online shopping and incorporates the influence of external website marketing, social-cultural environment as well as the psychological issues consumers experience in online shopping (Smith & Rupp, 2003:422; Stankevich, 2017:9).	Citations: 180 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 9320

	Smith and Rupp (2003) indicate three stages of decision making:	
	• Input stage: The consumer's recognition of the product is influenced by the website marketing efforts and sociocultural influences.	
	• Process stage: this stage focuses on how the consumer makes decisions.	
	• The Output Stage: The final stage of this model involves purchase behaviour and post-purchase evaluation.	
	Relevance of the model: The model was developed in the context of online shopping and does not take into consideration purchase decisions through other channels. The model was thus not considered to be wholistic in understanding the decision making of the hyper-connected consumer.	
McKinsey's consumer decision journey Also referred to as the 'Circular model of the consumer decision journey' (2009) By Court, Elzinga, Mulder and Vetvik	Court, Elzinga, Mulder and Vetvik (2009) provided a circular consumer journey with four phases; initial consideration, active evaluation, closure, and post-purchase, which allows for the study of the consumer's processes throughout their journey. The model provides a complex reality of changes in consumer choices, their decision criteria, various digital touchpoints, and key triggers that are important to the consumer (Gillpatrick, Blunch & Boga, 2019:148). The model not only follows the consumer through their decision journey but assists organisations in identifying key touchpoints of the consumer. The model indicates that there are various touchpoints at which the organisation can connect with the customer in order to influence the consumer decision journey (Court et al., 2009). *Relevance of the model:* The model focuses on how and where the business can influence the consumer decision through their journey. Stimuli from other sources other than the organisation is not really focused on. The model was thus not considered as a framework for the decision-making of the hyper-connected consumer.	Citations: 68 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 498
Milner and Rosenstreich (2013)	Milner and Rosenstreich (2013) developed a consumer decision-making model specifically for analysing the decision-making of credence goods (goods whose value is difficult to determine after the purchase) (Lou, Wang, Lu, Xiao & Xiao, 2020:3). The model consists of three essential components (Milner and Rosenstreich, 2013:115): • Inputs: The inputs include the purchase situation, consumer characteristics and any information sources. • Process: The process component includes the need arousal, information utility, criteria development, and evaluation of alternatives. • Outcomes: Outcomes include the decision to make the purchase, purchase of the product and the post-purchase decision evaluation. *Relevance of the model:* The model focuses on specifically the decision-making of credence goods and is not a wholistic model that takes into consideration decision-making of general goods, services and brands.	Citations: 71 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 124

Karimi (2013)	Karimi (2013) considers multiple channels (online, mobile, offline brick and mortar stores) consumers use when making a purchase decision. The author adopts the EBM model of the consumer decision process and proposes the following stages of the consumer's purchase process: • Formulation of the decision process • Search • Evaluation • Appraisal • Choice • Purchase • Post-purchase behaviour *Relevance of the model:* The model is based on the EBM model. The EBM model is thus focused on in the research.	Citations 76 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 5870
Conbe-Hepro (Consumer Behaviour towards Health Products) Model. (2019)	Ting, Ismail, Ting, Bahri, Sidek, Bt Idris, Tan, Abu Seman, Sethiaram, Ghazali, Lim, Zaki and Sohot (2019) produced a holistic model that clarifies and explains the antecedents and determinants of the consumer's purchase behaviour. The model consists of five components that stem from the EBM model; need recognition, the search of product information, evaluation of product attributes, purchase and use of products and post-purchase or post-use behaviour (Ting, Ismail, Ting, Bahri, Sidek, Bt Idris, Tan, Abu Seman, Sethiaram, Ghazali, Lim, Zaki & Sohot, 2019:392). *Relevance of the model:* The Conbe-Hepro model is based on the EBM model. The EBM model is thus focused on in the research.	Citations: 5 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately one
The MAR model Qin, Peak & Prybutok, (2021)	The authors research mobile augmented reality (MAR) apps and the influence of MAR on consumer attitudes and shopping behaviour. The others use the stimulus-organism-response (S-O-R) theory to propose and develop a model that describes the consumer MAR decision-making process. *Relevance of the model*: The MAR model was developed in the context of augmented reality and as such is not applicable to be used to determine the decision-making of the hyper-connected consumer.	Citations: 10 Google Scholar search results of author and model names with 'Consumer behaviour' and 'consumer decision making' keywords: Approximately 17

*The number of citations and Google Scholar search results can vary as new research is published daily.

The consumer behaviour models discussed in Table 3.1 comprehensively explain the decision-making process of the consumer. The models in Table 3.1 explain various steps, phases or elements that the respective scholars who developed the models (and that are named in Table 3.1) regard as important in the consumer decision-making process.

As indicated in Table 3.1, the Simon model indicates 4927 citations and approximately 32900 results of articles that could have made a mention or referenced the model and

author. The Theory of Buyer Behaviour results showed 8283 citations and about 13800 article search results that could have used or mentioned the model. The EBM model has fewer citations, 2484, (not all the editions of the books are indicated on Google Scholar); however, the Google Scholar search indicated approximately 40700 article search results indicating a higher usage of the model and reference to the authors compared to other models. Although these models discussed in Table 3.1 are still used by scholars, the results of the Google Scholar search indicate that the EBM model is one of the most popular models used to study consumer behaviour, with greater than 40700 Google Scholar search results. The EBM model is widely used as it is broad in nature and can be applied in a wide variety of situations (Ewerhard, Sisovsky & Johansson, 2019:5). As indicated in Table 3.1, several consumer decision-making models have been developed using the EBM model of consumer decision-process as the basis. Owing to the popularity of the EBM model, the wholistic nature and wide use of the model, the EBM model of the consumer decision process will be used as the theoretical backdrop for the current research and will be discussed in greater detail in the next section.

3.4 ENGEL, BLACKWELL AND MINIARD (EBM) MODEL OF THE CONSUMER DECISION PROCESS

As discussed in chapter 1, the EBM model of the consumer decision process is adopted by many scholars; it is regarded as one of the fundamental theories of consumer behaviour (Sihi, 2018:400; Mohanty, Ramesh & Kamat, 2020:6738). The theoretical model originally developed by Engel, Kollat and Blackwell in 1968 (later renamed the Engel, Blackwell and Miniard model) was developed to structure the knowledge and research on the types of consumer decision-making behaviour and has the aim of providing a roadmap to understanding consumer decision making (Engel et al., 1990:3; Poppelaars, Bakker & van Engelen, 2020:3).

The EBM model is based on the seminal work of John Dewey and his Reflective Theory model (Nash, 2019:83). The Reflective Theory model indicates that an individual goes through five steps that follow a logical sequence when solving a problem; this model was applied to a consumer behaviour context. As such, the EBM model of the consumer decision-making process follows a similar logical flow. The

model indicates the consumer's decision-making process in stages and indicates that each stage is affected by an individual's characteristics, social circumstances and situational influences (Kahawandala & Peter, 2020:1155).

Although developed decades ago, the EBM model is still used by many scholars in understanding consumers' behaviour (Mishra, 2018:2; Yousuf & Maitlo, 2019:458; Hsieh & Hu, 2019:2; Nash, 2019:82; Voramontri & Klieb, 2019:212; Pohlmann, 2020:16; Guo, Kim & Kim, 2020:12; Han, Zhang & Wang, 2020:136; Miyazaki, Hoshino & Bockenholt, 2021:623; Varghese & Agrawal, 2021:51). As such, the consumer's decision-making process, as indicated in the EBM model, is still relevant in understanding consumers' decision-making (Ashman et al., 2015:10; Nash, 2019:84). The EBM model is also used as the backbone of newer consumer decision-making models such as the model developed by Karimi (2013) as well as the Conbe-Hepro (Consumer Behaviour towards Health Products) Model (2019), as indicated in Table 3.1.

The EBM model, as illustrated in Figure 3.1, encompasses four key components of decision making and describes the relationship between these components (Ganesha & Aithal, 2020:5). The four key components include (Engel et al., 2006:85; Mehta et al., 2020:3):

- Information input: Stimuli that the consumer is exposed to from personal or mass external sources.
- Information processing: Once the consumer is exposed to stimuli, the information must be processed. The information processing steps include exposure, attention, perception and retention.
- The decision process: This component is the most crucial part of the model as it illustrates the stages of the consumer decision-making process. The decision process consists of seven stages, need recognition, search, pre-purchase evaluation of alternatives, purchase, consumption, post-consumption evaluation and divestment (Engel et al., 2006: Mehta et al., 2020:3), which are illustrated in Figure 3.1. Each stage of the decision process of the EBM model will be discussed in further detail in this chapter.

- Variables influencing the decision process: All those internal and external elements that will influence the decision-making process of the consumer.
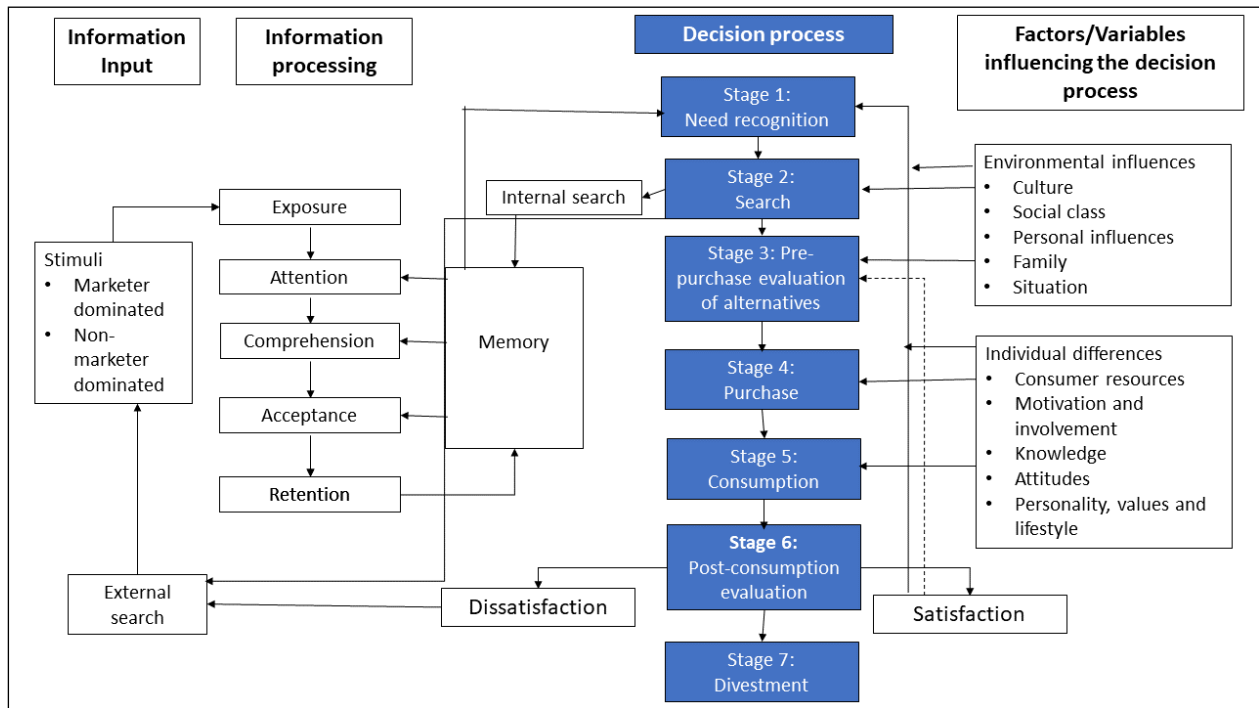
Figure 3.1: The EBM model of the consumer decision process
Source: Adapted from Engel et al. (2006)

The focus of the current research is on the core decision process of the EBM model. As such, each stage of the decision process of the EBM model, as illustrated in Figure 3.1, will be unpacked in the following sections.

3.4.1 Need recognition

As depicted in Figure 3.1, need recognition is the first stage of the decision process EBM model. Figure 3.2 illustrates that the factors' environmental influences and individual differences, as well as memory, will influence the need recognition stage of the consumer decision process.
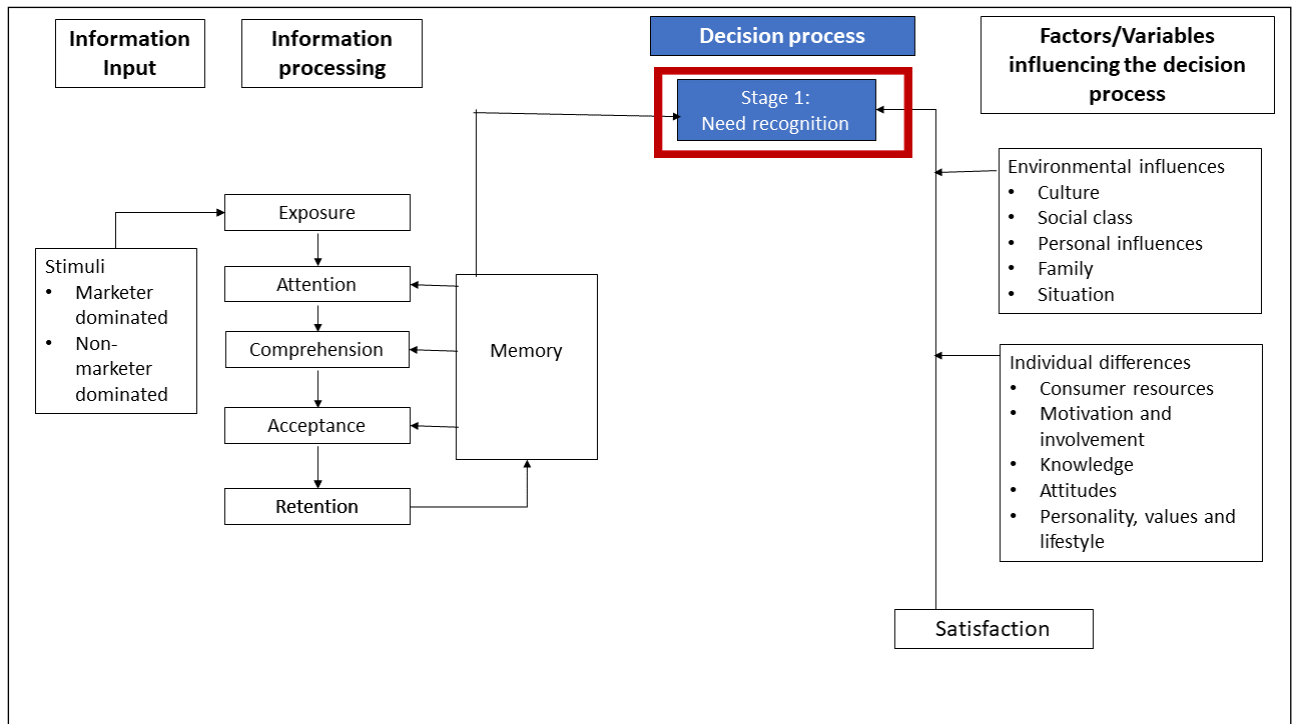
Figure 3.2: Need recognition stage of the EBM model of the consumer decision process

A need occurs when the consumer is faced with a problem or is presented with an opportunity that requires purchasing or consuming a product or service (Schiffman & Wisenblit, 2019:369). The need recognition stage, also known as the problem recognition stage, occurs when there is a difference between the consumer's actual state of being and their desired state (how the consumer ideally wants their current state to be) (Lamb, Hair & McDaniel, 2021:47). When the discrepancy between the consumer's actual and desired state of being is significant, it will result in a need being recognised (Lantos, 2015:66; Hoyer et al., 2021:182). However, if the need is not perceived or activated, the consumer will not recognise the need (Hoyer et al., 2021:182). Various factors can influence the perception and activation of a need (Engel et al., 2006:105; Mishra, 2018:5; Ngugi, O'Sullivan & Osman, 2020:27):

- *Time:* The passage of time can influence the consumer's current state that will activate the need recognition. For example, a person who has not eaten in a few hours, will over time, become hungrier and eventually, the need for food will be activated and recognised.

- *Changed circumstances:* an individual's needs will change based on changes that happen in the individual's life. For example, an individual's car breaks down, as such the individual's need for a new car will be activated.

- *Product acquisition:* The acquisition of a product may trigger the need or want to purchase additional products. For example, when an individual purchase's a house, the individual will need to purchase additional products such as furniture.

- *Product consumption:* Consumption of products may also activate the recognition of a need. For example, if the milk has been consumed and depleted, an individual may need more milk for a dish consumer wants to prepare.

- *Individual differences*: Individual differences include two types of consumers, actual state types and desired state types. Actual state-type consumers will recognise a need when a product does not meet their needs satisfactorily (Schiffman & Wisenblit, 2019:346). Desired state types tend to recognise a need based on their desire or want for something (Schiffman & Wisenblit, 2019:346). When the consumer is peckish for example, the consumer's need for food is triggered; however, the consumer may want a specific type of food that the consumer has previously eaten.

- *Marketing influences:* Organisations can, through their marketing media, activate the individual's need recognition, and motivate them to make a purchase. The organisation, through advertising or various marketing communications, stimulates awareness of consumers' needs. A consumer who, for example, is scrolling through their Facebook page receives an online banner advertisement for a new smartphone with advanced features and capabilities, making older smartphones seem obsolete, maybe be induced into purchasing the new device. The consumer's need for a new smartphone is activated as they feel that their current smartphone is outdated.

- *Recommendations:* A need can be triggered by recommendations of family, friends, colleagues or salespersons (Ting et al., 2019:392). For example, a friend of the consumer purchased a smart speaker. The friend is happy with the smart speaker and relates the various functions of the smart speaker to the consumer. Based on the friend's satisfaction and confirmation of the benefits, the consumer's need for a smart speaker is triggered.

The need recognition stage is influenced by three factors (illustrated in Figure 3.2), information stored from memory, environmental influences and individual differences (Engel et al., 2006:71; Hoyer et al., 2021:13). Each of these factors, as indicated in

Table 3.2 consists of several sub-factors. Table 3.2 depicts the factors and sub-factors of the need recognition stage of the consumer's decision process.

Table 3.2: Factors of need recognition stage

Stage in the EBM model	Factors	Sub-factor
Need recognition	Memory	• Experience • Stimuli
	Environmental influences	• Culture • Social class • Personal influences • Family • Current situation
	Individual differences	• Consumer resources • Motivation and involvement • Knowledge • Attitude • Personality, values, and lifestyle

Source: Adapted from Engel et al. (2006)

3.4.1.1 Memory

As indicated in Table 3.2, memory is a factor that will influence the need recognition stage of the consumer decision-making process. Memory refers to information learnt over time and that is stored and that can be retrieved when needed (Endo & Roque, 2017:2). Memory influences how a consumer activates and recognises a need either through the consumer's experience with the product or through stimuli that the consumer is exposed to (Engel et al., 2006:71; Mothersbaugh et al., 2020:329).

• *Experience*

If the consumer has had a positive experience with a product, the consumer will be more likely to recall a specific product or brand when a need arises. Most websites, as well as social media sites, track and capture individuals' online activities by using 'cookies' (files created on a device by a website that stores information such as the individual's online activity in the file) (Panek, 2020:216). The cookies allow websites and social media sites to remind consumers of products purchased in the past and even activities that the individual partook in. These reminders could trigger the consumer's need for a product. The gifting website Netflorist, for example, capture details such as the occasion, the recipient for which an individual makes a purchase,

the date of purchase. Netflorist uses the details captured to remind consumers of the previous purchase for a specific event and enquires if the consumer wants to make a similar purchase again for the same event. The reminder from Netflorist about the previous purchase for specific events can trigger the memory of the event and possibly the need to purchase for the event.

- *Stimuli*

According to Hoyer et al. (2021), information that is stored in an individual's memory is influenced by external stimuli and the way in which the individual processes the stimuli. The more connected consumers become, the more stimuli the consumers are exposed to on different online platforms such as social media, blogs, websites, which influence the consumer's recognition of a need (Ahmed, 2017:355). An individual could, for example, be exposed to stimuli such as product images and reviews on social media. The exposure to stimuli could trigger a happy memory for the consumer and may activate the need to purchase the product again. Similarly, the exposure could trigger a desire for a new product. How individual processes information is discussed in section 3.4.2.2.

3.4.1.2 Environmental influences

As depicted in Table 3.2, several environmental influences will influence the need recognition stage of the consumer's decision-making process. Consumers are said to be shaped by the environment in which they live (Engel et al., 2006:425; Mothersbaugh et al., 2020:221). Several sub-factors influence how individuals live and operate within society; these sub-factors include culture, social class, personal influences, family and the individual's current situation. These sub-factors will be discussed below.

- *Culture*

Culture is seen as the "blueprint of human activity", that binds groups of individuals (Wang, McNally & Lenihan, 2019:224). The term culture is used in three ways. First, it represents the collective way in which a specific group represents themselves, the group's ideology and the common ideas of the group (de Mooij, 2019:72). Second,

culture represents how a group behaves, the group's practices and day-to-day activities passed down from generation to generation (Roberts-Lombard & Parumasur, 2017:78). Finally, culture is seen as the set of rules, instructions and governing behaviour of a specific group (de Mooij, 2019:72). Basic components of culture include symbols, material components and cognitive components. Table 3.3 outlines the components of culture.

Table 3.3: Components of culture

Component	Description
Symbols	Any concrete or tangible element (object, sign, word, animal, music etc.) is used to represent something. Symbols are used to convey messages conveniently and easily (Guo, Heinberg & Zou, 2019:80).
Material components	The material components or cultural artefacts are physical aspects such as cars, books, and houses associated with culture.
Cognitive components	The cognitive components represent cultural knowledge and behaviour. Cultural knowledge includes the values, beliefs, language, religion, politics and attitudes of a culture. Cultural behaviour includes the norms and activities of the culture.

Source: Lantos (2015) and Dan (2020)

How consumers make decisions and make actual purchases are influenced by culture (Lamb et al., 2021:56). Culture provides certain standards or rules regarding what can be eaten, what products to purchase, how people dress and as such will influence the consumer's decision-making process (Ramya & Ali, 2016:79). Schiffman and Wisenblit, (2019:275) state that culture offers society "tried-and-true" methods to satisfy consumer psychological, personal and social needs. During the need recognition phase, culture influences how consumers absorb the information they are exposed to and how products are perceived by consumers. As such, it will influence if and how a need is activated and recognised (Engel et al., 1995:618; Gvili & Levy, 2021:56). How a culture views what a need is and what is needed to live a comfortable life will also influence the recognition of a need (Engel et al., 2006:432; Schiffman & Wisenblit, 2019:287). For example, in a culture where pork is not eaten, an advertisement that sells pork products will be disregarded and will not activate a need.

For example, in many South African cultures, livestock is considered a great source of wealth (Livestockwealth.com, 2021). However, not many individuals can farm livestock themselves. Software applications, such as Livestock Wealth, allows individuals to purchase, invest and buy shares in cows and calves (Businesstech.co.za, 2019). The individual purchases or invests in the livestock, while

the farmer looks after the animal on behalf of the individual. At maturation, the farmer either purchases the livestock back from the investor at a profit for the individual or the investor sells the livestock to someone else (Livestockwealth.com, 2021). The consumer's culture, therefore, supports the need for purchasing or investing in livestock. The application makes it easier and convenient to realise the cultural need.

- *Social class*

Social class refers to groups of people within a society that is grouped based on their socio-economic standing within society (Roberts-Lombard & Parumasur, 2017:107). A group of individuals who have the same level of wealth, who regularly socialises with each other and share the same level of esteem, is said to be part of the same social class (Lamb et al., 2021:58). Social class is divided into three broad categories, lower-class (unemployed and low-income consumers), middle class (educated consumers who are not rich nor poor) and upper class (wealthy consumers) (Cunningham, 2018:76). In South Africa, the living standard measure (LSM) was previously used to describe the various social classes within South Africa (SAARF, 2018). The LSM consisted of 10 rankings, LSM1 being the lowest (unemployed and low-income consumers that have little possessions) and LSM 10 (wealthy consumers that have various possessions) being the highest (SAARF, 2018). The LSM looked at wealth, geography and access to group individuals within certain social class groups (Roberts-Lombard & Parumasur, 2017:124). However, the Socio-Economic Measure (SEM) has been proposed to replace the LSM as a more accurate measure of the consumer's living standards (Langschmidt, 2017:33). The SEM focuses on how consumer lives and where the consumer lives (Roberts-Lombard & Parumasur, 2017:124). The LSM and SEM indicate the consumer's consumption patterns. The variables that will determine social class are indicated in Table 3.4.

Table 3.4: Variables that determine social class

Variable	Description
Occupation	An individual's occupation will influence their lifestyle, what they consume and what they can afford (Tandoh & Nsiah, 2019:772).
Personal performance	Personal performance in terms of the individual's job (their job level) or reputation and performance in society can elevate one's social status.
Interactions	The people with which an individual interacts can determine an individual's social class. If an individual interacts with others within a high social class, the individual will have a higher social standing.

Variable	Description
Possessions	Possessions indicate an individual's wealth. As such, it can reflect social class. Certain possessions are associated with specific social class levels (Mothersbaugh et al., 2020:130).
Value orientations	Individuals' values can indicate their social class. An individual may have wealth; however, if the individual does not have good values, they can be associated with a lower social class.
Class consciousness	This refers to the degree to which an individual is aware of the social class to which they belong (Schiffman & Wisenblit, 2019:446).

Source: Engel et al. (2006)

Different social classes have their behaviour patterns, perceptions, attitudes and beliefs, which influence how consumers behave and recognise a need (Roberts-Lombard & Parumasur, 2017:108; Ramya & Ali, 2019:79). A consumer that is part of the lower social class, for example, will define a need and what is needed to live conformably, differently from a consumer who is part of the upper social class. Individuals within different social class groups tend to have similar purchase patterns and often make purchases that reflect the social class to which the individual belongs (Cant & Van Heerden, 2017:69). For example, the car an individual drives, the clothes the individual purchases, the house the individual lives in, the brand of smartphone and the type of devices owned, are all status symbols that reflect the social class in which the individual belongs.

- *Personal influences*

Consumers are social beings who interact and engage with each other daily (Cant & Van Heerden, 2017:67). Social interaction with other individuals influences how consumers behave and make decisions (Babin & Harris, 2021:156; Hu, Chen & Davison, 2019:229). Personal influences include the reference groups, opinion leaders and communication through word-of-mouth that influence the consumer's behaviour and how the consumer makes purchase decisions (Engel et al., 2006:522; Lamb et al., 2021:115).

The type of personal influence, a reference group, refers to a group or an individual that influences the consumer's aspirations, behaviour and decisions (Babin & Harris, 2021:156). The individual usually identifies with the reference group's beliefs, values and behaviours (Pride & Ferrell, 2019a:207). An individual will use a reference group as a standard to evaluate themselves against (Hoyer et al., 2021:299). Reference

groups can be divided based on the formality of the reference group, the importance of the reference group, the aspiration to the reference group, and the affiliation to the reference group (Roberts-Lombard & Parumasur, 2017:103). The types of reference groups are indicated in Table 3.5.

Table 3.5: Types of reference groups

The type of the reference group	Description
The formality of the reference group	Formal reference groups have a structure with specific roles and levels of authority. A running club, for example, is a formal reference group that will have a clearly defined structure.
	Informal reference groups do not have any formal structures or rules that must be adhered to. Family, friend groups and social media groups that an individual belongs to are examples of informal reference groups.
Importance of the reference group	Primary reference groups have regular face-to-face or any personal contact with such as family members or peers.
	Secondary reference groups do not necessarily involve face-to-face contact or daily interaction. Online chat groups, for example, are considered secondary reference groups.
The aspiration to the reference group	Aspiration reference groups refer to those groups that individuals aspire to be part of but are currently not part of. An individual, for example, may aspire to be good enough at football to be part of a formal football club.
	Dissociative reference groups refer to those groups that individual avoids. These refer to groups without the same values and beliefs as an individual and who the individual rejects. A group that does drugs or crime, for example, may be rejected by members of a community.
Affiliation to the reference group	This category refers to the membership of a specific group. An individual belongs to, for example, a friend group with who they have the same values and beliefs as.

Source: Adapted from Roberts-Lombard and Parumasur (2017) and Vu, Nielsen and Jacobsen (2020)

Opinion leaders who are a type of personal influence, are those individuals that informally influence the opinions of others (Lamb et al., 2021:58). The opinion leader will provide individuals with information about the product and advice on whether to purchase the product or not (Schiffman & Wisenblit, 2019:245). Opinion leaders influence others through word-of-mouth communication as they relay their product experiences to others (Engel et al., 2006:533). An example of an opinion leader (sometimes also referred to as 'though leaders' or 'online influencers') is a well-known fashion blogger who regularly posts their experience with various fashion brands and their products on Instagram (Schiffman & Wisenblit, 2019:442). Fashion blogger will describe their thoughts about the brand and, as such, will influence consumers' purchase decisions about a specific brand or product.

Personal influencers such as reference groups and opinion leaders often play an important role in the consumers' purchase decisions and activating the consumer's needs (Engel et al., 2006:558; De Lange, Milner-Gulland & Keane, 2019:1040). The consumer may recognise a need for a product through interaction with their reference groups. For example, an individual who is part of a running club may be encouraged to purchase a specific brand of running shoes. An individual may also read the review of a fashion blogger, which may activate the need for a specific product.

- *Family*

Family is one of the most important influences on consumer behaviour (Cunningham, 2018:72). Family influences an individual's behaviour, values, attitudes, self-concept and purchase behaviour (Lamb et al., 2021:60). Surinder and Vipul (2017) state that the family is an important social and economic unit that has a direct influence on the decision-making and consumption patterns of individual members of the family. Family is defined as two or more individuals who reside together, related to each other through blood, marriage, adoption, or a common desire to live together (Schiffman & Wisenblit, 2019:287). The nuclear family includes a father, mother, and children who live together (Cant, 2017:68). The extended family refers to the nuclear family and includes grandparents, aunts, uncles (Cant, 2017:68). The socialisation process occurs within the family unit and involves teaching individuals how to behave, what is acceptable or not within a society, values, cultural norms and rules (Babin & Harris, 2021:172).

How purchase decisions are made within a family unit will depend on the various roles of the family members (Pride & Ferrell, 2019a:207). The various roles of family members are indicated in Table 3.6. These roles of family members can be instrumental in determining what to purchase when to purchase and how much to purchase (Hoyer et al., 2021:352). The various family roles also indicate the family purchase norms, such as the choice of brand, colour, style. (Surinder & Vipul, 2017:48). Choudhuri (2016) suggests that family roles differ depending on the type of product purchased. Choudhuri (2016), in his research on the various roles of family members in purchasing FMCG products, found that although the wife is the initiator for products such as bathing soap, hair oil and face cream, the husband does affect rural areas. The husband is seen as the dominant figure in initiating, influencing,

deciding, and purchasing clothing items in rural and urban areas (Choudhuri, 2016:314).

Table 3.6: Family member roles

Roles of family members	Description
Initiator	The initiator is the family member who suggests a specific product. For example, a daughter may suggest to her father that she needs a new smartphone. The daughter thus initiates the buying process.
Influencers	The influencer is the individual who provides their opinions. The brother may, for example, indicate which smartphones are better in his opinion.
Decision-maker	The decision-maker is that individual within the family unit who decides to purchase the product. The father, for example, may decide to purchase a new Apple iPhone for the daughter.
Purchaser	The purchaser is the family member who goes out and purchases the product. The mother, for example, may take the daughter to the mall to purchase the new iPhone.
Consumer	The consumer refers to the individual who uses and consumes the product. The daughter, for example, is the consumer of the smartphone.

Source: Adapted from Lamb et al. (2021)

The family unit is important to how the consumer behaves as the decisions that individuals make are influenced by family members (Engel et al., 2006:482; Coskuner-Balli & Cross, 2018:331). A child, for example, could see a new toy being reviewed on a YouTube toy review channel and request the toy from the parents. As such, family members can activate a need and influence how individuals recognise and react to a need.

- *Individual's current situation*

The individual's current situation or situational influences refers to those influences specific to the consumer's current time, place and that are independent of the consumer's characteristics (Engel et al.,1995:780; Ngugi et al., 2020:129). The situational influences are usually temporary conditions and include the effects of the physical environment (Babin & Harris, 2021:29). Atulkar and Kesari (2018) argue that a consumer's current situation in terms of time and money will influence the consumer's impulse buying behaviour. Calvo-Porral and Levy-Mangin (2019) indicate that situation factors such as place influence the consumer's behaviour. In their research on the influence of situational factors on alcohol consumption, Calvo-Porral and Levy-Mangin (2019) found that consumers who consume alcohol at home insist on value for money when making a purchase. Consumers' who consume alcohol out

of their homes look for the quality of the product (Calvo-Porral & Levy-Mangin, 2019:2097). The classifications of situational factors are; physical surroundings, social surroundings, time perspectives, reasons for purchase and the purchaser's mood or condition at the moment of purchase (Pride & Ferrell, 2019b:151). The situational factors are discussed in Table 3.7.

Table 3.7: Situational factors

Situational factors	Description
Physical surroundings	This includes the physical surroundings in which the purchase decision occurs, such as the store location, atmosphere, sounds and even the weather.
Social surroundings	The social environment includes the interactions that the consumer is at the time of purchase. A friend who is with the consumer can, for example, activate the need to purchase a specific product.
Time perspective	The time of the day, month, year and even different seasons can trigger the need for a specific product. During Christmas, for example, consumers experience the need to purchase a Christmas tree and the need to purchase Christmas decorations is triggered.
Reasons for purchase	This involves why the consumer is making a purchase and who they are purchasing a product for. For example, when the consumer is planning to cook a specific dish, the need to purchase specific ingredients is recognised.
Purchaser's mood or condition	The mood or current condition (happy, sad, anxious, peckish) of the consumer can influence their desire for a product. A consumer, for example, could become peckish during shopping, which activates the need for food and influences the purchase of a snack while shopping to consume later.

Source: Adapted from Pride and Ferrell (2019a)

The individual differences that influence the need recognition of the consumer decision-making process will be discussed in the next section.

3.4.1.3 Individual differences

As indicated in Table 3.2, several individual differences influence how consumers behave and recognise a need; these include consumer resources, motivation and involvement, knowledge, attitude, personality, values, and lifestyle. These sub-factors will be discussed below.

- *Consumer resources*

Marketing fundamentally involves the exchange of a product or service for something of value (such as money) (Cunningham, 2018:3). However, the exchange is only possible if the consumer has the resources to do so (Engel et al., 1990:227; Pride & Ferrell, 2019a:20). Consumers' resources include economic, temporal and cognitive

resources (essentially time, money and attention) (Engel et al., 1990:227; Varadarajan, 2020:91). These consumer resources are discussed in Table 3.8.

Table 3.8: Consumer resources

Resource	Description
Economic	Economic resource refers to the amount of money a consumer has available to purchase a product. Income, wealth and access to credit will influence the decision-making of the consumer. A consumer who earns a small income may not recognise the need to purchase a smartphone or a new Mercedes Benz car.
Temporal resources	Temporal resources refer to the time constraints of the consumer. Time is a limited resource and as such consumers budget their time based on what they perceive to be important. A consumer, for example, may decide to spend their time connecting with friends on social media instead of cooking dinner. The consumer then recognises a need to purchase food for dinner for the family (a takeaway, for example).
Cognitive resource	Cognitive resource refers to the ability of an individual to process and use the information that they receive or pay attention to it. Individuals have limited capacity to process information. As such, a consumer may not recognise a need when they are exposed to a message.

Source: Adapted from Engel et al.(1995) and Varadarajan (2020)

- *Motivation and involvement*

When a consumer experiences a discrepancy between their ideal state and their current state, a need is activated, and the consumer is motivated to satisfy that need (Roberts-Lombard & Parumasur, 2017:168). Motivation is that element that pushes a consumer to action; it is the reason why the consumer will take action in the form of making a purchase (Cunningham, 2018:69). According to Engel, Blackwell and Miniard (1995:295), two central variables to motivation can be discussed: needs or wants and involvement:

- *Needs or wants*: When a need has been recognised, it produces a drive to accomplish or satisfy it. A need is essential to the consumer's survival and can be felt internally (the individual realises they are peckish as their stomach makes a noise or the individual thinks about food and realises that they are peckish). It can also be felt externally (an individual may encounter a pop-up advertisement for a restaurant as they are scrolling through their Facebook home page and realising that they are peckish) (Soloman, 2020:35). A want is something that the consumer desires but does not need. A consumer, for example, can be exposed to an advertisement for a new smartphone. Although the consumer has one already, the advertisement could motivate the desire to purchase the smartphone advertised.

- *Involvement*: This is the perceived relevance or importance of the action in satisfying consumers' needs. Involvement encompasses the person (the individual's needs and values), the object (the product) and the situation itself (Soloman, 2020:164). If the individual perceives a product as important in satisfying the need, there will be a strong motivation to purchase the product.

- *Knowledge*

Engel et al. (2006:332) define knowledge as information that is stored within memory. Consumer knowledge is the information that the consumer has about a product, purchase and consumption stored in the consumer's memory (Hoyer et al., 2021:194). What a consumer knows or does not know influences how they identify needs and make decisions (Engel et al., 2006:332). For example, a consumer is exposed to an advertisement for a smartwatch that tracks an individual's fitness level. If the consumer does not know how the smartwatch works, where they can purchase it, the price of the smartwatch, the consumer may not recognise the need to purchase it.

The types of consumer knowledge that will influence the consumers' decision-making process include product knowledge, purchase knowledge, consumption or use knowledge, persuasion knowledge and self-knowledge, and indicated in Table 3.9 (Engel et al., 2006:332; Yan, Henninger, Jones & McCormick, 2020:439).

Table 3.9: Types of knowledge

Types of knowledge	Description
Product knowledge	This refers to the information that the consumer has in their memory regarding the product itself. Product knowledge includes knowledge of the product category, the different brands, the cost, where to purchase the product.
Consumption or use of knowledge	This refers to knowledge regarding how to use or consume the product. Consumers are less likely to purchase a product that they do not know how to use.
Persuasion knowledge	This represents the knowledge the consumer has about the goals and the tactics used by the organisations in trying to persuade the consumer. For example, certain wording, symbols or images are used by organisations to make consumers aware of a product or increase the chances of the consumer remembering the product.
Self-Knowledge	This type of knowledge refers to the consumer's understanding of themselves and how they mentally process information.

Source: Adapted from Engel et al. (2006)

- *Attitude*

Attitude refers to how an individual feels, views or thinks about something (Babin & Harris, 2021:156). Attitudes can be learnt through previous experience that the consumer has with the product (Cunningham, 2018:71). Consumers' attitudes are also formed on the basis of information they receive about the product from their own research from what others have told them, from advertisements or from the store itself (Roberts-Lombard & Parumasur, 2017:186). Attitude has three essential components, affective component, behaviour component and a cognitive component (Roberts-Lombard & Parumasur, 2017:187; Svenningsson, Höst, Hultén & Hallström, 2021:3):

- *The affective component:* This component refers to consumers' emotions and feelings. It is the overall assessment of the product and is usually based on the consumers' experience. For example, a consumer who is in love is more likely to experience a positive attitude towards Valentine's Day advertisements.

- *The behavioural component:* The purchase behaviour of the consumer represents the attitude of the consumer. If the consumer has a positive attitude, the consumer will most likely purchase the product. However, if the consumer has a negative attitude to the product, the consumer will most likely not purchase the product. As attitudes are based on consumers' likes and dislikes, they are an essential influence in how consumers make decisions and recognise a need. Consider, for example, a consumer who receives an e-mail about a new product. If the consumer forms a positive attitude towards the advertisement, the consumer may recognise the need for the product. However, if the consumer views the e-mail as spam, the consumer may form a negative attitude towards the product and brand itself and may not recognise the need for the product.

- *The cognitive component:* This component reflects the consumer knowledge and perception about the product. For example, a consumer may have a positive attitude towards a cosmetics brand as they have knowledge that the brand does not test their products on animals.

- *Personality, values and lifestyle*

How consumer recognises a need and how they make their purchase decisions often vary due to the unique characteristics of each consumer (Willman-Iivarinen, 2017:13). Consumers' characteristics such as personality, values and lifestyle differ. Therefore,

how they process information and behave will also differ (Engel et al., 1990:326; Hoyer et al., 2021:322).

- *Personality* refers to an individual's inner psychological characteristics and traits that will influence how a consumer reacts and behaves in response to their environment (Lamb et al., 2021:109). Wojciechowska (2017:59) indicated that consumers' personality traits influence how the consumer recognises a need and makes decisions. Extroverted consumers, for example, are found to be more willing to purchase new products than consumers who are introverted (Pelau, Serban & Chinie, 2018:756).

- *Values,* which are the personal principles of an individual, are said also to influence the way consumers recognise a need (Engel et al., 2006:271). A consumer's values refer to the beliefs that the consumer has about their life that will influence their actions and behaviour (Lichtenstein, Lichtenstein & Higgs, 2017:16). A consumer who is conscious of the effect that human behaviour has on the environment will probably purchase environmentally friendly products.

- *Lifestyle* refers to how an individual lives their life and includes the economic, cultural and economic and social aspects of an individual's life (Lamb et al., 2021:109). An individual's desired lifestyle will also influence what they purchase (Anitha, 2016:90). A consumer who is health-conscious, for example, and who has adopted a healthy living lifestyle, is likely to purchase healthy products and that agree with a healthy lifestyle. The consumer will thus only recognise a need for a product if it fits with their health conscience lifestyle.

As illustrated in Figure 3.1, environmental influences and individual differences can also influence the search, pre-purchase evaluation of alternatives, purchase and consumption stages of the decision-making process.

In an increasingly hyper-connected world, technological devices, connectivity and social media are increasingly triggering consumers' needs (Voramontri & Klieb, 2019:209). In their study, Sudha and Sheena (2017:27) found that consumers tend to identify a need for a brand or product through celebrities or influencers on social media platforms such as Facebook, Instagram and Twitter. Individuals who, for example, are scrolling through Instagram posts can trigger a need by being exposed to products in friends' Instagram posts or online brand advertisements.

How business is conducted has also evolved with the growing popularity of online platforms to make purchases, to socialise and interact with individuals and businesses, and has introduced social commerce (Wang & Yu, 2017:179). Social commerce is a business model that uses two-way communication to build relationships with customers during the customer's purchase and decision-making process using social media (Huang & Benyoucef, 2017:41). Social commerce platforms facilitate the need recognition of consumers (Chen, Lu & Wang, 2017:628). The social features of social commerce platforms, as well as exposure to stimuli such as content and images on social commerce platforms, contribute to awareness and need recognition for the consumer (Huang & Benyoucef, 2017:50).

The next step in the decision-making process, as depicted in Figure 3.2, is the search for information will be discussed in the next section.

3.4.2 Search

Once the consumer has recognised a need, the next step is search, as illustrated in Figure 3.2 of the consumer decision-making process. Engel et al. (1990:494) define search as the "motivated activation of knowledge stored in memory or acquisition of information from the environment". Figure 3.3 illustrates the factors that influence the search stage of the decision-making process.
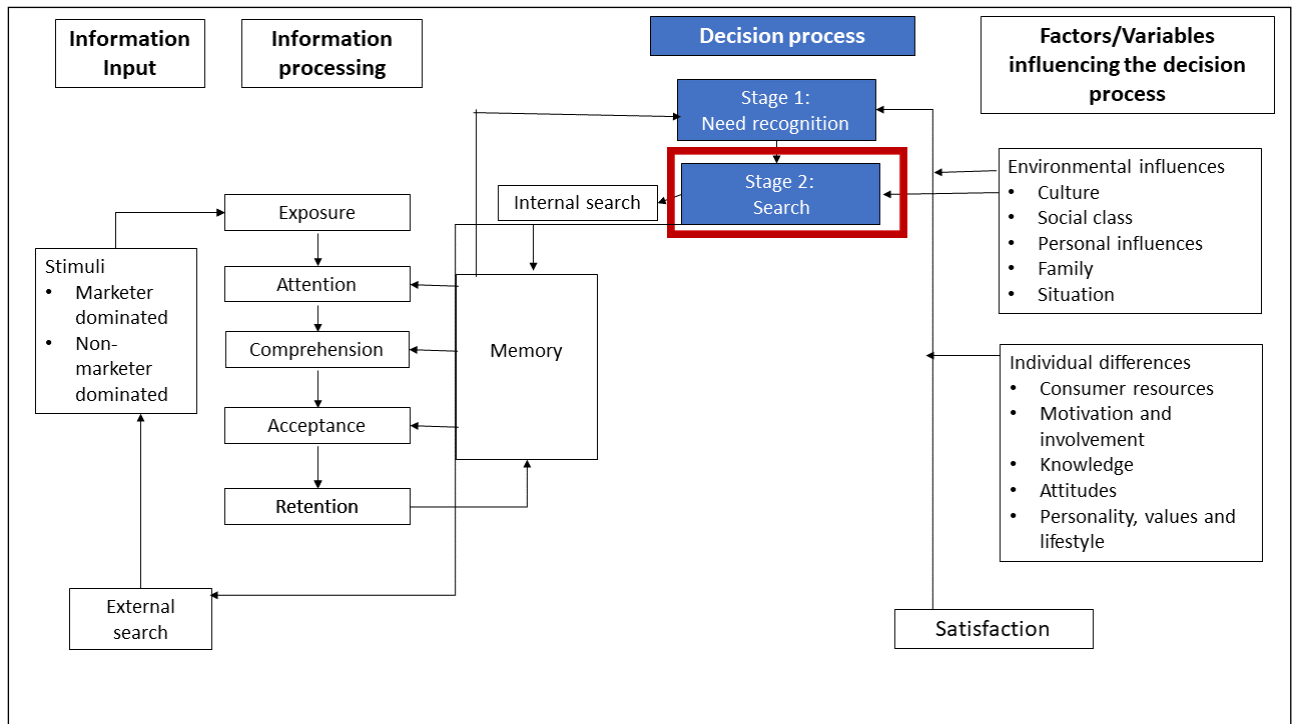
Figure 3.3: Search stage of the EBM model of the consumer decision-making process

During the search stage, the consumer will actively look for information on how best to solve the problem or satisfy a need (Cunningham, 2018:84). The consumer will usually first search for information internally, from their memory, and look at their experience with a product, brand or any other type of experience (Lamb et al., 2021:91). When the consumer cannot solve the problem through internal search, the consumer will then conduct an external search (Cunningham, 2018:84). The external search involves the consumer searching for information from external sources (Lamb et al., 2021:56). Table 3.10 indicates the internal and external factors and sub-factors that encompass the search stage of the decision-making process.

Table 3.10: Constructs of the search stage

Stage in the EBM model	Factors	Sub-factors
Search	Internal search	• Memory • Experience • Habit
	External search	• Stimuli from the market • Social groups (Friends, family, opinion leaders) • Information gathered from marketing promotion • Media reports • Online web search

Source: Adapted from Engel et al. (2006)

3.4.2.1 Internal search

As indicated in Table 3.10, internal search is a factor that will influence the consumer during the search stage of the EBM model of the consumer decision-making process. Consumers start the search for information internally from the consumer's memory, from the consumer's past experiences, or from the consumer's habits (Engel et al., 2006:85; Ngugi et al., 2020:18).

- *Memory:* The consumer will recall information stored in their memory (Lamb et al., 2021:47). A consumer, for example, who has identified the need for a new car, will first recall the various car brands that they have experienced before. The consumer's memory is also influenced by stimuli that the consumer is exposed to, such as social media posts of friends who have purchased a new car. Memory was discussed in section 3.4.1.1.
- *Experience:* Consumers may recall their previous experience that they have had with a specific product or brand. A consumer will, for example, recall their experience driving different brands of cars.
- *Habit:* This refers to a consumer's tendency to select the same brand or product every time. The consumer may, for example, recall a car brand that they usually purchase or that is commonly bought within the family or community.

Often a solution can be found from the consumer's internal search. However, some degree of external search is also required to verify the consumers' internal knowledge (Engel et al., 2006:111).

3.4.2.2 External search

As depicted in Table 3.10, a factor that influences the consumer's search stage of the EBM consumer decision-making process is an external search. External search refers to when the consumer looks for information from external sources (Hoyer et al., 2021:200). Two types of external searches exist; pre-purchase and ongoing search (Engel et al., 2006:111).

- *Pre-purchase:* This search type occurs in response to the consumer identifying a problem (Lamb et al., 2021:91). An online banner advertisement for a makeup

brand website appears on a consumer's social media, for example. The consumer identifies a need for a new lipstick when being exposed to the advertisement. The consumer then searches for alternative websites to evaluate the prices of the makeup brand from different websites.

- *Ongoing search:* This refers to when a consumer deliberately searches for information on an ongoing basis regardless of a need or problem (Cunningham, 2018:84). The consumer searches for information about a product with the intention of a possible future purchase. A consumer, for example, who may be thinking of purchasing a car in the future may search for cars on different websites for several weeks before the purchase is made.

External search sources can include stimuli from the market, social groups, information gathered from a marketing promotion, media reports and online web search (Engel et al., 2006:75; Jira-Alongkorn, Anatachart & Vungsunititum, 2020:40).

- *Stimuli from the market:* Consumers can get information from product advertisements or from print media such as pamphlets that they are exposed to.
- *Social groups:* Social groups such as friends, family, opinion leaders, online social groups can provide the consumer with information and advice about a product or brand.
- *Information gathered from marketing promotions:* The consumer can get information from sales representatives, online websites, or other marketing promotions.
- Media reports: Industry or media reports and even news stories or business and media websites can be used as a source of information about a product.
- *Online web search:* Increasingly consumers are searching for information online using a search engine and even on social media (Sun, Law & Luk, 2020:1).

An example of an external search is watching 'unboxing' videos on YouTube or Instagram. YouTube and Instagram influencers often use their platforms for unboxing new products and reviewing them. Unboxing refers to the individual videoing the opening or unwrapping of a product from its packaging. The individual will then describe the product and how it is used and sometimes rate the product. When the consumer is exposed to any external source of information, the consumer will need to

process the information (Engel et al., 1990:75; Sun et al., 2020:2). The steps, which the consumer goes through when processing information include exposure, attention, comprehension, acceptance and retention (Babin & Harris, 2021:56). These steps are indicated in Table 3.11.

Table 3.11: Steps in the processing of information

Steps	Description
Exposure	The consumer must first be exposed to the information. Exposure occurs when the consumer senses the stimuli. When scrolling through a Facebook page, for example, an advertisement pops up.
Attention	During the attention stage, the consumer will allocate processing capacity to the stimulus that they have been exposed to. If the stimuli are relevant to the consumer, the more likely the consumer will be to pay attention to them. If the Facebook advertisement is of a product or brand that the consumer uses or likes, the consumer is more likely to pay attention to it.
Comprehension	At this stage, the consumer will interpret the information and abstract meaning from it. The consumer may then actively view the information in the Facebook advertisement.
Acceptance	The consumer will decide if the information is acceptable or not. If the Facebook advertisement is offering something of value, like low prices, the consumer may accept the information as valuable.
Retention	During this stage, the information that the consumer is exposed to is accepted and stored in their memory. The consumer will finally store the information in the Facebook advertisement so that they can decide if they will make the purchase or not.

Source: Adapted from Babin and Harris (2021)

How consumers search for a product and product information is evolving, the more connected consumers become (Shah & Loiacono, 2016:243; Sun et al., 2020:3). As of 2018, Amazon (one of the largest online retailers worldwide) surpassed Google as the go-to platform for consumer product search (Garcia, 2018; eMarketer.com, 2020). According to a survey conducted in the United States of America in 2019, 46.7% of consumers started product searches on Amazon compared to 34.6% who started searching for a product on the search engine Google (Garcia, 2019).

Connectivity and digital technology have also provided consumers with many more means to search for information about a product or brand. Voice assistants, for example, which are conversational devices that assist an individual in performing tasks are increasingly being used to search for information about products and brands (Mari, 2019:3; Parise, Guinan & Kafka, 2016:416; GlobalWebIndex, 2020b:7). Voice assistants can be separate devices such as Amazon Echo. They may be built into a device such as Siri, which is found on the iPhone smartphone and Apple laptops. The

voice assistant often suggests products, provides prices and can find online and offline stores where the product is available (Mari, 2019:3).

Once the consumer has searched for information to solve their problem or satisfy their need, the next step in the consumer decision-making is evaluating alternatives. Evaluation of alternatives is discussed in the next section.

3.4.3 Pre-purchase evaluation of alternatives

As illustrated in Figure 3.2 and Figure 3.4, pre-purchase evaluation of alternatives is conducted once the consumer has completed the search stage of the consumer's decision-making process. At this stage of the consumer decision-making process, the consumer will evaluate alternatives identified during the search stage (Engel et al., 2006:78; Ngugi et al., 2020: 17). Figure 3.4 illustrates the factors that influence the pre-purchase evaluation of the alternative stage.
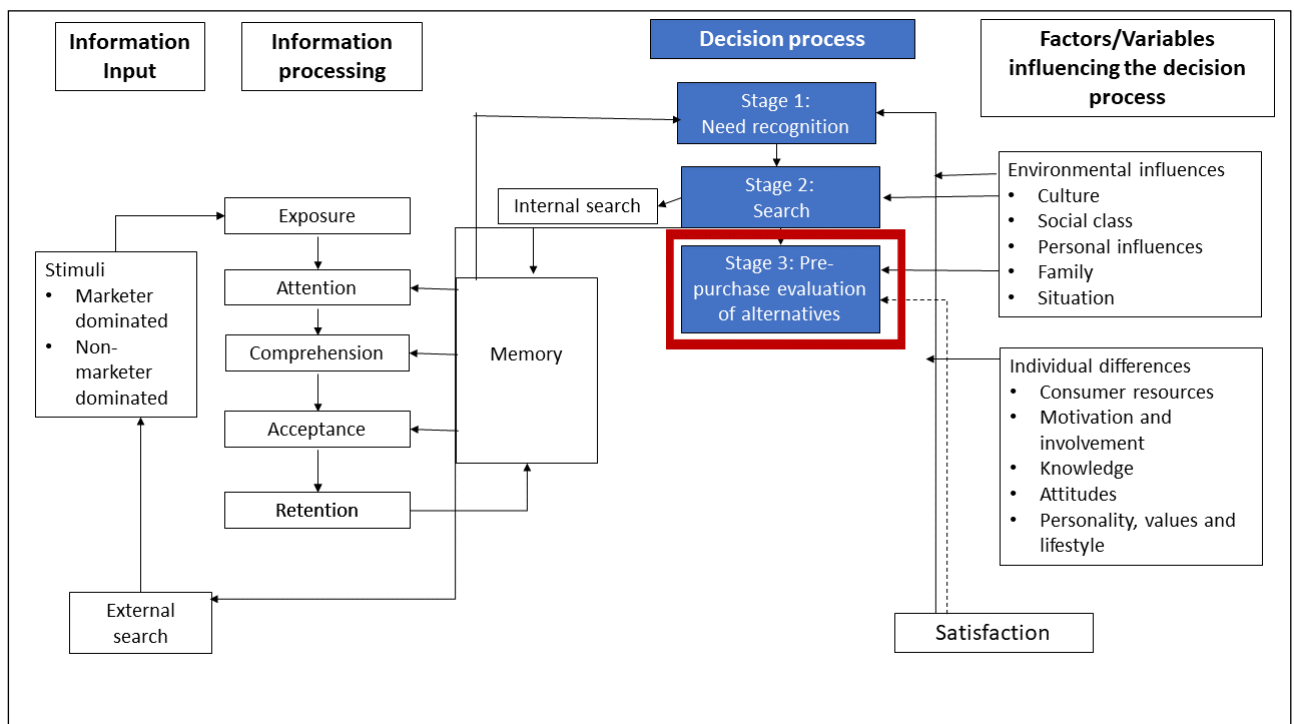
Figure 3.4: Pre-purchase evaluation of alternatives stage of the EBM model of the consumer decision-making process

The consumer will be at the pre-purchase evaluation of alternative stage, compare what they know about the products, assess the advantages and disadvantages,

identify what they feel is important and will decide on a course of action (Roberts-Lombard & Parumasur, 2017:253). Online review websites, blogs, and vlogs, as well as social media platforms, are being used to enhance the 'evaluation of alternatives stage' in decision making (Liu, Liu & Zhang, 2019:428; Voramontri & Klieb, 2019:212). These online platforms provide consumers with the advantages and disadvantages of products, the different prices and even provide the best retail stores to purchase the products from. Consumers also often build relationships with bloggers and bloggers and tend to view the vlogger or bloggers' evaluations of brands positively and as reliable (Voramontri & Klieb, 2019:212).

As indicated in Table 3.12, several factors encompass the pre-purchase evaluation of alternatives stage; these factors include evaluative criteria, choice alternatives, assessing alternatives and selecting a decision rule (Engel et al., 1990:223).

Table 3.12: Factors of pre-purchase evaluation of alternatives

Stage in the EBM model	Factors	Sub-factors
Evaluation of alternatives	Evaluative criteria	• Price • Brand name • Country of origin • Emotions/feelings
	Determine choice alternatives	• Evoked (consideration) set
	Assess choice alternatives	• Cut-off's • Signals
	Select a decision rule	• Compensatory • Non-compensatory

Source: Adapted from Engel et al. (2006)

3.4.3.1 Evaluative criteria

As indicated in Table 3.12, the evaluation criteria are a factor that will influence the evaluation of alternatives stage of the consumer decision-making process. Evaluation of criteria refers to the specific attributes that the consumer will use to evaluate and compare the product or brand (Cunningham, 2018:86). Criteria, which is considered important to the consumer when evaluating alternatives, include price, brand name, country of origin and emotions and feelings (Lamb et al., 2021:50).

- *Price:* This criterion refers to the amount that the consumer is willing to pay for the product. The consumer, for example, will purchase the brand that is the most affordable or represents the best value-for-money in their view.
- *Brand name:* The brand name can serve as an indicator of the quality of the product. For example, consumers prefer to purchase a specific appliance brand as it is known for its quality products.
- *Country of origin:* Country of origin is considered important as consumers associate products from certain countries to be of better quality (Fauser & Agola, 2021:130). A consumer, for example, will prefer chocolate from Switzerland as the country is known for the quality of its chocolates.
- *Emotions and feelings:* The consumers' emotions and the feelings that the product or brand evokes can also evaluate alternatives. A specific brand of perfume may, for example, arouse feelings of happiness within the consumer.

Consumers often use the evaluative criteria used by review websites or review bloggers and vloggers when evaluating a product.

3.4.3.2 Determine choice alternatives

As indicated in Table 3.12, determining choice alternatives is a factor that will influence the pre-purchase evaluation of alternatives stage of the consumer decision process. When the consumer makes a decision, not only do they have to evaluate the alternatives, but they also must decide on the alternative products or brands from which they will make their final choice (Hoffman & Bateson, 2017:93). This set of alternatives is known as the evoked or consideration set (Engel et al., 1990:215). The evoked set of alternatives consists of many brands that the consumer will recall from memory and experience, or those alternatives found within the search process (Babin & Harris, 2021:258). For example, a consumer purchasing a car may decide from a set of brands that the consumer has recalled from memory. The consumer could also find different car brands to consider from external sources such as product websites, review websites or social media.

3.4.3.3 Assessing choice alternatives

Assessing choice alternatives, as depicted in Table 3.12, will influence the pre-purchase evaluation of alternatives stage of the consumer decision process. The consumer will evaluate the alternatives according to the criteria that the consumer deems important (Engel et al., 1990:524). Consumers may already have pre-existing beliefs about how the product or brand will perform against their evaluation criteria. The consumer may often employ cut-off's or use signals when assessing choices (Lamb et al., 2021:50):

- *Cut-offs:* This refers to restrictions that the consumer has in terms of the attribute's value. A product or brand is considered further if it meets the consumer's minimum or maximum requirements. For example, the consumer usually has a maximum price that they are willing to pay for a product.
- *Use signals*: The consumer may use signals to evaluate or make judgements about the product or brand. Price, for example, is often a signal for product quality. Certain brands, for example, may be more expensive, however, consumers will still purchase the brand if they perceive it to be of high quality.

3.4.3.4 Select a decision rule

As indicated in Table 3.12, the decision rule refers to the strategies that the consumer will use to select from the alternatives (Engel et al., 1990:526). It is essentially the mental process the consumer goes through when deciding on the alternative and can be classified as compensatory and non-compensatory (Li, McCabe & Song, 2017:700).

- *Compensatory decision rules:* This refers to a situation where the perceived value of one criterion is low. However, this low value is compensated by the high value of another criterion. For example, if the product is an older version, but the price is affordable, the consumer may still decide to purchase the product as the low price of the product offsets the fact that it is an older version.
- *Non-compensatory:* With non-compensatory decision rules, the weakness of one evaluation criteria cannot be compensated with the strength of another. For

example, the consumer will not consider an older version of a product, even though the price is affordable. The age of the product is thus a non-compensatory rule.

Once the consumer has evaluated the alternatives, the next stage is to make the actual purchase decision. The purchase stage of the decision-making process will be discussed in the next section.

3.4.4 Purchase

Once the consumer has evaluated the alternatives, the next stage as illustrated in Figure 3.2 of the consumer decision-making process is to make the purchase decision. Figure 3.5 illustrates the factors that influence the purchase stage of the EBM model of the decision process.
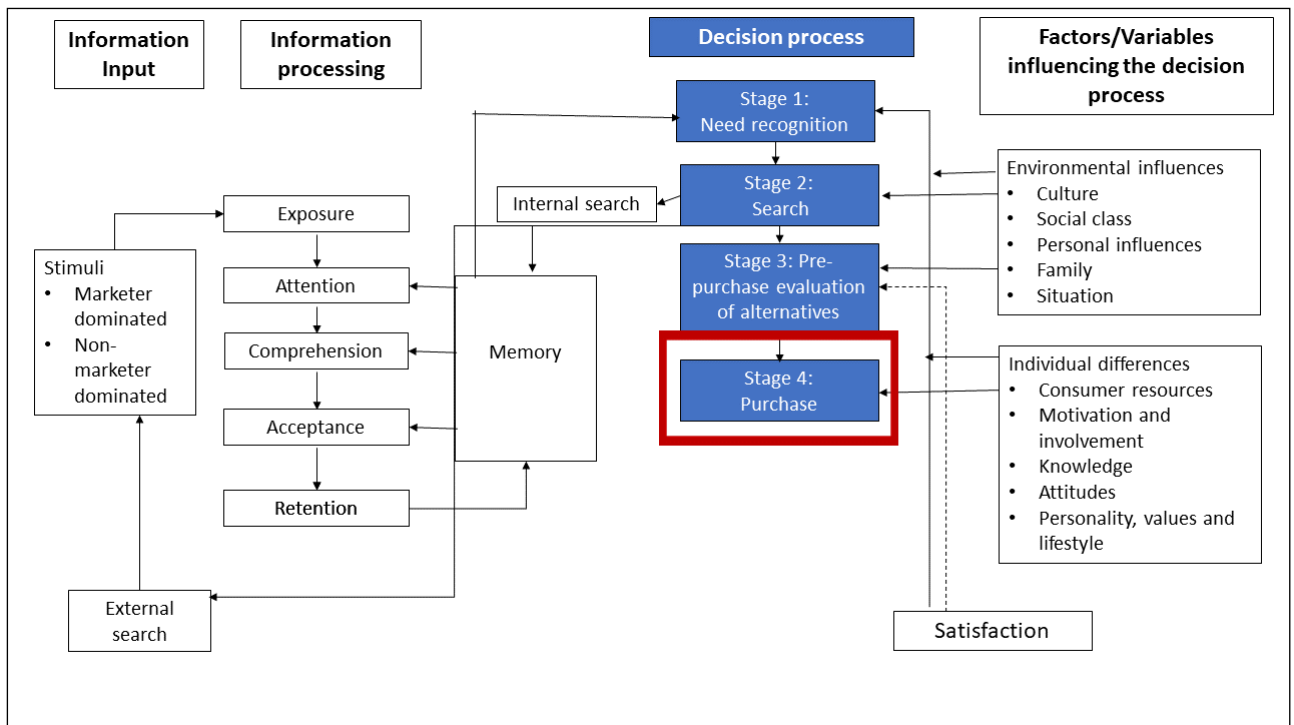
Figure 3.5: Purchase stage of the EBM model of the consumer decision-making process

During the purchase stage of the decision-making process, if the identified choice solves the problem or satisfies the consumers' need, the consumer will make a purchase (Burrow & Fowler, 2016:170). When making a purchase, the consumer will decide when to make the purchase, where the consumer will make the purchase and

how the consumer will make the purchase (Engel et al., 1990:537; Fauziah & Wahdiniwaty, 2019:125). Consumers have different avenues when making a purchase. A consumer, for example, can make the purchase and payment online or place an order through a mobile device and make the actual purchase on delivery.

According to Engel et al. (1990:537), purchase intention and environmental influences or individual differences are two determinants of the purchase decision stage. Table 3.13 indicates the factors of the purchase decision stage of the EBM.

Table 3.13: Factors of the purchase decision stage

Stage in the EBM model	Factors	Sub-factors
Purchase decision	Intentions	• Fully planned purchase • Partially planned purchase • Unplanned purchase
	Individual differences and/or environmental influences	• Motivation • Knowledge • Attitude • Personality • Values • Culture • Social class • Personal influences • Family • Current situation

Source: Adapted from Engel et al. (2006)

3.4.4.1 Purchase intention

The purchase intention, as indicated in Table 3.13, will influence the purchase decision stage of the consumer decision process. The purchase intention refers to the willingness of the consumer to partake in the exchange process and purchase the product (Hashim, Husin, Othman & Zain, 2017:170). Purchase intention consists of three sub-factors; fully planned purchase, partially planned purchase, as well as an unplanned purchase (Engel et al., 2006:82; Sohan & Ko, 2021:2):

- *Fully planned purchase:* This is when the consumer does an extensive search and has decided what to purchase, which brand to purchase, where the consumer will make the purchase.

- *Partially planned purchase:* The consumer has decided to purchase a product; however, the brand, style, size will be decided in-store. Price is usually a determining factor in partially planned purchases.
- *Unplanned purchase:* Often referred to as impulse purchases, the consumer decides on impulse to purchase a product.

To promote brands and products and enhance purchase intention, businesses are increasingly investing in online platforms such as social media sites, online review sites, vloggers as well as technology such as augmented and virtual reality (Dabbous & Barakat, 2019:1). These platforms provide an opportunity for the business to expose consumers to their products and brands with the anticipation of influencing the consumer's purchase intention (Dabbous & Barakat, 2019:1). McClure and Seock (2020) indicate in their research that social media pages of brands create awareness and familiarity with the brand allowing potential customers to plan future purchases from the brand. The research found that the consumer's involvement with a brand on social media influenced their attitude towards the brand and increased the likelihood of future purchase intention of the brand (McClure & Seock, 2020:5). In his research, Abrar (2018) found that augmented reality (an interactive environment where technology is used to superimpose information such as sound, images or text, into the real world) can enhance consumers' purchase intention if the consumer has the know-how on using the application. The research indicated that augmented reality has a positive effect on the customer's engagement and interaction with a brand (Abrar, 2018:74).

3.4.4.2 Individual differences and/or Environmental influences

Individual differences and/or environmental influences, as indicated in Table 3.13, will influence the consumer's purchase decision. The consumer's actual purchase decision can be influenced by the individual differences such as what the motivation for the purchase is, their knowledge of the product or brand needed, their attitude, personality, as well as environmental influences such as the consumers' values, culture, social class, personal influences, family and their current situation (Engel et

al., 2006:82). Individual differences and environmental influences have been discussed in detail in section 3.4.1.

As consumers increasingly become hyper-connected, consumers become more comfortable making a purchase online through a website, online through a mobile device app, through social media and even through the use of a voice assistant device (Accenture, 2016:7; Nielsen, 2018:9). According to World Wide Work (2021), online retail sales have surpassed R30.2 billion in 2020 in South Africa alone. This indicates that online purchases are increasingly being adopted in South Africa. Research conducted by Business Wire (2019) suggests that mobile commerce drives online sales in South Africa. The increase in online sales is an indication that consumers are increasingly using their mobile devices to make online purchases. According to Euromonitor International (2020), the COVID-19 pandemic has resulted in a surge in online and mobile purchases.

Once the consumer has made the purchase decision and has made the actual purchase, the next stage of the consumer decision process is consumption. The consumption stage of the decision-making process is discussed in the next section.

3.4.5 Consumption

Consumption refers to the actual usage of the product once it has been purchased (Burrow & Fowler, 2016:170). Consumption is evidence that a purchase has occurred (Schiffman & Wisenblit, 2019:353; Tata, Prashar & Gupta, 2020:3). Figure 3.6 illustrates the factors that influence the Consumption stage of the EBM model of the decision process.
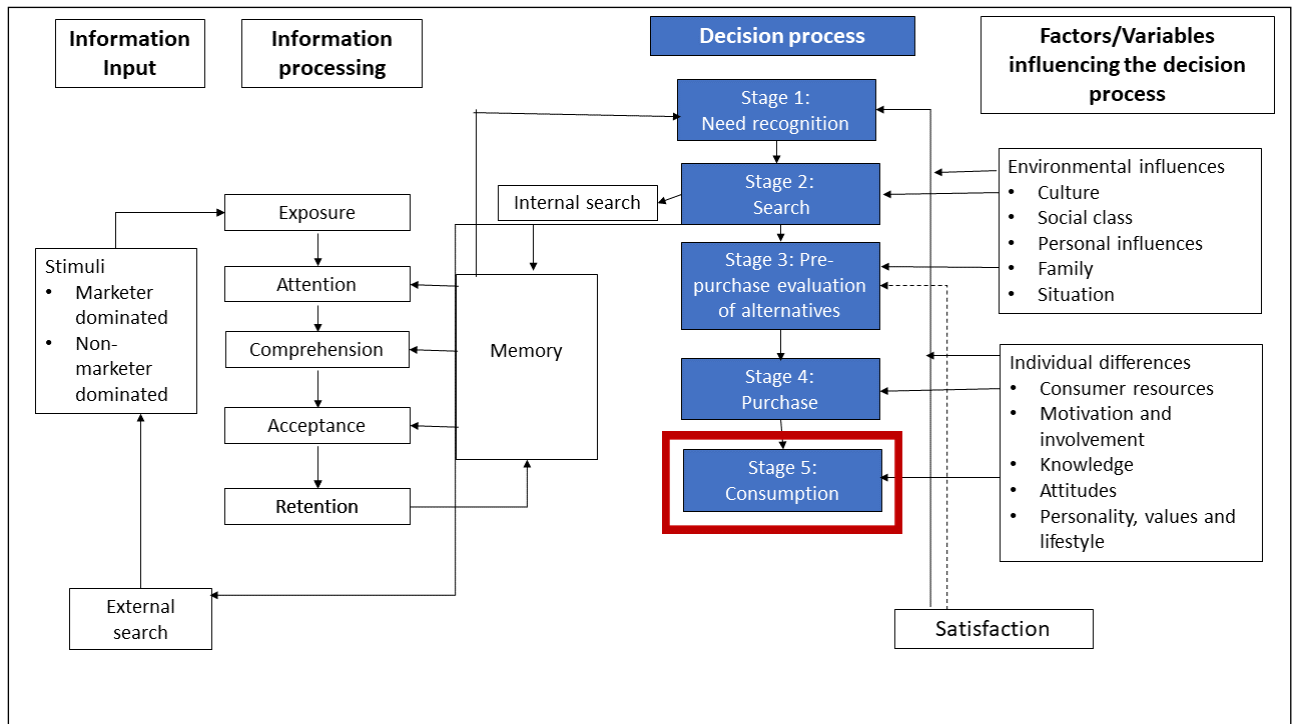
Figure 3.6: Consumption stage of the EBM model of the consumer decision-making process

As indicated in Figure 3.6, the consumption stage is also influenced by environmental influence and individual differences in the consumer. Table 3.14 shows that the consumption stage of the consumer decision process consists of several factors such as the consumption behaviour of the consumer, the consumption experience, consumption norms and rituals and compulsive consumption (Engel et al., 1990:543; Rajagopal, 2019:9; Fei, Huang & Huang, 2020:136).

Table 3.14: Factors of consumption behaviour

Stage in the EBM model	Factor	Sub-Factor
Consumption	Consumption behaviour	• When the product is used • How the product is used • Where the product is used • How much is consumed
	Consumption experience	• How does it feel • How rewarding or punishing was the experience • Did it confirm or disconfirm expectations
	Consumption norms and rituals	• Consumption norms • Consumption rituals
	Compulsive consumption	• Uncontrollable behaviour

Source: Adapted from Engel et al. (2006)

3.4.5.1 Consumption behaviour

Consumption behaviour, as indicated in Table 3.14, refers to the actual usage of the product purchased and is evidence of the actual purchase decision (Babin & Harris, 2021:6). Several sub-factors can characterise consumption; when the product is used, how the product is used, where is the product consumed and how much is consumed (Engel et al., 2006:191; Hoyer et al., 2021:6):

• *When the product is used:* Usage usually goes hand-in-hand with the consumption of a product. For example, when purchasing food at a restaurant, the consumer will consume food simultaneously. Consumption can also occur at a late unknown stage. For example, when the consumer purchases household groceries for the month, the consumer may only use these groceries at a later stage.

• *How the product is consumed:* How a product is consumed may differ based on who purchased it and the reason for the purchase. Consumers use products for different reasons; for example, some food products such as milk and honey can be used to bake cakes, to make beauty products such as face masks and to make traditional medication.

- *Where the product is used:* This refers to where the consumption occurs or the situation in which the consumption occurs. The consumer, for example, may purchase food at a restaurant to be eaten later at home.
- *How much is consumed:* Consumers may consume only a specific amount of a product at a time. This will influence when they make the next purchase. If a consumer consumes one litre of milk a day, they may purchase milk every day or maybe purchase a six-pack of milk for the week.

3.4.5.2 Consumption experience

Consumption experience refers to the emotional connection and consumer's perception that is formed when the consumer interacts with the product or brand (Han, Lei & Chen, 2017:1024). Engel et al. (2006) suggest that the consumption experience involves how it makes the consumer feel, how rewarding or punishing the experience is and if it confirmed or disconfirmed the expectations of the consumer:

- *How does it feel:* The feelings that a consumer gets during consumption can be positive, negative, overwhelming or even underwhelming (Timpanaro, Bellia, Foti & Alessandra, 2020:7). Many everyday consumption experiences are, however, experienced with low or no feeling. Bread, for example, is a product that is purchased and consumed almost every day. Consumers may often not experience any feeling when consuming bread. Negative feelings usually occur because of the product failing to meet the consumer's expectations during consumption. If a consumer purchased an appliance and it does not work when the consumer tries using it, it may cause the consumer to become annoyed and frustrated.
- *How rewarding or punishing was the experience*: Consumer experiences vary and can provide positive or negative reinforcements and can also be viewed as a punishment (Wang, Wang, Wan, Jin & Pan, 2021:6). When a consumer receives a positive outcome from consumption, it reinforces a positive experience. For example, every time a consumer makes an online purchase from Takealot.com, the delivery arrives early, and the product works perfectly. Because the consumer has consistently had a positive consumption experience with the online retail store, this creates positive reinforcement. Negative reinforcement occurs when the consumption experience results in a negative experience. Positive or negative

reinforcements can result in the consumer making a repeat purchase, or not. For example, the repeat consumption of multivitamins results in the avoidance of getting sick. Consumption experiences can sometimes also result in something negative or some form of punishment. For example, if a consumer gets a rash after using a specific cosmetic brand, this will likely result in the consumer not purchasing the brand again.

- *Did it confirm or disconfirm expectations*: This refers to the degree to which the consumer's expectations of the product were confirmed or disconfirmed during consumption. A consumer, for example, purchases a cake as it looks appetising and especially after the salesperson at the bakery indicated that the cake was delicious. However, upon consuming the cake, the consumer did not like the taste of the cake and found it parched. The consumer's expectations, in this case, were disconfirmed.

3.4.5.3 Consumption norms and rituals

Every society has norms and rituals that individuals will follow consciously or unconsciously. Consumption norms are any formal or informal rules that govern societies' consumption behaviour (Pellandini-Simanyi, 2014:168; Fei et al., 2020:130). The consumption of marijuana, for example, is illegal in many countries. Consumption rituals refer to a sequence of behaviour that has an emotional and symbolic meaning. During holidays, such as Christmas, the consumer participates in consumption rituals such as gift-giving, consuming specific types of food.

3.4.5.4 Compulsive consumption

Consumption can sometimes be destructive or counterproductive. Compulsive consumption refers to any uncontrollable behaviour that leads to an excessive desire to consume, obtain or experience an activity or product repeatedly in such a manner that it becomes dangerous to the consumer (Engel et al., 2006:456; Tarka, 2020:244). Compulsive consumption includes compulsive shopping, compulsive buying, compulsive possession, compulsive use (Engel et al., 2006:456; Tarka & Babaev, 2021:1582). Individuals engage in compulsive consumption behaviour for various

reasons, including low self-esteem, feelings of depression, and inadequacy. An individual, for example, experiences a sense of euphoria and relief from negative emotions every time they make a purchase. This sense of euphoria drives the individual to make purchases repeatedly.

3.4.6 Post-consumption evaluation

As indicated in Figure 3.2, post-consumption evaluation is a stage of the EBM consumer decision process. Once the consumer has consumed the product, the consumer will evaluate if they are satisfied with the product or not (Burrow & Fowler, 2016:170; Ngugi et al., 2020:130). Figure 3.7 illustrates the factors that influence the post-consumption stage of the EBM model of the decision process.
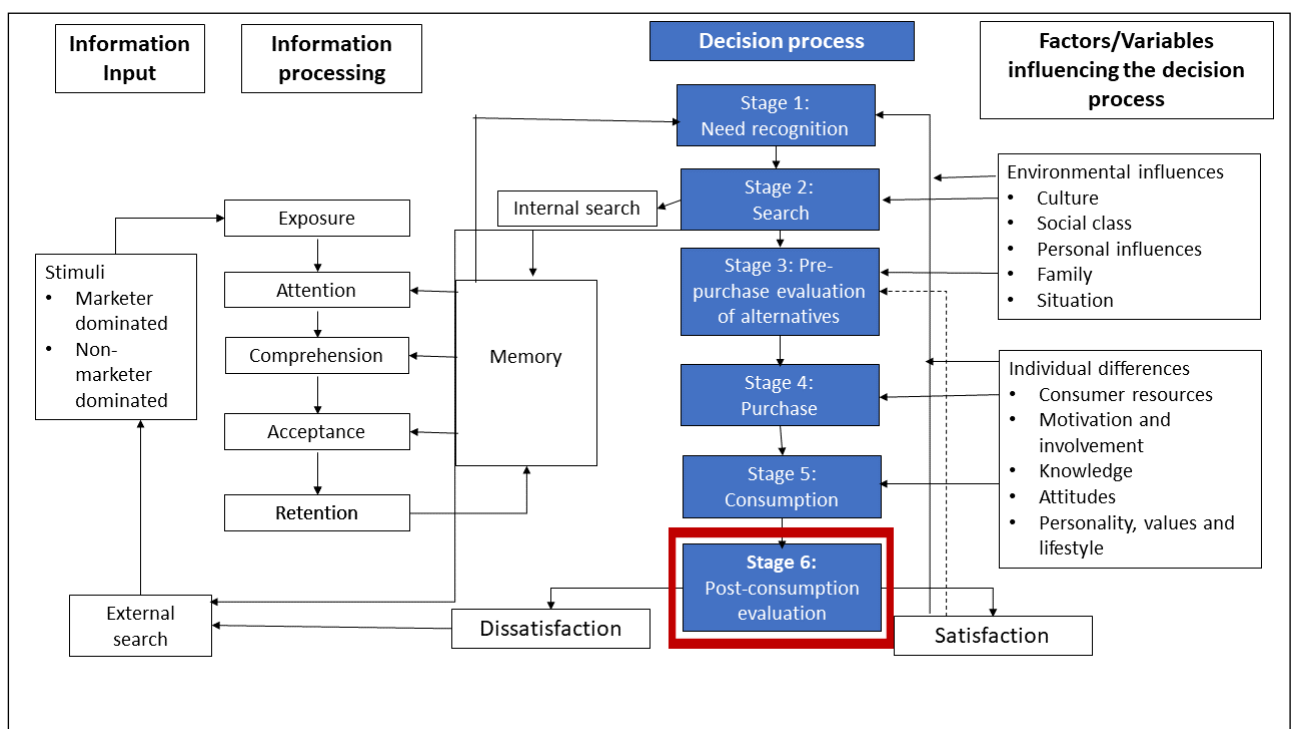
Figure 3.7: Post-consumption stage of the EBM model of the consumer decision process

As indicated in Table 3.15, post-purchase evaluation comprises two factors: satisfaction and dissatisfaction (Engel et al., 2006:210).

Table 3.15: Factors of post-consumption evaluation

Stage in the EBM model	Factor	Sub-Factors
Post-consumption evaluation	Satisfaction	• Product performance • Consumption feelings • Expectations
	Dissatisfaction	• Cognitive dissonance

Source: Adapted from Engel et al. (2006)

3.4.6.1 Satisfaction

Satisfaction refers to the consumption of the product resulting in a favourable experience for the consumer (Burrow & Fowler, 2016:170). The consumer's level of satisfaction depends on how well the product has satisfied the consumer's need or solved their problem. The level of satisfaction is also influenced by the consumer's expectation of the product. Satisfaction is important as it will impact the likelihood of the consumer making a repeat purchase. It will shape the word-of-mouth communication that is conveyed about the product and it assists in recruiting more customers (Engel et al., 2006:220; Kumar, Sachan & Dutta, 2020:273). As indicated in Table 3.15, satisfaction is determined by the product's performance, the consumption feelings and expectations of the consumer (Engel et al., 2006:220; Khanna & Hanspal, 2020:35):

• *Product performance:* This refers to the consumer's perception regarding the overall performance of the product. If the consumer has a positive perception regarding how the product performed, tasted, feels after use, the consumer will have a positive perception of the product and is more likely to make a repeat purchase.

• *Consumption feelings:* These refer to the feelings that the consumer has during the consumption of the product, which is important in determining the level of satisfaction. A consumer who purchases expensive earrings may feel beautiful when wearing them, making the consumer more self-confident. The self-confidence the consumer gets will influence the consumer's satisfaction regarding the product or brand of earrings.

• *Expectations:* Consumers have expectations about a product before they consume it. If the performance of the products matches or exceeds the consumer's expectations, the consumer will likely be satisfied. A consumer, for example, expects batteries to last for a month. If the battery dies before the month is over,

the consumer's expectation of the battery life span is not met, and they will be dissatisfied with the batteries and brand.

3.4.6.2 Dissatisfaction

Dissatisfaction occurs because the product does not match consumer expectations or the consumer's favourable consumption experience (Engel et al., 2006:221; Hoyer et al., 2020:6). Dissatisfaction can lead to complaints and even lawsuits against the company. A consumer who is dissatisfied with a product will search for a different product for future purchases. A sub-factor that will influence the consumer level of dissatisfaction is cognitive dissonance (Engel et al., 2006:221).

- *Cognitive dissonance:* This refers to the feeling of discomfort that occurs when there are conflicting beliefs or attitudes about a product (De Vos & Singleton, 2020:526). The consumer may need some reassurance that their purchase decision was worth and satisfactory in solving the problem. A consumer that makes an expensive purchase, for example, may feel uncomfortable and rethink the purchase.

In the connected culture, consumers often share the products they purchase, how they use the product and their experiences and level of satisfaction with the product on various social media and online platforms (Nielsen, 2018:17). There are various platforms available where consumers can rate their satisfaction or dissatisfaction, such as social commerce sites or Google Reviews on the business. Some service businesses such as beauty spas may ask customers to review their experience on Google reviews and the review often links to the beauty therapists' bonus.

3.4.7 Divestment

As indicated in Figure 3.2, divestment is the final stage of the EBM model of the consumer decision-making process. Divestment refers to the disposal of the product after use, the packaging of the product and even marketing materials or product literature (Engel et al., 2006:84; Ngugi et al., 2020:130; Poppelaars et al., 2020:2). Figure 3.8 illustrates the factors that influence the divestment stage of the EBM model of the decision process.
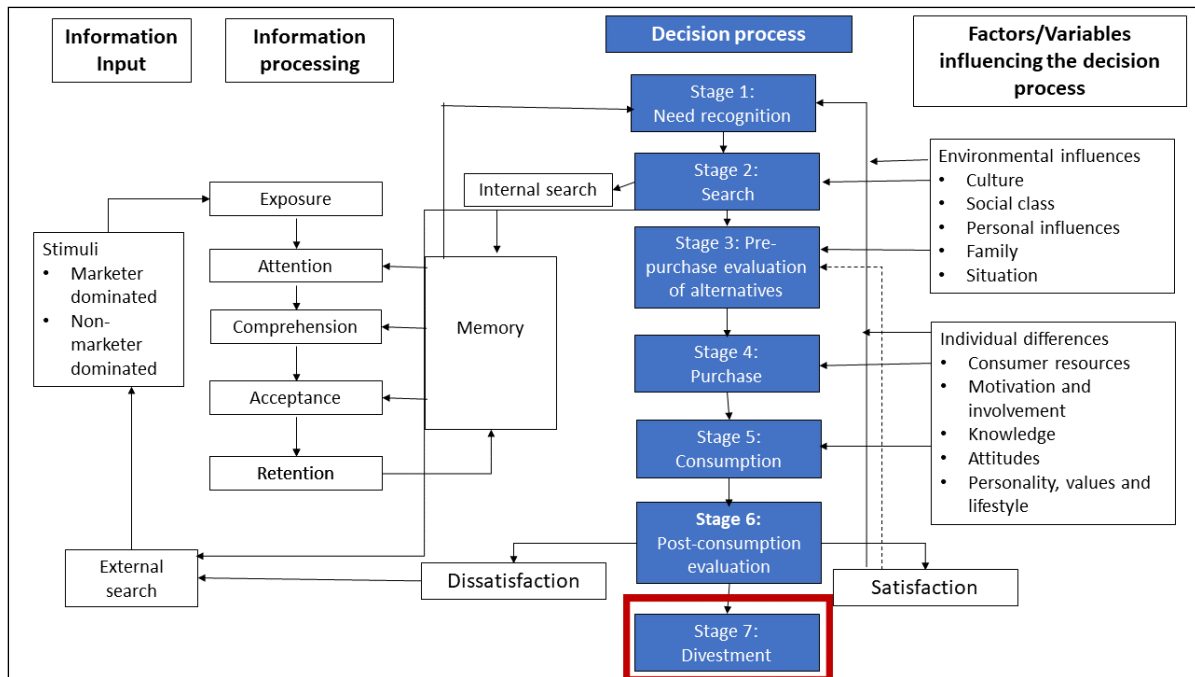
Figure 3.8: Divestment stage of the EBM model of the consumer decision process

Table 3.16 indicates the factors and sub-factors of the divestment stage of the decision-making process.

Table 3.16: Factors of Divestment

Stage in the EBM model	Factor	Sub-Factors
Divestment	Disposal	• Recycling • Selling • Outright disposal

Source: Adapted from Engel et al. (2006)

There are different methods of disposing of which include recycling, selling and remarketing or outright disposal (Engel et al., 2006:84; Poppelaars et al., 2020:2).

- *Recycling:* This involves the conversion of waste material into something useful. It could also include the re-use of packaging for different purposes. For example, the use of plastic bags to create art products.

- *Selling:* Once a consumer has used a product, they may opt to re-sell the product. Furniture, for example, can be re-sold on auction websites such as bidorbuy.co.za, gumtree.co.za or Olx.co.za.

- *Outright disposal:* With outright disposal, the product and its packaging are discarded through refuse removal.

The seven stages of the EMB model of the consumer decision-making process (need recognition, search, pre-purchase evaluation of alternatives, purchase, consumption, post-consumption evaluation and divestment) are influenced by many internal and external factors such as technology and connectivity and the incorporation of technology and connectivity into everyday activities (Kumar, Mangla, Luthra, Rana & Dwivedi, 2018:675). Advances in technology, digital and mobile devices and connectivity have provided consumers with the ability to engage in the online digital world at any time and any place (Nageswari, 2019:245). This ability to connect and interact with the online digital world at any time and any place are posited to have an implication on the consumer's decision-making process (Nageswari, 2019:245). Muzellec and O'Raghallaigh (2018) particularly highlight how mobile technology has influenced how consumers make purchase decisions. Mobile technology allows consumers to go back and forth between the various stages of the decision-making process before finally making the purchase, and even to do this at the point or moment before making the purchase in the store. How many consumers today, while standing in front of a product in a store about to buy, quickly check the product, its reviews, its price, and/or its availability at other local competitors, on Google? The consumer may also completely skip a stage if it is unnecessary (Muzellec & O'Raghallaigh, 2018).

Social media and online communication also influence various stages of the consumer decision-making process. In his research, Nash (2019) found that social media use influenced need recognition, search for information and evaluation of alternative stages of the decision-making process. The research indicated that social media facilitated consumers in actively searching for information and in making more informed decisions regarding product purchases (Nash, 2019). In their research, Ma, Au and Ren (2020) indicate that information processed from social media influences the speed of consumer decision making. Ngarmwongnoi (2020) posits that electronic word-of-mouth (eWOM) is perceived to be more specific and trustworthy by consumers and plays a critical role in the product evaluation, purchase and post-purchase stages of consumer decision making.

As societies, norms, rules, values, attitudes, technology and the environment change, so does the consumer's behaviour and decision making. In chapter 2, it was argued

that consumers are becoming increasingly hyper-connected and as such, how they interact with the world around them has changed. It is thus important to gain a better understanding of the consumer decision-making process of the hyper-connected consumer.

3.5 EVOLUTIONISED CONSUMER BEHAVIOUR IN A TECHNICALLY ADVANCED ERA

Changes in society are often spurred by various factors such as population patterns, evolving consumer values, politics, economics, globalisation, technology, and health pandemics such as the Coronavirus pandemic experienced during 2020 (Evans, 2018:4; Evans, 2020a:2). As discussed in chapter 2 (section 2.2), advancements in technology have been key in reshaping society and the world. Innovations in technology have led to increased Internet connectivity, advanced mobile technology and digital devices that enable connectivity to the internet of things (discussed in chapter 2, section 2.2.3), which has spurred the advent of hyper-connectivity. Because of hyper-connectivity, consumers' behaviour and how they interact with each other, and the world is arguably changing and evolving.

The increase in connectedness has led to consumers who are more informed, who have more information available to them and who are more empowered to contribute to society (World Economic Forum, 2016:6; Nijs, 2019:26). Consumers are going online through a mobile device such as a smartphone to interact and communicate with each other on social network sites, search for information, watch videos, find directions, and shop and buy goods or services (Consumer Barometer with Google, 2017). Schaefer and Edinger (2019) state that the rapid use of technology and social media and increased connectedness in the everyday lives of consumers are significantly altering the consumer's behaviour and expectations. The increasingly connected consumer is prioritising unique experiences, building relationships and value from the retailer when making purchases (Evans, 2018:8). Consumers in an increasingly connected and digital world tend to factor in online interactions and shared experiences in their everyday decision-making process (Solis, 2015:3; Zak & Hasprova, 2020:2).

Technologies, such as mobile devices, social media, chatbots, virtual assistants and even virtual reality, has impacted the consumer's decision-making process at different stages. Faulds, Mangold, Raju and Valsalan (2017) state that the increased use of mobile devices by consumers has changed consumer decision-making. Faulds et al. (2017) stipulate that the use of mobile devices has led to consumers going through a pre-purchase, purchase and post-purchase stage when making a decision. These stages (pre-purchase, purchase and post-purchase) happen in real-time and often occur together (Faulds et al., 2017:3). Pousttchi and Dehnert (2016) indicate that in a digitised environment, consumers tend to incorporate online comparison sites, review sites, and online recommendation systems into their decision-making behaviour. Ewerhard et al. (2019) suggest that consumers are increasingly using online channels such as social media and search engines to search for information and look for reviews and use different channels and devices to make purchases. Sihi (2018) found that virtual reality technology enhances the search for information stage of decision making and can expedite the evaluation of alternatives stage. Virtual assistants and chatbots are also increasingly being used by customers in the information search and pre-purchase evaluation stages of the decision-making process (Hoyer, Krischke, Schmitt, Kraume & Shankar, 2020:59).

Additionally, at the time of writing, the COVID-19 pandemic has reshaped society, the world economy, culture and consumer behaviour (Costabile et al., 2020:2). Nielsen (2020b) argues that while consumer behaviour has been changing recently to increasingly incorporate digital channels, the COVID-19 pandemic has sped up this integration as well as how consumers behave and make purchases. As governments worldwide implemented countrywide lockdown and restricted the movements of consumers as well as curtailing many business operations, a growing number of consumers started using online channels to make their purchases, while companies also turned to these channels to market and sell their products (Evans, 2020a; Wright & Blackburn, 2020:10). Even though countries have removed strict lockdown, social distancing and avoidance of large crowds have arguably become a norm, and the move to online consumption and socialisation are expected to forever change the behaviour of consumers (Sands, 2020). Evans (2020b) states in *'The Digital Consumer Journey'* report conducted by Euromonitor International (2020), that 60%

of substantial online shoppers researched products and explored product categories online during the COVID-19 pandemic period between March and June 2020. The *Digital Consumer Journey* report (Evans, 2020b) also indicates that online and mobile purchases by connected consumers of beauty, health and personal care products have risen during the COVID-19 pandemic. Sands (2020) indicates that because of COVID-19, consumers are increasingly moving away from using cash and cards as a payment method to contactless payments. As social distancing measures are adopted in the short- and long-term by consumers, contactless card payments (for example, mobile payments using a QR code, a smartphone, or smartwatch through ApplePay) are increasingly being used (Sands, 2020:4). Consumer research conducted throughout the COVID-19 pandemic from Accenture (2020) indicates that consumers' shopping behaviour during the COVID-19 pandemic has been influenced by consumers' concerns regarding financial security, sustainability and the value of brands as well as a move by consumers towards local shopping.

Table 3.17 indicates some of the research conducted on the influence of technology, increased connectivity, digitised marketing, social media and even software applications on the decision-making of consumers.

Table 3.17: Select research on the influence of technology, increased connectivity, digital marketing, social media and software on consumer decision making

Author(s)	Research discussion
Wetenowska and Rzepka (2021)	Wetenowska and Rzepka (2021) investigated the most popular social media used in selecting tourist destinations and the influence of social media on consumer decision-making amongst generation Y. A survey was conducted among Polish social media users who were considered as part of the Generation Y cohort. The research found that Facebook, YouTube and Instagram are the most used social media sites for generation Y. Individuals use social media as a means of gaining information from opinions of others on social media and reviews before making a purchase decision.
Semente and Whyte (2020)	Semente and Whyte (2020) state that the decision-making process of millennials is influenced by a considerable amount of time and money that the millennial consumer spends on technology-related devices and connecting to the internet. Semente and Whyte (2020) investigated the millennial consumers in Namibia's e-literacy or digital literacy levels and consumer decision-making styles. A total of 505 surveys were gathered from millennial consumers between 18 and 34 years in Namibia. The research revealed that the consumer level of e-literacy directly influenced the consumer's decision-making style. The research suggests that the lack of e-literacy adversely impacts the preferences of consumers.

Author(s)	Research discussion
Indahingwati, Launtu, Tamsah, Fireman, Putra and Awari (2019)	Indahingwati et al. (2019) state that digital technology is changing the paradigms and perceptions of millennial consumers in terms of their behaviour. The authors indicate digital technology can strongly influence the consumer's culture of decision making from a psychological and a marketing perspective. The research results indicate that internal factors (affective, cognitive and normative) and external factors (family, friends, culture) have a strong influence on the decision-making of the consumer of the technology-driven millennials. These internal and external factors will influence consumers at product awareness, information search, which leads to purchase intention and the final purchase decision.
Oumayma (2019)	According to Oumayma (2019), social media networks influence the consumer purchase decision-making process at each stage, namely, when recognising a need, searching for information, evaluating alternatives, making the purchase decision and post-purchase. The research empirically investigated the impact of social media on social media on the purchasing behaviour of consumers. A survey was conducted among Moroccan consumers and 828 responses were gathered. The results indicate that consumers use social media the most while searching for information and evaluating alternative stages of the decision-making process. The research indicates that consumers regularly use social media to find product reviews and comments to assist them in making their purchase decision.
Fauziah and Wahdiniwaty (2019)	Fauziah and Wahdiniwaty (2019) determined whether online marketing can influence the decision-making of internet users when making a purchase. The research conducted among consumers of the Meffy skincare brand in Indonesia found that consumer decision-making when making online purchases were influenced by four factors: the purchasing transaction process, product excellence, information clarity, and service excellence.
Dahiya and Gayatri (2018)	Dahiya and Gayatri (2018) investigated the effect of digital marketing communication on the consumer decision-making process. The research was aimed at the Indian passenger car market and was collected from 784 respondents in Delhi, India. The authors used five stages of decision making, need recognition, search for information, evaluation of alternatives, purchase decision and post-purchase behaviour. The research indicates that the role of the internet and digital marketing is significant in the decision-making process of the consumer for a high involvement product such as a car. The results indicate that several stages of the decision-making process that include need recognition, search for information, evaluation of alternatives and post-purchase evaluation, are influenced by digital marketing communication and consumers' online activity. Although consumers used digital channels through the decision-making process, the results indicated that consumers still did not book a car online.
Kumar, Mangla, Luthra, Rana and Dwivedi (2018)	In this research, the authors state that technology has provided consumers with multiple platforms to select their products or services. The research thus determined the impact on the consumer's decision-making pattern in a digital market. The authors propose a structural hierarchy model for the changing pattern of consumer decision-making. The model indicates that factors such as innovation and trends, brand and quality, fulfilment and time energy, reputation system, information overload, price and value for money, face and risk aversion and social aspects are responsible factors for changing consumers behaviour patterns in a digital market.

Author(s)	Research discussion
Hall, Conway, Betts and Parker (2016)	In their article, 'From economic man to connected consumer', Hall et al. (2016) reviewed several decision-making models and their relevance in the era of a connected consumer. Hall et al. (2016) state that most consumer decision-making models were developed when traditional one-way communication existed and does not consider the highly digitally literate consumer. The authors indicate that consumers today actively seek out knowledge and inspiration and as such, brands should cater their communication to the needs of these consumers.
Huseynov, Huseynov and Ozkan (2016)	Huseynov et al. (2016) investigated the influence of knowledge-based recommender agents on the online consumer decision-making process. Online recommender systems are intelligent software that can make recommendations for consumers during their online shopping. The research used shopping system log data that was gathered by the online recommender system. The results indicated that consumers' shopping behaviour was influenced by the online recommendation system. The consumers' shop durations and the amount of time they spent searching for information was reduced when an online recommender system was integrated into the online store.

The selected studies discussed in Table 3.17 indicate that how consumers behave and make decisions are decidedly influenced by the increased connectivity and use of digital technology by consumers. Several factors have been identified in the research discussed in Table 3.17 that influences the decision-making process of a consumer when making purchases online or through the use of digital technology. These factors include internal factors such as consumers' experience, habits and memory, knowledge, attitude and values (Indahingwati et al., 2019:30). External factors that influence the online consumer behaviour process were found to include culture, social class, friends and family, the consumer's situation, marketing stimuli (Kumar et al., 2018:675; Indahingwati et al., 2019:30).

When researching the decision-making process of consumers purchasing in a connected environment through online platforms or supported by digital technology many researchers (as indicated in Table 3.17) commonly use an amended five-stage model of decision making. The five-stage decision-making model consists of the stages, need recognition, search for information, evaluation of alternatives, purchase decision and post-purchase behaviour (Dahiya & Gayatri, 2018:78; Fouziah & Wahdiniwaty, 2019:125; Oumayma, 2019:3).

As the world, society, and consumers are increasingly becoming hyper-connected, businesses and academia must better understand the decision-making process of the hyper-connected consumer. A lack of knowledge of consumers and their changes in

behaviour can lead businesses to spend large amounts of money on the wrong market offerings and the wrong target market using the wrong communication platforms. The research thus determines the decision-making process of the hyper-connected consumer.

3.6 PROPOSED THEORETICAL MODEL FOR THE RESEARCH

As discussed in sections 3.2 and 3.3, several consumer decision-making models have been developed over time. In section 3.3, the seminal consumer decision-making models were discussed. It was indicated that the EBM model of the consumer decision process has, however, been the most widely used in academia in determining and analysing the decision-making process of the consumer. Recently, scholars such as Kotler, Armstrong and Opresnik (2016), Lantos (2015), and Schiffman and Wisenblit (2019) in the marketing and consumer behaviour fields of study have modified the EBM model of the consumer decision-making process. They have condensed it to focus on the five core stages of consumer decision making (need recognition, search for information, evaluate alternatives, purchase decision and post-purchase behaviour) (Hettiarachchi et al., 2017:130). The main difference between the original seven-stage EBM model and the condensed model is that the last three stages of the seven-stage model (consumption, post-consumption evaluation and divestment) have been collapsed into a single stage, referred to as post-purchase behaviour. In section 3.5, it was also indicated that research regarding consumer behaviour in a connected, online or digital technology environment, often uses these five stages (namely, need recognition, search for information, evaluate alternatives, purchase decision and post-purchase behaviour) of decision making.

While willing to adopt the more common five-stage approach to consumer decision-making, the author wishes to raise a concern about the fifth stage of the model. The empirical component in part 2 of the research – discussed in the next chapter – draws on structural equation modelling and path analysis. In doing so, it is common practice to have independent variables and dependent variables. Ideally, in consumer decision making the dependent variable is the actual act of purchasing. However, in the research context, purchasing is difficult to measure directly, and therefore

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consumption is considered a proxy for the actual purchase in this study. Consumption is used as a proxy as it is proof that an actual purchase occurred. At the same time, the point of concern is that post-purchase behaviour cannot be seen as the dependent variable in decision making, as it all occurs post-purchase. Post-purchase behaviour rather creates a feedback loop that feeds information from the consumer experience and interaction with the product/brand back into the consumer decision-making process (Fikiri et al., 2020:361).

Thus, to determine the decision-making process of the hyper-connected consumer, the research will also further amend and condense the five core stages of decision making to four essential stages: need recognition, search for information, evaluate alternatives and purchase decisions, with consumption used as a proxy for decision making. A theoretical model was developed based on the theoretical premise of the EBM model of the consumer decision-making process, modified as described above, to be used as the basis for the empirical investigation. The theoretical model, as illustrated in Figure 3.9, consists of several constructs and sub-constructs:

- *Constructs:* The model constructs are the four proposed stages of the decision-making process of the hyper-connected consumer. The constructs of the model are latent variables as they are not directly observed (Leedy & Ormrod, 2021:89). The constructs are inferred from other variables that will be observed.
- *Sub-constructs (factors):* The sub-constructs include several factors that form the structure of each construct. The sub-constructs are intermediate or mediating variables that explain the observed relationship between two variables (Leedy & Ormrod, 2021:41).
- *Sub-constructs (items):* The items are those variables measured. The items are the actual statements or questions answered by respondents who participate in the research.

Figure 3.9 illustrates the proposed theoretical model for the hyper-connected consumer's decision-making process, indicating the constructs, sub-constructs, and items that will be used as the basis of the research.
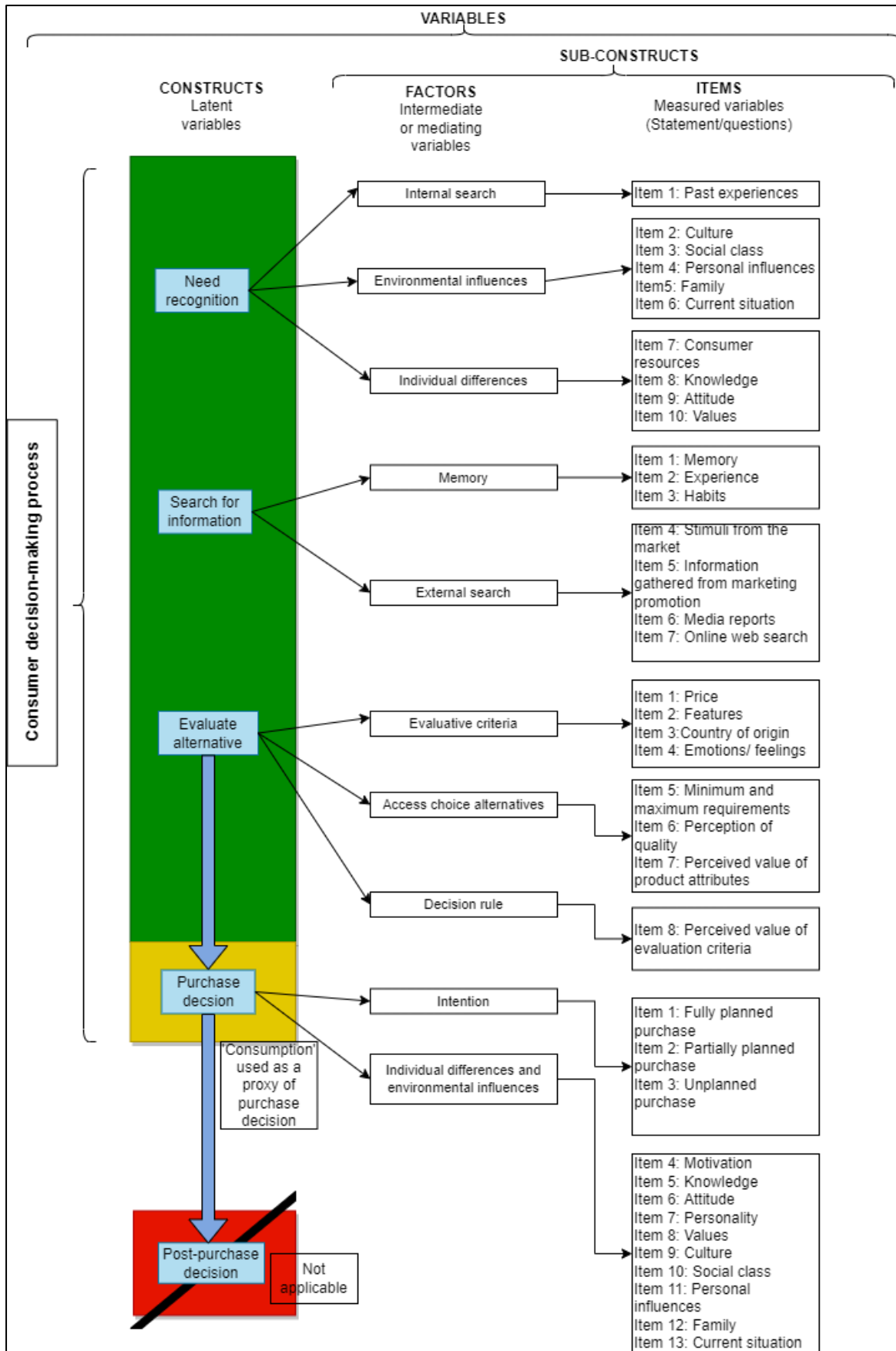
Figure 3.9: A proposed theoretical model of the decision-making process of the hyper-connected consumer

The proposed theoretical model illustrated in Figure 3.9 shows the constructs need recognition, search for information and evaluate alternatives, which leads to a purchase decision. The sub-constructs (factors that influence each construct) and items (measured variables) for each factor is indicated. Figure 3.9 also highlights that consumption will be seen as a proxy of purchase decision and that the post-purchase decision stage will not apply to the research. The four constructs of the theoretical model, as indicated in Figure 3.9, are discussed:

1. **Need recognition:** The need recognition construct represents the stage of the hyper-connected consumer decision-making process where the consumer has identified a need or a problem. A need is triggered by an internal search, environmental influences and individual differences that a consumer is exposed to (Engel et al., 2006; Ho & Law, 2020:8). Consumers are continuously exposed to and fed information from various platforms (online and offline) in a hyper-connected environment. The continuous exposure to information and feeding of information can impact how the consumer's needs are triggered and even create artificial needs (Matthes, Karsay, Schmuck & Stevic, 2020:2). Figure 3.9 indicates that hyper-connected consumers' internal search is triggered by past experiences that the hyper-connected consumer may have had with the product or brand. The environmental influences that influence the hyper-connected consumer's need recognition include culture, social class, personal influences, family and the hyper-connected consumer's current situation (Hettiarachchi et al., 2017:130). The individual differences that influence the hyper-connected consumers' needs include consumer resources, knowledge, attitude and values.

2. **Search for information:** Figure 3.9 indicates that the search for information construct represents the hyper-connected consumer decision-making process where the hyper-connected consumer will gather information to solve the problem. The theoretical model in Figure 3.9 proposes that a hyper-connected consumer will search for information in their memory and look at past experiences, as well as drawing on their ingrained habits (Engel et al., 2006:70; Mothersbaugh et al., 2020:536). The hyper-connected consumer will also search for information externally from stimuli from the market, gather information from a marketing promotion, media reports, online web searches, social media, review sites (Engel et al., 2006:70; Oumayma, 2019:3; Han, Zhang & Wang, 2020:133).

3. **Evaluate alternatives:** The evaluation of the alternatives construct illustrated in Figure 3.9 represents the stage of the hyper-connected consumer decision-making process at which the consumer will evaluate alternative products or brands. The proposed theoretical model indicates that during evaluating criteria, the hyper-connected consumer will use price, product features, country of origin and emotions as evaluative criteria (Peide & Fei, 2019:442; Fouziah & Wahdiniwaty, 2019:125). The hyper-connected consumer will also assess their choice alternatives by assessing the minimum and maximum criteria that the hyper-connected consumer has set, assess their perceptions of quality and the perceived value of the product attributes (Engel et al., 2006:70; Mothersbaugh et al., 2020:568).

4. **Purchase decision:** The proposed theoretical model, as illustrated in Figure 3.9, indicates the purchase decision construct represents the stage of the hyper-connected consumer decision-making process at which the consumer has made the final purchase decision and intends to make the purchase. The hyper-connected consumer's purchase decision stems from their intention (if the purchase was fully planned, partially planned or unplanned), as well as the individual and environmental influences (motivation, knowledge, attitude, personality, values, culture, social class, personal influence, family and the consumer's current situation) (Engel et al., 2006:70; Hettiarachchi et al., 2017:130; Lou et al., 2020:3). Once a consumer has made the purchase decision and made the actual purchase, consumption occurs. Consumption encompasses the acts of acquiring, owning, and using a product and can be viewed seen as evidence of the actual purchase decision (Canavan, 2021:3). As such, consumption can be viewed as a proxy of purchase decisions.

3.7 SUMMARY

The study of consumer behaviour provides businesses and marketers with essential knowledge on effectively reaching and interacting with consumers (Stankevich, 2017:7; Schiffman & Wisenblit, 2019:30). Understanding how consumers behave assists businesses in adapting their offerings to better suit the consumer's needs.

This chapter provided an overview of consumer behaviour and the decision-making process of the consumer. The seminal models of consumer decision-making were discussed. The EBM model of the consumer decision process is seen as the most commonly used decision-making process in academic research. As such, the EBM model is used as the theoretical framework for the theoretical model proposed for the decision-making process of the hyper-connected consumer to be tested later in this study. A detailed discussion of the EBM model of the consumer decision process is provided in the chapter. How consumers' behaviours are evolving in an increasingly hyper-connected world was also deliberated. The proposed theoretical model that is developed on the basis of the theory is provided and discussed. In the next chapter (chapter 4), the research methodology adopted in this study will be discussed.

CHAPTER 4
RESEARCH DESIGN AND METHODOLOGY

4.1   INTRODUCTION

The preceding chapters (chapters 1, 2 and 3) provided an in-depth literature review which began with introducing the study, identifying an information gap and research objectives in chapter 1. In chapters 2 and 3, the hyper-connected consumer, consumer behaviour, and consumer decision-making models were discussed. Delving into the literature revealed that the world of hyper-connected consumers is a growing market, which has recently been accelerated by the COVID-19 pandemic, yet still relatively unexplored. There is still a lack of knowledge on the hyper-connected consumer and how the consumer makes decisions, specifically within the South African context. A theoretical model for the decision-making process of the hyper-connected consumer was proposed based on the literature review. To confirm the theorised model, empirical research was required.

This chapter focuses on outlining the central concepts of the research undertaken to conduct the empirical investigation. The purpose of the research that leads to the primary research question will be discussed. The primary and secondary research objectives will be revisited, followed by a detailed discussion of the empirical research process employed in this study. The research design, based on Saunders et al.'s (2007:128) 'research onion', culminating in the research methodology, the sample identification, the sampling techniques, and the data collection method, will be discussed as part of the research process. The chapter will conclude with a discussion on the ethical considerations involved in the research. The discussion begins by outlining the research process.

4.2   THE RESEARCH PROCESS

The research process encapsulates a series of activities that culminate in gathering data which is then analysed to form conclusions and answer a research question – the last step in Saunders' et al. research onion (Gravetter & Forzano, 2020:19). The research process is undertaken to ensure that all aspects of the research project are consistent by following a systemic, planned series of steps (Adams & Lawrence, 2018:25). Figure 4.1 illustrates the steps in the research process. Each step in the research process, as indicated in Figure 4.1, will be discussed in detail in relation to the research in the following sections.
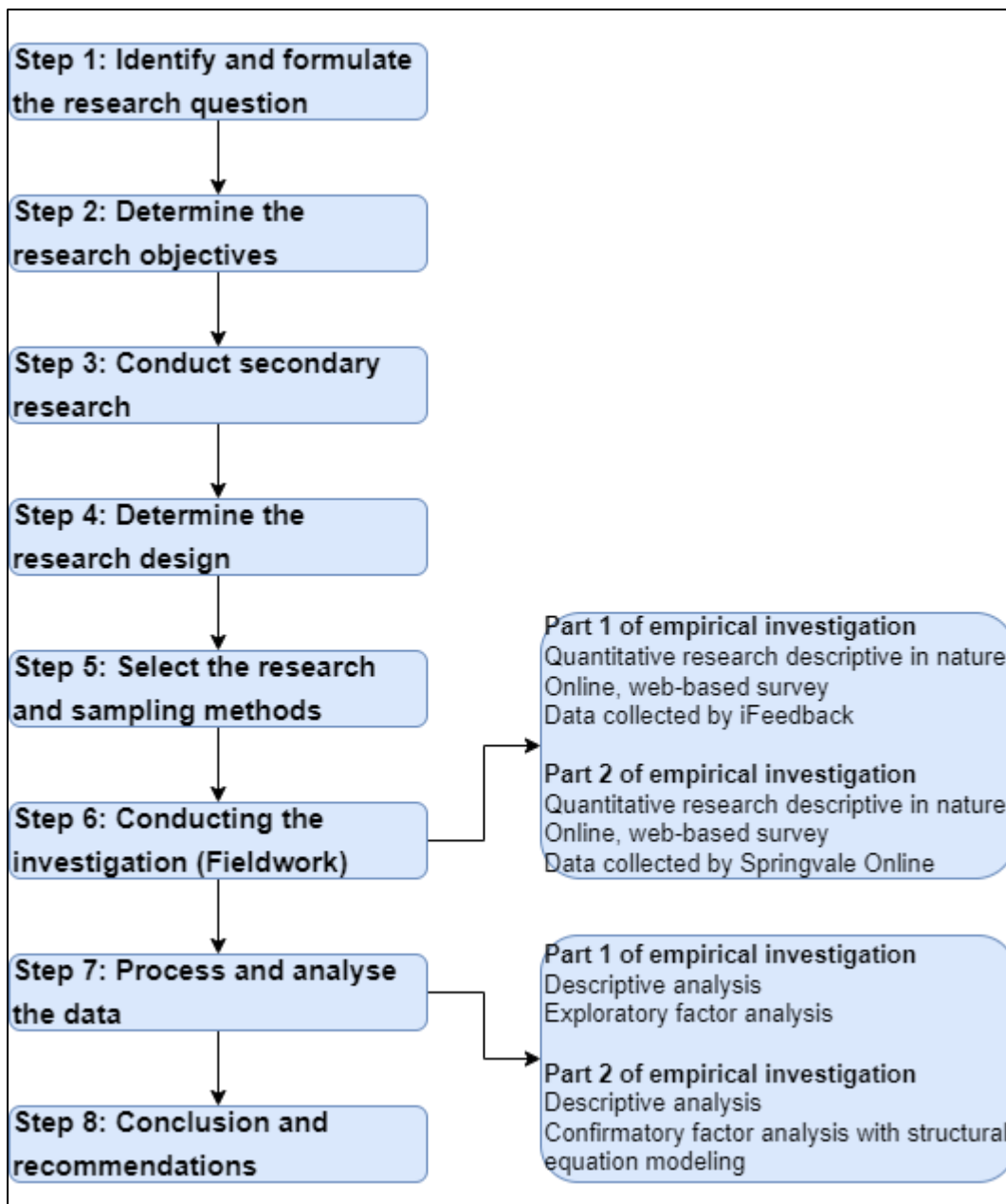
Figure 4.1: Steps in the research process
Source: Adapted from Mooi et al. (2018) and Mukherjee (2020)

4.2.1   Step 1: Identify and formulate the research question

The first step in the research process, as illustrated in Figure 4.1, is identifying and formulating the research question. A research question is a clear, concise and arguable question around which the research is centred (Blaikie & Priest, 2019:56).

The research question is the foundation of the study that essentially guides the research process (Ary, Jacobs, Irvine & Walker, 2019:25). A well-defined research question will provide a clear indication of the type of information required to answer the research question and how to effectively and efficiently obtain the relevant information (Veal, 2017:56).

According to Euromonitor International (2015s) and Monaco, Minneman and Joseff (2020), consumers are increasingly becoming hyper-connected due to the increase in connectivity and communication between people, devices, machines, and objects. As such, how consumers behave and make decisions are changing because of hyper-connectivity. The COVID-19 pandemic that swept the world during 2020 resulted in unprecedented disruptions to the lives of individuals worldwide. With many countries implementing countrywide lockdown and individuals following strict social distancing protocols, individuals worldwide have been forced to conduct learning, working, exercise, entertaining and shopping activity online through various digital devices (Boumphrey, 2020:4). The rapid increase in connectivity during the COVID-19 pandemic has spurred the growth of hyper-connectivity among individuals worldwide (Evans, 2020a:3; Lelouch & Gomez, 2020:4).

Research conducted by Euromonitor international (2015a) on hyper-connected consumers triggered a search of academic literature on the hyper-connected consumer and the decision-making process of the hyper-connected consumer. Previous research on hyper-connected consumers and hyper-connectivity focused on how the world and society are moving towards hyper-connectivity (Swaminathan et al., 2020; Stephan, 2017; Porto, 2016). To the researcher's knowledge, the available research does not focus on the behaviour and decision-making process of the hyper-connected consumer and no theoretical model has yet been proposed that indicates the decision-making process of the hyper-connected consumer.

To gain a better understanding of the increasingly hyper-connected consumer market, the researcher focuses on investigating the decision-making process of the hyper-

connected consumer. Gaining greater insights into the hyper-connected consumer will not only contribute to the academic literature but also enable marketers and businesses with knowledge on how to better serve the increasingly hyper-connected market. As indicated in chapter 1 (section 1.6), the research question for the current study is thus as follows: *What is the decision-making process of the hyper-connected consumer?*

The research question guided the development of the research objectives of the study. As illustrated in Figure 4.1, the next step of the research process is determining the research objectives.

4.2.2 Step 2: Determine the research objectives

The second step of the research process is to determine the research objectives of the study (shown in Figure 4.1). The objective of a study is a broad indication of what the research aims to achieve (Bairagi & Munot, 2019:23). There are two categories of research objectives that can be set, namely, primary and secondary research. The primary research objective indicates the focus of the study and the main outcome that the study aims to achieve (Kumar, 2019:91). The secondary research objectives stem from the primary objective and reflect the elements that need to be investigated to achieve the primary objective (Kumar, 2019:91).

The objectives of the research were developed to address the research question. The primary objective of the research, as stated in chapter 1, is to determine the decision-making process of the hyper-connected consumer within South Africa to better understand the growing hyper-connected market.

From the primary objective, several secondary objectives were developed. These secondary objectives are to:
- determine the profile of a hyper-connected consumer within South Africa,

- identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer,

- propose a conceptual model from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa,

- confirm the underlying factor structure of the proposed conceptual model of the decision-making process of the hyper-connected consumer, and

- determine areas of future research.

Once the research objectives have been set, the next step in the research process is to conduct secondary research.

4.2.3 Step 3: Conduct secondary research

As depicted in Figure 4.1, the third step of the research process is to conduct secondary research. Secondary research refers to historical information that has already been gathered by others for a different research opportunity (Kumar, 2021b:298). The secondary research is used to provide a historical background on which to base the current research (Gravetter & Forzano, 2020:28).

For the research, secondary research was conducted to identify the research question (chapter 1) and formulate a literature review (chapters 2 and 3). From the literature review, a theoretical model was proposed for the decision-making process of the hyper-connected consumer. Various external resources, including academic journal articles, academic books, industry research reports, online and internet statistics, and internet articles, were consulted for the research. As indicated in chapter 1, several academic databases (Ebscohost, Scopus, Web of Science, ProQuest and Google Scholar) were consulted in formulating the literature review. Previous research on hyper-connectivity and consumer decision-making models were reviewed to identify any new insights, theories or patterns that could be used to provide historical background as well as a base for the current research. The secondary research was

conducted to understand hyper-connectivity and the various technologies that have led to hyper-connectivity and hyper-connected consumers (see chapter 2).

Various consumer decision-making models and theories were evaluated during the secondary research process to identify constructs, subconstructs and items that could be used to develop a theoretical consumer decision-making model for the hyper-connected consumer. From the secondary research conducted, four constructs were identified as key in the decision-making process of consumers, namely, need recognition, search for information, evaluation of alternatives and purchase decision. The literature also identified several sub-constructs that form the structure of each identified construct. Several measurable items for each sub-construct were identified from the literature as well. The constructs, sub-constructs and items identified from the literature were used to propose a theoretical model for the decision-making process of the hyper-connected consumer that would form the basis of the empirical investigation (see chapter 3).

To confirm the constructs and sub-constructs of the proposed theoretical model identified an empirical study was required. Primary research involves research that is conducted by gathering empirical evidence. When conducting an empirical study, the research design must first be determined, the next step in the research process.

4.2.4 Step 4: Determine the research design

As indicated in Figure 4.1, the fourth step in the research process is to determine the research design that will be used. The research design is essentially about connecting questions with answers (Salganik, 2018:5). The research design refers to the plan that is to be followed to answer the research question (Mooi et al., 2018:12; Mukherjee, 2020:12). The framework of Saunders' et al (2007) 'research onion' will be used to describe how the research will be framed. The research onion consists of several layers, each of which examines the decisions and choices selected for the research. The six layers of the 'research onion' from the outermost layer are the research

philosophy, the approaches to theory development; methodological choices, research strategy; time horizons and techniques and procedures.

4.2.4.1 Research philosophy

The research philosophy as presented by Saunders et al. (2019) addresses issues such as the research paradigm that guides the research. Research paradigms are often adopted in human behaviour studies as a means of improving the credibility and generalisability of a study (Kankam, 2019:85). The word paradigm was first used by Thomas Kuhn (1962), an American philosopher, who defined a paradigm as "a philosophical way of thinking". A researcher's philosophical way of thinking or 'world view' reflects their thinking and beliefs about the world and informs how the research data is interpreted (Kivunja & Kuyini, 2017:26; Park, Konge & Artino, 2020:690). The selected research paradigm influences what is to be studied, how the research will be conducted, how the results will be interpreted (Bell, Bryman & Harley, 2018:34).

Four basic elements characterise a research paradigm: epistemology, ontology, methodology and axiology (Easterby-Smith, Jaspersen, Thorpe & Valizade, 2021:102). The epistemology describes how knowledge has come to be known (Mukherjee, 2020:12). Ontology refers to reality; it provides an understanding of all elements that make up the world as it is seen by the researcher (Matteucci, Nawijn & Zumbusch, 2021:3). The methodology refers to how knowledge is gained and includes the research procedures used, how the data will be collected and analysed etc. in a planned study (Goodyear-Smith & Mash, 2019:26). It also addresses issues such as the research approach adopted, the research strategy used and the time horizon of the study. Finally, axiology refers to the ethics or the value of the research (Matteucci et al., 2021:3).

The research paradigm adopted for the research is that of a post-positivist paradigm. Post-positivism as a research paradigm emerged as a response to the limitations of the positivist paradigm (Melegati & Wang, 2021:46). The positivist paradigm views

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reality as objective and is based on pure empirical analytical facts (Iofrida, De Luca, Strano & Gullisano, 2018:469). Positivists believe that science can objectively uncover absolute truths, using the correct measurement tools (Leedy & Ormrod, 2021:7; Park et al., 2020:691). The role of the researcher is ignored in a positivist paradigm. However, social science researchers found that positivism is limiting as true objectivity is not always possible and consequently proposed the post-positivism paradigm which takes into consideration the role of the researcher in the study (Melegati & Wang, 2021:46).

The post-positivism paradigm recognises that there is no certainty or absolute truth in research when studying human behaviour (Creswell & Creswell, 2018:7). Although objectivity is strived for in research, bias can occur especially during the data collection and interpretation (Leedy & Ormrod, 2021:7). Post-positivism holds a critical realism ontology, which means that reality is viewed as objective. However, it is recognised that reality is probabilistic and can only be known imperfectly (Nicotera, 2017:1).

The post-positivist research paradigm maintains an objective epistemology that maintains that reality "has a material existence independent of our thinking about it that can be measured and studied" (Goodyear-Smith & Mash, 2019:28). Due to external influences such as the context of the research, epistemologically, no full explanation of reality is possible. The methodology that is prioritised in the post-positivist research paradigm is quantitative research; however, qualitative data can be used to strengthen the findings if required (Melegati & Wang, 2021:46). Data and rational considerations are emphasised as a means of contributing to and shaping knowledge. Quantitative research strategies include surveys, experiments or observations to provide statistical and measurable data, which are used to explain relationships. In the post-positivism paradigm, the scientific community contributes to validating the research (Iofrida et al., 2018:469). The post-positivist paradigm also aims to understand how axiology may influence the research (Aliyu, Bello, Kasim & Martin, 2014:81; Laher, Fynn & Kramer, 2020:304). Post-positivists believe that even though undesirable, bias does occur, efforts must be taken to limit and correct any

bias (Melegati & Wang, 2021:46). In ascertaining quality in the post-positivist research, internal and external validity criteria are investigated through statistical confidence levels produced (Iofrida et al., 2018:469). Post-positivism uses abstract theories that are based on previous knowledge to develop factual knowledge (Nicotera, 2017:2; Leedy & Ormrod, 2021:30).

Consumer behaviour research, specifically in marketing, has traditionally adopted a positivist research paradigm (Zeithaml, Verleye, Hatak, Koller & Zauner, 2020:410). The use of the positivist research paradigm was largely due to the logical approach through which consumer behaviour was viewed in various consumer decision-making models such as the EBM model of the consumer decision process (Engel et al., 2006:4; Zeithaml et al., 2020:410). Owing to the limitations of the positivism research paradigm in exploring various aspects of consumer behaviour, researchers opt for research paradigms such as post-positivism, which recognises that the consumer's reality cannot be perfectly known (Creswell & Creswell, 2018:7; Alharahsheh & Pius, 2020:41). The current research recognises that the consumer may not always be rational, and that consumer behaviour is not something that can be known perfectly. The research seeks to develop relevant, true knowledge regarding how hyper-connected consumers make decisions. The post-positivist research paradigm and its associated statistical data collection and analysis methodologies are thus most suited to determine the decision-making process of the hyper-connected within South Africa. The research paradigm of post-positivism will inform the research process used in the research, which is discussed in the next section.

4.2.4.2 *Approaches to theory development*

In keeping with the 'research onion' of Saunders et al. (2007) and given the research philosophy adopted in this study as discussed above, a deductive research approach is proposed. The deductive approach is proposed as the research approach moves from theory to an empirical investigation. For the study, both primary and secondary research was deemed necessary. Drawing on the literature on consumer behaviour

and consumer decision-making models, the research proposed a conceptual consumer decision-making model for the hyper-connected consumer as the basis for the empirical investigation. To refine and develop a proposed conceptual model, primary research was conducted.

4.2.4.3 Methodological choice

The methodological approach selected for the research is that of quantitative research. As discussed in section 4.2.4.1 a post-positivist paradigm was adopted to gather the primary research, guided using a quantitative approach. Quantitative research focuses on obtaining objective research through statistical descriptions that can be generalised (Easterby-Smith et al., 2021:309). Quantitative research is descriptive and aims to explain, predict, confirm, validate or test theories (Leedy & Ormrod, 2021:136). Descriptive research is adopted to gather additional information about a topic (Lamb, Hair & McDaniel, 2021:157). The empirical investigation used numerical data and statistics to identify and extract latent factors and develop the proposed conceptual model for the decision-making process of the hyper-connected consumer. Descriptive research describes the characteristics of the population being studied and, as such, it provides greater insight into the decision-making process of the hyper-connected consumer. From the quantitative data obtained from the research, generalisations could be made regarding the hyper-connected consumer and how the hyper-connected consumers make decisions. Through the analysis of statistical data, the results of the research could be quantified, and key characteristics of the hyper-connected consumer could be identified to develop a profile of the hyper-connected consumer within South Africa. The statistical analysis provided insight into the decision-making of the hyper-connected consumer.

4.2.4.4 Research strategy

to the research strategy provides outlines a detailed plan of action indicating how the research question will be answered (Saunders et al., 2019:128). The strategies that

can be selected for particular research include experiments, surveys, case studies, action research, grounded research, ethnography and archival research. To fit with the objectives of the study (see chapter 1), as well as with the research philosophy and research approach outlined above, a survey research strategy is proposed. Surveys were used for both parts 1 and 2 of the empirical investigation as they provided objective, measurable and descriptive data that could be analysed to determine the decision-making of the hyper-connected consumer.

4.2.4.5 Time horizons

The point in time at which the research will be collected. The research can be collected at a specific point in time (cross-sectional) or over a period of time (longitudinal) (Saunders et al., 2019:128). The time horizon in which the data was collected was cross-sectional as the data was collected at one point in time.

4.2.4.6 Techniques and procedures

The techniques and procedures represent the centre of the research onion describes what data are collected, the sampling techniques, the data analysis and the materials used for the research (Saunders et al., 2019:128). The techniques and procedures used in the collection of the data represent the core of the 'research onion'. The sampling method selected for the research was that of simple random sampling. Simple random sampling allowed for each element in the sample to have an equal chance of being selected and made it possible to generalise the results to the population. The data analysis techniques used for the research consisted of EFA, SEM with CFA and descriptive analysis. EFA was used to examine the factor structure of the theorised model of consumer decision making for the hyper-connected consumer. SEM with CFA was conducted in order to validate the theorised model. The descriptive analysis provided more insight into the samples and provided information that could be used to develop a profile of the hyper-connected consumer. The analysis provided insight into the decision-making of the hyper-connected consumer.

Once the research design had been selected, the next step was to select the research and sampling methods that were used in the empirical research. The research and sampling methods used stem from the research design and are discussed in the next section.

4.2.5 Step 5: Select the research and sampling methods

Step 5 of the research process, as indicated in Figure 4.1, is to select the research and sampling methods for the study. The research method includes the data collection approach, the data collection method and the instrument used in the research. The selected research methods must be able to address the research objectives and answer the research question (Creswell & Creswell, 2018:6). The sampling method used in the research is a subcomponent of the research method and will address who the respondents for the research are, from what population the respondents will be selected, how big the sample size should be, which sampling method will be most appropriate in maximising the reliability and generalisability of the research findings and what sampling frame will be used (Mukherjee, 2020:54).

In unpacking the research method, it is important to highlight, that to achieve the research objectives of the study, the empirical investigation is composed of two parts. The first part of the empirical investigation identified and extract latent factors that influence the decision-making process of the hyper-connected consumer. Part 1 of the empirical investigation also validated the research instrument. The results of part 1 of the empirical investigation allowed for the proposal of a model of the decision-making process of the hyper-connected consumer. The aim of part 2 of the empirical investigation was to confirm the factor structure of the proposed model as well as to determine the structural validity of the model of the decision-making process of the hyper-connected consumer that was proposed in part 1. These two parts of the empirical research are outlined below.

4.2.5.1 Part 1 of the empirical investigation

As discussed in the literature, chapter 1 and chapter 3, several seminal models of consumer decision-making have been developed over the years, the most widely used of which is the EBM model of consumer decision making. The theory of the EBM model with the literature on consumer behaviour and decision making was drawn on to develop a measurement instrument for the research.

Four key constructs of consumer decision making were identified to be used in the research from the literature, namely, need recognition, search for information, evaluation of alternatives and purchase decision. The identified constructs of the decision-making process are considered latent variables as they are not directly observed. The latent variables are inferred from other observed variables (Hair, Black, Babin & Anderson, 2018:608). Each of the four constructs of decision-making consists of factors that are referred to as sub-constructs. These sub-constructs are the intermediate or mediating variables. The mediating variables explain the relationship between the dependent and independent variables within a model (Edlund & Nichols, 2019:10). The sub-constructs consist of several items, each of which is the measured variables that make up the statements used for the measurement instrument. Appendix E provides an outline of the measured variables (items) used in the measurement instrument. An online self-administered questionnaire was also used to collect the data

As the context of the research is that of hyper-connected consumers, the research instrument included questions that would identify consumers from the sample population as hyper-connected. The questions were formed on the basis of the literature and previous industry studies on hyper-connectivity.

Factor analysis, as well as descriptive statistics, was conducted in part 1 of the empirical investigation. Exploratory factor analysis (EFA) was conducted to identify and extract latent factors inherent in the data collection that could influence the

decision-making of the hyper-connected consumer. The identified latent factors were used to propose a conceptual model of the decision-making of the hyper-connected consumer. Descriptive statistics were used to gather a hyper-connected consumer profile.

4.2.5.2 Part 2 of the empirical investigation

Part 2 of the empirical investigation was conducted to confirm the underlying latent factor structure of the latent factors identified in part 1. The structural validity and model validation of the conceptual model proposed in part 1 was also determined in part 2. An online self-administered questionnaire was also used to collect the data for part 2 of the empirical investigation. The research instrument used for part 2 of the empirical investigation was the same as part 1. However, the format and structure of some questions were adapted. The format and structure were adapted to get more granular feedback from the data in part 2 of the empirical investigation.

To identify hyper-connected consumers in the sample, just as part 1, the research instrument of part 2 of the empirical investigation also included questions that were specifically focused on the characteristics of the hyper-connected consumer, which was used to identify if the sample population consisted of hyper-connected consumers. The data were analysed for part 2 using descriptive statistics and confirmatory factor analysis (CFA) with structural equation modelling (SEM). CFA together with SEM was conducted to determine the model fit and whether or not the data fit the theory. Descriptive statistics were also used to gather a hyper-connected consumer profile and to determine the normality of the data.

The results of part 2 of the empirical investigation provided greater insight into the decision-making and behaviour of the hyper-connected consumer within South Africa. The research and sampling methods of parts 1 and 2 of the empirical investigation are discussed in the rest of this section.

4.2.5.3 The sampling method for part 1 and part 2 of the empirical investigation

As discussed in chapter 1 (section 1.8.2), a sample or subset of the population will be selected to conduct the research and to answer the research objectives. Sampling refers to a process that is used to obtain relevant data from a subset of the population from which characteristics of the larger population are drawn (Bell et al., 2018:188; Leedy & Ormrod, 2021:200). The sample is selected scientifically as this ensures the representativeness of the population (Mooi et al., 2018:41).

When selecting a sample for a study, several steps are taken. The steps in selecting a sample are illustrated in Figure 4.2.
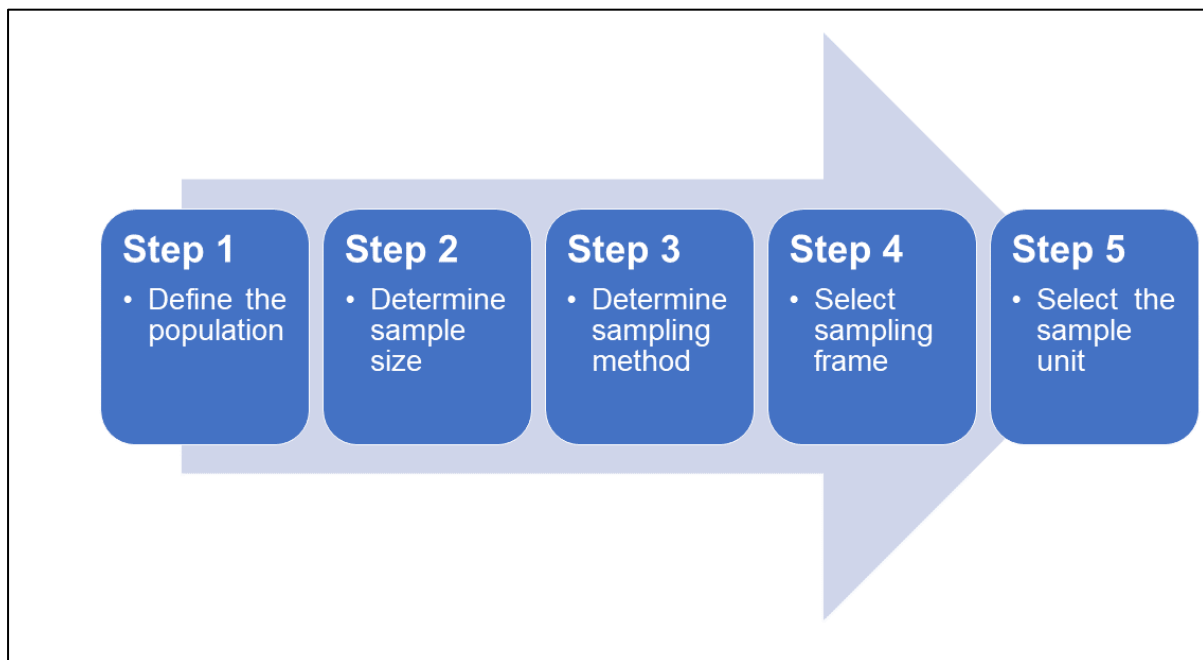
Figure 4.2: Steps in selecting a sample population
Source: Adapted from Kumar (2019) and Wu and Thompson (2020)

Each step in selecting a sample is briefly discussed in this section.

Step 1: Define the population

As indicated in Figure 4.2, the first step in selecting the sample is to define the population. The population refers to the total group of individuals who have the characteristics relevant to the research (Lohr, 2019:3). The population for the current research will include individuals that have characteristics of hyper-connected consumers that have been identified in the literature. The research results are generalised to the population of the study (Ary et al., 2019:171).

The sample population for both part 1 and part 2 of the empirical investigation included consumers between the ages of 18 and 65 that reside within South Africa. A consumer is regarded as an individual that makes a purchase (through any means, traditional or online) or who is considered the end-user of a product (Sethna & Blythe, 2019:6). For the research, any individual who has ever made a purchase through online and traditional methods or consumed a product was included as part of the population for both parts 1 and 2 of the empirical investigation. Qualifying questions were then analysed to determine whether the consumers who partook in the research were considered hyper-connected or not. In accordance with ethical requirements, the research was conducted with individuals between the ages of 18 and 65 years.

Step 2: Determine the sample size

The next step in the sampling process, as indicated in Figure 4.2, is to determine the sample size. The sample size is the total number of individual elements that must be included in the research for the study to be valid (Leedy & Ormrod, 2021:207). A sample size that is too large can take a lot of time and can be excessively costly; while, a sample size that is too small will provide inaccurate results (Creswell & Creswell, 2018:151).

When calculating the sample size, the basic rule of thumb is to use the item-to-respondent ratio of 1:5 (Tsang, Royse & Terawi, 2017; Memon, Ting, Cheah, Thurasamy, Chuah & Cham, 2020:5). That means that for every question, 5 responses are required (Memon et al., 2020:121). Part 1 of the empirical investigation had a total of 16 questions. Four of the questions comprise subsets of Likert-scaled questions that were used for factor analysis and that contained between 5 and 38 sub-questions or items (a total of 59 items). Owing to the ratio of 1:5 for these 59 item questions, the researcher required approximately 295 responses for part 1 of the empirical. Part 2 of the empirical investigation consisted of 16 questions that also comprised Likert scale questions and contained between 5 and 36 items (a total of 78 items). Owing to the ratio of 1:5 for these 78 items or questions, the researcher required approximately 390 responses for part 2 of the empirical investigation.

When conducting survey research, the sample size is also commonly based on the sample sizes used in similar previous studies (Chawla & Sondhi, 2015:263; Mukherjee, 2020:65). Previous studies conducted on consumer behaviour and the EBM model of the consumer decision process have made use of sample sizes between 55 and 500 (see Appendix C).

The sample size can also be calculated by using calculations such as the Raosoft sample size calculator. The Raosoft sample size calculator considers the margin of error (the amount of error that can be tolerated for the study), the confidence level (the amount of uncertainty that can be tolerated for the study), the population size and the response distribution (the expected results for each question) when computing the minimum recommended sample size (Raosoft.com, 2021). The margin of error is commonly set at 5%, with a confidence level of 95% (Raosoft.com, 2021). A lower margin of error and a higher confidence level will require a countless sample size (Raosoft.com, 2021). The Raosoft calculator allows for the input of the population size; however, if the population size is unknown, the calculator considers a standard population of 20000. The population for the current research is that of consumers within South Africa, and as such, the exact number is unknown. Thus, when using the

Raosoft calculator to determine the minimum sample size required for the research, the population was set at 20000. The recommended minimum sample size according to the Raosoft calculator for the study is 377 respondents.

In determining the sample size for part 1 and part 2 of the research, all three abovementioned methods were evaluated. A statistician at UNISA's Office of Graduate Studies and Research was also consulted, and it was deemed acceptable that for both part 1 and part 2 of the empirical investigation to be measurable, a minimum of 300 responses would be required for each part.

Step 3: Determine the sampling method used

Once the sample size has been selected, the next step, as shown in Figure 4.2, is to determine the sampling method that is to be used for the empirical investigation. Two main sampling methods can be used: probability sampling and non-probability sampling. Probability sampling methods ensure that the sample is selected in a manner that every individual selected has a known and non-zero chance of being selected to participate in the study (Kumar, 2019:295). With non-probability sampling methods, the researcher has some control over the participants who are selected for the study (Wu & Thompson, 2020:6).

Quantitative research typically uses probability sampling methods (Leavy, 2017:109; Easterby-Smith et al., 2021:300). As the research follows a quantitative approach, probability sampling will be used. Probability sampling will ensure that the sample selected for the research represents the intended population (consumers between the ages of 18 and 65 that reside within South Africa) (Ruel, 2019:24). There are several probability sampling methods that can be used to conduct the research, which includes, simple random sampling, systematic sampling, cluster sampling and stratified sampling (Leavy, 2017:79).

The research used simple random sampling in conducting the empirical investigation (indicated in chapter 1, section 1.8.2.3). Simple random sampling allows for generalising the results to the larger population (Lohr, 2019:26). The possibility of researcher bias is also eliminated as simple random sampling is purposeful and methodical (Ary et al., 2019:175).

For simple random sampling to be effectively implemented, there must be a clear and identifiable sample frame to select the elements (Rubin & Babbie, 2016:366; Saha & Paul, 2020:116). The sample frame, which is discussed in the next section, will be the databases of two data consultancy agencies iFeedback (used in part 1 of the empirical investigation) and Springvale Online (used in part 2 empirical investigation). The databases used by iFeedback and Springvale Online consist of a clear list of individuals from which a select number will be drawn each time the survey is sent out. Each time individuals were drawn from the list; the remaining elements had an equal probability of being selected (Ruel, 2018:33).

Step 4: Establish the sample frame

The fourth step of the sampling process, as illustrated in Figure 4.2 is to establish the sample frame that will be used in the research. The sample frame includes a list or database of consumers drawn from the population selected to participate in the research (Bell et al., 2018:188). The inclusion criteria of the sample frame, based on the target population, consisted of the following criteria:

- consumers that reside within South Africa;
- consumers that are between the ages of 18 and 65;
- consumers who have access to email and internet;
- consumers who have the time and willingness to participate in the research; and
- consumers who are part of the iFeedback and Springvale Online databases.

To achieve the objectives, the researcher has made use of a separate database of consumers for each part of the empirical investigation. Separate databases were used

as part 1 of the empirical investigation to identify and extracted latent factors that could influence the decision-making of the hyper-connected consumer and validate the research instrument. Part 2 of the empirical investigation confirmed the underlying factor structure of the conceptual model of decision making for the hyper-connected consumer proposed in part 1 as well as to gain greater insight into the decision-making of the hyper-connected consumer. The same database should not be used for both parts of the research to ensure the validity and reliability of the research results. As such, two separate research consultancies with different databases were used in each part.

The sample frame for each part of the empirical investigation included databases that consisted of various consumers in terms of age group, gender, income, and location within South Africa. The database of the consumers for part 1 of the empirical investigation was acquired with the assistance of a South African-based research and data consultant agency, iFeedback. The data consultant agency, iFeedback, specialises in data collection for academic and business purposes. The sample frame included iFeedback's Citizen Science Institute database that consists of various consumers (more than 13000) in terms of age, gender, income levels, and province. The database consists of consumers who have provided the agency iFeedback with their contact details and agreed to participate in studies. Respondents must opt-in to participate in studies. iFeedback allows using a database that the research consultancy agency has gathered for research for a fee (the agency charges per response received).

During part 2 of the empirical investigation, the data consultancy agency, Springvale Online, was used to acquire a database. Springvale Online is a South African-based research consultancy agency that specialises in market research. The agency has a database of more than 40000 respondents in South Africa who have voluntarily opted to participate in online survey research. The database is diverse and includes respondents within different age groups, gender and income level from all nine provinces in South Africa.

Step 5: Select the sample elements

Once the population has been identified, the sampling method selected, and the sample size has been determined. The sample frame has been established, and the final step of the sampling process (as demonstrated in Figure 4.2) is to select the sample elements or respondents to be used in the research. The sample elements refer to the individual units that will participate in the empirical investigation, which are the individual consumers' that are part of the iFeedback and Springvale Online datasets. The sample elements for part 1 of the empirical investigation were drawn by iFeedback, who also sent out the e-mail communication with the link to the survey. For part 2 of the empirical investigation, the sample elements were drawn by Springvale Online, who also sent out an e-mail with a link to the online survey platform.

Once the research and sampling methods have been selected, the researcher can conduct the investigation.

4.2.5.4 Determine the research strategy for part 1 and part 2 of the empirical investigation

The research strategy details how the data will be collected. Primary data can be collected through observations, experimentation or surveys. Survey research was considered appropriate for both part 1 and part 2 of the empirical investigation to achieve the research objectives. Survey research refers to the structured collection of data from a population and can be done through questionnaires, structured interviews or structured observations (Saha & Paul, 2020:315). Surveys are a measurement tool used in descriptive research to describe a situation, phenomenon, individuals' beliefs and attitudes, and the behaviour of the population (Gravetter & Forzano, 2020:323).

A survey was used in the research as it provided objective data regarding the decision-making process of the hyper-connected consumer. Measurable data were used to determine the factor structure and validate the theorised model of consumer decision

making for the hyper-connected consumer. The survey provided descriptive data that were used to determine a profile of the hyper-connected consumer within South Africa.

The type of survey that is used for both part 1 and part 2 of the empirical investigation is that of a computer-aided self-administered survey. A computer-aided self-administered survey essentially means that the data will be collected using a computer, laptop, tablet or similar device that can connect to the internet, as well as display and capture the responses of an individual (Callegaro, Manfreda & Vehovar, 2015:2; Saha & Paul, 2020:319). The individual was sent an email with a link to the platform on which the data collection instrument was available. The individual could then complete the survey on their own and in the individual's own time. A computer-aided self-administered survey is convenient for the respondent, it removes interviewer bias, and the data is captured and analysed automatically (Babin, D'Alessandro, Winza, Lowe & Zikmund, 2020:176). Data were collected from the sample population at one point in time. Thus, the methodological survey design was that of cross-sectional.

4.2.5.5 *Determine the data collection instrument for part 1 and part 2 of the empirical investigation*

The survey instrument or data collection instrument used for both part 1 and part 2 of the empirical investigation was a questionnaire. Questionnaires are the primary data collection instruments used in surveys (Lamb et al., 2021:163). A questionnaire refers to a set of questions designed to extract relevant information that will lead to answering the research question (Robinson & Leonard, 2019:4).

In designing the questionnaire, the questions asked, the wording of the questions, the order of the questions, the length of the questionnaire is important because they can influence how respondents interpret and answer the questions (Fricker, 2013; Leavy, 2017: 102; Lamb et al., 2021:163). There are several steps that an individual will go through when answering a questionnaire: comprehension, retrieval, judgment and

reporting (Giroux, 2017; Temelman-Yogev, Katzir & Prior, 2020:351). Table 4.1 describes each step that an individual will go through when answering a questionnaire.

Table 4.1: Steps an individual goes through when answering a questionnaire

Step	Description
Comprehension	When reading a question, the respondent must first comprehend what the respondent is reading (Fricker, 2013; Temelman-Yogev et al., 2020:351). The respondent must put together the words to make sentences that the respondent can understand. Words are understood differently by individuals and some words are more difficult to understand by everyone. As such, it is important to use easy and consistent wording that everyone understands in the questionnaire (Mooi et al., 2018:12).
Retrieval	Once the respondent understands the question asked, the respondent must then retrieve the information or experience from the respondent's memory or any other source that may assist the respondent in answering the question.
Judgement	The respondent then makes a judgement regarding the information that the respondent has retrieved. The respondent determines whether the information is relevant and if it will answer the question adequately.
Reporting	If the respondent is happy with the judgment made, the respondent will report their response by answering the question on the survey.

Source: Giroux (2017)

When designing the questionnaire, the researcher ensured that the wording used for the questions was simple and easy to understand and should be understood the same way by everyone. The researcher also ensured that no double-barrel or leading questions was asked.

Respondent fatigue was also taken into consideration when designing the questionnaire. Respondent fatigue refers to a phenomenon that occurs when respondents' interest, attention, and motivation deteriorates as the respondent completes the questionnaire (Kardes, Herr & Scharz, 2019:78). Respondents become tired or bored if the questionnaire is too long, if the order of the questions is illogical, if there are too many open-ended questions, if it is repetitive and if the questions are complicated and boring (OECD Eurostat, 2018:188). Respondent fatigue affects the quality of the data that are collected. To address respondents' fatigue, the researcher designed the questionnaire to be short (only questions relating to the objectives and research questions were asked), and used simple words were and clear, simple instructions.

The questionnaires used for both part 1 and part 2 of the empirical investigation were developed based on the theory on consumer behaviour and the consumer decision-making models. The same questions were used for both parts of the empirical investigation; however, the format and structure of some questions were adapted for the questionnaire in part 2 of the empirical investigation. Changing the format of the question allowed for a more detailed analysis in part 2 of the empirical investigation. Structured questions were used in the questionnaires for both part 1 and part 2 of the empirical investigation. Both questionnaires consisted of multiple-choice questions (respondents are given a list of options to select from) and scale-type questions (close-ended questions that provide the respondent with a fixed list of responses to select from) (Saha & Paul, 2020:319). The questionnaires of both parts 1 and 2 of the empirical investigation can be seen in Appendix A and Appendix B.

The questionnaires used for part 1 and part 2 of the empirical investigation included a short cover page that indicated the purpose of the research and asked the respondent for consent in using the data provided. The questionnaires for both part 1 and part 2 of the empirical investigation consisted of sections A, section B, and section C. Section A of the survey for both part 1 and part 2 of the empirical investigation focussed on the profile of a hyper-connected individual (see chapter 2, section 2.4.1) and consisted of ten questions. The questions relating to the profile of a hyper-connected consumer consisted of the following elements in the questionnaire for part 1 and part 2 of the empirical investigation:

- Internet connectivity
- Owned devices
- The amount of time spent on devices
- The use of applications (or apps) to conduct certain activities by consumers.

Section A of the questionnaire made use of multiple-choice questions, ranking questions, and Likert-scale questions. The questions in section A aimed at identifying the level of connectivity of the respondents to identify if the respondents were hyper-connected. In developing the questions for section A, the researcher consulted

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previous research and industry studies conducted on hyper-connected consumers and the hyper-connected consumer's characteristics (van den Dam, 2014; Euromonitor International, 2016; GFK Global, 2017; Parro & Jordan, 2017; Swaminathan et al., 2020).

Question 8 (see Appendix A) of part 1 of the empirical investigation, which asked consumers to rank the top 5 apps that the respondent found difficult to live on a daily basis, was adapted for part 2 of the empirical investigation. To get more granular feedback regarding which apps consumers used, the researcher changed the question into a Likert scale from a ranking scale question in part 2.

In section B of part 1 of the empirical investigation, the survey focussed on the consumer decision-making process according to the proposed theoretical model of decision making for the hyper-connected consumer identified in the literature and included a total of 38 items. The items measured the various constructs of the decision-making process as identified in theory. Respondents were required to rate each item for the various constructs on a Likert scale ranging from '1 – Strongly Disagree' to '5 – Strongly Agree'. The constructs are:

- Need recognition
- Search for information
- Evaluate alternatives
- Purchase decision

The questionnaire was set up so that the items of each construct were grouped into one Likert single scale. The statements on the Likert scale were based on the sub-constructs that were identified in the literature. Reflecting on the discussion in chapter 3, each construct of the proposed theoretical model of decision-making for the hyper-connected consumer consists of several sub-constructs. For example, the need recognition construct consists of environmental influences and individual differences sub-constructs, which will influence how a consumer recognises a need. The Likert scale for the need recognition construct thus consisted of various statements relating

to the environmental influences and the individual differences that influence how a hyper-connected consumer recognises a need (illustrated in chapter 3, section 3.6, Figure 3.9).

In section B of part 2, a single Likert scale was used that included 36 items that loaded significantly in the results of the EFA of part 1. From the results of part 1, two items were removed from the Likert scale. One item had a low Lambda value and item 11.13 was removed as it was deemed a repeat of another item. Similar to part 1, the Likert scale required respondents to indicate their level of agreement and disagreement with statements on a level of 1 to 5.

Table 4.2 provides the item wording of the variables and indicates the corresponding item number for both parts 1 and 2 of the empirical The item 11.12 did not load onto any factor in part 1 of the empirical investigation and was thus removed from the survey instrument used in part 2 of the empirical investigation. Item 11.13 in part 1 of the empirical investigation has been deemed a repeat and was removed from the survey used in part 2 (chapter 5, section 5.3).

Table 4.2: Item wording of the variables for part 1 and part 2 of the empirical investigation

Corresponding item no. per part		Item Wording
Part 1	**Part 2**	
11.1	11.1	Past experiences I have had with the product/brand.
11.2	11.2	The current situation that I am in (If I have run out of a product that I need).
11.3	11.3	My knowledge of the product/brand.
11.4	11.4	My attitude or how I feel about a product/brand.
11.5	11.5	Rely on the memory of the previous experience of a product/brand.
11.6	11.6	Look at past experiences I have had with the product or brand.
11.7	11.7	Purchase certain products or brands out of habit.
11.8	11.8	Features of the product/brand.
11.9	11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.).
11.10	11.10	My perception of what indicates quality.
11.11	11.11	The perceived value of the product attributes.
11.14	11.12	My social standing in society.
11.15	11.13	The people I socialise and interact with.
11.16	11.14	My mood and emotional state.
11.17	11.15	How I feel in the moment.
11.18	11.16	My personality (impulsive or not).
11.19	11.17	My personal values.

Corresponding item no. per part		Item Wording
Part 1	Part 2	
11.20	11.18	My cultural norms and beliefs.
11.21	11.19	My social class (my standing in society).
11.22	11.20	Personal influences such as the people I socialise with.
11.23	11.21	An extensive search into the product/brand.
11.24	11.22	My motivation (reason) for purchasing a product.
11.25	11.23	The knowledge I have about a product or brand.
11.26	11.24	The attitude I have towards a product or brand.
11.27	11.25	My values and how I live my life.
11.28	11.26	Find information on products/brands from the market (In-store).
11.29	11.27	Get information on products/brands through the marketing media such as advertisements or pamphlets.
11.30	11.28	Get information on products/brands that I need from media reports.
11.31	11.29	The product/brand country of origin.
11.32	11.30	The amount of money I have available to purchase the product.
11.33	11.31	Find information by doing an online search for the product/brand.
11.34	11.32	The different prices of the products/brands.
11.35	11.33	The price of the product.
11.36	11.34	My family and their needs.
11.37	11.35	My family's needs and wants.
11.38	11.36	My current situation. (If I have run out of a product).

Section C of the questionnaire for both parts 1 and 2 focussed on the demographic profile of the respondents. This included questions relating to:

- Gender
- Age
- Employment status
- Province in which most time is spent
- Gross monthly income

Section C of the questionnaire of both parts 1 and part 2 determined the demographic information of the respondents. Demographic information is necessary for research as it indicates the representativeness of the sample population used for the study (Robinson & Leonard, 2019:142). Demographic information provides data about the characteristics of the respondents and will be used in developing a profile of the hyper-connected consumer within South Africa.

The questionnaires used for both part 1 and part 2 of the empirical investigation are available in Appendices A and B.

Pre-testing refers to a trial run of the questionnaire conducted to identify any errors in the design of the questionnaire (Mooi et al., 2018:80). The pre-test is important as it determines whether the questions and the instructions are suitable (Giroux, 2017; Lamb et al., 2021:170).

The questionnaires used for both parts 1 and 2 of the empirical investigation were pre-tested to ensure that the wording of the questions was correct and could be easily interpreted by respondents and to identify any double-barrel or misleading questions. Respondent fatigue was also tested for each of the questionnaires during the pre-test phase. The pre-test was also used to determine the face validity and content validity of the research instrument.

In conducting the pre-test, the questionnaires for both part 1 and part 2 of the empirical investigation were sent out to 10 respondents who represented the sample population. The questionnaires for both parts of the empirical investigation were scrutinized by the respondents to determine whether there was spelling, grammar, or sentence structure errors. Respondents were asked to indicate if there were any questions that they could not understand. The average time it took for respondents to complete the questionnaire was also noted.

The pre-test results conducted for each part of the empirical investigation confirmed that the items in the questionnaire represented the constructs that they were intended to measure. The pre-test confirmed that questionnaires for parts 1 and 2 of the empirical investigation were representative of what they measured. Respondents of the pre-test indicated that the questions were clear and easy to understand. Several grammar and sentence structure errors were identified from the pre-test of both parts of the empirical investigation, which were fixed before the survey was sent out to the database. Respondents could complete the questionnaires for both parts 1 and 2 of

the empirical investigation within the given time frame. All errors identified were addressed before the final questionnaires for both part 1, and part 2 were sent out to respondents.

4.2.6 Step 6: Conducting the investigation (fieldwork)

Step 6 of the research process, as indicated in Figure 4.1 is to conduct the actual research investigation or fieldwork. Conducting the investigation consists of all activities in collecting the data from the respondents. The actual research investigation for both part 1 and part 2 of the empirical investigation was conducted similarly. South African-based data consultancy agencies, iFeedback and Springvale Online were used to assist with the collection of data from the sample for both part 1 and part 2 of the empirical investigation. An online, web-based survey was used to collect the data. During part 1, iFeedback sent out an e-mail that provided the research details, the researcher's details, and information regarding the confidentiality and privacy of the data being collected. The e-mail contained a link to iFeedback's online survey platform, where the questionnaire was made available for the respondents to complete. During part 2 of the empirical investigation, respondents were sent a link to the online survey platform by Springvale Online. Respondents again were given a similar brief description of the research as in the case of the iFeedback survey and were asked to start the survey. The respondents were informed that by selecting to start the survey, consent to use the data collected for the research would be confirmed. The data collected was automatically captured on Microsoft Excel as respondents completed the survey during both parts of the empirical investigation. The data collection process for part 1 and part 2 took approximately nine months (in total for both parts) to gather. Reminders were sent to the respondents every two weeks so as not to overload or annoy the respondents.

4.2.7 Step 7: Process and analyse data

Figure 4.1 indicates that step 7 of the research process is to process and analyse the data that have been captured. At the processing and data analysis stage, the data that have been gathered are edited, coded, and imported into the statistical package (SPSS 27 in combination with AMOS Graphics 27), verified and cleaned (Creswell & Creswell, 2018:173; Easterby-Smith et al., 2021:344). The statistical software (SPSS 27) used assisted with the data cleaning. Once the data were imported to SPPS 27, the data were checked for errors. Any values that fell outside the range of possible values were corrected. For example, the range of values for the Likert scale questions was between 1 and 5. If any errors were identified, the original data were analysed to determine the correct answer of the respondent and fixed in the dataset. Missing values were identified in some questions, indicating that not all respondents answered all the questions. The data from the questionnaires with missing values were, however, deemed adequate to contribute to the analysis of the results in all cases.

Several data analysis techniques were used in both parts 1 and 2 of the investigation including descriptive statistics, exploratory factor analysis and confirmatory factor analysis with structural equation modelling. The advice of a statistician was acquired to ensure accurate processing and analyse of the data. Each data analysis technique used in the research is discussed.

4.2.7.1 Descriptive statistics

Descriptive statistics are usually used to describe the basic features of the variables within a dataset (Saunders et al., 2019:257; Babin et al., 2020:403). Descriptive statistical tools assist in organising, summarising and presenting the data informatively (Holcomb, 2017:5). Two types of measures can be used to analyse data and draw a conclusion when conducting descriptive statistical analysis; these include the following (Nesselroade & Grimm, 2019:27; Edlund & Nichols, 2019):

- Measures of central tendency: This refers to an estimate of the central value of a distribution. The measure of central tendency is measured through the mean, median and mode. The mean is the most frequently used measure of central tendency used.
- Dispersion: These measures are used to describe how the data values are dispersed around the central tendency and include measures such as the standard deviation.

Both parts 1 and 2 of the empirical investigation used descriptive statistical analysis to determine a profile of the hyper-connected consumer within South Africa. Mean and frequency distributions were calculated to summarise the data to develop generalisations of the demographic profile and the characteristics of the hyper-connected consumer within South Africa.

Part 2 of the empirical investigation also used descriptive statistics to determine the normality of the data. The results of the descriptive research for both parts 1 and 2 of the empirical investigation are presented in tables and figures in chapters 5 and 6.

4.2.7.2 Exploratory factor analysis

EFA is a data reduction method that identifies any underlying constructs by reducing many variables into a smaller set (Finch, 2019:5). The EFA was conducted to examine the overall item pool using the 38 items identified from the literature.

When conducting EFA, it is important to determine how suitable the data are for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, as well as Bartlett's test of sphericity, was used to determine the factorability of the data. The KMO measures how suitable the data are for factor analysis and Bartlett's test of sphericity determines the redundancy between the variables that are summarised with a few numbers of factors (Watson, 2017:232). According to seminal author Kaiser

(1970), factor analysis is deemed appropriate when the KMO measure of sampling adequacy index is higher than 0.5 (the satisfactory minimum limit).

Once the factorability of the data was confirmed, the EFA was conducted. Two common models are used for EFA, namely, principal component analysis (PCA) and common factor analysis (CFA). With PCA, the original set of variables is reduced to a smaller set to identify the primary underlying factors (Mooi et al., 2018:266). With CFA, only the common factors are used to identify any underlying factors (Easterby-Smith et al., 2021:205). PCA with an oblique (Direct Oblimin) rotation was conducted on the data in part 1 of the empirical investigation to identify any underlying constructs. PCA was selected as it assisted in reducing the dimensionality of the dataset in order to increase interpretability, however, minimising the loss of any information in the data. Both principal factor analysis and common factor analysis produce estimates of the factor loadings of each common factor identified (Mindrila, 2017:4). The estimates, which include the eigenvalues, also known as the Kaiser criterion or latent root criterion, a scree plot, and factor loadings, which together provide summaries of the indices of the important factors identified in the data (McNabb, 2015:215; Mindrila, 2017:4). A combination of methods, including the (eigenvalues-greater-than-one) and the scree-plot test was used to extract factors for part 1 of the empirical investigation. Eigenvalues indicate the amount of variance of a specific factor compared to that of an average factor (Mooi et al., 2018:276). An eigenvalue of 1 and above indicates a significant variance and is usually retained (Mindrila, 2017:15). A scree plot illustrates how quickly the quality of a factor degrades (Durbarry, 2017:246; Carvalho, Reis & Silveira, 2021:119). The scree plot illustrates both an 'elbow' and an 'inflection point', which represents the point where the curve changes from concave to convex and vice versa (Pallant, 2020:215). Both methods (elbow and inflection point) arguably indicate the optimal number of factors that should be selected (Durbarry, 2017:246). When combined with the use of eigenvalues to decide on the ideal number of factors, this represents three ways of selecting the ideal number of factors. The literature (Hair et al, 2020:430; Pallant, 2020:205; Shrestha, 2021:7) suggests that a researcher should use all three, calculating the Cronbach Alpha in each case to select the number of

factors most suitable for the study. The literature (Hair et al, 2020:430; Shrestha, 2021:7) also suggests taking one factor less and more as part of this exercise to select the ideal number of latent factors.

Lambda values, also known as factor loadings, are used to determine the extent to which an individual item loads onto a factor (Easterby-Smith et al., 2021:209). The factor loadings will indicate the correlation between the original variables and the factors derived from them (Sarkar, 2020:319). A variable between -1 and 1 can be used to interpret a factor (Mooi et al., 2018:276). A Lambda value threshold or cut-off value can range between 0.3 and 0.8 (Field, 2018:1009). However, Hair et al. (2018) indicate that the factor loading threshold should be at least 0.5 and 0.7 or higher. Wang and Wang (2020), Mooi et al. (2018), Pallant (2020) and Foster, Barkus and Yavorsky, (2006) state that although 0.3 is a low value, it is however considered an acceptable factor loading threshold when there are a high number of factors. The sample size is often also looked at when determining the Lambda value threshold, where a smaller sample size will have a larger cut-off value (Catalano, 2016:5). For a sample size of above 100 respondents, a factor loading should be greater than 0.512 and a sample of 300 and more should have a factor loading of more than 0.298 (Field, 2018:1009). However, Loewenthal and Lewis (2020), Pituch and Stevens (2015) and Costello and Osborne (2005) suggest a factor loading cut-off of 0.4 and above. The factor threshold used for the EFA conducted in part 1 was ≥0.4. This allowed for the inclusion of as many items that statistically made sense to be included for further analysis. In determining items to retain for each factor, two aspects were looked at, the Lambda values threshold and the item content. The item content (wording and factor representation) was also analysed to confirm if an item should be retained or not for the specific factor (Watson, 2017:237; Watkins, 2018: 232).

4.2.7.3 CFA using SEM

CFA using SEM with maximum likelihood estimation was conducted in part 2 of the empirical investigation. Confirmatory factor analysis tests how well the measured

items represent the specified number of constructs and can confirm or reject the constructs (Easterby-Smith et al., 2021:205).

SEM is a multivariate statistical technique that is used to test relationships between the observed variables (the sub-constructs that can be directly measured) and latent variables (constructs not directly measured) (Byrne, 2016:3; Hair, Page & Brunsveld, 2020:462). The SEM technique is considered a hybrid technique as it combines aspects of confirmatory factor analysis and methods derived from regression analysis to estimate a series of interrelated dependence relationships simultaneously (Gana & Broc, 2018:1). SEM has the ability to account for measurement errors in the estimation process (Hair et al., 2020:426).

The measurement model or path analysis in SEM is the part of the model that examines the relationship between the measured variables and the constructs (Hair et al., 2020:426). Arrows are used to represent the path between the measured variable and the constructs. CFA is used to validate the measurement model.

The structural model indicates the structural paths that are drawn between constructs. Single-headed arrows are used to represent the hypothesised structural relationship between constructs, indicating the cause and effect relationship (Hair et al., 2020:426). The degree to which the SEM fits the sample data is determined by goodness-of-fit indices (Civelek, 2018:6). Several indices can be used to measure goodness-of-fit, the most common of which to report on include the chi-squared statistic, The goodness of fit index, Comparative Fit Index, Root mean square error of approximation and Standardized root means square residual. Table 4.3 provides a brief discussion on each of the goodness-to-fit indices and outlines the values that indicate a good or bad model fit.

Table 4.3: Goodness-of-fit indices

Index	Discussion
The chi-squared statistic	The Chi-squared goodness-to-fit test is used to determine how well the theoretical model fits the observed data. A large chi-square indicates a large discrepancy between the data and the hypothesis, thus indicating that the data do not fit the hypothesised model (Gravetter, Wallnau & Forzano, 2018:22). The sample size influences the outcome of the chi-squared statistic. A small sample size may not identify a reasonably strong association as significant. A sample size that is too large may result in a significant statistical finding when the findings are not substantially significant. A sample of less than 200 or more than 400 is considered sensitive (Zhu, Zedtwitz & Assimakopoulos, 2018:53; McNeish, 2018:2). A significant chi-square (p<.05) indicates a bad fit of the model.
The goodness of fit index (GFI)	The GFI calculates the proportion of variance between the hypothesized model and the observed covariance. If the GFI value >=.95, it indicates a good fit of the model.
Comparative Fit Index (CFI)	The CFI examines the discrepancy between the results of the data and the hypothesised model. A CFI value >=.95 indicates a good fit of the model.
Root mean square error of approximation (RMSEA)	The RMSEA measures the discrepancy between the observed correlation/covariance from the sample and the hypothesized model. An RMSEA value of .06 indicates a good model fit, yet values below .08 may also indicate an acceptable fit.
Standardized root means square residual (SRMR)	The SRMR represents the standardized residuals between the observed and hypothesized covariance matrices. SRMR is an absolute measure of fit; as such, a zero represents a perfect fit. An SRMR value less than .08 is considered a good fit (Pavlov, Maydeu-Olivares & Shi, 2021:113)

Source: Adapted from Civelek (2018) and Wang, Xu, Wang, Tan and Chen (2020).

Part 2 of the empirical investigation was conducted to confirm the underlying latent factors and the proposed conceptual model of consumer decision-making for the hyper-connected consumer proposed in part 1. Confirmatory factor analysis with structural equation modelling and the maximum likelihood estimation was therefore conducted.

A Lambda value threshold of 0.4 was used for the CFA of part 2 of the empirical investigation. The results of the CFA for part 2 of the empirical investigation are presented and further discussed in chapter 6.

4.2.8 Step 8: Conclusion and recommendations

The final step of the research process, as illustrated in Figure 4.1, is to discuss the research findings (chapters 5 and 6), draw conclusions and make further

recommendations. The conclusions and recommendations will be discussed in chapter 7.

4.3 RELIABILITY AND VALIDITY

Reliability refers to the degree to which a research instrument used repeatedly produces stable and consistent results (Dorsten & Hotchkiss, 2019:145). Reliability essentially measures whether constructs within the research instrument measure the same thing and produce dependable results each time with the same subjects (Lamb et al., 2020:144). Several types of measures or tests can be used to test reliability, including test-rest reliability, inter-rata reliability, and internal consistency reliability. (Mooi et al., 2018:41). Internal consistency reliability using Cronbach's Alpha was used to determine the reliability for both part 1 and part 2 of the empirical investigation.

The key idea with internal consistency reliability is to test whether the items on a measurement tool measure the same thing. With internal consistency reliability, multiple items are used to measure the same concept. The most common method used to determine internal consistency reliability is to calculate Cronbach's alpha. Cronbach's alpha is calculated by statistically conducting an item analysis (Rubin & Babbie, 2017:202). The closer the Cronbach's alpha value is to 1, the greater the internal consistency of the scale (Mooi et al., 2018:289). Table 4.4 provides a guideline for interpreting Cronbach's alpha coefficient.

Table 4.4: Interpretation of Cronbach's alpha

Range	Strength
< 0.6	Unacceptable
0.6 to < 0.7	Acceptable
0.7 to < 0.8	Good
0.8 to <0.9	Excellent
0.9 to < 0.95	Excellent
≥ 0.95	Too high (Items considered redundant)

Source: Adapted from Lamb et al. (2020) and Mooi et al. (2018)

Reliability indicates consistency and does not indicate validity. Validity refers to how the research measures what it was trying to measure (Rubin & Babbie, 2017: 204). As the questionnaire was developed based on the literature on consumer behaviour as well as the theory of consumer decision-making models, by the researcher, the constructs in the questionnaire needed to be tested for validity. Construct validity indicates whether the constructs in the questionnaire measure what it is intended to (Loewenthal & Lewis, 2020:74). Exploratory factor analysis is usually conducted to test the validity of the constructs of the questionnaire and determine whether the individual questions load onto the constructs as indicated in the questionnaire (Rubin & Babbie, 2017:207). EFA conducted in part 1 of the empirical investigation confirmed the construct validity of the measuring instrument.

Face validity refers to the extent to which a variable appears to reflect what the questionnaire is meant to measure (Ngulube, 2020:380). Face validity involves evaluating the content of the variables (items) in the measuring instrument at face value and whether or not it corresponds to the relevant conceptual definitions (Mooi et al., 2018:40; Hair et al., 2018:136). Face validity is considered as the minimum requirement for a variable to be considered valid (Mooi et al., 2018:40).

Content validity refers to the extent to which the questions in the measuring instrument represent the constructs (Ngulube, 2020:380). To assess the face validity and content validity for the current research, a pre-test was conducted for both parts 1 and 2 of the empirical research. The pre-test allowed the researcher to determine whether the variables of the measuring instrument for part 1 and part 2 of the empirical investigation measured the degree to which the variables were relevant to the constructs. The results of the pre-test confirmed the face validity and content validity as it indicated that the variables reflected the definition of the constructs and made sense.

4.4 ETHICAL CONSIDERATIONS

Research must be conducted ethically and in a way that causes no harm to the participants (Lamb et al., 2020:59). The respondent's rights, interest's human dignity, and privacy need to be protected throughout the research process. Ethical issues need to be considered before the study, at the beginning of the study, when collecting data, during the data analysis, when reporting, sharing and storing the results (Leedy & Ormrod, 2021:102). The Belmont report of 1979 provides a guideline and basic ethical principles that researchers should follow in order to avoid and to resolve any ethical concerns that may arise during research involving human participants (HHS.gov, 1979). The three basic principles indicated in the Belmont report that is relevant to research ethics that involve human participants include the principle of respect of persons, beneficence and justice (HHS.gov, 1979:4).

4.4.1.1 Respect for persons

The Belmont report refers to two ethical convictions with regards to respect for persons, (i) autonomous treatment of individuals and (ii) and protection of individuals with less autonomy (HHS.gov, 1979:4). Respect for persons also emphasises the requirement of voluntary participation in the research and that adequate information be provided to participants upfront (HHS.gov, 1979:4).

In conducting the research, the aim and purpose of the research was indicated to the participants. Participants were provided with an information sheet outlining what the research was about, that their participation was voluntary and that they could opt-out at any time. Participants were also given the researchers contact details if they required further information. Participants were informed that by selecting to start the online survey, their consent would be given for any data that are captured to be used in the research study. All participants who formed part of the databases used had opted to be included in the database for research.

4.4.1.2 Beneficence

The Belmont principle of beneficence highlights the need to treat individuals in an ethical manner and protecting individuals from harm by making every effort to secure the well-being of individuals (HHS.gov, 1979:5). Two rules have been formulated with regards to beneficence (i) do no harm and (ii) maximise potential benefits and minimise possible harms (HHS.gov, 1979:5).

The research ensured that the welfare of participants was protected by minimising any potential risks that may occur. Any potential risks of the research were clearly communicated to participants beforehand. Sensitive information such as demographic-related questions were kept to a minimum and were only asked if it was essential to the research outcome. Due to the autonomy of the research, any personal identifiers of the respondents will not be made available. The database agencies, iFeedback and Springvale online send out the survey links on their system and as such do not make any personal identifiable information about respondents available to the researcher.

4.4.1.3 Justice

The Belmont report refers to justice in research as being fair and reasonable in the way in which the individuals who are participating in the research is treated (HHS.gov, 1979:6). Participants should be treated equally, and no participant should receive additional benefits over another.

The research made use of simple random sampling, which entailed that each individual in the database had an equal chance of being selected to participate in the research. The participants that formed part of the database was selected based on inclusion criteria (see sections 4.2.5.3).

As indicated in chapter 1 (section1.8), to ensure that the research was conducted ethically and that it did not infringe on the rights of the respondent's, ethical clearance was obtained from the Research Ethics Committees of the Department of Marketing and Retail Management before the research started. The approval was endorsed by the University of South Africa – see Appendix D.

Data that were collected will be safely stored by the researcher on an external memory drive that is password protected. The data will be kept for five years, after which it will be disposed of. Per ethical considerations of confidentiality and protection of consumer data, the data will not be made available or used by others.

4.5 SUMMARY

Chapter 4 provided a detailed discussion of the research design and methodology of the research. The research paradigm of post-positivism, which guided how the research was conducted, was discussed. To achieve the research objectives, the research method consisted of secondary research and primary research. The secondary research, in which a literature review was conducted and a theoretical model of consumer decision making for the hyper-connected consumer, was proposed as the basis for the research. The primary research was divided into two parts; part 1 identified and extracted latent factors that influence consumer decision-making for the hyper-connected consumer. The latent factors identified in part 1 were used to propose a conceptual model of the decision-making process of the hyper-connected consumer. Part 1 of the empirical investigation also validated the items of the research instrument. Part 2 of the empirical research confirmed the conceptual model. The research process, from the research question, through the research objectives and literature review, to the data collection method, the sampling method, the instrument used and the data analysis methods for both part 1 and part 2 of the empirical research was discussed. How the validity and reliability of the measuring tools that were tested were unpacked. The importance of ethics in research and the ethical considerations

for the current research was also discussed. In the next chapter, chapter 5, the empirical results of part 1 of the research will be provided and discussed.

CHAPTER 5
RESULTS OF PART 1 OF THE EMPIRICAL INVESTIGATION

5.1 INTRODUCTION

An extensive literature review was conducted in chapters 2 and 3 on hyper-connectivity and the hyper-connected consumer, as well as consumer decision making and its various models. Chapter 4, in turn, provided an outline of the research methodology and design that the research followed to answer the research question and address the research objectives. As discussed in chapter 4, the research followed a post-positivist paradigm, adopting a quantitative research approach. The empirical investigation consisted of two parts: an exploratory part (part 1) and a confirmatory part (part 2). The exploratory part employed exploratory factor analysis that identified and extracted latent factors inherent in the data collected using a questionnaire developed based on the question items identified from the literature on consumer decision making. Part 1 of the empirical investigation also validated the research instrument. The second part of the empirical investigation (part 2) was confirmatory and used the second, separate but similar survey questionnaire to confirm the underlying latent factors identified in part 1. Part 2 of the research also determined the structural validity and validation of the conceptual model proposed in part 1. Part 2 of the empirical investigation provided greater insight into the profile of the hyper-connected consumer and their decision-making.

Chapter 5 reports on the findings of part 1 of the empirical investigation and, in turn, has been divided into two sections, namely 1A and 1B. The first section (1A) reports on the demographic information associated with the sample, followed by a discussion regarding the level of hyper-connectivity of the respondents sampled. The second section (1B) outlines the results of the EFA and identifies the latent factors that were extracted through the analysis. The results are presented in the tables and figures that follow, supported by discussions of the research findings.

5.2 SECTION 1A: DEMOGRAPHIC INFORMATION AND HYPER-CONNECTIVITY

Part 1 of the empirical investigation adopted a quantitative approach with the data being collected using an online, web-based survey (see Appendix A for the questionnaire) which was completed by respondents via an e-mail link sent to them. The questionnaire comprised a series of questions about various variables or attributes of decision making extracted from the literature (see chapter 3). Once respondents clicked on the link provided in the e-mail, they were asked to indicate if they agreed to participate in the research. The purpose and objectives of the research as well as terms and conditions such as the time it will take to complete the survey was outlined in the weblinks. Respondents were made aware that participation in the research is voluntary and could withdraw at any time. It was also emphasised that the responses would be anonymous, and the results could not be linked back to the individual respondent. Respondents were made aware that by selecting to agree and continue with the research, they accepted the terms and conditions presented to them and gave consent to participate in the research. If the respondent indicated that they agreed to participate in the research, they were given access to the rest of the survey. If the respondent indicated that they did not agree to participate in the research, they were thanked for their time and the link was closed. Simple random probability sampling was used to collect the data to identify respondents from which to collect the data for the research.

The results and the accompanying discussion are outlined below. First, a demographic overview of the respondents is presented in section 5.2.1 below, followed by a descriptive statistical overview of hyperconnected consumers presented in section 5.2.2. Finally, the EFA results are discussed in Section 5.3.

5.2.1 Demographic information of the sample

The overall sample size for the empirical investigation for part 1 of the research, following the data cleaning process, as discussed in chapter 4 (section 4.3.7),

consisted of 306 respondents who completed the questionnaire and whose responses were deemed valid and usable for further analysis. From the 306 questionnaires received, the results indicated missing values for some questions suggesting that not all respondents answered all the questions. However, the data from the questionnaires were deemed adequate to contribute to the analysis of the results. The survey was sent out to 13 500 respondents. Part 1 of the empirical investigation thus had a response rate of 2.26%. The results in Table 5.1 indicate where there were missing responses.

Table 5.1 illustrates that the sample consists of 43.5% (n=133) males and 56.5% (n=173) females. In terms of age, most of the sample is between the ages of 26 - 35 (31.0%, n=95). The results indicate a large portion of respondents (42.4%, n=130) are over the age of 46.

The sample stems predominantly from Gauteng (59.5%, n=182), the Western Cape (22.2%, n=68), and Kwa Zulu-Natal 6.9% (n=21), with a marginal representation from other provinces within South Africa. Regarding employment, the majority of respondents indicated that they are employed (70.9%, n=217), with only 9.5% (n=29) respondents indicating that they are unemployed. Furthermore, the gross monthly income of the sample is widely distributed, with most of the respondents (27.8%, n=85) indicating a gross monthly income falling between R10 001 and R30 000 and a small portion (10.1%, n=31) having a gross monthly income of more than R100 000 per month. Table 5.1 provides a detailed breakdown of the demographic information of the sample. The missing responses indicated in Table 5.1 refer to respondents who did not answer some of the demographic questions.

Table 5.1: Demographic breakdown of the sample

		n	%
Gender			
	Male	133	43.5
	Female	173	56.5
	Other	0	0.0
	Total	306	100
Age			
	18–25	27	8.8
	26–35	95	31.0
	36–45	52	17.0
	46–55	65	21.2
	56–65	65	21.2
	Missing	2	0.07
	Total respondents	306	100
Province			
	Eastern Cape	9	2.9
	Free state	4	1.3
	Gauteng	182	59.5
	Kwa-Zulu Natal	21	6.9
	Limpopo	4	1.3
	Mpumalanga	3	1.0
	Northern Cape	1	0.3
	Northwest	8	2.6
	Western Cape	68	22.2
	Missing	6	2.0
	Total respondents	306	100
Employment Status			
	Part-time	7	2.3
	Employed	217	70.9
	Unemployed	29	9.5
	Self-employed	53	17.3
	Total	306	100
Gross monthly income			
	R0–R10 000	36	11.8
	R10 001–R30 000	85	27.8
	R30 001–R60 000	76	24.8
	R60 001–R100 000	53	17.3
	More than R100 000	31	10.1
	Prefer not to answer	22	7.2
	Missing	3	1.0
	Total	306	100

Source: Questionnaire used in Part 1: Questions 12, 13, 14, 15, 16

In the next section, the results regarding the statistics associated with the hyper-connectivity of the sample population will be discussed.

5.2.2 Statistics associated with the hyper-connected consumer

Part 1B of the empirical investigation aimed to identify and extract the latent factors that influence the decision-making of the hyper-connected consumer from the data collected. As the context of the research is that of hyper-connectivity, it was important to determine whether the sample population was considered hyper-connected. For the sample to be considered hyper-connected, each respondent needed to have at least three of the four characteristics of a hyper-connected consumer as identified in theory (see chapter 2, section 2.4.1).

The analysis of the data revealed several key themes of hyper-connectivity, namely internet connectivity, owned devices, the amount of time spent on a device, the apps used and ranking of these apps, what devices are used to conduct certain activities online and the monthly expenditure on making purchases online. Each of these identified themes will be presented separately.

5.2.2.1 Internet connectivity

Respondents were asked to indicate how often they connect to the internet, the methods they use to connect to the internet, how much data they use per month, and how many hours (on average) they spend actively on the internet every day. The respondent's level of Internet connectivity will indicate the degree to which the respondent is hyper-connected. The responses are illustrated in Table 5.2. Table 5.2 also displays missing values, which indicates the number of respondents that did not answer the specific question.

Table 5.2: Internet connection patterns of respondents

		n	%
Frequency of internet connection	Occasionally connected	12	3.9
	Regularly connected	56	18.3
	Continuously connected	62	20.3
	Continuously and automatically connected	172	56.2
	Missing	4	1.3
	Total respondents who answered the question	306	100
Method/s used to connect to the internet at home*[4]	Mobile (using a sim-card cellular phone - smartphone or featurephone)	201	65.7
	Did not select mobile as an option	105	34.3
	Total	306	100
	Fixed-line or cables (ADSL or fibre)	188	61.4
	Did not select fixed-line or cables as an option	118	38.6
	Total	306	100
	Home LTE (Using an LTE SIM card in a modem or router)	83	27.1
	Did not select home LTE as an option	223	72.9
	Total	306	100
	Other	8	2.6
	Did not select other	298	97.4
	Total	306	100
	Respondents had to select the options that applied to them only.		
Data usage per month when accessing the internet	Between 0–1 GB	10	3.3
	1 GB and more but less than 5 GB	48	15.6
	5 GB and more but less than 10 GB	47	15.4
	10 GB and more but less than 50 GB	99	32.4
	50 GB and more	75	24.5
	I do not know	23	7.5
	Missing	4	1.3
	Total	306	100
Average hours per day actively spent on the internet	Less than 1 hour	21	6.9
	1 hour and more but no more than 4 hours	95	31.0
	4 hours and more but no more than 7 hours	93	30.4
	7 hours and more but no more than 10 hours	66	21.6
	Over 10 hours	29	9.5
	Missing	2	0.7
	Total	306	100

Source: Questionnaire used in Part 1: Questions 1, 2, 3 & 4

Note that more than one option could be selected from the survey.

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[4] At the time that the study was done, the primary cellular technology in use was LTE. 5G was not yet widely available and used.

Table 5.2 highlights that the majority (76.5%, n=234) of respondents are continuously (20.3%, n=62) as well as continuously and automatically (56.2%, n=172) connected to the internet. The connectivity percentage (76.5%) confirms that the respondents are 'connected'. The two most common methods used to connect to the internet, as indicated in Table 5.2, are mobile devices (65.7%; n=201) and fixed lines (61.4%; n=188). More than half, 56.9% (n=174) of respondents stated that they use more than 10 GB of data per month. A very small minority of respondents (3.3%, n=10) use less than 1 GB of data, while a small portion of respondents (7.5%, n=23) does not know how much data they use per month. Lastly, more than half of respondents (61.4%; n=188), spend greater than four hours on the internet every day, pointing to a hyper-connected sample of respondents.

5.2.2.2 Owned devices

Respondents were asked to indicate from a list, which devices they owned (the respondent's own property) (see Appendix A, question 5). As illustrated in Figure 5.1 and Table 5.3, the results indicate that most respondents own a smartphone (94.4%, n=289). The very small percentage of featurephone ownership (5.9%, n=18) as compared to smartphone ownership, points to the entrenchment of smartphones in the sample. The said results are in line with the results of Table 5.2, discussed previously, which indicates that the majority of respondents (65.7%) access the internet through a mobile cellular network. Figure 5.1 and Table 5.3 indicates that more than half of the respondents (83.3%, n=255) indicated that they own a laptop. The results in Figure 5.1 and Table 5.3 show that there is relatively bigger ownership of tablet devices (49.0%, n=150) and smart televisions (40.8%, n=125), compared to desktop computers (36.3%, n=111). Smart car devices (14.1%, n=43) are almost three times more prevalent than smart home devices (3.6%, n=11) (even though the ownership numbers indicated in Figure 5.1 and Table 5.3 for both devices are low).

Figure 5.1: Owned devices
Source: Questionnaire used in Part 1: Question 5
Note that more than one option could be selected from the survey.

Table 5.3: Owned devices

	Owned (n)	Owned %	Total respondents who answered the question (n)
Featurephone	18	5.9	306
Smartphone	289	94.4	306
Desktop computer	111	36.3	306
Laptop	255	83.3	306
Tablet device	150	49.0	306
Smart television	125	40.8	306
Wearable device	75	24.5	306
Smart speaker	28	9.2	306
Smart home device	11	3.6	306
Smart car device	43	14.1	306
Gaming console	87	28.4	306

Source: Questionnaire used in Part 1: Question 5

Note that more than one option could be selected from the survey.

5.2.2.3 Time spent on devices

To determine how much time the respondents spent on the internet using a particular device, respondents were asked from a given list to indicate how many hours a day they spent on the internet on each device (see Appendix A, question 6). Not all respondents answered the question for each device; therefore, the total number of responses (n) is different for each device. Figure 5.2 and Table 5.4 together illustrate the results indicating how much time respondents spend accessing the Internet on each device. The N/A results shown in Figure 5.2 and Table 5.4 point to the number of respondents who did not use a specific device to access the internet.

The results in Figure 5.2 and Table 5.4 indicate that most of the respondents (57.9%, n=171) spend more than four hours per day accessing the internet on their smartphones. Similarly, most respondents also spend more than four hours per day on the internet on their laptops (54.1%, n=162). The smartphone and laptop appear to be the primary devices for connecting to the internet. The results suggest that the desktop appears to be losing popularity to the smartphone and laptops. In contrast, the tablet, in turn, appears to be used more for occasional access to the internet and for shorter periods with the majority of respondents with tablets (39.3%; n=117) using the tablet for less than four hours a day.

The results reflect a difference in the number of respondents who own a device (as indicated in the previous Figure 5.1) and the number of respondents who access the Internet on the device in question (as indicated in Figure 5.2). For example, Figure 5.1 indicate that only 5.9%, (n=18) of respondents own a featurephone. However, from the results in Figure 5.2, it can be seen that 39.3%, n=114 of respondents, access the internet on a featurephone. There is also a discrepancy in the number of respondents who own a desktop computer (36.3%, n=111) and the number of respondents who access the internet on a desktop computer (54.8%, n=158). There is a slight difference between respondents who own a smartphone, laptop, tablet device and smart television and the number of respondents who indicate that they access the Internet

through these devices. It is possible that in answering question 6, respondents took into consideration accessing the internet on devices that for example, are provided by the business or corporate organisation where the respondent is employed. Businesses often provide employees with approved mobile devices such as featurephones, smartphones and laptops to mitigate potential risk and exposure to online threats (Otto, Dubihlela & Bendedict, 2020:23). Individuals, however often make use of business-owned devices for personal as well as business use. Hayyes, Cappa & Le-Khac, (2020), state that the use of business-owned devices for work and personal use have become blurred, with individuals often downloading personal apps and accessing the internet on business-owned devices.

	Featurephone	Smartphone	Desktop computer	Laptop	Tablet device	Smart Television
N/A %	60,7	4,1	45,3	9	47,3	54,3
Over an hour but no more than 4 hours %	17,2	38	24,6	36,8	39,3	29,4
Over 4 hours but no more than 7 hours %	12,4	30,5	15,6	24,4	9,1	11,3
Over 7 hours but no more than 10 hours %	4,8	12,5	11,8	21,7	1,7	1
> 10 hours a day %	4,8	14,9	2,8	8	2,7	4,1
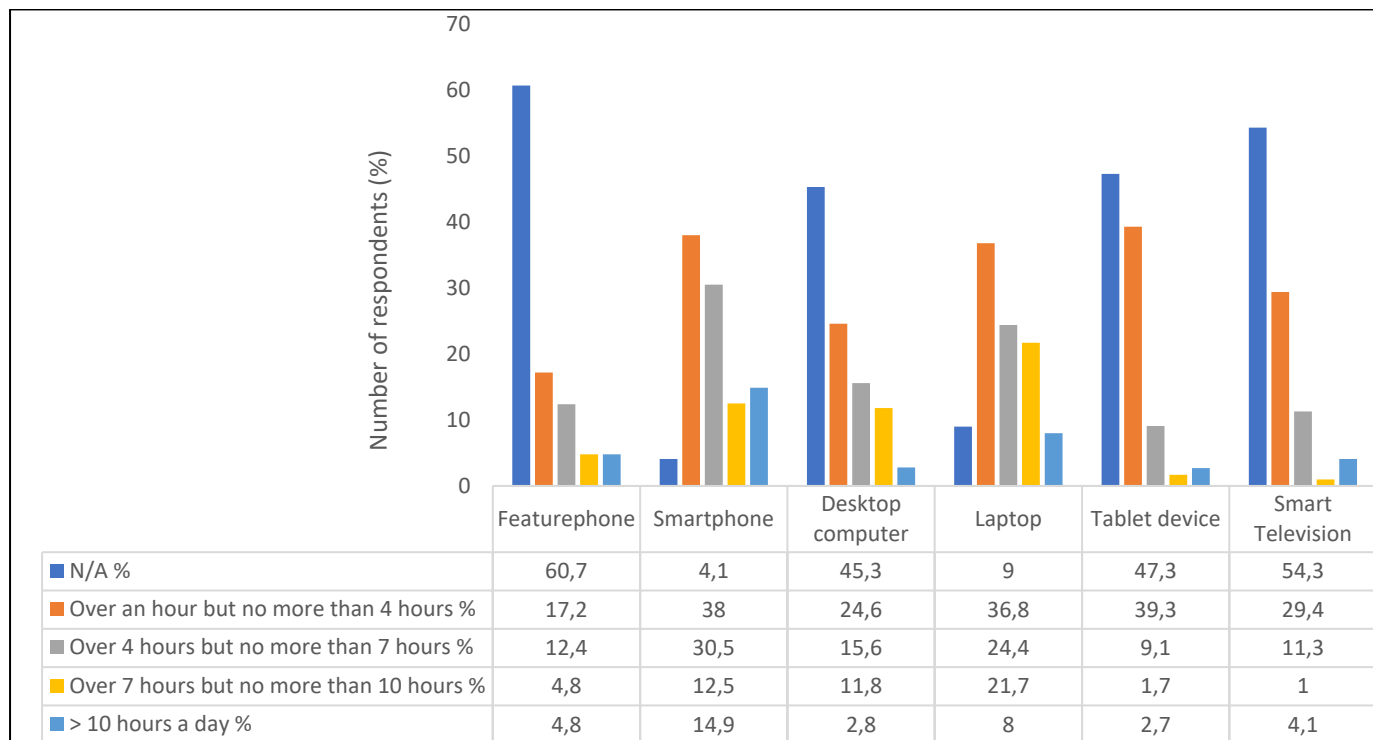
Figure 5.2: Number of hours spent on the internet through a device
Source: Questionnaire used in Part 1: Question 6

Table 5.4: Number of hours spent on the internet through a device

	N/A		Over an hour but no more than 4 hours		Over 4 hours but no more than 7 hours		Over 7 hours but no more than 10 hours		> 10 hours a day		Total respondents who answered the question
	n	%	n	%	n	%	n	%	n	%	n
Featurephone	176	60.7	50	17.2	36	12.4	14	4.8	14	4.8	290
Smartphone	12	4.1	112	38.0	90	30.5	37	12.5	44	14.9	295
Desktop computer	131	45.3	71	24.6	45	15.6	34	11.8	8	2.8	289
Laptop	27	9.0	110	36.8	73	24.4	65	21.7	24	8.0	299
Tablet device	141	47.3	117	39.3	27	9.1	5	1.7	8	2.7	298
Smart television	159	54.3	86	29.4	33	11.3	3	1.0	12	4.1	293

Source: Questionnaire used in Part 1: Question 6

5.2.2.4 The software application (App) use

To determine the number of software applications (apps) used by respondents, the researcher asked them to indicate the number of apps they used regularly on a device (see Appendix A, question 8). The results are illustrated in Figure 5.3 and Table 5.5. Not all respondents answered the question; therefore, the total number of responses (n) is different for each device. Note that 'N/A' (not applicable) could be selected if no apps were used on a specific device.

Figure 5.3 and Table 5.5 illustrate that the majority of respondents (72.1%, n=219) regularly make use of five or more apps on their smartphones. Less than half 32.4% (n=98) of respondents use five or more apps on their laptops. The majority of respondents, as indicated in Figure 5.3 and Table 5.5, selected not applicable for smart television (58.1%, n=176), desktop computers (57.3%, n=173) and tablet devices (47.2%, n=143), indicating that respondents do not use apps on these devices daily. By comparing the results to Figure 5.1, it is evident that respondents do not own these devices as only 40.8% of respondents indicate that they own a smart television,

36.3% indicate that they own a desktop computer and 49% of respondents indicate that they own a tablet device computer.

The results indicated in Figure 5.3 and Table 5.5 also highlight that respondents only make use of 1 - 4 apps on a desktop computer (27.8%, n=84), tablet device (26.7%, n=81) and smart television (34.0%, n=103). The number of apps on the devices could be attributed to the specific purpose of the device (Blair, 2020). The storage space could also contribute to the number of apps used on a device. Panko (2018) found that individuals deleted apps from their mobile devices due to a lack of storage space on the device.

	Not applicable	1 - 4 apps	5 - 8 Apps	9 - 12 Apps	12 - 16 Apps	16+ apps
Smartphone	2.6%	25.3%	41.8%	15.8%	6.9%	7.6%
Laptop	21.5%	46.2%	20.8%	5.0%	4.6%	2.0%
Desktop computer	57.3%	27.8%	7.6%	3.6%	2.6%	1.0%
Tablet device	47.2%	26.7%	15.8%	5.9%	2.6%	1.7%
Smart Television	58.1%	34.0%	5.9%	1.3%	0.0%	0.7%
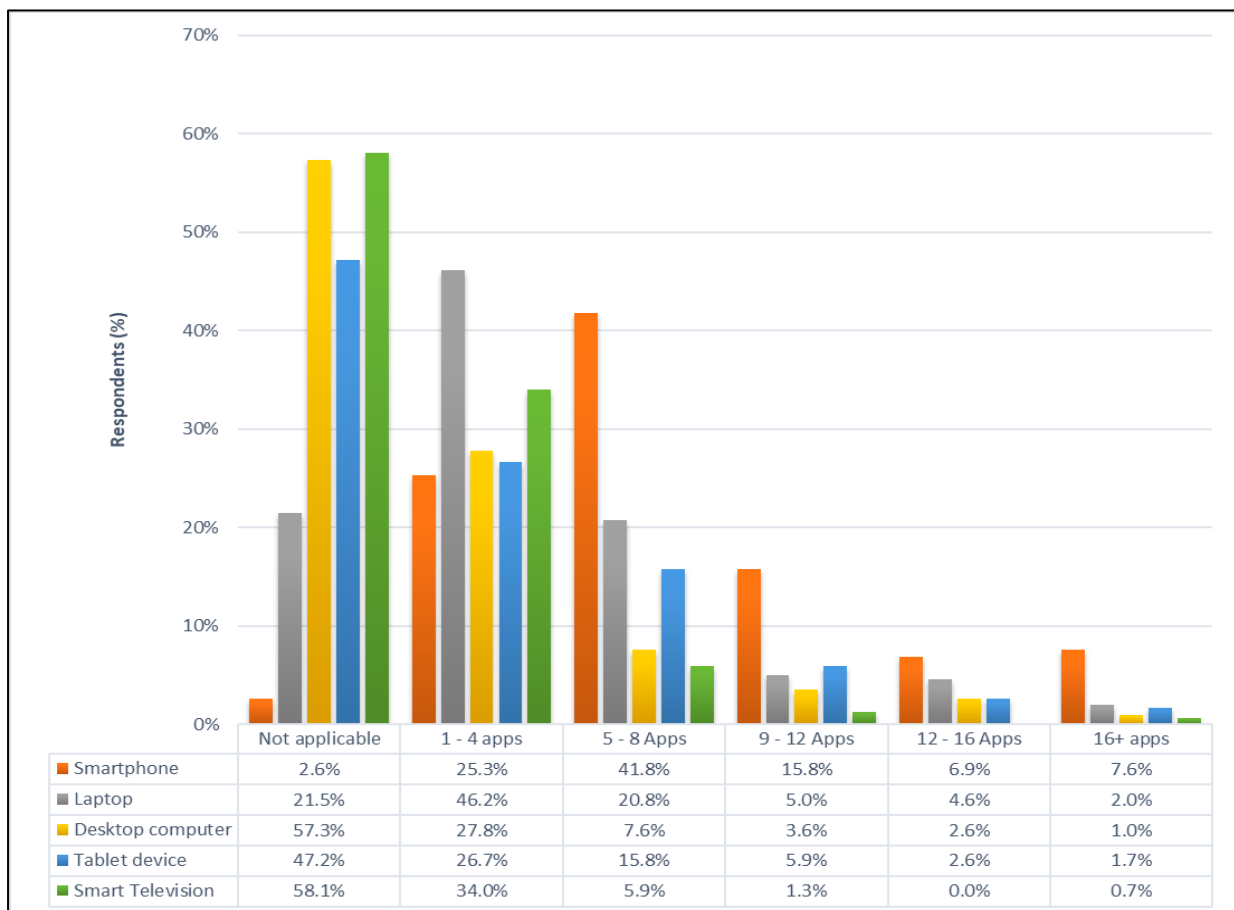
Figure 5.3: Regular application (app) uses on certain devices
Source: Questionnaire used in Part 1: Question 7

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Table 5.5: Regular application (app) uses on certain devices

	N/A		1 - 4 Apps		5 - 8 Apps		9- 12 Apps		12 - 16 Apps		16+ Apps		Total respondents who answered the question
	n	%	n	%	n	%	n	%	n	%	n	%	%
Smartphone	8	2.6	77	25.3	127	41.8	48	15.8	21	6.9	23	7.6	304
Laptop	64	21.5	140	46.2	63	20.8	15	5.0	14	4.6	6	2.0	303
Desktop computer	173	57.3	84	27.8	23	7.6	11	3.6	8	2.6	3	1.0	302
Tablet device	143	47.2	81	26.7	48	15.8	18	5.9	8	2.6	5	1.7	303
Smart television	176	58.1	103	34.0	18	5.9	4	1.3	0	0	2	0.7	303

Source: Questionnaire used in Part 1: Question 7

5.2.2.5 App ranking

Respondents were also asked to rank from a pre-set list (see Appendix A, question 8) the top apps that respondents find difficult to live without daily. The results would indicate the apps that respondents considered valuable and important and made use of daily. Table 5.6 shows the ranking of the app respondents selected as difficult to live without. To determine a clear ranking order, the data were aggregated as respondents were asked to only rank their top five apps. The aggregation of the data involves summarising or using the total sum of elements within a dataset (Giri & Paul, 2021:55; Charry, Coussement, Demouline & Heuvinick, 2018:25). To determine the aggregate, a weight was assigned to each rank. The weights indicated the importance of each rank, and were as follows:

- Ranking an app first was allocated a weight of 5
- Ranking an app second was allocated a weight of 4
- Ranking an app third was allocated a weight of 3
- Ranking app fourth was allocated a weight of 2
- Ranking an app fifth was allocated a weight of 1

The number of respondents per rank for each app was multiplied by the weight of the rank. The total number for each app was then added to determine the aggregate number indicated in Table 5.6. The aggregated amount was used to determine a reasoned ranking for each app. Table 5.6 highlights in bold the top 10 ranked apps.

Table 5.6: Ranking of apps used

	1		2		3		4		5			
	n	%	n	%	n	%	n	%	n	%	Aggregate	Rank
Weighting	**x5**		**x4**		**x3**		**x2**		**x1**			
Communication app (e.g. WeChat/WhatsApp)	138	45.1	50	16.3	29	9.5	25	8.2	15	4.9	1042	**1**
E-mail app (e.g., Gmail app)	29	9.5	46	15	47	15.4	25	8.2	28	9.2	548	**2**
Facebook	48	15.7	34	11.1	30	9.8	17	5.6	20	6.5	520	**3**
Banking app	23	7.5	25	8.2	52	17	39	12.7	33	10.8	482	**4**
Maps/GPS app (e.g. Google maps)	8	2.6	20	6.5	31	10.1	44	14.4	34	11.1	335	**5**
Instagram	15	4.9	43	14.1	14	4.6	13	4.2	17	5.6	332	**6**
Search engine (e.g. Google Chrome app)	15	4.9	18	5.9	24	7.8	26	8.5	31	10.1	302	**7**
Video app (e.g. YouTube, Netflix)	6	2	6	2	14	4.6	22	7.2	19	6.2	159	**8**
LinkedIn	5	1.6	13	4.2	14	4.6	14	4.6	7	2.3	154	**9**
Twitter	3	1	16	5.2	13	4.2	7	2.3	8	2.6	140	**10**
Music app (e.g. Spotify)	1	0.3	11	3.6	13	4.2	17	5.6	11	3.6	133	11
Health and Fitness tracker app (e.g. Fitbit app)	0	0	5	1.6	5	1.6	13	4.2	20	6.5	81	12
Taxi app (e.g. Uber or Taxify)	1	0.3	2	0.7	4	1.3	9	2.9	10	3.3	53	13
Food delivery app (e.g. Uber eats)	0	0	2	0.7	0	0	3	1	6	2	20	14
Payment app (e.g Snapscan, Zapper)	0	0	0	0	3	1	2	0.7	6	2	19	15
Sleep app (e.g. Calm)	0	0	0	0	1	0.3	3	1	3	1	12	16
Ecommerce app (e.g. Superbalist)	0	0	1	0.3	0	0	1	0.3	5	1.6	11	17
Snapchat	1	0.3	0	0	0	0	2	0.7	2	0.7	11	17

Dating app (e.g. Tinder)	0	0	1	0.3	0	0	1	0.3	3	1	9	18
Airbnb	1	0.3	0	0	0	0	0	0	2	0.7	7	19
Safety app (e.g. Namola)	0	0	1	0.3	0	0	0	0	0	0	4	20
Missing	12	3.9	12	3.9	12	3.9	23	7.5	26	8.5		

Source: Questionnaire used in Part 1: Question 8

According to the aggregate in Table 5.6, the top ten ranked apps that respondents found difficult to live without daily, which are highlighted in Table 5.6 are:

1 Communication app (e.g. WeChat/WhatsApp)

2 E-mail app (e.g., Gmail app)

3 Facebook

4 Banking app

5 Maps/GPS app (e.g., Google Chrome app)

6 Instagram

7 Search engines

8 Video app (e.g. YouTube/Netflix)

9 LinkedIn

10 Twitter

The results in Table 5.6 highlight the importance of communication and social media to the respondents. From the results in Table 5.6, it can be seen that the majority of the top apps that respondents indicated that they find it difficult to live without daily include communication and social media apps such as communication apps (e.g., WeChat/WhatsApp) (ranked 1) and e-mail (ranked 2), social media apps such as Facebook (ranked 3), Instagram (ranked 6), LinkedIn (ranked 9) and Twitter (ranked 10). Lifestyle apps such as health and fitness (ranked 12), taxi (ranked 13), food delivery (ranked 14), dating (ranked 18) had lower rankings compared to communication and social media apps. The results imply that lifestyle activities conducted through apps are not valued as communication and social media. The aggregate weights for both E-commerce apps and Snapchat had the same aggregated value, and as such, both apps share the same ranking of 17.

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5.2.2.6 Devices used to conduct activities and online monthly expenditure

Respondents were given a pre-set list of activities (purchase online from an e-commerce store, access e-mail, banking, making payments, etc.) (see Appendix A, question 9). They were asked to indicate which devices they made use of to conduct each activity. The results illustrated in Table 5.7 indicates which devices are used to conduct the activities listed in the same table. Note that N/A (not applicable) could be selected if none of the devices was used for an activity.

Table 5.7: Devices used to conduct certain activities

Activity	N/A		Smartphone		Tablet		Laptop		Desktop		Total respondents who answered the question
	n	%	n	%	n	%	n	%	n	%	n
Purchase products online from an e-commerce website	51	16.7	157	51.3	41	13.4	171	55.9	60	19.6	306
Access e-mail	3	1.0	261	85.3	68	22.2	232	75.8	99	32.4	306
Do banking	9	2.9	249	81.4	41	13.4	187	61.1	71	23.2	306
Make payments/pay bills	22	7.2	211	69.0	31	10.1	168	54.9	68	22.2	306
Socialise through social media platforms	16	5.2	268	87.6	59	19.3	105	34.3	34	11.1	306
Entertainment	29	9.5	219	71.6	80	26.1	122	39.9	44	14.4	306
Use a communication application to chat	1	0.3	301	98.4	36	11.8	83	27.1	24	7.8	306
Use a search engine	1	0.3	272	88.9	103	33.7	256	83.7	104	34.0	306
Access your car through an app	276	90.2	28	9.2	3	1.0	5	1.6	3	1.0	306
Control home devices through an app	257	84.0	45	14.7	8	2.6	3	1.0	3	1.0	306

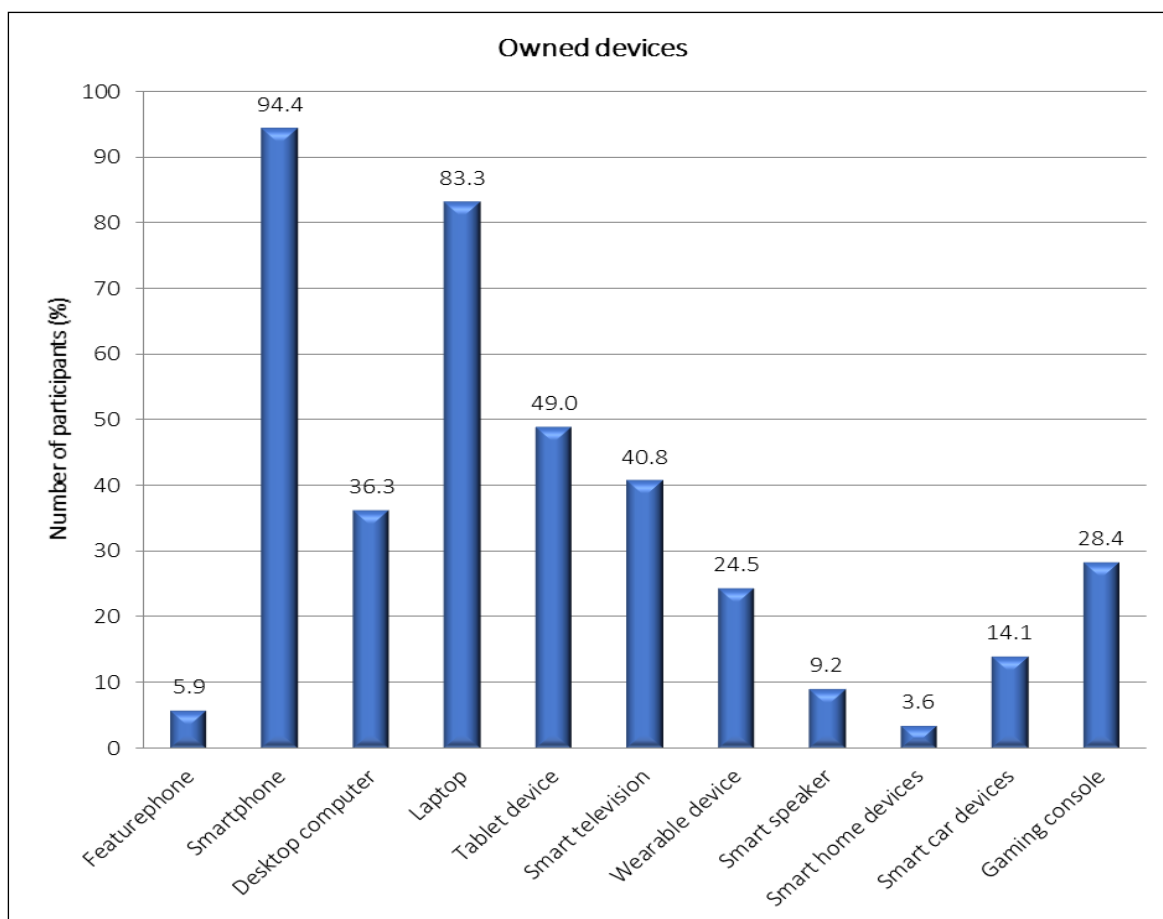**source:** Questionnaire used in Part 1: Question 9

Note that more than one option could be selected from the survey.

According to the results in Table 5.7, the majority of respondents make use of their smartphones to communicate using a communication app (98.4%, n=301), to access a search engine (88.9%, n=272), to socialise on social networking sites (87.6%, n=268), to access their e-mails (85.3%, n=261) and to bank (81.4%, n=249). Even using their mobile phone to purchase products online score quite high, albeit behind the use of a laptop to buy products online. The results in Table 5.7 correlate with the top apps that respondents indicate that they find it difficult to live without daily that was discussed in Table 5.6, which includes, communication apps and e-mail, search engines, social media such as Facebook and Instagram and banking apps. The results also correlate with Figure 5.1, presented earlier in the chapter, which illustrates that the majority of respondents own a smartphone.

As indicated earlier in section 5.2.2.2, Figure 5.1 illustrates a larger usage of mobile or handheld devices such as smartphones and tablet devices, compared to fixed devices such as desktop computers. However, analysing the results in Table 5.7, it was found that while respondents did indeed use their smartphones predominately more for the activities indicated in the question when it came to a comparison between tables and desktops, respondents conduct more activities on a desktop computer than a tablet device. Table 5.7 indicates that 19.6% (n=60) of respondents make use of a desktop computer to purchase products online from an e-commerce store, compared to 13.4% (41) of respondents who make use of a tablet device. Similarly, 32.4% (n=99) of respondents access their e-mail, 23.2% (n=71) of respondents conduct banking and 22.2% (n=68) of respondents make online payments using a desktop computer. Compared to only 22.2% (n=68) of respondents who accesses their e-mail, 13.4% (n=41) of respondents who conduct banking and 10.1% (n=31) of respondents who make payments online using their tablet devices. The results could be due to some mobile apps available on tablets being limited in their functionalities, and the experience is not as feature-rich compared to conducting the activities online on a desktop computer, normally with a larger screen.

Table 5.7 shows that 16.7% (n=51) of respondents indicated 'not applicable' for purchasing products online from an e-commerce website. It can thus be presumed that 83.4% of respondents make a purchase online. Respondents most commonly use a laptop to make online purchases (55.9%, n=171) followed by a smartphone (51.3%, n=157).

Using a search engine is an activity that respondents indicate that they conduct on all the devices (88.9% on smartphones, 83.7 % on a laptop, 34.0% on a desktop, and 33.7% on a tablet device) as indicated in Table 5.7. The search engine app is ranked only 7 in Table 5.6, which ranks the apps that respondents find difficult to live without daily, even though the accessing of a search engine activity is conducted daily on various devices.

Respondents were also asked to indicate the percentage of their monthly expenditure that they use to make purchases online or in-store (Appendix A, question 10). The results indicated in Table 5.8 shows that, on average, 83.4% of the respondents who shop online spend 24% of their monthly expenditure online and 76% in-store.

Table 5.8: Monthly expenditure online or in-store

Monthly expenditure	%
Online	24
In-store	76

Source: Questionnaire used in Part 1: Question 10

5.2.2.7 Hyper-connectivity of the sample

A hyper-connected consumer was defined in chapter 2 as a consumer who is constantly or continuously connected to the internet and on the web through various devices such as smartphones, laptops, tablets, wearable devices and even desktop computers. Several characteristics of a hyper-connected consumer were also identified in the literature, which is indicated in Table 5.9. The definition, as well as the characteristics of hyper-connected consumers, were used as a criterion to indicate if the sample population were deemed, hyper-connected consumers. In the analysis of

the results, to determine if the respondents were hyper-connected, each respondent was analysed on the basis of the criteria in Table 5.9. If a respondent had three or more of the characteristics of a hyper-connected consumer (see section 5.2.2), the respondent was regarded as a hyper-connected consumer.

Table 5.9: Criteria used to determine whether the respondents were hyper-connected consumers

Characteristic	Literature	Research results based on the majority of responses
Internet connectivity		
Have continuous access to the internet	Consumers are said to be 'Always on', meaning that they are continuously connected to the internet through a device (Ceccotti & Vernuccio, 2015; Stephan, 2017).	The results, as seen in Table 5.2, indicate that the majority (76.5%) of the respondents are continuously (20.3%), with 56.2% also being automatically connected to the internet. Mobile phones, as well as fixed lines, were the two most common methods used to connect to the internet. More than half of respondents (56.9%), as indicated in Table 5.2, use more than 10 GB of data per month. The results indicate that the respondents in the sample can be considered always-on and continuously and often automatically connected to the internet.
Accesses the internet daily on at least one digital device	Hyper-connected consumers are said to access the Internet on at least one of the digital devices that they own daily (GFK Global, 2017; Euromonitor International, 2015a	The results in Table 5.2 display that 76.5% of respondents in the sample are continuously and continuously and automatically connected to the internet. Figure 5.2 illustrates that 57.9% of respondents spend more than four hours per day accessing the internet on their smartphones. Respondents also access the internet for over an hour on their laptops (90.9%), tablet devices (52.8%), desktop computers (54.8%), smart television (45.8%) and featurephone (39.2%) (Table 5.4). It is thus clear that the majority of the respondents access the internet on at least one device daily.

Characteristic	Literature	Research results based on the majority of responses
Owned devices		
Make use of multiple digital devices daily	Studies conducted by GFK Global, 2017 and Euromonitor international, 2015a indicate that hyper-connected consumers use multiple digital devices daily.	The results indicate in Figure 5.1 that the majority of the respondents owned a smartphone (94.4%) or a laptop (83.3%). The results in Figure 5.2 also indicate that 57.9% of the respondents spend greater than four hours a day on the internet through their smartphones, 54.1% on their laptops and 13.5% on their tablet devices. As such, it can be inferred that the majority of the respondents make use of multiple mobile devices daily.
Own a smartphone and at least one other device that can connect to the internet	In a hyper-connected world, consumers own multiple digital devices that can access the Internet (Euromonitor International, 2015a). Often the consumer owns a smartphone and one other device (Parrow & Jordan, 2017:6).	The result indicated in Figure 5.1 shows that most respondents own a smartphone (94.4%) and a laptop (83.3%). Table 5.5 indicates that respondents regularly make use of more than 1 app on their smartphones (97.4%), laptops (78.6%), tablet devices (52.7%) and desktop computers (42.6%), daily. As such, it can be inferred that most respondents make use of multiple digital devices daily.
The amount of time spent on a device		
Spend more than four hours a day on a smartphone	On average, a hyper-connected consumer spends four hours or more a day making use of their smartphone GFK Global, 2017; Cheong & Mohammed-Baksh, 2019:9)	As indicated previously, the results in Figure 5.2 indicate that most respondents in the sample spend more than four-hour online (57.9%) on smartphones accessing the internet daily. From these results, it can be inferred that respondents spend on average 4 hours on their smartphones daily.
The use of applications (or apps) to conduct certain activities by consumers		
Have more than nine applications on their smartphones that they make use of regularly	The number of apps that hyper-connected consumers have on their smartphones varies between 9 and 16 (The Economist Intelligence Unit, 2015) and Growth from Knowledge (GFK) Global, 2017).	The results illustrated in Figure 5.3 indicate that only 30.2% of respondents have more than 9 applications on their smartphones that they make use of regularly. This is lower than what is indicated in theory; however, in a South African context, data and internet connectivity is limited and considered expensive. The consumer could thus decide to only download and make use of apps that they need and that does not use too much data

Characteristic	Literature	Research results based on the majority of responses
Make use of a mobile communication application daily	Hyper-connected consumers make use of mobile communication apps daily (Deng, Kanthawala, Meng, Peng, Konova, Hao, Zhang & David, 2019: 11; Euromonitor International, 2015a).	The top application used daily, as seen in the results in Table 5.6, is that of a communication app such as WhatsApp and WeChat, which is ranked number 1 on the list of apps that respondents cannot live on a daily basis. The majority (98.4%) of the respondents (Table 5.7) also indicated that they make use of a communication app on their smartphone.
Visit a social networking site daily	The Hyper-connected consumer visits a social network site daily (GFK Global, 2017; Xanthakou & Antoniadis, 2019:230).	The results indicated in Table 5.7 shows that 87.6% of the respondents indicated that they made use of a use a smartphone to socialise through social media platforms. Table 5.6 also indicates that social media apps such as Facebook, Instagram, Twitter and Linkedin are part of the top ten ranked apps that respondents cannot live on a daily basis.
Access e-mails daily through a digital device	Hyper-connected consumers use different devices to check their e-mail at least once a day (GFK Global, 2017; Euromonitor international, 2015a; Kumar, 2021a:1).	The results indicated in Table 5.7 shows that smartphones (85.3%) and laptops (75.8%) are mainly used to access e-mail. As seen in Table 5.6, e-mail also holds the second-ranking of top apps that respondents cannot live on a daily basis.
Regularly bank online	Hyper-connected consumers are said to use various devices to conduct online banking regularly (GFK Global, 2017; Euromonitor international, 2015a)a	A total of 249 respondents (81.4%) uses smartphones, and 187 (61.1%) use laptops to do banking (see Table 5.7). Banking also features in Table 5.3 as the fourth-ranked app that is used daily.
Regularly make purchases online	Euromonitor International (2015a) indicates that hyper-connected consumers make online purchases regularly through a device.	The results indicated in Table 5.7 shows that 51.3% of respondents use a smartphone and/or a laptop (55.9%) to purchase products online from an e-commerce website.

The characteristics discussed in Table 5.9 are grouped into four main characteristics of a hyper-connected consumer that is identified in the literature (GFK Global, 2017; Euromonitor international, 2015a): internet connectivity, owned devices, the amount of time spent on a device and lastly, the use of applications (or apps) to conduct certain activities by consumers. As shown in Table 5.9, the sample can clearly be classified as hyper-connected as the respondents incorporate the four main characteristics of a hyper-connected consumer. The reason for this is four-fold. Firstly, most of the sample

is continuously (and at times, automatically) connected to the Internet. Secondly, almost the entire sample owns a smartphone and one other connected device (e.g., a laptop, tablet device or computer). Thirdly, the majority of the sample also spend more than four hours a day on a smartphone. The fourth reason for classifying the sample as hyper-connected is that a large portion of the sample uses apps to conduct activities such as banking, e-mail, visiting social network sites, and communicating through mobile communication apps regularly. The results indicated that each respondent had possessed a characteristic of the main criteria of a hyper-connected consumer. Once it was determined that the sample was hyper-connected, the remaining results could be analysed with confidence.

In the next section, the results of the exploratory factor analysis were done to identify the latent factors that influence the decision-making of the hyper-connected consumer and to develop a conceptual model of the latent factors that influence the decision-making process of the hyper-connected consumer in South Africa.

5.3 SECTION 1B: IDENTIFYING LATENT FACTORS INFLUENCING THE HYPER-CONNECTED CONSUMER DECISION-MAKING PROCESS

To identify the underlying factor structure (latent) of the measurement instrument, exploratory factor analysis, principal axis factoring with an oblique (Varimax) rotation (chapter 4, section 4.3.7.2) as well as reliability analysis were performed on the data. Factors were consequently extracted considering methods such as the Kaiser criterion known as the latent root criterion (eigenvalues-greater-than-one) and a visual interpretation of the scree-plot test based either on 'inflection' or the 'elbow' (Steenbergen, 2018:8) methods. The number of factors extracted was selected based on a best-sense approach when comparing the Kaiser criterion versus a visual interpretation of the scree plot using the established theoretical framework posited for the factors underlying the measuring instrument. In line with the general rule of thumb and in consideration of the sample size, only items with a Lambda value (factor loadings) of ≥ 0.4 were considered in the analyses (Maskey, Fei & Nguyen, 2018:94;

Ghauri, Gronhaug & Strange, 2021:225). Regarding reliability analyses, Cronbach's alpha coefficients were calculated for each identified latent factor.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, as well as Bartlett's test of sphericity, were utilised to determine the factorability of the data. As can be seen in Table 5.10, both the KMO measure (.820) and Bartlett's test of sphericity χ^2 (275) = 4677.819, p < .01, suggest sufficient inter-correlation and common variance within the data to support the factor analysis.

Table 5.10: KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.820
Bartlett's Test of Sphericity	Approx. Chi-Square	4677.819
	df	703
	Sig.	.000

The initial factor analysis performed on the data suggested extracting 11 factors using the Kaiser criterion (i.e. using eigenvalues-greater-than-one as a guide). The 11-factor solution, however, yielded unstable factors with several factors having only 1 or 2 significant items that loaded onto a factor and items with unacceptable Lambda values (below 0.4) loading onto a factor. To provide minimum coverage of the factors theoretical domain, it is advised that a single factor ideally consists of three or more items (Pallant, 2020:215; Hair et al., 2018:600). The 11-factor solution, even though it accounted for almost 68% of the cumulative variance, as indicated earlier, was thus not considered suitable. Table 5.11 indicates the number of factors identified and the eigenvalues of each.

Table 5.11: Eigenvalues of the identified factors

Component/ Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**8.192**	21.557	21.557	8.192	21.557	21.557	4.818	12.678	12.678
2	**4.559**	11.996	33.554	4.559	11.996	33.554	4.808	12.653	25.331
3	**2.039**	5.367	38.921	2.039	5.367	38.921	2.955	7.777	33.107
4	**1.870**	4.920	43.841	1.870	4.920	43.841	2.636	6.937	40.044
5	**1.706**	4.490	48.331	1.706	4.490	48.331	2.538	6.679	46.723
6	**1.587**	4.176	52.507	1.587	4.176	52.507	2.198	5.784	52.507
7	**1.341**	3.530	56.037						
8	**1.285**	3.381	59.418						
9	**1.119**	2.945	62.362						
10	**1.095**	2.881	65.243						
11	**1.016**	2.673	67.916						
12	.948	2.495	70.411						
13	.828	2.179	72.590						
14	.802	2.111	74.700						
15	.733	1.928	76.629						
16	.699	1.841	78.469						
17	.627	1.651	80.120						
18	.609	1.602	81.722						
19	.572	1.505	83.228						
20	.540	1.420	84.648						
21	.510	1.343	85.991						
22	.493	1.297	87.288						
23	.461	1.213	88.501						
24	.435	1.145	89.646						
25	.410	1.079	90.725						
26	.389	1.024	91.749						
27	.356	.937	92.686						
28	.343	.904	93.590						
29	.336	.883	94.473						
30	.334	.878	95.351						
31	.296	.779	96.130						
32	.281	.740	96.870						
33	.257	.676	97.546						

34	.215	.567	98.113						
35	.206	.543	98.656						
36	.197	.518	99.174						
37	.168	.442	99.616						
38	.146	.384	100.000						
Extraction Method: Principal Component Analysis.									

The scree plot illustrated in Figure 5.4 presents the eigenvalues plotted against the respective component/factor numbers and assists in determining the number of appropriate factors (Carvalho, Reis & Silveira, 2021:119). To find a more stable factor solution to better fit the data, the scree plot of the eigenvalues of principal components in the analysis was examined using two alternative visual heuristics (the 'elbow' and the 'inflection point') (Peterfreund & Gavish, 2021:334).

The scree plot, which is shown in Figure 5.4, illustrates 37 component/factor numbers. Using a visual 'elbow' heuristic (Pallant, 2020:205), three factors are proposed – see arrow 1 in Figure 5.4. However, using an alternative visual heuristic – the first inflection point[5] after the elbow – six factors were evident – see arrow 2 (this is not a visually big inflection point, but nevertheless it is an inflection point). The literature suggests that each option should be tested using best-fit measures (the Lambda values, the number of items that load onto each factor and the item content), based on the number of factors identified using the visual heuristic in question, plus or minus one factor (Pallant, 2020:215). Thus, EFA tests were run using 2/3/4/5/6 and 7 factors, excluding the test using 11 factors mentioned earlier. An EFA performed with six factors revealed the 'best fit' with a cumulative percentage for the six factors accounting for 52.507% of the total variance.

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[5] Inflection point refers to the point where a curve changes from concave to convex and vice versa
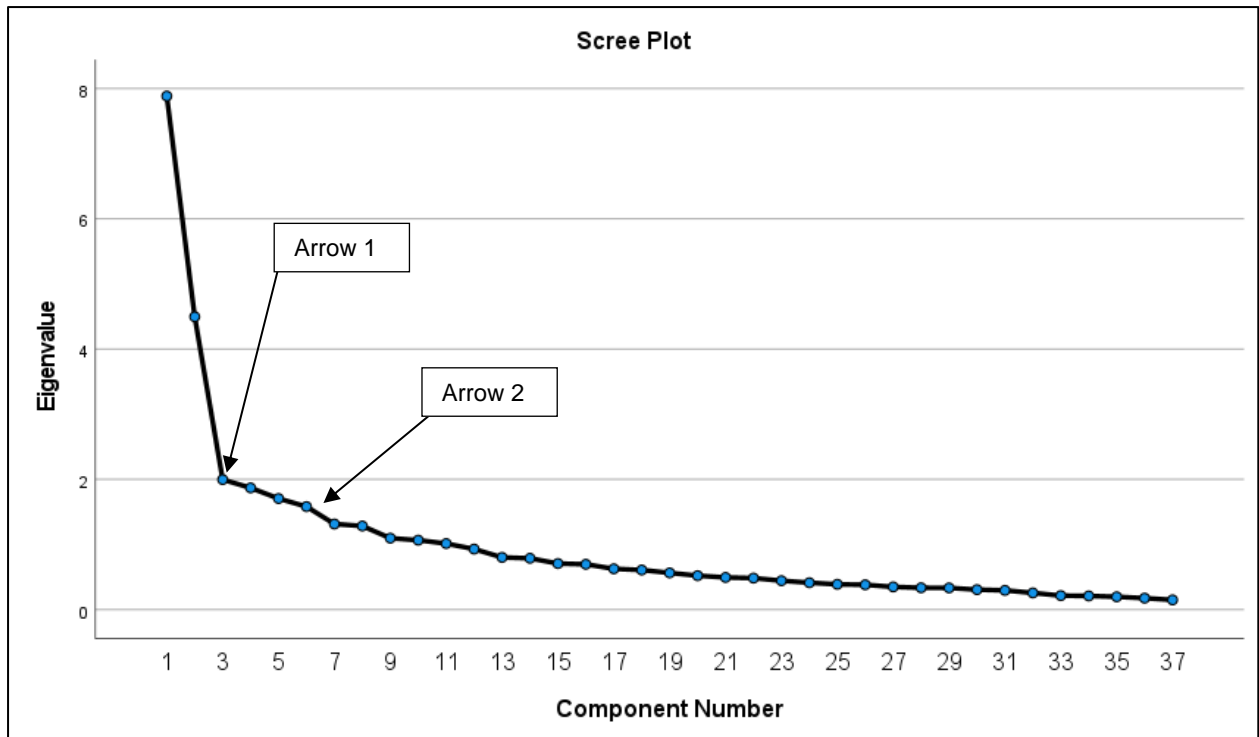
Figure 5.4: Scree plot

Table 5.12 indicates the rotated Lambda values of the six factors. The rotated Lambda values represent the correlations between the observed variables and the latent factors (Finch, 2019:210). The rotation of the factors provides a simpler structure that makes it easier to interpret the results (Finch, 2019:210). As indicated, correlations below 0.4 were discarded. With the Lambda values, threshold/cut-off; the item content was also considered when retaining items in a factor. As such, items that are loaded onto a factor may be discarded due to the item content not being in line with the rest of the items that form the factor.

Table 5.12 indicates the item loadings for each factor and highlights the items ≥ 0.4 in bold. Item 13.8 did not significantly load onto any factor as all the Lambda values were below 0.4. Item 13.8 was subsequently not included in the factor groupings.

Table 5.12: Rotated factor matrix

		Rotated Component Matrix					
		Component/Factor					
Item no.		1	2	3	4	5	6
11.1	Past experiences I have had with the product/brand.	**.640**	-.147	.155	.024	.105	.131
11.2	The current situation that I am in. (If I have run out of a product that I need)	**.483**	.097	.048	-.051	.395	.298
11.3	My knowledge of the product/brand.	**.436**	-.098	.290	.375	.069	.207
11.4	My attitude or how I feel about a product/brand.	**.475**	.000	.368	.252	.063	.179
11.5	Rely on the memory of previous experience of a product/brand.	**.790**	.083	.039	-.015	-.008	.105
11.6	Look at past experiences I have had with the product or brand.	**.817**	-.027	.071	.132	.121	-.028
11.7	Purchase certain products or brands out of habit.	**.617**	.302	.006	-.055	.041	-.097
11.8	Features of the product/brand.	**.472**	-.074	.211	.329	.291	.075
11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.)	**.501**	.069	.299	.311	.227	.029
11.10	My perception of what indicates quality.	**.621**	-.046	.195	.215	.170	.106
11.11	The perceived value of the product attributes.	**.529**	.103	.389	.126	.076	.072

11.12	The perceived value of each evaluation criteria. (If a product/brand scores low in one criterion (price) but high in other criteria (quality) the product will still be purchased because it is a good price.	.301	.232	.275	.145	-.030	.032
11.13	My cultural beliefs.	-.030	**.423**	-.079	.323	-.300	.131
11.14	My social standing in society.	-.093	**.711**	-.092	.151	-.014	.120
11.15	The people I socialise and interact with.	-.027	**.644**	-.102	.115	.077	.195
11.16	My mood and emotional state.	.220	**.682**	.107	-.002	.079	-.287
11.17	How I feel in the moment.	.092	**.682**	.256	-.131	.218	-.196
11.18	My personality. (impulsive or not).	.122	**.750**	.179	-.003	.082	-.060
11.19	My personal values.	.138	**.463**	.284	.305	-.155	.124
11.20	My cultural norms and beliefs.	.046	**.589**	.066	.295	-.257	.210
11.21	My social class (my standing in society).	-.035	**.771**	-.015	.078	-.126	.071
11.22	Personal influences such as the people I socialise with.	-.011	**.752**	-.046	.076	.021	.134
11.23	An extensive search into the product/brand.	.024	-.147	**.598**	.327	.253	-.033
11.24	My motivation (reason) for purchasing a product.	.163	.128	**.634**	-.070	.288	.228
11.25	The knowledge I have about a product or brand.	.203	-.034	**.742**	.121	-.005	.192
11.26	The attitude I have towards a product or brand.	.391	.179	**.632**	.001	-.069	-.042
11.27	My values and how I live my life.	.348	.138	.131	**.544**	-.043	.197
11.28	Find information on products/brands from the market (In-store)	.189	.196	.240	**.448**	.004	.018

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11.29	Get information on products/brands through the marketing media such as advertisements or pamphlets.	.025	.239	-.027	**.595**	.277	.006
11.30	Get information on products/brands that I need from media reports.	.009	.084	-.011	**.644**	.119	.055
11.31	the product/brand country of origin	.190	.170	.243	**.434**	-.303	-.104
11.32	The amount of money I have available to purchase the product.	.375	.066	-.140	-.011	**.481**	.250
11.33	Find information by doing an online search about the product/brand.	.156	-.116	.203	.360	**.510**	.018
11.34	The different prices of the products/brands.	.314	-.049	-.039	.140	**.709**	-.033
11.35	The price of the product.	.031	.061	.260	.057	**.675**	.009
11.36	My family and their needs.	.217	.113	-.027	.172	.012	**.711**
11.37	My family's needs and wants.	.050	.076	.193	.075	-.057	**.768**
11.38	My current situation. (If I have run out of a product)	.152	.114	.262	-.066	.349	**.626**
	Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
	a. Rotation converged in 10 iterations.						

A total of 37 items, out of the original 38 items loaded significantly onto six factors, thus validating the 37 items of the research instrument. After the factors were identified, the specific item content of the items within the various extracted factors was analysed. Each factor is discussed in the following section.

5.3.1 Factor groupings

As indicated in Table 5.12, six factors were identified. Each factor grouping will be discussed below.

5.3.1.1 Factor 1

As indicated in Table 5.13, the items that loaded significantly onto factor 1 predominantly relate to the consumer's memory, past experiences and perception of product quality and value. Item 11.6 "*look at past experiences I have had with the product or brand*" had the highest loading of .817. Item 11.3 "*my knowledge of the product/brand*", which relates to knowledge based on previous experience or memory, had the lowest Lambda value of .436.

Table 5.13: Items that loaded onto factor 1

Item	Item content	Loadings
11.1	Past experiences I have had with the product/brand.	.640
11.2	the current situation that I am in. (If I have run out of a product that I need)	.483
11.3	My knowledge of the product/brand.	.436
11.4	My attitude or how I feel about a product/brand.	.475
11.5	Rely on the memory of previous experience of a product/brand.	.790
11.6	Look at past experiences I have had with the product or brand.	.817
11.7	Purchase certain products or brands out of habit.	.617
11.8	Features of the product/brand.	.472
11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.)	.501
11.10	My perception of what indicates quality.	.621
11.11	The perceived value of the product attributes.	.529

5.3.1.2 Factor 2

The items that loaded significantly onto factor 2 as indicated in Table 5.14 consist of both internal and external influences. External influences that influence consumer behaviour included consumers social standing in society, their social class and people that they socialise with. As indicated in Table 5.14, items 11.13 and 11.20 both of which relate to culture loaded with varying factor scores onto factor 2. Item 11.20 "*my cultural norms and beliefs*" had a moderate Lambda value of .589 and item 11.13 "*my cultural beliefs*" had the lowest loading in the factor grouping of .423. As both items referred to culture and beliefs, the items were deemed a repeat of each other and the item with the lower Lambda value was considered to be removed. The Cronbach alpha of the factor was .864, removing the item with the lower Lambda loading (item 11.13) resulted in a slight increase in the Cronbach's alpha to 0.865. As such, it was considered appropriate to remove item 11.13 from factor 2.

Internal influences that influence consumer behaviour that loaded onto factor 2 include items relating to the consumer's personality (if they are impulsive or not), how they feel in the moment, their mood and emotional state and their personal values. The items that load onto factor 2 can be seen to reflect how external social influences impact the consumer's internal views.

Table 5.14: Items that loaded onto factor 2

Item	Item content	Loadings
11.14	My social standing in society.	.711
11.15	The people I socialise and interact with.	.644
11.16	My mood and emotional state.	.682
11.17	How I feel in the moment.	.682
11.18	My personality. (impulsive or not)	.750
11.19	My personal values.	.463
11.20	My cultural norms and beliefs.	.589
11.21	My social class (my standing in society).	.771
11.22	Personal influences such as the people I socialise with.	.752

5.3.1.3 Factor 3

The items that loaded significantly onto factor 3, as indicated in Table 5.15, relate to the consumer's subjective knowledge about the brands or products such as the consumer's attitude towards the product/brand or the consumer's motivation for purchase and the knowledge that the consumer thinks they have about the brand. The highest item loading is item 11.25 "*the knowledge I have about a product or brand*", which had a Lambda value of .742. Item 11.23 "*an extensive search into the product/brand*", which refers to subjective knowledge that the consumer forms based on their search into the product/brand, had the lowest Lambda value of .595.

Item 11.25 "*the knowledge I have about a product or brand,*" which loaded onto factor 3, is similar to item 11.3 "*my knowledge of the product/brand,*" which loaded onto factor 1. Upon analysing both factors 1 and 3 as a whole, it is seen that item 11.3 in factor 1 refers to knowledge based on the consumer's own experience. However, Item 11.25 that loaded onto factor 3 refers to how much knowledge the consumer thinks they have about the product or brand and that they have gained from the third party.

Table 5.15: Items that loaded onto factor 3

Item	Item content	Loadings
11.23	An extensive search into the product/brand.	.598
11.24	My motivation (reason) for purchasing a product.	.634
11.25	The knowledge I have about a product or brand.	.742
11.26	The attitude I have towards a product or brand.	.632

5.3.1.4 Factor 4

As indicated in Table 5.16, factor 4 contains items that relate to the sources or channels that the consumer gathers information from. The consumer either looks in-store, at advertisements or in media reports. Information can be gathered by evaluating various products/brands based on certain criteria. Information such as the country of origin that can provide information such as the quality of a product or brand can also influence the consumer's purchase decisions. Item 11.27, "*my values and how I live my life,*" which relates to the consumer being influenced by information

based on their value system, had a significant Lambda value of .544. Item 11.30, "*get information on product/brand that I need from media reports,*" had the highest Lambda value of the factor of 0.644.

Table 5.16: Items that loaded onto factor 4

Item	Item content	Loadings
11.27	My values and how I live my life.	.544
11.28	Find information on products/brands from the market (In store)	.448
11.29	Get information on products/brands through the marketing media such as advertisements or pamphlets.	.595
11.30	Get information on products/brands that I need from media reports.	.644
11.31	The product/brand country of origin	.434

5.3.1.5 Factor 5

Factor 5, as indicated in Table 5.17, consists of items that relate to price and financial considerations such as the specific price of the product, the comparative prices of the products, conducting online searches to find information such as the product's price. Item 11.23, "*the amount of money I have available to purchase the product,*" had the lowest Lambda value of .481.

Table 5.17: Items that loaded onto factor 5

Item	Item content	Loadings
11.32	The amount of money I have available to purchase the product.	.481
11.33	Find information by doing an online search about the product/brand.	.510
11.34	The different prices of the products/brands.	.709
11.35	The price of the product.	.675

5.3.1.6 Factor 6

As indicated in Table 5.18, factor 6 consists of items that largely relate to consumers family needs and wants; they include the consumer's current situation. Both Items 11.36 (Lambda value .711) and 11.37 (Lambda value .768), which both refer to family needs and wants, had high Lambda values.

Item 11.38 "*my current situation (If I have run out of a product),*" which loaded onto factor 6, is similar to item 11.2 "*the current situation that I am in (If I have run out of a product that I need),*" which loaded onto factor 1. The items of the factors 1–6 can relate to both factors they loaded onto. In factor 1, the consumer's current situation and need for a product are linked to internal aspects such as memory, experience and habit when making the purchase decision. Whereas in factor 6, the consumer's current situation and if they have run out of a product, relates to products/needs that are required by the consumers' family.

Table 5.18: Items that loaded onto factor 6

Item	Item content	Loadings
11.36	My family and their needs.	.711
11.37	My family's needs and wants.	.768
11.38	My current situation. (If I have run out of a product)	.626

5.3.2 Reliability

In determining the reliability for each factor, Cronbach's alpha reliability coefficients were calculated for each factor. Table 5.19 provides a breakdown of the resulting Cronbach's alpha coefficients.

From Table 5.19, it is clear that all scales were found to have good internal consistency and reliability with the Cronbach's alpha coefficients > 0.6. (Creswell & Creswell, 2018:153; Ghauri et al., 2021:245).

Table 5.19: Cronbach's Alpha per factor identified

Factor	Items	Cronbach alpha
Factor 1	11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 11.10, 11.11	.869
Factor 2	11.13, 11.14, 11.15, 11.16, 11.17, 11.18, 11.19, 11.20, 11.21, 11.22	.865
Factor 3	11.23, 11.24, 11.25, 11.26	.712
Factor 4	11.27, 11.28, 11.29, 11.30, 11.31	.639
Factor 5	11.32, 11.33, 11.34, 11.35	.677
Factor 6	11.36, 11.37, 11.38	.713

The six factors identified in the EFA are proposed as the latent factors that influence the decision-making process of the hyper-connected consumer within South Africa.

5.4   DISCUSSION OF PART 1 OF THE EMPIRICAL INVESTIGATION

The results of the analysis of demographic information, the level of hyper-connectivity of the sample and the results of the EFA, and the latent factors identified will be discussed in the following sections.

5.4.1   Discussion of the demographics and hyper-connectivity of the sample

The results of part 1A of the research indicate that the sample consists of more female (56.5%) respondents and respondents over the age of 26 (90.4%). The consumers can be deemed millennials (consumers born between 1981 and 2000 and fall between the ages of 20–39 years (Lim & Parker, 2020:6). In South Africa, the generational cohort groupings differ slightly, with millennials being defined as consumers born between 1990 and 2000 and generation Z defined as consumers born between 2006 and 2020 (van der Walt, Jonck & Sobayeni, 2019:54).

The respondents are predominantly from the Gauteng (59.5%) province within South Africa. The majority of respondents (70.9%) are employed, with more than half (52.2%) of respondents earning greater than 30 001 per month. South Africa has one of the highest unemployment rates in the world, with 32.6% of the population being unemployed at the end of the first quarter of 2021 due to the COVID-19 pandemic (Toyana, Kumwenda-Mtambo, Evans & Macfie, 2021; Statssa.gov.za, 2021). However, the results of the research indicate that a small percentage (9.5%) of the respondents indicated they are unemployed.

As discussed in Table 5.9, it is clear that the respondents can be deemed, hyper-connected consumers. Each respondent in the sample complies with at least three or more of the characteristics of a hyper-connected consumer. The hyper-connected

respondents are continuously connected to the internet (76.5%) and access the internet primarily through mobile cellular networks (65.7%). Most respondents (61.5%) indicate that they actively spend greater than four hours a day on the internet. Although the price of data in South Africa is considered expensive (Healing, 2019; Chinembiri, 2020:2), only 3.3% of respondents use less than 1 GB of data per month with most respondents (56.9%) indicating that they make use of more than 10 GB of data per month when accessing the internet.

The majority of the respondents (94.4%) own a smartphone and spend over an hour a day (95.9%) accessing the internet. The results are in line with the statistic that most of the sample falls within the millennial generational grouping, who grew up with the emergence of technology and are said to have a high affinity to new technology and media (Koufie & Kesa, 2020:3).

The results indicate that the majority of respondents (72.1%) have more than 5 apps on their smartphones. The most commonly used apps that respondents have on their smartphones include apps that are used to chat through a communication app (98.4%), use a search engine (88.9%), socialise through social media (87.6%), access e-mail (85.3%) and bank (81.4%) (Table 5.7).

In identifying which apps consumers valued the most, respondents were asked to rank the apps from a given list that they could not live on a daily basis. Communication apps were ranked as the number one app that consumers cannot live without. Several social media apps were among the top ten apps consumers indicated they could not live without. The social media apps include Facebook (ranked 3), Instagram (ranked 6), LinkedIn (ranked 9) and Twitter (ranked 10). According to the, We Are Social and Hootsuite 2021 digital report (2021:304), the rankings are in line with global statistics, indicating that communication and social media apps Facebook Messenger, Facebook and WhatsApp ranked as the top three apps downloaded worldwide.

More than half of respondents in the sample (51.3%) use smartphones, as well as laptops (55.9%), to purchase products online from an e-commerce website. Despite the increased online activity of respondents, the respondents indicate that they spend only 24% of their monthly expenditure on making online purchases.

Once the sample was classified as hyper-connected, the EFA was conducted to identify and extract the latent factors of decision-making for the hyper-connected consumer from the data collected.

5.4.2 Discussion on the identified latent factors of decision making of the-hyper-connected consumer

Part 1B of the empirical investigation identified and extract latent factors inherent in the data collection using a questionnaire developed based on the question items identified from the literature on consumer decision making. The following objectives were focused on in part 1 of the investigation:

- To identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer.
- To propose a conceptual model from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa.

To achieve the objectives of part 1B of the empirical investigation, EFA was conducted and six latent factors were identified. Using the six latent factors identified in the EFA, the researcher proposed a model for the latent factors that were identified and extracted from the data of the decision-making process of the hyper-connected consumer (Figure 5.5). The identified latent factors have not been labelled at this stage and will be further discussed and labelled in chapter 6. The proposed model in Figure 5.5 illustrates the six latent factors identified. The numbers 11.1-11.36 in Figure 5.5 represent the question items in the survey. Part 1B of the empirical investigation also validated the measurement instrument used to identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer. A total

of 37 of the 38 items of the questionnaire had significant Lambda values; this confirmed the validation of the measurement instrument used to identify and extract the latent factors. To confirm the proposed model illustrated in Figure 5.5, part 2 of the empirical investigation was conducted. Once the latent factors are confirmed in part 2 of the empirical investigation, the latent factors will be given appropriate labels. The structural and construct validity of the proposed model will also be tested in part 2 of the research.

In terms of reliability, Cronbach's alpha coefficients were all higher than the desired value of 0.6. Therefore, all the latent factors identified in the EFA showed good internal consistency and reliability.
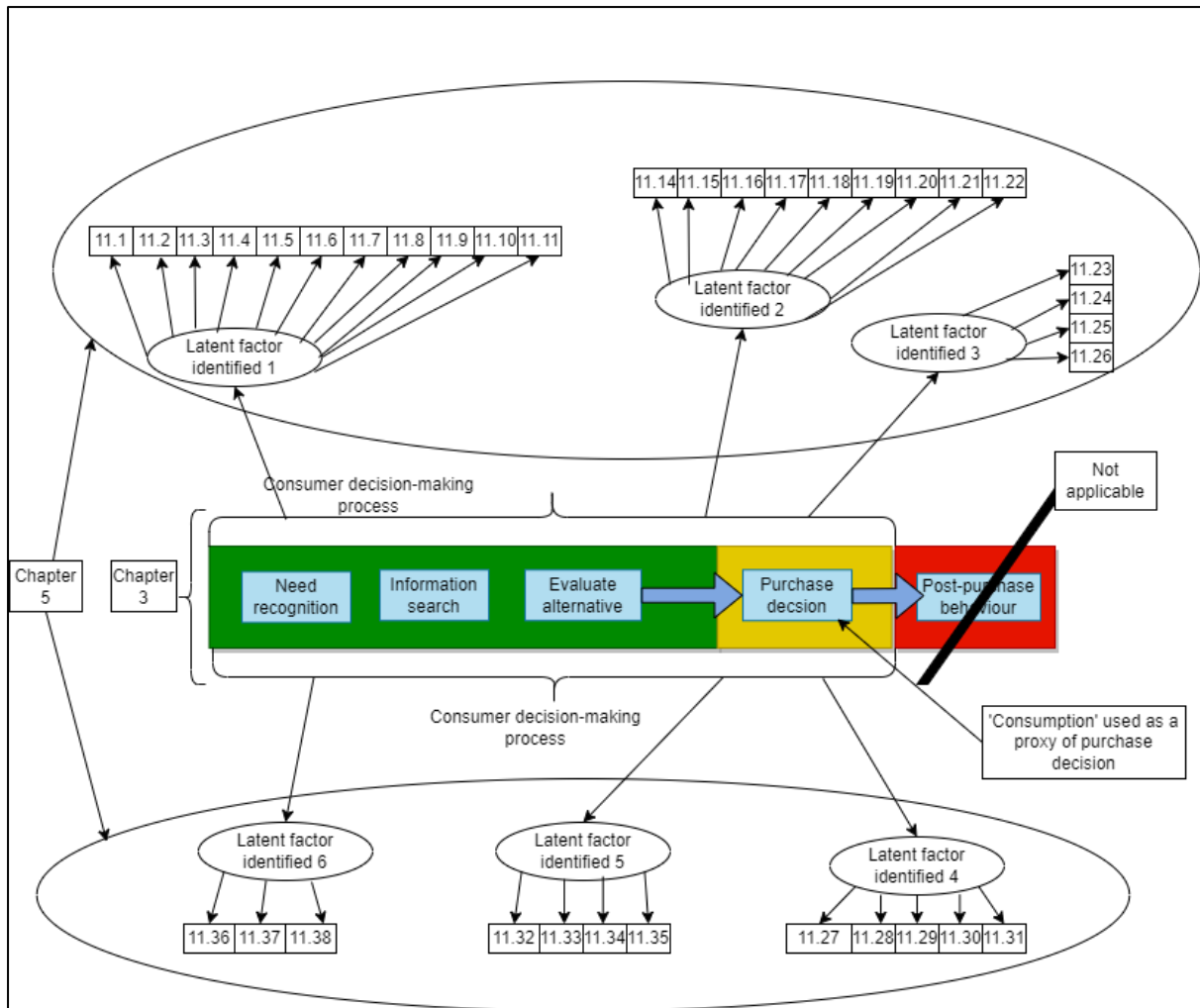
Figure 5.5: A proposed conceptual model of the decision-making process of the hyper-connected consumer

5.5 SUMMARY

This chapter provided the data analysis of part 1 of the empirical investigation. The chapter began with a discussion on the demographic profile of the respondents. As the context of the research is that of hyper-connected consumers, the demographics and level of hyper-connectivity of the sample were deliberated. The results indicated that each respondent in the sample had possessed an aspect of the main criteria used to identify a hyper-connected consumer (internet connectivity, owned devices, the amount of time spent on a device, and the use of applications (or apps) to conduct certain activities by consumers). Once the sample was classified as hyper-connected,

further EFA was conducted on a list of items identified from the literature on the traditional EBM consumer decision-making process to explore the underlying structural validity of the questionnaire and to identify and extract latent factors that influence the decision-making of the hyper-connected consumer. The results of the EFA identified six factors, which were used to propose a conceptual model of the decision-making process of the hyper-connected consumer.

The structural validity of the proposed model was determined in part 2 of the empirical investigation. The next chapter (chapter 6) will provide a detailed analysis of the results obtained during part 2 of the empirical investigation.

CHAPTER 6
RESULTS OF PART 2 OF EMPIRICAL INVESTIGATION

6.1 INTRODUCTION

The preceding chapter focused on the results of part 1 of the empirical investigation. Part 1 of the empirical investigation identified and extract latent factors inherent in the data collected using a questionnaire developed based on the question items identified from the literature on consumer decision making, adapted for the hyper-connected consumer. An EFA was conducted, which yielded six underlying factors that could represent the latent factors that influence the decision-making process of the hyper-connected consumer. The said factors were used to propose a theoretical model (see sections 5.4.2 and 6.3.1) illustrating the decision-making process of the hyper-connected consumer within the South African context.

Part 2 of the empirical investigation follows from the results of the analysis of part 1 and is captured in this chapter. The primary objective of part 2 of the empirical investigation was to confirm the underlying latent factors that influence the decision-making of the hyper-connected consumer within South Africa from part 1 of the empirical investigation, using a different random sample. The structural and construct validity of the proposed conceptual model was also tested. The results of which will be presented in the sections that follow.

This chapter begins by addressing the research results conducted during part 2 of the empirical investigation. As in chapter 5, the results of part 2 of the empirical investigation are divided into two sections: 2A and 2B. The first section (2A) reports on the demographic information associated with the sample used in part 2, followed by a discussion regarding the level of hyper-connectivity of the respondents sampled. The second section (2B) outlines the results of the CFA and SEM, followed by a discussion on the descriptive analysis of the latent factors previously identified in chapter 5. The results are presented in tables and figures that follow, which, in turn,

are supported by discussions validating the research findings of part 2 of the empirical investigation.

6.2   SECTION 2A: DEMOGRAPHIC INFORMATION AND HYPER-CONNECTIVITY

A quantitative approach was adopted for part 2 of the empirical investigation, with the data being collected using online, web-based surveys. A different sample of randomly selected respondents was sent an e-mail with a link to the online platform that hosted the survey. Respondents were provided with the details of the research and asked to indicate if they agreed to participate in the research before continuing. The purpose and objectives of the research, as well as terms and conditions, such as the time it will take to complete the survey, were outlined in the weblinks. Respondents were made aware that participation in the research is voluntary and could withdraw at any time. It was also emphasised that the responses would be anonymous, and the results could not be linked back to the individual respondent. Respondents were made aware that by selecting to agree and continuing with the survey, the respondents accepted the terms and conditions and consented to participate in the research. Simple random sampling was used in the collection of the data.

The measurement instrument for part 2 of the empirical investigation was adapted from the instrument used in part 1. In section 1A of the measurement instrument, question 8, which asked respondents to rank the top 5 apps that the respondent finds difficult to live without daily (see Appendices A and B), was adapted for part 2 of the empirical investigation. The question was changed to a Likert scale (part 2) from a ranking question (part 1) to get more granular feedback regarding the apps, which consumers made use of. Section B of the measurement instrument was adapted to only include the 36 items that loaded onto the six latent factors identified in part 1 of the empirical investigation.

The survey was sent out to 5 000 respondents, of which 601 attempted the survey. The online platform used to host the survey was used to clean the data (chapter 4,

section 4.3.7). After the data cleaning process, the final sample consisted of 411 useful responses. Part 2 of the empirical investigation thus had a response rate of 8.22%. The results of part 2 of the empirical investigation will be discussed in the following sections.

A secondary objective of the research was to develop a profile of the hyper-connected consumer within South Africa. In building the profile of the hyper-connected consumer, the demographic results and hyper-connected characteristics of the population samples used in part 1 and part 2 of the empirical investigation will be examined as a whole. The samples for part 1 and part 2 of the empirical investigation will be referred to as samples 1 and 2, respectively. To clearly distinguish between the results of sample 1 and sample 2, the results of sample 2 are highlighted in grey in the tables that follow.

6.2.1 Demographic information of the respondents

The demographic information provides insight into who the respondents for the research are. Table 6.1 provides the demographic profile of respondents in both samples 1 and 2 from part 1 and part 2 of the empirical investigation. The missing responses indicated in Table 6.1 refer to respondents who did not answer some of the demographic questions.

Table 6.1: Demographic breakdown of respondents of Sample 1 and Sample 2

		Sample 1 Part 1A Chapter 5		Sample 2 Part 2A This chapter		Conclusion
		n	%	n	%	
Gender						
	Male	133	43.5	136	33.1	The majority of the respondents in both sample 1 (56.5%, n=173) and sample 2 (66.7%, n=274) are female. In sample 2, only one respondent selected the "other" category.
	Female	173	56.5	274	66.7	
	Other	0	0.0	1	0.2	
	Total	306	100	411	100	
Age						
	18–25	27	8.8	113	27.5	Respondents for both samples 1 (31.0%, n=95) and 2 (40.9%, n=168) are between the
	26–35	95	31.0	168	40.9	

36–45	52	17.0	91	22.1
46–55	65	21.2	30	7.3
56–65	65	21.2	9	2.2
Missing	2	0.7	0	0.0
Total	306	100	411	100

ages of 26 and 35 years. Only 8.8% (n=27) of respondents in sample 1 are between the ages of 18 and 25 compared to respondents in sample 2 that has 27.5% (n=113) respondents that are between the ages of 18 and 25. The results indicate that respondents in sample 2 are younger with more respondents (68.4%) between the ages of 18 and 35 compared to respondents in sample 1 (39.8%). Respondents who are between the ages of 18 and 35 (in South Africa, the age group is 31 years and above) fall within the millennial and generation Z generational groups and would have grown up with technology. As such, they are more likely to make use of various devices and be connected.

Province

Eastern Cape	9	2.9	31	7.5
Free state	4	1.3	20	4.9
Gauteng	182	59.5	170	41.4
Kwa-Zulu Natal	21	6.9	68	16.5
Limpopo	4	1.3	24	5.8
Mpumalanga	3	1.0	15	3.6
Northern Cape	1	0.3	3	0.7
North-West	8	2.6	11	2.7
Western Cape	68	22.2	69	16.8
Missing	6	2.0	0	0.0
Total	306	100	411	100

The results indicate that respondents from samples 1 and 2 were predominantly from the Gauteng (sample 1=59.5%, n=182; sample 2=41.4%, n=170), Western Cape (sample 1=22.2%, n=68; sample 2=16.8%, n=69), and Kwa-Zulu Natal (sample 1=6.9%, n=21; sample 2=16.5%, n=68), provinces within South Africa. Comparing the results to the population contribution of each province according to the South African Government statistics, Gauteng has the largest share of the population with 26.0% (www.gov.za, 2021). Kwa-Zulu Natal has a 19.3% share of the population, followed by the Western Cape with 11.8% of the South African population. The three provinces contribute the most to the national economy of South Africa. According to Statssa.gov.za (2020a) and Deloitte (2020), Gauteng contributes 34.6%, Kwa-Zulu Natal contributes 16% and Western Cape contributes 14% to the economy of South Africa.

Employment Status

Part-time	7	2.3	48	11.7
Employed	217	70.9	222	54.0
Unemployed	29	9.5	98	23.8
Self-employed	53	17.3	43	10.5

With regards to employment, close to three-quarters of respondents in sample 1 (70.9%, n=217) and over half of respondents in sample 2 (54%, n=222) indicate that they are employed. More respondents (17.3%, n=53) in

Total	306	100	411	100	sample 1 indicate that they are self-employed compared to respondents in sample 2 (10.5%, n=43). The results of the employment statistics are in line with the fact that the majority of the respondents reside in the provinces that contribute the most to the economy of South Africa. The unemployment rate for sample 1 (9.5%, n=29) is lower compared to sample 2 (23.8%, n=98) that is closer to the national unemployment rate of South Africa (32.5%%) (Toyana et al., 2021).
Gross monthly income					
R0 – R10 000	36	11.8	197	47.9	The majority (80.0%, n=245) of respondents in sample 1 indicate that they earn more than R10 001 per month. In sample 2, almost half (47.9%, n=197) of respondents indicate that they earn between R0 – R10 000 and further 49.1% (n=202) indicating that they earn over R10 001 per month. In sample 1, the unemployment rate is low (9.5%) and respondents earn a higher monthly income compared to sample 2. In sample 2, however, the unemployment rate is higher (32.5%) compared to sample 1 and respondents indicate that they earn a lower monthly income.
R10 001– R30 000	85	27.8	153	37.2	
R30 001– R60 000	76	24.8	32	7.8	
R60 001– R100 000	53	17.3	10	2.4	
More than R100 000	31	10.1	7	1.7	
Prefer not to answer	22	7.2	12	2.9	
Missing	3	1.0	0	0.0	
Total	306	100	411	100	

Source: Questionnaires used in Part 1 & Part 2: Questions 12, 13, 14, 15, 16

The next section will discuss the results regarding the level of hyper-connectivity of respondents in both samples 1 and 2.

6.2.2 Statistics associated with the hyper-connected consumer

As with part 1A of the empirical investigation (see chapter 5, section 5.2.2), the empirical investigation context is hyper-connectivity. As such, it was important to determine whether the sample was considered hyper-connected. Similar to part 1 of the empirical investigation, several key themes of hyper-connectivity were identified from the results, internet connectivity; owned devices; the amount of time spent on a device; apps used and ranking of the apps; devices used to conduct certain activities online and monthly expenditure on making purchases. Each theme identified from the research will be discussed separately.

6.2.2.1 Internet connectivity

Respondents were asked to indicate how often they connect to the Internet, methods used to connect to the Internet, how much data respondents use per month, and how many hours (on average) they spend actively on the internet every day (Appendix A and Appendix B, questions 1, 2, 3 & 4). Table 6.2 indicates the results of internet connectivity for both samples 1 and 2. The missing responses indicated in Table 6.2 refer to respondents who did not answer some questions relating to internet connectivity.

Table 6.2: Internet connection patterns of respondents

		Sample 1 Part 1A Chapter 5		Sample 2 Part 2A This chapter		Discussion
		n	%	n	%	
Frequency of internet connection	Occasionally connected	12	3.9	29	7.1	In sample 1, majority (76.5%) of respondents indicate that they are continuously (20.3%, n=62) and continuously and automatically (56.2%, n=172) connected to the internet. Almost 70.0% (69.1%, n=284) of respondents in sample 2 indicate that they are continuously (21.2%, n=87) as well as continuously and automatically (47.9%, n=197) connected to the internet. The connectivity percentage (sample 1: 76.5%; sample 2: 69.1%) confirms that the respondents in sample 1 and 2 are 'connected' as one might expect for a hyper-connected consumer.
	Regularly connected	56	18.3	98	23.8	
	Continuously connected	62	20.3	87	21.2	
	Continuously and automatically connected	172	56.2	197	47.9	
	Missing	4	1.3	0	0	
	Total	306	100	411	100	
Method/s used to connect to the Internet at home*6	Mobile (using a sim-card cellular phone - smartphone or featurephone)	201	65.7	356	86.6	Even though both samples 1 and 2 make use of various methods such as fixed lines or cables as well as home LTE to access the internet, the most common method used is mobile access through a cellular network. The majority of respondents in both sample 1 (65.7%, n=201) and
	Did not select mobile as an option	105	34.3	55	13.4	
	Total	306	100	411	100	

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[6]At the time that the study was done, the primary cellular technology in use was LTE. 5G was not yet widely available and used.

		Sample 1 Part 1A Chapter 5		Sample 2 Part 2A This chapter		Discussion
		n	**%**	**n**	**%**	
	Fixed line or cables (ADSL or fibre)	188	61.4	115	28.0	sample 2 (86.6%, n=356) indicate that they make use of mobile cellular networks to access the internet.
	Did not select fixed-line or cables as an option	118	38.6	296	72.0	In sample 2 more respondents access the internet through home LTE (40.4%, n=166)
	Total	306	100	411	100	compared to only 28% (n=115) of respondents who access the
	Home LTE (using an LTE SIM card in a modem or router)	83	27.1	166	40.4	internet through a fixed-line. In sample 1 this is reversed, in that more respondents indicated that they access the internet through
	Did not select home LTE as an option	223	72.9	245	59.6	fixed lines (61.4%, n=188) compared to home LTE (27.1%,
	Total	306	100	411	100	n=83).
	Other	8	2.6	15	3.6	
	Did not select other	298	97.4	396	96.4	
	Total	306	411	411	100	
	Respondents had to select the options that applied to them only					
Data usage per month when accessing the internet	Between 0–1 GB	10	3.3	20	4.9	The majority of respondents in sample 1 (88.0%, n=269) and sample 2 (90.6%, n=372) use
	1 GB and more but less than 5 GB	48	15.7	103	25.1	more than 1 GB of data per month. These results align with reports from mobile network
	5 GB and more but less than 10 GB	47	15.4	82	20	provider MTN, which states that the average South African mobile network-prepaid
	10 GB and more but less than 50 GB	99	32.4	118	28.7	network prepaid prescriber uses more than 2 GB of data
	50 GB and more	75	24.5	69	16.8	per month (Pike, 2021). According to MTN, South
	I do not know	23	7.5	19	4.6	
	Missing	4	1.3	0	0.0	

		Sample 1 Part 1A Chapter 5		Sample 2 Part 2A This chapter		Discussion
		n	%	n	%	
	Total	306	100	411	100	African consumers that are on mobile network contracts make use of more than 10 GB of data per month (Pike, 2021). The statistics are also reflected in the results, which show that 56.9% (n=174) of respondents in sample 1 and 45.5% (n=187) respondents in sample 2 indicated that they make use of more than 10 GB of data per month. An insignificant portion of respondents in both sample 1 (7.5%, n=23) and sample 2 (4.6%, n=19) indicates that they do not know how much data they use per month.
Average hours per day actively spent on the internet	Less than 1 hour	21	6.9	11	2.7	The majority of respondents in sample 1 (61.5%, n=188) and sample 2 (79.8%, n=328) spend more than 4 hours a day on the internet. In sample 2, 20.4% (n=84) of respondents indicate that they spend more than 10 hours a day on the internet. The result of sample 2 is compared to sample 1, where only 9.5% (n=29) of respondents indicate that they spend more than 10 hours a day on the internet.
	1 hour and more but no more than 4 hours	95	31.0	72	17.5	
	4 hours and more but no more than 7 hours	93	30.4	133	32.4	
	7 hours and more but no more than 10 hours	66	21.6	111	27.0	
	Over 10 hours	29	9.5	84	20.4	
	Missing	2	0.7	0	0.0	
	Total	306	100	411	100	

Source: Questionnaires used in Part 1 & Part 2: Questions 1 ,2, 3 & 4
Note that more than one option could be selected from the survey.

6.2.2.2 Owned devices

Respondents were asked to indicate from a pre-determined list (Appendix A and B, question 5) which device they owned (the respondent's own property). 'Owned devices' include the devices that respondents own, and the amount of time spent on each device daily. Figure 6.1 illustrates that almost all the respondents in both sample

1 and 2 (sample 1=94.4%, n=289, sample 2=94.9%, n=390) own a smartphone and a laptop (sample 1=83.3%, n=255; sample 2=68.9%, n=283).

The results (Table 6.3 and Figure 6.1) of both sample 1 and sample 2 illustrate that more respondents make use of tablet devices compared to desktop computers with more respondents indicating they own a tablet device (sample 1=49.0%, n=150; sample 2=42.3%, n=174) compared to desktop computers (sample 1=36.3%, n=111; sample 2=32.7%, n=135). In Figure 6.1 and Table 6.3, it can be seen that sample 1 have a higher percentage of respondents who own a desktop computer (36.3%), laptop (83.3%), tablet device (49.0%) and wearable device (24.5%) compared to sample 2; desktop computer (32.8%), laptop (68.9%), tablet device (42.3%) and wearable device (14.4%). Almost double the number of respondents in sample 2, however, own a featurephone (14.8%), smart speaker (14.1%) and smart home device (7.1%) compared to sample 1 (featurephone (5.9%), smart speaker (9.2%) and smart home device (3.6%).
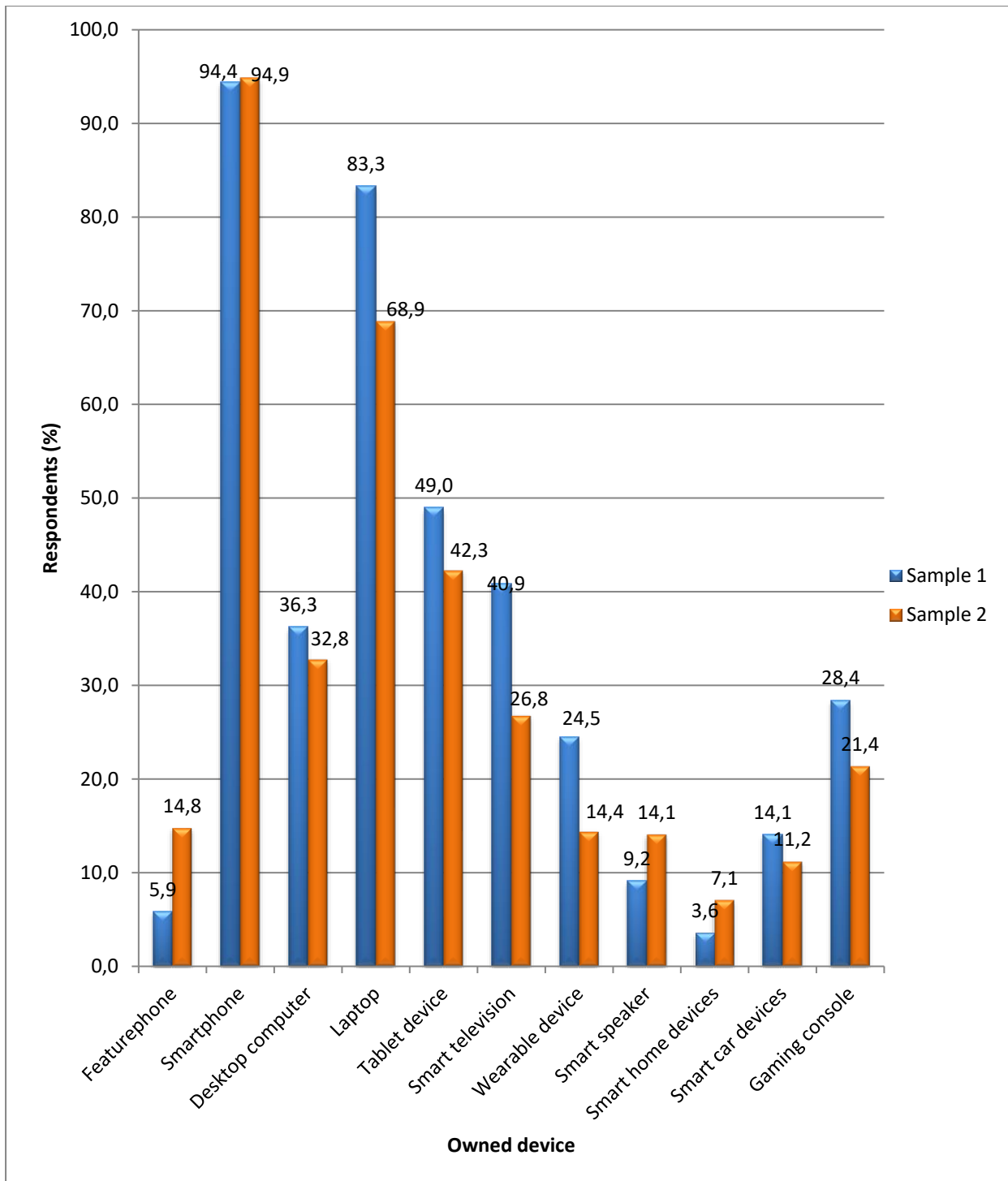
Figure 6.1: Owned devices of both samples 1 and 2
Source: Questionnaires used in Part 1 & Part 2: Question 5
Note that more than one option could be selected from the survey.

Table 6.3: Owned devices of both samples 1 and 2

	Sample 1 % Part 1A Chapter 5	Sample 2 % Part 2A This chapter	Total respondents who answered the question Sample 1 (n)	Total respondents who answered the question Sample 2(n)
Featurephone	5.9	14.8	306	411
Smartphone	94.4	94.9	306	411
Desktop computer	36.3	32.8	306	411
Laptop	83.3	68.9	306	411
Tablet device	49.0	42.3	306	411
Smart television	40.8	26.8	306	411
Wearable device	24.5	14.4	306	411
Smart speaker	9.2	14.1	306	411
Smart home device	3.6	7.1	306	411
Smart car device	14.1	11.2	306	411
Gaming console	28.4	21.4	306	411

Source: Questionnaires used in Part 1 & Part 2: Question 5

6.2.2.3 Time spent on devices

To determine which devices were used to access the internet and for how long, respondents were asked to indicate how many hours a day they spent on the internet from a given list of devices (Appendices A and B, question 6). Note that 'N/A' (not applicable) could be selected if none of the devices was used for an activity. Table 6.4 compares the number of hours spent on the internet daily for respondents in samples 1 and 2.

Table 6.4: Number of hours spent on the internet through a device

Sample 1 Part 1A Chapter 5 Sample 2 Part 2A This chapter	N/A		Over an hour but no more than 4 hours		Over 4 hours but no more than 7 hours		Over 7 hours but no more than 10 hours		> 10 hours a day		Total respondents who answered the question	
	1 %	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 (n)	2 (n)
Featurephone	60.7	57.4	17.2	15.8	12.4	12.7	4.8	8.3	4.8	5.8	290	411
Smartphone	4.1	2.9	38.0	17.0	30.5	27.0	12.5	24.3	14.9	28.7	295	411
Desktop computer	45.3	41.6	24.6	26.3	15.6	15.8	11.8	10.46	2.8	5.8	289	411
Laptop	9.0	23.6	36.8	30.2	24.4	20.2	21.7	15.8	8.0	10.2	299	411
Tablet device	47.3	44.3	39.3	22.4	9.1	15.57	1.7	9.2	2.7	8.5	298	411
Smart Television	54.3	60.1	29.4	20.0	11.3	9.2	1.0	4.6	4.1	5.8	293	411

Source: Questionnaires used in Part 1 & Part 2: Question 6

The results in Table 6.4 indicate that smartphones and laptops appear to be the primary devices for connecting to the internet. Respondents in both sample 1 (57.9%%, n=171) and sample 2 (80.0%, n=329) indicate that they access the internet for more than four hours a day on their smartphones. In sample 1, more than half (54.1%, n=162) of respondents indicate that they access the Internet on a laptop for more than four hours a day. In sample 2, less than half (46.2%, n=190) of respondents access the Internet on a laptop for more than four hours a day.

The results in Table 6.4 suggest that tablet devices are occasionally used to access the internet, with many respondents in sample 1 (39.3%, n=117) and sample 2 (22.4%, n=92) using a tablet device for less than four hours a day to access the internet. The said findings are in line with statics by We Are Social and Hootsuite (2021a:28) that indicate that tablet devices in South Africa account for 1.7% of web traffic only.

An anomaly that was picked up in the data shows a difference in the number of respondents who own a device indicated in Figure 6.1 and the number of respondents who access the internet on the devices. Figure 6.1, for instance, indicates that only 5.9% (n=18) respondents in sample 1 and 14.8%, (n=91) respondents in sample 2 own a featurephone. However, from the results in Table 6.4, it can be deduced that 39.2% (n=114) of respondents in sample 1 and 42.6% (n=175) of respondents in sample 2 access the internet on a featurephone. It is possible that the question proved to be complex and misunderstood. In answering the question, respondents could have considered devices that they make use of that are, for example, provided by their employers. Hayyes et al. (2020) indicate that the use of business-owned devices for work and personal use have become blurred, with individuals often downloading personal apps and accessing the internet on business-owned devices.

From the results in Figure 6.1 and Table 6.4, it can be concluded that most respondents own a smartphone and a laptop and access the Internet through these devices. The majority of respondents, however, spend more time accessing the Internet through a mobile device such as their smartphone.

6.2.2.4 The software application (App) use

Respondents were asked to indicate how many apps they made use of their devices daily (Appendices A and B, question 7). Note that 'N/A' (not applicable) could be selected if none of the devices was used for an activity. Table 6.5 indicates the number of apps that respondents for both samples 1 and 2 make use of daily on their devices.

Table 6.5: Regular application (app) uses on certain devices

Sample 1 Part 1A Chapter 5 Sample 2 Part 2A This chapter	N/A		1-4 apps		5-8 apps		9-12 apps		12-16 apps		16+ apps		Total respondents who answered the question	
	1 %	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 (n)	2 (n)
Smartphone	2.6	1.7	25.3	28.5	41.8	36.3	15.8	17.3	6.9	5.1	7.6	11.2	304	411
Laptop	21.5	27	46.2	36.5	20.8	17	5.0	7.3	4.6	5.4	2.0	6.8	306	411
Desktop computer	57.3	49.1	27.8	22.6	7.6	12.4	3.6	6.3	2.6	3.4	1.0	6.1	302	411
Tablet device	47.2	45	26.7	21.9	15.8	13.1	5.9	9.2	2.6	4.6	1.7	6.1	303	411
Smart Television	58.1	62	34.0	23.4	5.9	6.3	1.3	3.2	0.0	1.7	0.7	3.4	303	411

Source: Questionnaires used in Part 1 & Part 2: Question 7

Table 6.5 indicates that the majority of respondents in both samples 1 (72.1%, n=219) and sample 2 (69.9%, n=287) regularly make use of five or more apps on their smartphones. Respondents in both samples make use of 1 and 4 apps on their laptops (sample 1=46.2%; sample 2=36.5%), desktop computer (sample 1=27.8%; sample 2=22.6%), tablet device (sample 1=26.7%; sample 2=21.9%) and smart television (sample 1=34.0%; sample 2=23.4%). Blair (2020) indicates that devices such as tablet devices and laptops are used for specific purposes such as work, gaming or social media and the number of apps on the device may be influenced by the purpose for which the device is used. The number of apps used could also be influenced by the limited storage space on a device (Karnes, 2021; Wilson, 2019).

Respondents in both samples 1 and 2 indicated not applicable for desktop computer (sample 1=57.3%, n=173; sample 2=49.1%, n =202), tablet device (sample 1=47.2%,

n=143; sample 2=45%, n=185) and smart television (sample 1=58.1%, n=176; sample 2=62%, n =255), indicating that the respondents do not use apps on the said devices daily. Comparing the results to Figure 6.1, it can be deduced that respondents possibly do not own a desktop computer (sample 1=63.7%; sample 2=31.1%), tablet devices (sample 1=51%; sample 2=57.7%) and smart televisions (sample 1=59.2%; sample 2=73.2%). It is possible that the question proved to be complex and misunderstood, nevertheless it provides a robust indication of the number of apps that is used by respondents on each device.

6.2.2.5 App ranking

Respondents were asked to rank from a pre-set list (Appendices A and B, question 8) the apps that they find difficult to live without daily. Table 6.6 indicates the top-ranked apps based on the total aggregate scores for both samples 1 and 2. An aggregated analysis was used as respondents were asked to rank a limited number of apps (the top five apps). The question that was asked in the questionnaires of part 1 and part 2 of the empirical investigation to determine the ranking of the apps used by consumers was different. In part 1 of the empirical investigation, an ordinal scale was used where respondents were asked to rank on a scale of 1 to 5, the apps that respondents could not live without on a daily basis. The results indicated more than one app for some rankings; as such, an aggregated total was used to determine a clear ranking order (see chapter 5, section 5.2.2.3). In part 2 of the empirical investigation, a Likert scale, which is an ordinal scale (Esteban-Bravo & Vidal-Sanz, 2021:612) was used, and respondents were asked to rate the app usage where '1 = do not make use of' and '5 = make use of daily'. To gain an accurate ranking in part 2 of the empirical investigation, the aggregated total was used as well. To determine the aggregate for both samples 1 and 2, a weight was assigned to each rank. The weights indicated the importance of each rank and were as follows:

- Ranking an app first was allocated a weight of 5
- Ranking an app second was allocated a weight of 4
- Ranking an app third was allocated a weight of 3

- Ranking app fourth was allocated a weight of 2
- Ranking an app fifth was allocated a weight of 1

The number of respondents per rank for each app was multiplied by the weight of the rank. The total number for each app was then added to determine the aggregate number indicated in Table 6.6. The aggregated amount was used to determine a reasoned ranking for each app. Table 6.5 indicates the results as well as the aggregate and the ranking for each app for both sample 1 and sample 2.

The apps listed in Table 6.6 can be grouped as communication apps (WhatsApp and e-mail), social networking apps (Facebook, Instagram, Twitter, LinkedIn and Snapchat), entertainment apps (video streaming and music apps), lifestyle apps (health and fitness tracker, taxi, food delivery, Airbnb, dating, sleep and security apps), utility apps (banking apps, search engine apps and maps/GPS) and e-commerce apps. The results in Table 6.6 indicate that respondents value communication apps such as WhatsApp (ranked 1 for both samples 1 and 2) as well as e-mail apps (ranked 2 for both samples 1 and 2) over lifestyle apps that include taxi apps (ranked 13 in sample 1 and 16 in sample 2), Airbnb (ranked 19 in sample 1 and 20 in sample 2) and dating apps (ranked 18 in sample 1 and 21 in sample 2). E-commerce apps ranked 17 on the ranking list in sample 1 and 14 in sample 2.

Table 6.6: Ranking of apps

Ranking	1		2		3		4		5		Total respondents who answered the question					
Sample 1 Part 1A Chapter 5 Sample 2 Part 2A This chapter	1	2	1	2	1	2	1	2	1	2	1	2	Sample 1		Sample 2	
	%		%		%		%		%		n	n	Aggregate	Rank	Aggregate	Rank
Weighting	x5		x4		x3		X2		x1							
Communication app (e.g. WeChat/WhatsApp)	45.1	1.95	16.3	0.97	9.5	4.62	8.2	5.6	4.9	86.86	306	411	1042	1	1539	1
E-mail app (e.g. Gmail app)	9.5	1.46	15	2.68	15.4	9.49	8.2	11.19	9.2	75.18	306	411	548	2	1463	2
Search engine (e.g. Google chrome app)	4.9	3.89	5.9	3.65	7.8	8.03	8.5	12.41	10.1	72.02	306	411	302	7	1418	3
Facebook	15.7	7.54	11.1	6.57	9.8	10.22	5.6	9.0	6.5	66.67	306	411	520	3	1318	4
Video app (e.g. YouTube, Netflix)	2.0	5.84	2.0	7.79	4.6	14.84	7.2	22.14	6.2	49.39	306	411	159	8	1239	5
Banking app	7.5	7.54	8.2	8.03	17.0	21.17	12.7	24.09	10.8	39.17	306	411	482	4	1148	6
Maps/GPS app (e.g. Google maps)	2.6	10.22	6.5	23.36	10.1	28.71	14.4	17.76	11.1	19.95	306	411	335	5	879	7

Instagram	4.9	27.74	14.1	11.44	4.6	16.06	4.2	11.92	5.6	32.85	306	411	332	6	866	8
Twitter	1.0	30.66	5.2	12.17	4.2	15.33	2.3	6.33	2.6	35.52	306	411	140	8	838	9
Music app (e.g. Spotify)	0.3	34.55	3.6	10.46	4.2	17.76	5.6	10.71	3.6	26.52	306	411	133	11	757	10
Payment app (e.g. Snapscan, Zapper)	0.0	31.14	0.0	17.52	1.0	21.17	0.7	14.6	2.0	15.57	306	411	19	15	682	11
LinkedIn	1.6	37.96	4.2	16.55	4.6	14.84	4.6	10.95	2.3	19.71	306	411	154	9	649	12
Health and Fitness tracker app (e.g. FitBit app)	0.0	43.31	1.6	14.11	1.6	17.03	4.2	9.98	6.5	15.57	306	411	81	12	577	13
Ecommerce app (e.g. Superbalist)	0.0	44.04	0.3	11.68	0.0	19.95	0.3	10.46	1.6	13.87	306	411	11	17	569	14
Food delivery app (e.g. Uber eats)	0.0	36.74	0.7	19.46	0.0	23.36	1.0	9.73	2.0	10.71	306	411	20	14	568	15
Taxi app (e.g. Uber or Taxify)	0.3	41.36	0.7	17.76	1.3	18.98	2.9	10.22	3.3	11.68	306	411	53	13	547	16
Snapchat	0.3	54.26	0.0	11.44	0.0	16.3	0.7	6.33	0.7	11.68	306	411	11	17	451	17
Safety app (e.g. Namola)	0.0	69.59	0.3	9.49	0.0	9.25	0	5.11	0.0	6.57	306	411	4	20	286	18
Sleep app (e.g. Calm)	0.0	75.67	0	7.79	0.3	6.33	1	4.38	1.0	5.84	306	411	12	16	234	19
Airbnb	0.3	74.21	0.0	9.25	0.0	9.73	0.0	1.7	0.7	5.11	306	411	7	19	223	20
Dating app (e.g. Tinder)	0.0	78.83	0.3	7.06	0.0	6.08	0.3	3.16	1.0	4.87	306	411	9	18	198	21

Source: Questionnaires used in Part 1 & Part 2: Question 8

Despite different questions being used for part 1 and part 2 of the empirical investigation, by analysing the aggregated totals in part 1 and part 2, the ranking of app usage among respondents can be compared from both samples. Table 6.7 provides the ranking of the top 10 apps that respondents indicated they find it difficult to live without daily for both samples. Communication and email apps are ranked 1 and 2 for both samples 1 and 2, even though the same apps appear on the top ten for both samples, the rest of the apps ranked differently. For example, video app (YouTube, Netflix) ranked 8 in sample 1 but 5th in sample 2. LinkedIn that ranked 9 in sample 1 did not rank on the top 10 apps in sample 2. The difference in ranking of the apps could be attributed to the age group differences in the samples. As indicated in Table 6.1, sample 1 has an older age group compared to sample 2. The video streaming apps such as YouTube have a younger age demographic (Aslam, 2021) compared to professional business apps such as LinkedIn, which has an older age demographic (Tran, 2020).

Table 6.7: Top ten ranked apps in samples 1 and 2

	Sample 1	Sample 2
Ranking 1	Communication app (e.g. WeChat)	Communication app (e.g. WeChat/WhatsApp)
Ranking 2	Email app (e.g. Gmail app)	E-mail app (e.g. Gmail app)
Ranking 3	Facebook	Search engine (e.g., Google Chrome app)
Ranking 4	Banking app	Facebook
Ranking 5	Maps/GPS app	Video app (e.g. YouTube, Netflix)
Ranking 6	Instagram	Banking app
Ranking 7	Search engine (e.g. Google chrome app)	Maps/GPS app (e.g., Google maps)
Ranking 8	Video app (e.g. YouTube, Netflix	Instagram
Ranking 9	LinkedIn	Twitter
Ranking 10	Twitter	Music app (e.g. Spotify)

It can be concluded from the results of both samples 1 and 2, as indicated in Table 6.7, that respondents value communication and social media apps. The research is in line with global statistics from We Are Social and Hootsuite (2021a) that indicate that the top three most downloaded apps are communication and social media apps, namely Facebook Messenger, Facebook and WhatsApp. We Are Social and Hootsuite (2021a) also report that 96% of the South African population make use of social networking apps and 95% of the population make use of communication or chat apps.

The results of Table 6.5 and Table 6.7 infer that consumers have on average between 5 and 8 apps on their smartphones. The apps include apps that consumers make use of daily, such as communication apps (WhatsApp and e-mail), social networking apps (Facebook and Instagram) and utility apps (banking apps, search engines and maps/GPS apps).

6.2.2.6 Devices used to conduct activities and monthly expenditure

Respondents were given a pre-set list of activities (purchase online from an e-commerce store, access e-mail, banking, making payments, etc.) (Appendices A and B, question 9) and were asked to indicate which devices they used to conduct each activity. The results illustrated in Table 6.8 indicates which devices are used to conduct the activities listed in the same table for samples 1 and 2. Note that N/A (not applicable) could be selected if none of the devices was used for an activity.

Table 6.8: Devices used to conduct certain activities

Sample 1 Part 1A Chapter 5 Sample 2 Part 2A This chapter	N/A		Smartphone		Tablet		Laptop		Desktop		Total respondents who answered the question	
	1%	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 %	2 %	1 (n)	2 (n)
Purchase products online from an e-commerce website	16.7	14.8	51.3	70.8	13.4	17.8	55.9	34.3	19.6	17.5	306	411
Access e-mail	1.0	0.5	85.3	86.9	22.2	25.3	75.8	49.9	32.4	22.6	306	411
Bank	2.9	4.9	81.4	82.2	13.4	13.9	61.1	24.8	23.2	12.4	306	411
Make payments/pay bills	7.2	12.7	69.0	74.2	10.1	12.9	54.9	22.1	22.2	10.9	306	411
Socialise through social media platforms	5.2	2.2	87.6	88.1	19.3	23.6	34.3	30.7	11.1	15.1	306	411

Entertainment	9.5	7.1	71.6	73	26.1	24.1	39.9	40.1	14.4	15.6	306	411
Use a communication application to chat	0.3	1.0	98.4	89.8	11.8	21.2	27.1	20.9	7.8	10.5	306	411
Use a search engine	0.3	1.0	88.9	88.1	33.7	28.5	83.7	51.1	34.0	25.1	306	411
Access your car through an app	90.2	65.2	9.2	27.3	1.0	10.2	1.6	9.5	1.0	4.9	306	411
Control home devices through an app	84.0	68.4	14.7	24.8	2.6	7.3	1.0	7.3	1.0	4.6	306	411

Source: Questionnaires used in Part 1 & Part 2: Question 9
Note that more than one option could be selected from the survey

Table 6.8 indicates that 16.7% (n=51) of respondents in sample 1 and 14.8% (n=61) respondents in sample 2 indicated 'not applicable' for purchasing products online from an e-commerce website. It can thus be presumed that 83.3% of respondents in sample 1 and 85.2% of respondents in sample 2 make a purchase online. Respondents in sample 2 most commonly use a smartphone to make purchases online (70.8%, n=291), followed by a laptop (34.3%, n=141). Whereas in sample 1, respondents use a laptop to make online purchases (55.9%, n=171), followed by a smartphone (51.3%, n=157). Research conducted by Schaefer and Bulbulia (2021) for Deloitte Digital indicates that in South Africa, e-commerce had a penetration of 37.0%, with approximately 22 million consumers who made online purchases in 2020. Evens (2020) states that the COVID-19 pandemic and lockdown restrictions fostered the growth of e-commerce purchases executed by using mobile devices among connected consumers.

Respondents were asked to indicate the portion of their monthly expenditure on purchases in-store and online (Appendices A and B, question 10). The results in Table 6.9 indicate that although respondents spend some of their monthly expenditure online, most of the purchases are made in a physical store. On average, the respondents who shop online in sample 1 (83.3%) only spend 24% of their monthly expenditure shopping online. In sample 2, from 85.2% of respondents who make purchases online, only 40% of their monthly income is spent on online purchases.

Table 6.9: Monthly expenditure online or instore

Monthly expenditure	Sample 1	Sample 2	Respondents who shop online	
	%	%	Sample 1%	Sample 2%
Online	24.0	40.0	83.3	85.2
In-store	76.0	60.0		

Source: Questionnaires used in Part 1 & Part 2: Question 10

6.2.3 Comparing samples 1 and 2

There is some difference in the demographic and hyper-connectivity results indicated in the above section compared to the sample results in part 1 of the empirical investigation discussed in chapter 5 (sections 5.2.1 and 5.2.2). The sample size of sample 2 is bigger, with 411 respondents compared to 306 respondents in sample 1. The gross monthly income of both sample 1 and sample 2 is slightly different, with the majority of respondents in sample 1 indicating that they earn between R10 001–R30 000 per month and respondents in sample 2 indicating that they earn R0–R10 000 per month. Fewer respondents (16.8%, n=69) in sample 1 indicate that they use more than 50 GB of data per month compared to respondents in sample 2 (24.5%, n=75). There are also some differences in the devices used to conduct certain activities between sample 1 and sample 2. The respondents in sample 1 indicate that they make most online purchases from a laptop, whereas respondents in sample 2 indicate that they mostly use a smartphone to make online purchases. The respondents of sample 1 were found to be hyper-connected (see chapter 5, section 5.2). However, the respondents in sample 2 needed to be still compared to the characteristics identified of a hyper-connected consumer to determine whether the sample was hyper-connected.

6.2.4 Classification of sample 2 as hyper-connected

Similar to the approach used in chapter 5, to determine whether the sample could be considered hyper-connected, each respondent was analysed based on the characteristics of a hyper-connected consumer as outlined in the literature in chapter 2. If a respondent had three or more of the characteristics of a hyper-connected consumer, the respondent was regarded as a hyper-connected consumer. The response of each respondent was analysed to determine whether they possessed three or more of the four

main criteria (internet connectivity, owned device; the amount of time spent on a device and the use of applications (or apps) to conduct certain activities by consumers used to identify a hyper-connected consumer. Table 6.10 provides an overview of the criteria used to determine whether the respondents of sample 2 could be classified as hyper-connected consumers.

Table 6.10: Criteria used to determine whether the respondents were hyper-connected consumer

Characteristic	Literature	Study results
Internet connectivity		
Have continuous access to the internet	The literature indicates that hyper-connected consumers are continuously connected to the Internet through a device (Ceccotti & Vernuccio, 2015; Stephan, 2017).	The results in Table 6.2 indicate that 69.1% of respondents in sample 2 indicate that they are continuously (21.2%, n=87) as well as continuously and automatically (47.9%, n=197) connected to the internet. As such, it can be inferred that the majority of the respondents in sample 2 have continuous access to the internet.
Accesses the internet daily on at least one digital device	According to GFK Global (2017) and Euromonitor International (2015), hyper-connected consumers access the Internet on at least one device that they own daily.	The results indicated in Table 6.4 shows that respondents in sample 2 spend over an hour a day accessing the internet on a smartphone (97.0%), Laptop (76.4%), desktop computer (58.4%) and tablet device (55.7). From the results, it can be deduced that the majority of the sample accesses the internet on a digital device at least once daily.
Owned devices		
Make use of multiple digital devices daily	Hyper-connected consumers are said to use multiple devices daily GFK Global, 2017 and Euromonitor international, 2015).	The result, as indicated in Figure 6.1 shows that most respondents in sample 2 own a smartphone (94.9%) and a laptop (68.9%). Table 6.5 indicates that respondents of sample 2 regularly make use of more than 1 app on their smartphones (98.4%), laptops (73.0%), tablet devices (54.9%) and desktop computers (50.8%), daily. As such, it can be inferred that most respondents make use of multiple digital devices daily.
Own a smartphone and at least one other device that can connect to the internet	According to Parro and Jordan, (2017) and Euromonitor International (2015), hyper-connected consumers often own a smartphone and one other device.	Figure 6.1 illustrates that the majority of respondents in sample 2 own a smartphone (94.9%) and a laptop (68.9%). It can be deduced that the majority of the respondents own a smartphone and at least one other device that can connect to the Internet.

Characteristic	Literature	Study results
The amount of time spent on a device		
Spend more than four hours a day on a smartphone	GFK Global (2017) and Cheong and Mohammed-Baksh (2019) indicate that, on average, hyper-connected consumers spend four hours or more a day making use of their smartphones.	Respondents in Sample 2 indicate in Table 6.4 that they spend greater than 4 hours a day (97.0%) accessing the internet on a smartphone. It can thus be inferred that the majority of the respondents spend more than four hours a day accessing the internet on their smartphones.
The use of applications (or apps) to conduct certain activities by consumers		
Have more than nine applications on their smartphones that they make use of regularly	The Economist Intelligence Unit, 2015) and GFK Global (2017) indicate that on average hyper-connected consumers have between 9 and 16 apps on their smartphones.	The results shown in Table 6.5 indicate that 71.0% of respondents in sample 2 make use of more than five apps on their smartphones regularly. Only 34.1% of respondents in sample 2 regularly use more than nine apps on their smartphones. The reason that fewer respondents have more than nine apps could be the lack of storage space on a device.
Make use of a mobile communication application daily	According to Deng et al. (2019) and Euromonitor international (2015), hyper-connected consumers use mobile communication apps daily.	The results in Table 6.8 indicate that respondents in sample 2 use a communication application daily (89.8%) on their smartphones. Communication apps are also the highest-ranking app, as indicated in Table 6.7 used daily according to the respondents and include communication apps such as WeChat or WhatsApp.
Visit a social networking site daily	Growth from GFK (2017) and Xanthakou and Antoniadis (2019) indicate that the hyper-connected consumer visits a social network site daily.	More than half of the respondents in sample 2 indicates in Table 6.8 that they use the social networking site (88.1%) daily on a smartphone. Social media apps Facebook, Twitter and Instagram, have also been ranked in the top ten apps that respondents make use of daily by respondents (see Table 6.7).
Access e-mails daily through a digital device	Hyper-connected consumers use different devices to check their e-mail at least once a day (GFK Global, 2017; Euromonitor international, 2015; Kumar, 2021a:1).	The results indicated in Table 6.8 illustrate that 86.9% of respondents in sample 2 access their e-mails on their smartphones. Table 6.8 also indicated that 49.9% of respondents in sample 2 use a laptop to check their e-mails with 25.3% accessing their e-mails through a tablet device. E-mail is also ranked number 2 (Table 6.7) as an app that respondents use daily. It can thus be concluded that respondents check their e-mails daily on at least one device.

Characteristic	Literature	Study results
Regularly bank online	According to GFK Global (2017); Euromonitor International (2015), hyper-connected consumers use various devices to conduct online banking regularly.	Most respondents in sample 2 (82.2%) indicate that they regularly use their smartphones to conduct banking activities (Table 6.8). Banking app is also ranked number 6 (Table 6.6) as the top-ranked apps that respondents make use of daily.
Regularly make purchases online	Hyper-connected consumers make online purchases regularly through a device (Euromonitor International, 2015).	The results indicated in Table 6.8 that 70.8% of respondents in sample 2 make online purchases through their smartphones, and 40% of their monthly income expenditure is used to purchase products online. It can thus be deduced that respondents regularly make purchases online.

The results indicated that each respondent had possessed an aspect of the four main criteria of a hyper-connected consumer, internet connectivity, owned devices, the amount of time spent on a device and lastly, the use of applications (or apps) to conduct certain activities by consumers. As can be seen from Table 6.10, respondents in sample 2 can also be classified as hyper-connected as every respondent in the sample incorporate the main characteristics of a hyper-connected consumer as identified in the literature (see chapter 2). The respondents in sample 2 have continuous access to the internet; the respondents own a smartphone and at least one other device. The sample 2 respondents also spend more than four hours a day accessing the internet on their smartphones and using applications to conduct activities such as banking, accessing email, visiting social media sites and communicating through communication apps regularly. An analysis of each respondent indicated that each respondent had possessed a characteristic of the four main criteria of a hyper-connected consumer

Once the sample was classified as hyper-connected, the remaining results could be analysed. In the next section, the data analysis for the CFA with SEM that was conducted to determine the validity of the proposed theorised model of the decision-making process of the hyper-connected consumer that was proposed in part 1 of the empirical investigation, will be discussed. The descriptive analysis of each identified latent factor from part 1 of the empirical investigation will also be provided.

6.3 SECTION 2B: THE PROPOSED CONCEPTUAL MODEL OF CONSUMER DECISION MAKING FOR THE HYPER-CONNECTED CONSUMER

Following the results of the EFA in part 1B of the empirical investigation, a conceptual model was proposed for the underlying factor structure of the decision-making process of the hyper-connected consumer within South Africa. The data analysis for part 2 of the study (discussed in this chapter) focuses on confirming the identified latent factors and testing the structural and construct validity of the proposed conceptual model produced by part 1 of the empirical investigation by conducting a CFA. The data is analysed using the statistical package for the social science version 27 (SPSS 27) along with AMOS Graphics 27. The results of the confirmatory factor analysis are discussed in the following section.

6.3.1 Confirmatory factor analysis (CFA)

To test for construct validity and model validation, CFA using SEM with maximum likelihood estimation was used to examine the proposed model from chapter 5, as a measurement instrument for the decision-making process of the hyper-connected consumer. In terms of goodness-of-fit indicators (chapter 4, section 4.2.7.3) for the model, the following measures were used to determine the overall fit of the model (Hair et al., 2018; Denis, 2021:521):

1) The chi-square test statistic – significant chi-square ($p < .05$) indicates bad fit
2) Comparative Fit Index (CFI) – value $\geq .90$ indicate good fit
3) Root mean square error of approximation (RMSEA) – value $< .06$ indicates a good fit. A value below .08 may also indicate an acceptable fit.
4) Standardized Root Mean Square Residual (SRMR) – value $< .08$ indicate a good fit

Factors within the confirmatory model were allowed to correlate and modification indices (significantly correlated errors) were used to ensure the best fit for the model, with significant errors being allowed to correlate based on their theoretical alignment and

content. Before the results are presented and for clarification, Figure 6.2 provides a graphical representation of the proposed conceptual model of the decision-making process of the hyper-connected consumer from chapter 5. The proposed conceptual model illustrates the stages (need recognition, information search, evaluate alternatives) of decision-making that were adapted from the theory in chapter 3. It is indicated that consumption is used as a proxy for purchase decision and that post-purchase behaviour is not applicable to the research. Figure 6.2 illustrates the latent factors identified from part 1 of the empirical investigation (chapter 5) and the question items (the numbers 11.1-11.36) from the survey used in part 2 that makes up each factor. The labels of the identified latent factors as shown in figure 6.2 are further discussed in section 6.5.
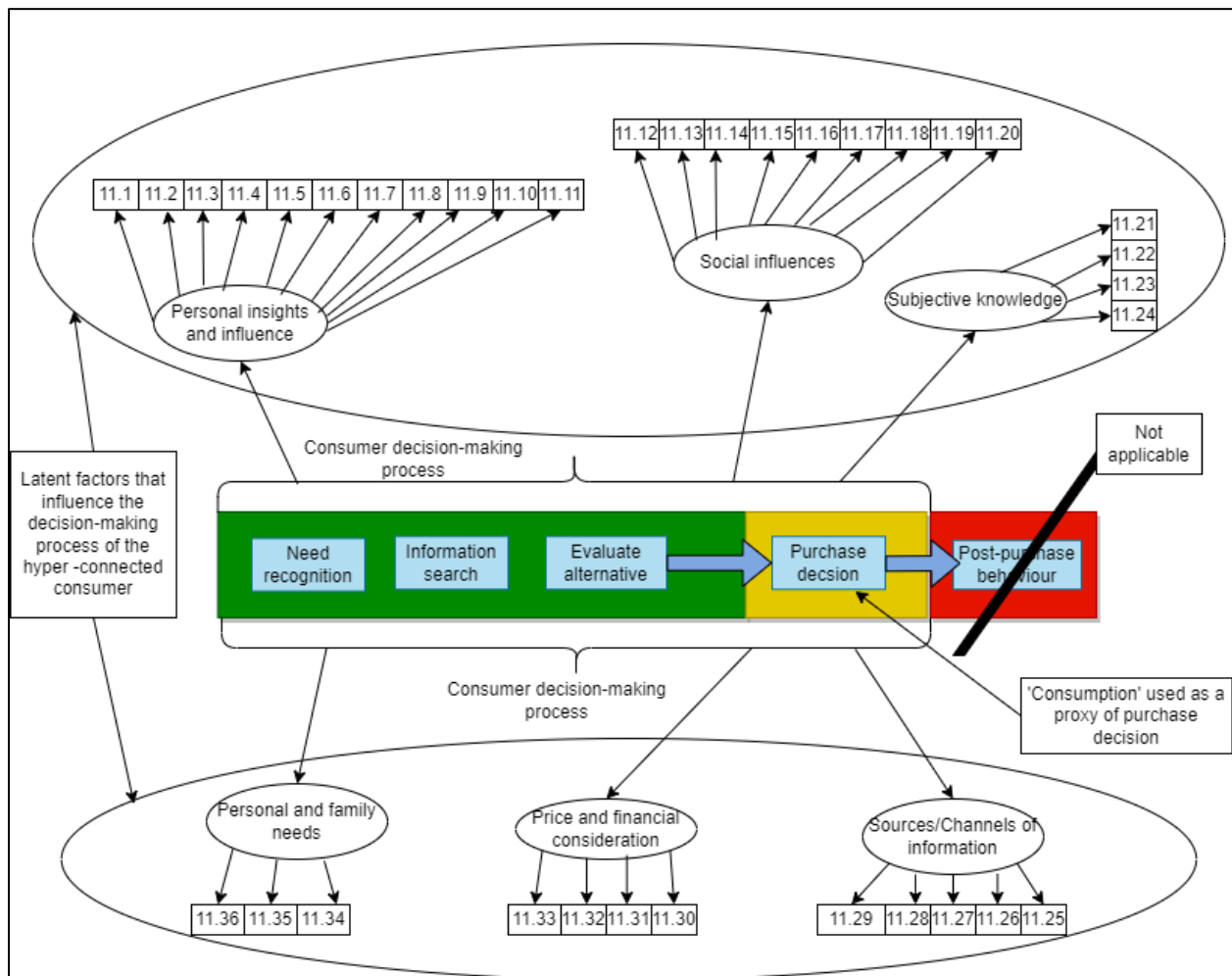
Figure 6.2: A proposed conceptual model of the decision-making process of the hyper-connected consumer

The CFA of the proposed model was based on a 6-factor model in line with the results of the EFA in part 1 of the empirical investigation (see section 5.4.2). Table 6.11 indicates that all items were found to have adequate (> 0.5) to high factor loadings (> 0.7).

Table 6.11: Proposed model confirmatory factor analysis item factor loadings sample 2

Corresponding item no. per sample			Latent factors					
Sample 1	Sample 2	Item wording	Latent factor 1	Latent factor 2	Latent factor 3	Latent factor 4	Latent factor 5	Latent factor 6:
11.1	11.1	Past experiences I have had with the product/brand.	.667					
11.2	11.2	The current situation that I am in. (If I have run out of a product that I need)	.606					
11.3	11.3	My knowledge of the product/brand.	.698					
11.4	11.4	My attitude or how I feel about a product/brand.	.714					
11.5	11.5	Rely on the memory of the previous experience of a product/brand.	.689					
11.6	11.6	Look at past experiences I have had with the product or brand.	.713					
11.7	11.7	Purchase certain products or brands out of habit.	.528					
11.8	11.8	Features of the product/brand.	.733					
11.9	11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.)	.669					

11.10	11.10	My perception of what indicates quality.	.621					
11.11	11.11	The perceived value of the product attributes.	.619					
11.14	11.12	My social standing in society.		.631				
11.15	11.13	The people I socialise and interact with.		.595				
11.16	11.14	My mood and emotional state.		.688				
11.17	11.15	How I feel in the moment.		.671				
11.18	11.16	My personality (impulsive or not)		.687				
11.19	11.17	My personal values.		.591				
11.20	11.18	My cultural norms and beliefs.		.644				
11.21	11.19	My social class (my standing in society).		.610				
11.22	11.20	Personal influences such as the people I socialise with.		.613				
11.23	11.21	An extensive search into the product/brand.			.645			
11.24	11.22	My motivation (reason) for purchasing a product.			.774			
11.25	11.23	The knowledge I have about a product or brand.			.819			
11.26	11.24	The attitude I have towards a product or brand.			.774			
11.27	11.25	My values and how I live my life.				.594		
11.28	11.26	Find information on products/brands from the market (In-store)				.583		
11.29	11.27	Get information on products/brands through the				.603		

		marketing media such as advertisements or pamphlets.						
11.30	11.28	Get information on products/brands that I need from media reports.				.602		
11.31	11.29	The product/brand country of origin				.582		
11.32	11.30	The amount of money I have available to purchase the product.					.548	
11.33	11.31	Find information by doing an online search for the product/brand.					.592	
11.34	11.32	The different prices of the products/brands.					.542	
11.35	11.33	The price of the product.					.593	
11.36	11.34	My family and their needs.						.650
11.37	11.35	My family's needs and wants.						.659
11.38	11.36	My current situation. (If I have run out of a product)						.693

Modification indices suggested covariances between the errors of some factors and items. To ensure the optimal fit of the model, and in consideration of the content of the items, the covariances were incorporated into the model. The covariances which are represented by double headed arrows in Figure 6.3 indicate that there are bidirectional relationships between factors and items that are neither predictive nor causal (Hair et al., 2018:154). The covariances thus indicate relationships between the latent factors that are not linear. Figure 6.3 illustrates the AMOS output of the model and indicates the covariances between the various latent factors and items.
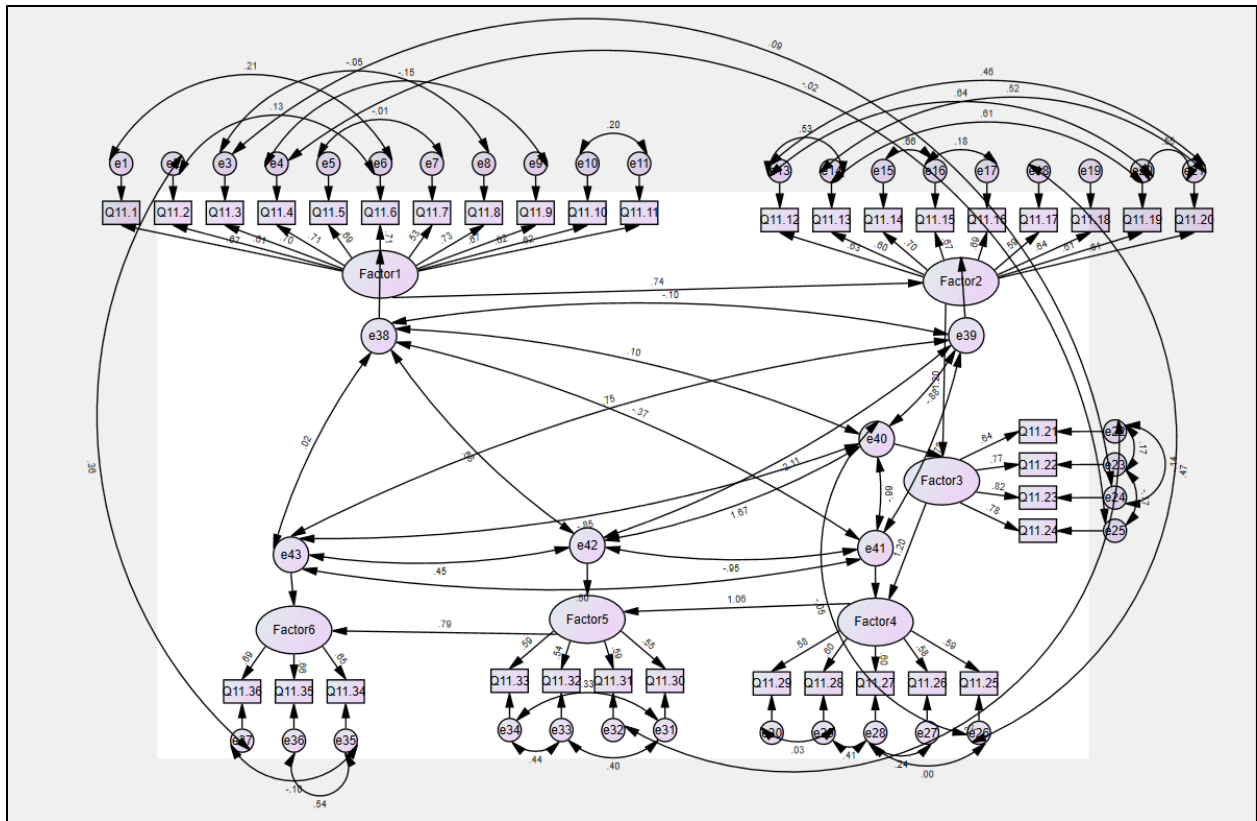
Figure 6.3: AMOS output of the model indicating the covariances

Correlations between the latent factors were tested, as can be seen in Figure 6.3, to identify how strongly the identified latent factors are related to each other. Table 6.13 indicates that several of the latent factors (factors 2,3,4,5) have correlations greater than 1. This is acceptable because of the oblique rotation applied during the CFA and suggests that there are too many parameters specified in the model and not enough observations to properly estimate path coefficients (Prudon, 2015:2; Denis, 2021:521). Strong relationships thus appear to exist between the various dimensions underlying the model. Table 6.12 provides a breakdown of the correlations between the latent factors.

Table 6.12: Correlations between latent factors

Latent factors		Estimates
Latent factor 2	Latent factor 1	.739
Latent factor 3	Latent factor 2	1.203
Latent factor 4	Latent factor 3	1.198
Latent factor 5	Latent actor 4	1.058
Latent factor 6	Latent factor 5	.793

In terms of the overall fit of the model, the chi-square statistic was found to be significant with χ^2 (547) = 1577.881, p < .05, suggesting a poor fit of the hypothesised model (see Table 6.14). However, the chi-square statistic is sensitive to sample size, with larger samples (such as the current sample size of 411) tending to yield a more significant result (Hair et al., 2018). Due to the unreliability of the chi-square statistic, further goodness-of-fit statistics were thus also investigated to assess the overall fit of the hypothesised model. In contrast to the chi-square statistic, the RMSEA (< .068) and the SRMR (<.0693) suggested an adequate fit of the proposed model (see Table 6.13). The CFI (.884) approximates to 0.9, which also indicates adequate fit (Guo, March, Parker, Dicke, Ludtke & Diallo, 2019:546).

Table 6.13: Proposed factor model scale goodness-of-fit indices

Model	χ^2	*Df*	*P*	CFI	RMSEA	SRMR
Original model	1577.881	547	<.05	.884	.068	.0693

6.3.1.1 Reliability analysis

Following the factor analysis, the Cronbach's alpha reliability coefficients for each various factor were calculated. Table 6.14 provides a breakdown of the resulting Cronbach's alpha coefficients.

Table 6.14: Cronbach's alpha of each latent factor

Latent Factor	Items of sample 2	Cronbach's alpha
Latent factor 1	11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 11.10, 11.11	.894
Latent factor 2	11.12, 11.3, 11.14, 11.15, 11.16, 11.17, 11.18, 11.19, 11.20	.888
Latent factor 3	11.21, 11.22, 11.23, 11.24	.833
Latent factor 4	11.25, 11.26, 11.27, 11.28, 11.29	.749
Latent factor 5	11.30, 11.31, 11.32, 11.33	.763
Latent factor 6	11.34, 11.35, 11.36	.744

From Table 6.14, it is clear that the scales were found to have good internal consistency and reliability, with all Cronbach's alpha coefficients > 0.6. (Field, 2018; Hair et al., 2018; Abu-Badr, 2021:15).

6.3.2 The descriptive analysis of the latent factors

An analysis of the descriptive statistics of the identified latent factors will indicate the normality of the data. A normal distribution of the data is graphically illustrated by a bell-shaped curve in which the data are symmetrically distributed around the mean (Rosa, Silva & Analide, 2020:416). Data that are +-3 standard deviations from the mean are considered outliers (Rosa et al., 2020:416). The descriptive statistics of each factor are discussed further in the sections that follow.

6.3.2.1 Latent factor 1

As indicated in Table 6.15, the respondent's mean for latent factor 1 is 4.05, indicating that the average of the responses strongly leans towards 'agree' on the Likert scale. The standard deviation indicates a variation of 0.6407 from the mean. As illustrated in Figure 6.4, the data distribution is slightly skewed to the left with a negative skewness of -0.722. This negative skewness supports the clustering of scores towards the right of the mean, leaning towards the 'agree'/'strongly agree' options on the Likert scale, as seen in Figure 6.4. The Kurtosis value is 1.350, indicating a peaked distribution. The distribution is presented visually in Figure 6.4.

Table 6.15: Descriptive statistics of latent factor 1

Descriptive analysis			Statistic	Std. Error
Latent factor_1	Mean		4.0515	.03160
	95% Confidence Interval for Mean	Lower Bound	3.9894	
		Upper Bound	4.1137	
	5% Trimmed Mean		4.0801	
	Median		4.0909	
	Variance		.411	
	Std. Deviation		.64070	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		.91	
	Skewness		-.722	.120
	Kurtosis		1.350	.240
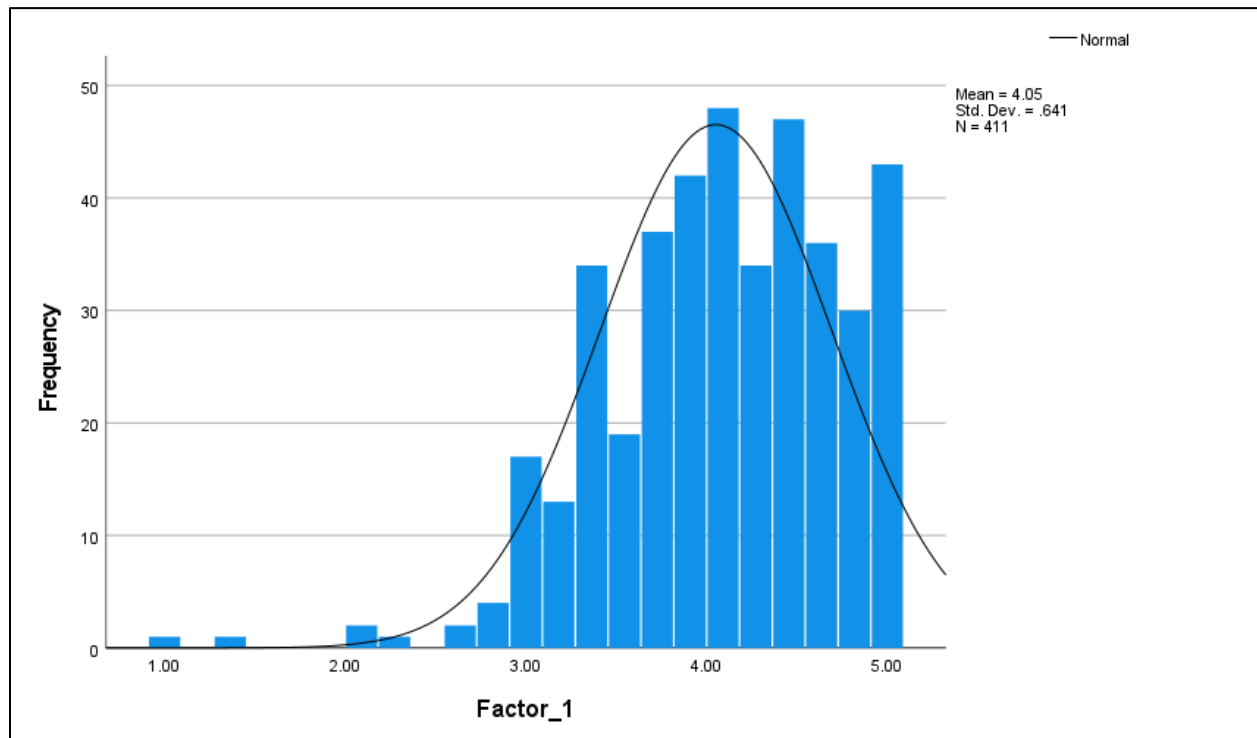
Figure 6.4: Distribution of latent factor 1

Table 6.16 indicates the range of responses by the respondents regarding the question items for latent factor 1

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Table 6.16: Latent factor 1 item descriptive statistics

Item wording	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree/ strongly agree
My knowledge of the product/brand.	1.22% [5]	1.95% [8]	16.78% [69]	43.07% [177]	36.98 [152]	80.05%
Past experiences I have had with the product/brand.	0.73% [3]	2.19% [9]	17.52% [72]	30.41% [125]	49.15% [202]	79.56%
My perception of what indicates quality.	2.19% [9]	0.97% [4]	18.49% [76]	32.36% [133]	45.99% [189]	78.35%
Look at past experiences I have had with the product or brand.	1.22% [5]	2.92% [12]	18.49% [76]	39.42% [162]	37.96% [156]	77.38%
My attitude or how I feel about a product/brand.	0.49% [2]	4.38% [18]	18.49% [76]	42.58 [175]	34.06% [140]	76.64%
Rely on the memory of previous experience of a product/brand.	1.22% [5]	3.41% [14]	19.95% [82]	40.63% [167]	34.79 [143]	75.42%
The current situation that I am in. (If I have run out of a product that I need).	1.70% [7]	4.87% [20]	18.25% [75]	33.82% [139]	41.46% [170]	75.28%
The perceived value of the product attributes.	1.70% [7]	2.92% [12]	21.41% [88]	38.44% [158]	35.52% [146]	73.96%
The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.).	1.70% [7]	2.43% [10]	23.84% [98]	42.09% [173]	29.93% [123]	72.02%
Features of the product/brand.	1.22% [5]	3.41% [14]	24.09% [99]	39.66% [163]	31.63% [130]	71.29%
Purchase certain products or brands out of habit.	5.35% [22]	8.27% [34]	23.60% [97]	30.90% [127]	31.87% [131]	62.77%

*The number in [ ] represents the total number of responses

The results in Table 6.16 indicate that respondents 'agree'/'strongly agree' with the statements that form factor 1. Table 6.16 indicates that the majority of respondents 'agree'/'strongly agree' with the statements *"my knowledge of the product/brand"* (80.05%); *"past experiences I have had with the product/brand"* (79.56%) and *"my perception of what indicates quality"* (78.35%). The items that had the highest percentage of 'agree'/'strongly agree' refer to knowledge, experience and perceptions of quality,

representing personal insights and influences that the consumer forms about a product/brand when making a purchase decision.

6.3.2.2 Latent factor 2

Table 6.17 indicates that the respondents' mean for latent factor 2 is 3.4915, indicating that the average of the responses leans more towards 'neutral' and 'agree' on the Likert scale. The standard deviation indicates a variation of 0.89665 from the mean. The skewed distribution is -0.220, which is negative and less than 0, indicating a slight left-skewed distribution. This indicates that the scores lean more towards the right of the mean, which leans towards the 'neutral/'agree' options on the Likert scale, which is illustrated in Figure 6.5. The Kurtosis value is -0.218, signifying a flat distribution, which indicates a wider spread around the mean.

Table 6.17: Descriptive statistics of latent factor 2

| Descriptive analysis			Statistic	Std. Error
Latent factor_2	Mean		3.4915	.04423
	95% Confidence Interval for Mean	Lower Bound	3.4045	
		Upper Bound	3.5784	
	5% Trimmed Mean		3.5153	
	Median		3.4444	
	Variance		.804	
	Std. Deviation		.89665	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.22	
	Skewness		-.220	.120
	Kurtosis		-.218	.240
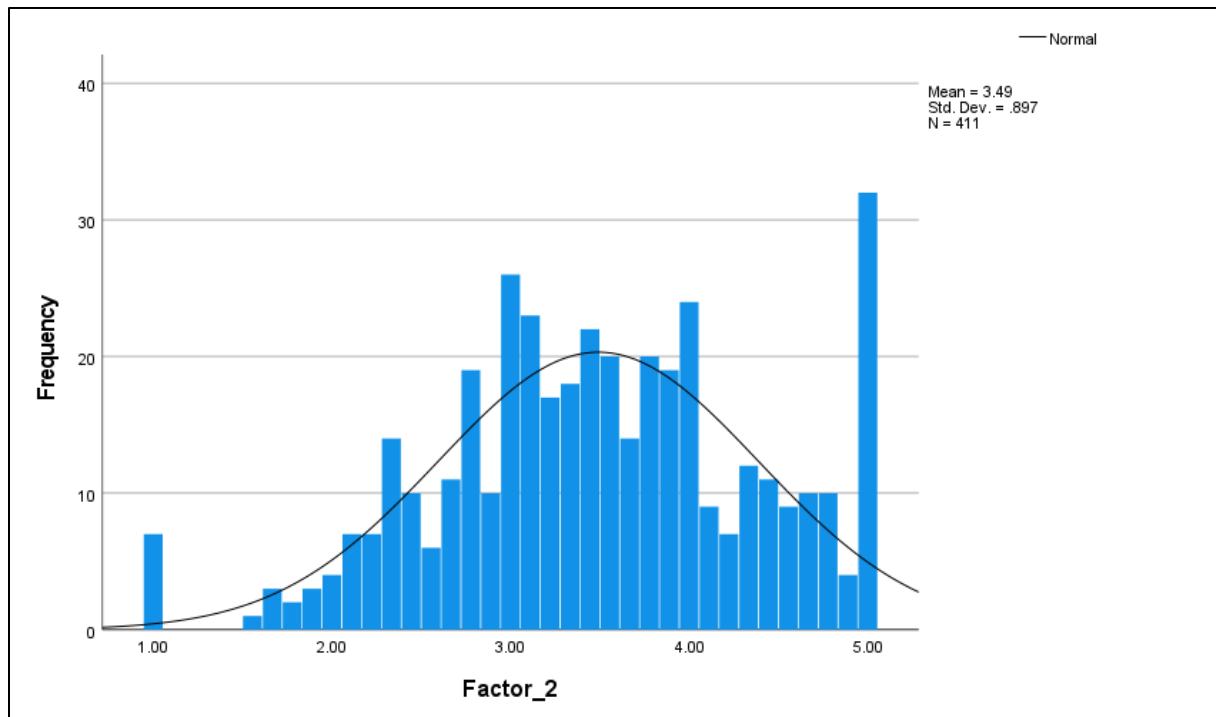
Figure 6.5: Distribution of latent factor 2

Table 6.18 provides the range of responses by the respondents regarding the question items for latent factor 2.

Table 6.18: Latent factor 2 item descriptive statistics

Item wording	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree/strongly agree
My personal values.	1.70% [7]	2.43% [10]	20.19% [83]	37.96% [156]	37.71% [155]	75.67%
My personality (impulsive or not).	4.87% [20]	8.76% [36]	27.01% [111]	33.82% [139]	25.55% [105]	59.37%
My mood and emotional state	5.35% [22]	9.25% [38]	28.22% [116]	30.41% [125]	26.76% [110]	57.17%
How I feel in the moment.	5.35% [22]	9.73% [40]	27.98% [115]	32.36% [133]	24.57% [101]	56.93%
The people I socialise and interact with.	9% [37]	12.41% [51]	22.87% [94]	25.55% [105]	30.17% [124]	55.72%
Personal influences such as the people I socialise with.	8.76% [36]	9.73% [40]	28.95% [119]	26.76% [110]	25.79% [106]	52.55%

My social standing in society	9.49% [39]	11.19% [46]	28.71% [118]	25.06% [103]	25.55% [105]	50.61%
My social class (my standing in society).	11.44% [47]	12.65% [52]	28.22% [116]	25.79% [106]	21.9% [90]	47.69%
My cultural norms and beliefs.	10.95% [45]	14.11% [58]	28.22% [116]	27.01% [111]	19.71% [81]	46.72%

*The number in [ ] represents the total number of responses

Table 6.18 indicates that respondents 'agree'/'strongly agree' with the statements *"my personal values"* (75.67%); *"my personality. (impulsive or not)"* (59.37%); *"my mood and emotional state"* (57.17%) and *"how I feel in the moment"* (56.93%). The statements that have the highest percentage of respondents who 'agree'/'strongly agree' refer to intrinsic influences such as values, emotions, moods and feelings that are often influenced by extrinsic influences.

Respondents 'agree'/'strongly agree' with the following statements *"the people I socialise and interact with"* (55.72%); *"personal influence such as the people I socialise with"* (52.55) and *"my social standing in society"* (50.61%), which refers to extrinsic social influences that impact on the consumer's internal motivations when making purchase decisions. The statements in latent factor 2 represent the social influences that impact the intrinsic elements within the consumer.

6.3.2.3 Latent factor 3

As indicated in Table 6.19, the respondents' mean for latent factor 3 is 3.98, indicating that the average of the responses leans more towards 'agree'/'strongly agree' on the five-point Likert scale. The standard deviation indicates a variation of 0.75181 from the mean. A left-skewed distribution is present (illustrated in Figure 6.6) as the skewness is -.605. As shown in Figure 6.6, the negative skewness indicates a clustering of scores towards the right of the mean, which leans towards the 'agree'/'strongly agree' options on the Likert scale. The Kurtosis value is 0.781, indicating a distribution that is slightly peaked around the mean.

Table 6.19: Descriptive statistics of latent factor 3

| Descriptive analysis			Statistic	Std. Error
Latent factor_3	Mean		3.9818	.03708
	95% Confidence Interval for Mean	Lower Bound	3.9089	
		Upper Bound	4.0547	
	5% Trimmed Mean		4.0200	
	Median		4.0000	
	Variance		.565	
	Std. Deviation		.75181	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.00	
	Skewness		-.605	.120
	Kurtosis		.781	.240
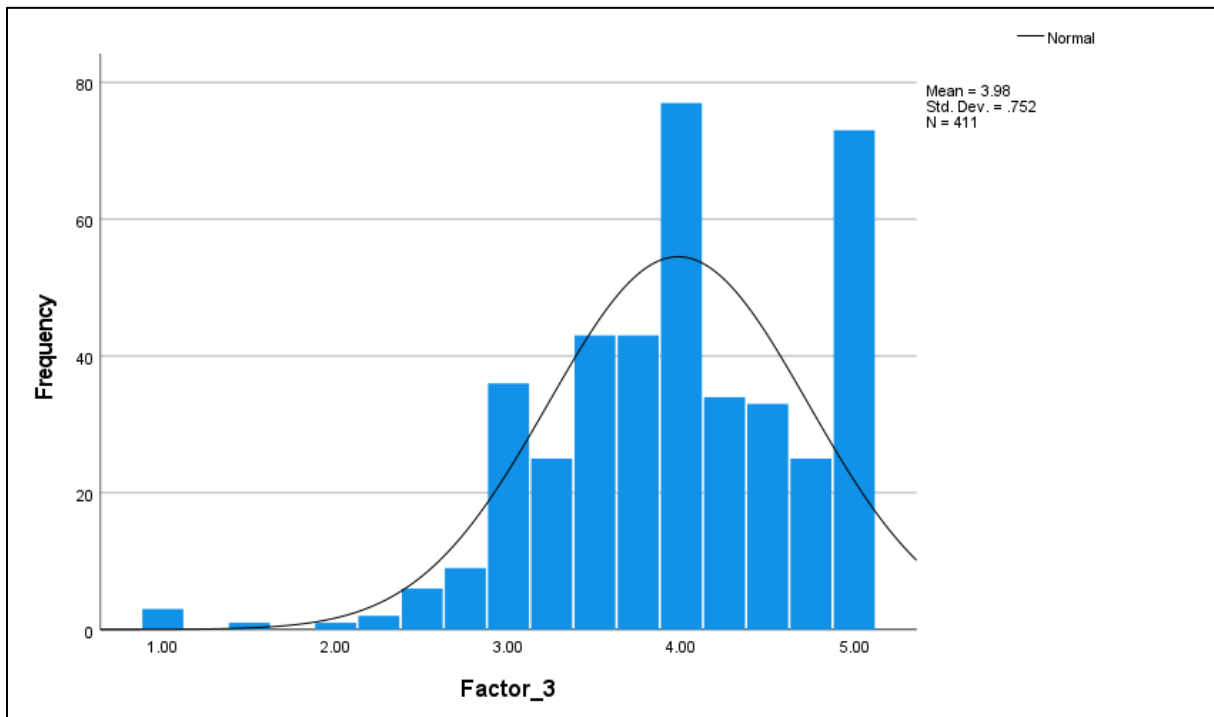
Figure 6.6: Distribution of latent factor 3

Table 6.20 provides the range of responses by the respondents regarding the question items for factor 3.

Table 6.20: Latent factor 3 item descriptive statistics

Item wording	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree/strongly agree
The knowledge I have about a product or brand.	0.97% [4]	1.95% [8]	17.76% [73]	42.82% [176]	36.5% [150]	79.32%
My motivation (reason) for purchasing a product.	1.22% [5]	3.41% [14]	21.65% [89]	41.61% [171]	32.12% [132]	73.73%
The attitude I have towards a product or brand.	2.43% [10]	2.43% [10]	22.87% [94]	39.42% [162]	32.85% [135]	72.27%
An extensive search into the product/brand.	2.92% [12]	5.6% [23]	27.49% [113]	33.58% [138]	30.41% [125]	63.99%

*The number in [ ] represents the total number of responses

Table 6.20 indicates that most respondents 'agree'/'strongly agree' with all statements that form part of factor 3. The results in Table 6.20 indicate that the statements that most respondents 'agree'/'strongly agree' with are *"the knowledge I have about a product or brand"* (79.32%); *"my motivation (reason) for purchasing a product"* (73.73%) and *"the attitude I have towards a product or brand"* (72.27%). These statements that most respondents 'agree'/'strongly' agree with refer to knowledge, motivation and attitude, which is considered as subjective knowledge that the consumer has about the product or brand.

6.3.2.4 Latent factor 4

Table 6.21 shows the respondents' mean for latent factor 4 is 3.7577, indicating that the average of the responses leans towards 'agree'/'strongly agree' on the five-point Likert scale. The standard deviation indicates a variation of 0.76091 from the mean. As can be seen in Figure 6.7, a negatively skewed distribution is present. Table 6.21 indicated the skewness is -0.324, indicating a clustering of scores towards the right of the mean, which leans towards the 'agree'/'strongly agree' options on the Likert scale. The Kurtosis value is 0.005, indicating a slightly peaked distribution towards the right of the mean.

Table 6.21: Descriptive statistics of latent factor 4

| Descriptive analysis			Statistic	Std. Error
Latent factor_4	Mean		3.7577	.03753
	95% Confidence Interval for Mean	Lower Bound	3.6839	
		Upper Bound	3.8314	
	5% Trimmed Mean		3.7811	
	Median		3.8000	
	Variance		.579	
	Std. Deviation		.76091	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.00	
	Skewness		-.324	.120
	Kurtosis		.005	.240
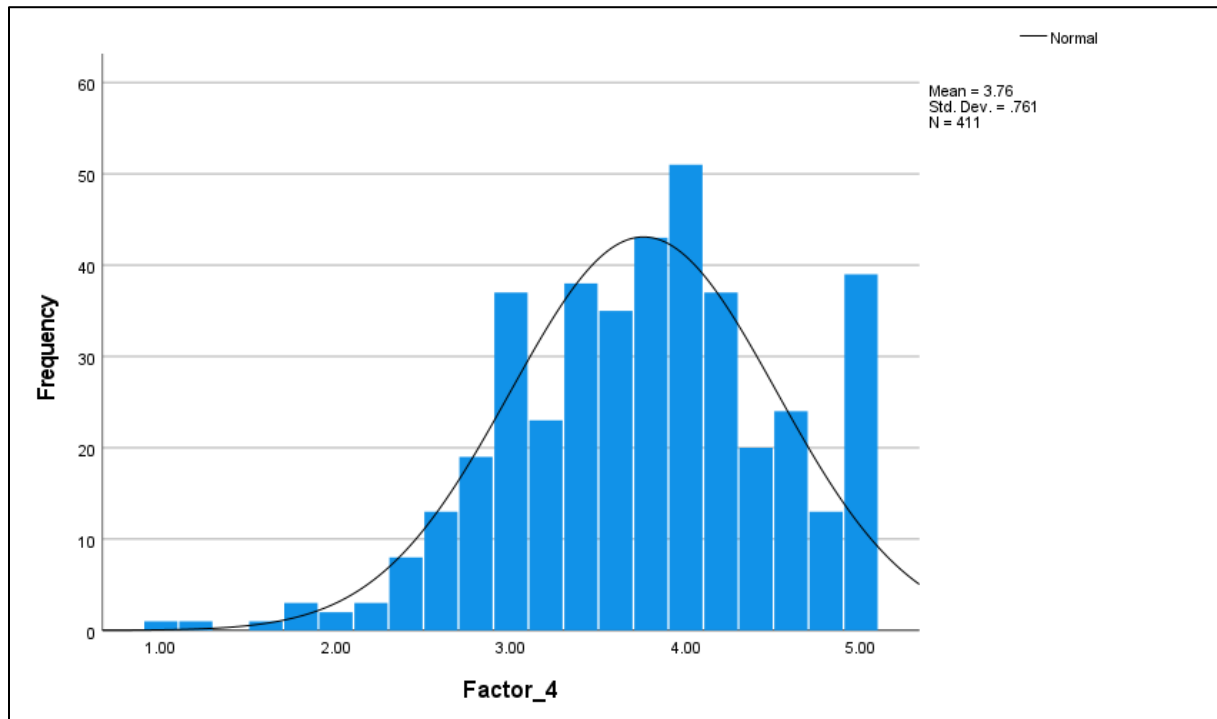
Figure 6.7: Distribution of latent factor 4

Table 6.22 provides the range of responses by the respondents regarding the question items for latent factor 4.

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Table 6.22: Latent factor 4 item descriptive statistics

Item wording	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree/strongly agree
My values and how I live my life.	1.22% [5]	4.62% [19]	21.65% [89]	35.52% [146]	36.98% [152]	72.50%
Get information on products/brands through the marketing media such as advertisements or pamphlets.	3.16% [13]	8.03% [33]	22.38% [92]	37.23 [153]	29.20% [120]	66.43%
Find information on products/brands from the market (In-store).	3.16% [13]	7.06% [29]	26.03% [107]	33.33% [137]	30.41% [125]	63.74%
Get information on products/brands that I need from media reports	3.41% [14]	9.25% [38]	24.57% [101]	33.09% [136]	29.68% [122]	62.77%
The product/brand country of origin.	9.49% [39]	15.33% [63]	25.30% [104]	27.59% [113]	22.38% [92]	49.97%

*The number in [ ] represents the total number of responses

Table 6.22 indicates that respondents 'agree'/'strongly agree' with the statements that form part of factor 3. The statements that had the highest percentage of respondents who 'agree'/'strongly agree' were *"My values and how I live my life"* (72.50%); *"get information on product/brands through the marketing media such as advertisements or pamphlets"* (66.43%); *"find information on product/brands from the market (in-store)"* (63.74%) and *"get information on products/brands that I need from media reports"* (62.77%). The statements that form part of factor 4 refer to different sources and channels from which the consumer gathers information when making a purchase decision.

6.3.2.5 Latent factor 5

Table 6.23 displays the statistics for latent factor 5. Statistics in Table 2.23 indicate that the respondents' mean for latent factor 1 is 4.1594, indicating that the average of the responses leans towards 'agree'/'strongly agree' on the five-point Likert scale. The standard deviation indicates a variation of 0.71514 from the mean. A left-skewed distribution is present as the skewness is -0.917. The negative skewness indicates a clustering of scores towards the right of the mean, which leans towards the

'agree'/'strongly agree' options on the Likert scale, which is illustrated in Figure 6.8. The Kurtosis value is 1.112, indicating a more peaked distribution.

Table 6.23: Descriptive statistics of latent factor 5

| Descriptive analysis			Statistic	Std. Error
Latent factor_5	Mean		4.1594	.03528
	95% Confidence Interval for Mean	Lower Bound	4.0900	
		Upper Bound	4.2287	
	5% Trimmed Mean		4.2068	
	Median		4.2500	
	Variance		.511	
	Std. Deviation		.71514	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.00	
	Skewness		-.917	.120
	Kurtosis		1.112	.240
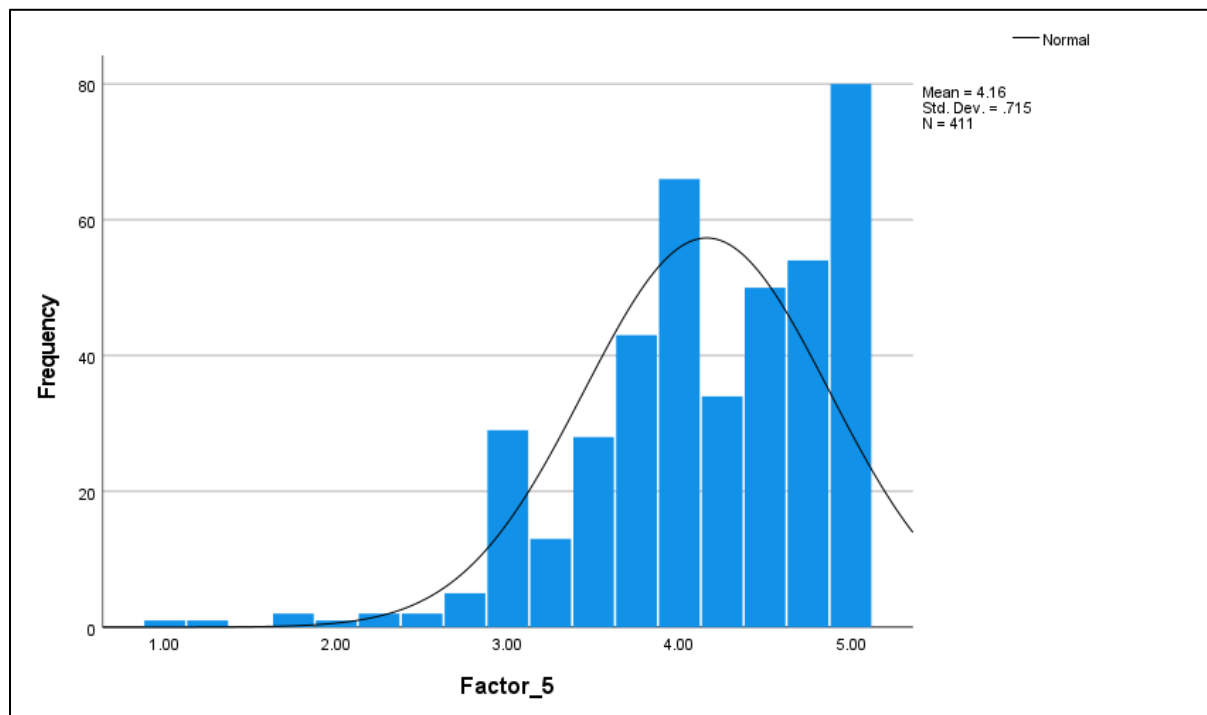
Figure 6.8: Distribution of latent factor 5

Table 6.24 provides the range of responses by the respondents regarding the question items for latent factor 5.

Table 6.24: Latent factor 5 item descriptive statistics

Item wording	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree/strongly agree
The price of the product.	1.7% [7]	2.43% [10]	13.14% [54]	32.12% [132]	50.61% [208]	82.73%
The different prices of the products/brands.	1.7% [7]	2.43% [10]	14.6% [60]	36.25% [149]	45.01% [185]	81.26%
The amount of money I have available to purchase the product.	1.46% [6]	3.89% [16]	14.84% [61]	29.93% [123]	49.88% [205]	79.81%
Find information by doing an online search for the product/brand.	2.43% [10]	4.38% [18]	25.55% [105]	33.09% [136]	34.55% [142]	67.64%

*The number in [ ] represents the total number of responses

The results in Table 6.24 indicate that the majority of the respondents 'agree'/'strongly agree' with the statements that form part of factor 5. Statistics in Table 6.24 indicate that the majority of respondents 'agree'/'strongly agree' to the statements regarding the price of a product, such as a price or the money that the respondent has. It can be seen in Table 6.24 that 82.73% of respondents 'agree'/'strongly agree' to the statement *"the price of the product"*; 81.26% of respondents 'agree'/'strongly agree' to the statement *"the different prices of the product/brands"* and 79.81% of respondents 'agree'/'strongly agree' with the statement *"the amount of money I have available to purchase the product"*. The statements in latent factor 5 refer to the price and financial considerations of the consumer.

6.3.2.6 Latent factor 6

Table 6.25 shows the respondents' mean for latent factor 6 is 4.0511, indicating that the average of the responses leans towards 'agree'/'strongly agree' on the five-point Likert scale. The standard deviation indicates a variation of 0.79792 from the mean. A left-skewed distribution is present as the skewness is -0.654. The negative skewness

indicates a clustering of scores towards the right of the mean, which leans towards the 'agree'/'strongly agree' options on the Likert scale, as seen in Figure 6.9. The Kurtosis value is 0.118, indicating a flatter peak than that of a normal distribution.

Table 6.25: Descriptive statistics of latent factor 6

| Descriptive analysis			Statistic	Std. Error
Latent factor_6	Mean		4.0511	.03936
	95% Confidence Interval for Mean	Lower Bound	3.9737	
		Upper Bound	4.1285	
	5% Trimmed Mean		4.1023	
	Median		4.0000	
	Variance		.637	
	Std. Deviation		.79792	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.00	
	Skewness		-.654	.120
	Kurtosis		.118	.240
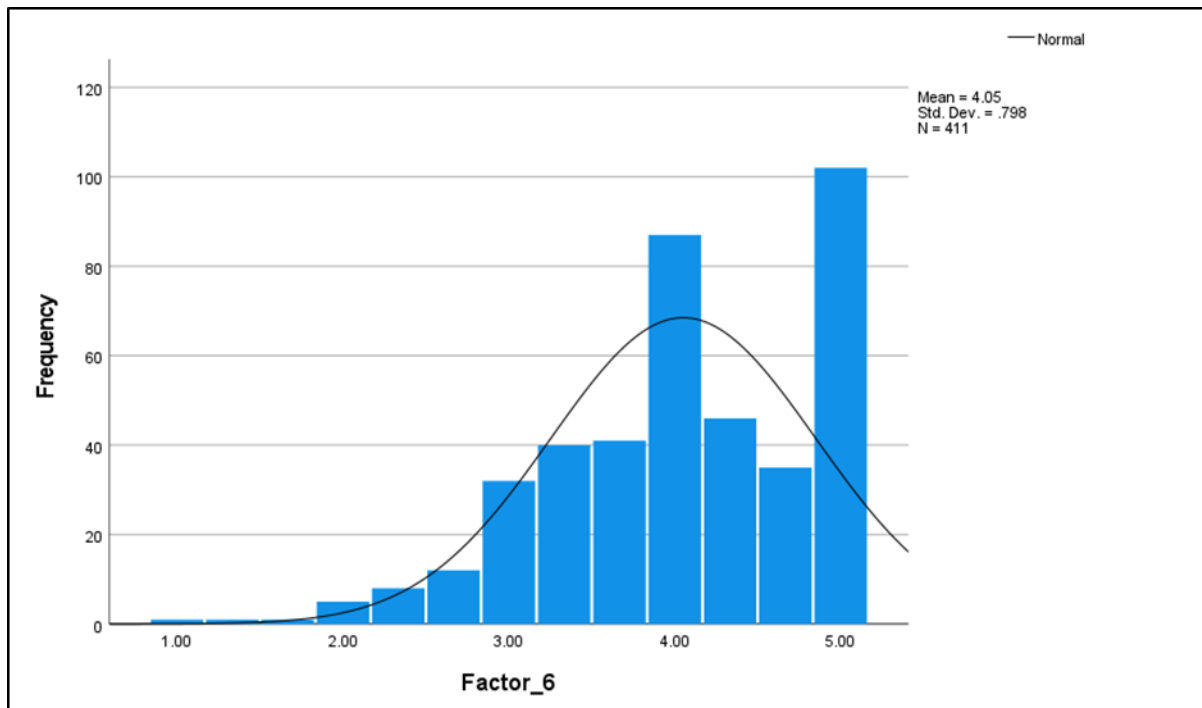
Figure 6.9: Distribution of latent factor 6

Table 6.26 provides the range of responses by the respondents regarding the question items for latent factor 6.

Table 6.26: Latent factor 6 item descriptive statistics

Item wording	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree/strongly agree
My current situation. (If I have run out of a product).	0.97% [4]	4.14% [17]	20.19% [83]	39.17% [161]	35.52% [146]	74.69%
My family and their needs.	1.95% [8]	5.84% [24]	18.25% [75]	33.09% [136]	40.88% [168]	73.97%
My family's needs and wants.	1.95% [8]	4.62% [19]	19.71% [81]	32.85% [135]	40.88% [168]	73.73%

*The number in [ ] represents the total number of responses

Table 6.26 indicates that most of the respondents 'agree'/'strongly agree' with the statements that form factor 6. As indicated in Table 6.26, the respondents largely 'agree'/'strongly agree' with all statements regarding the consumer's current situation and their family needs. The statement with the highest percentage (74.69%) of respondents that indicated that they 'agree'/'strongly agree' with is *"my current situation (If I run out of a product)"*, reflecting that the consumer's personal needs are considered first. The statements of latent factor 6 represent the consumer's family and personal needs which are considered when making a purchase decision.

6.4 DISCUSSION OF PART 2 OF THE EMPIRICAL INVESTIGATION

The results of the analysis of demographic information, the level of hyper-connectivity as well as the validity of the proposed new model will be discussed in the following sections.

6.4.1 Discussion of the demographics and hyper-connectivity of the sample

In developing a profile of the hyper-connected consumer, the demographic and level of hyper-connectivity results of the samples used in part 1 and part 2 of the empirical

investigation are presented together in the chapter. The sample used in part 1 of the empirical investigation is referred to as sample 1. The sample used in part 2 of the empirical investigation is referred to as sample 2 in the discussion.

The results of the empirical investigation for both part 1 and part 2 indicate that the respondents were predominantly female (sample 1=56.5%; sample 1=66.7%). Sample 1 has an older demographic as more respondents in sample 1 (59.4%) are above the age of 36 compared to sample 2 (31.6%). Sample 2 has a younger demographic with a larger percentage of respondents (68.4%) between 18 and 25 compared to sample 1 (39.8%). Consumers in sample 2 fall within the millennial (individuals born between 1981-1996) and generation Z (individuals born between 1997–2012) generational groups (Koufie & Kesa, 2020:3; Lim & Parker, 2020:6; Statsa.gov.za, 2020b). According to van der Walt, Jonck and Sobayeni (2019), the generational cohort groupings differ slightly, with millennials being defined as consumers born between 1990 and 2000 and generation Z defined as consumers born between 2006 and 2020.

Respondents in samples 1 and 2 are predominantly from the Gauteng (sample 1=59.9%; sample 2=41.4%) province within South Africa, with the majority of the respondents (sample 1=70.9%; sample 2=54.0%) indicating that they are employed and earn between R0 and R30 000. The unemployment rate of sample 2 (23.8%) is closer to the national unemployment rate (32.5%%) of South Africa, compared to sample 1 which indicates only 9.5% of respondents were unemployed (Statssa.gov.za, 2020a).

To confirm that the samples were hyper-connected, each respondent in both samples 1 and 2 were analysed to determine whether they had at least one of each characteristic of the main criteria of the hyper-connected consumer identified in the literature (internet connectivity, owned device, the amount of time spent on a device and the use of applications (or apps) to conduct certain activities by consumers). The analysis of the results indicated that each respondent of both samples 1 and 2 had at least one of each characteristic of the hyper-connected consumer, indicating that the samples can be deemed, hyper-connected consumers.

The hyper-connected consumers in both samples 1 and 2 indicate that they are continuously (sample 1=20.3%, sample 2=21.2%) and continuously and automatically (sample 1=56.2%; sample 2=47.9%) connected to the internet. The results of the frequency of connection of consumers are in line with the characteristics of the millennial generational group who is said to place a priority on connectivity and device usage (Brailovskaia & Bierhof, 2020:24).

Respondents in both samples indicate that they use mobile access through a cellular network to connect to the internet (sample 1=65.7%; sample 2=86.6%). Most of the respondents in sample 1 (88.0%, n=269) and sample 2 (90.6%, n=372) use more than 1 GB of data per month. With the increase in consumers working from home, online learning for school and university students, as well as online gaming and video streaming since the beginning of the COVID-19 pandemic, data usage in South Africa has increased (Thukwana, 2020). According to mobile network provider MTN, the data usage of the average prepaid consumer by the first quarter of 2021 was above 2 GB and the data usage of contract customers is above 10 GB per month (Pike, 2021). An industry report on data usage by Tefficient.com (2021) found that data usage per SIM card averaged 10 GB per month in 2020 across mobile network operators worldwide.

Most respondents in both samples 1 and 2 own a smartphone (sample 1=94.4%; sample 2=94.9%) and most respondents in sample 1 (60.4%) and sample 2 (80.0%) indicate that they spend more than four hours a day accessing the internet through their smartphones. Respondents also perform most of their activities on their smartphones such as, use communication app such as WhatsApp (sample 1=98.4%; sample 2=89.8%), use a search engine (sample 1=88.9%; sample 2=88.1%), socialise through a social media platform Facebook (sample 1=87.6%; sample 2=88.1%), access e-mail (sample 1=85.3%; sample 2=86.9%) and do banking (sample 1=81.4; sample 2=82.2%). Respondents of both samples 1 and 2 ranked communication apps such as WhatsApp (ranked 1 in both samples) and e-mail (ranked 2 in both samples) as the top apps that they make use of daily. The results are in line with global statistics, which indicate that

communication apps are the most downloaded apps worldwide (We Are Social and Hootsuite, 2021a: 304).

Once the sample was classified as hyper-connected, the analysis regarding the validity of the proposed new model identified in part 1 of the empirical investigation was determined.

6.4.2 Discussion of the validity of the proposed conceptual model of consumer decision making for the hyper-connected consumer

Part 2 of the empirical investigation determined the structural validity of the six-factor model identified in part 1 of the empirical investigation. CFA was conducted to confirm the proposed conceptual model. Findings of the CFA confirmed an adequate fit of the latent factors that were identified as factors that influence the decision-making process of the hyper-connected consumer. The goodness-of-fit indices indicate an adequate model fit. A strong correlation was also found between the latent factors underlying the model. The results thus confirm the structural validity of the latent factors in the proposed conceptual model. The Cronbach alphas of each latent factor in the model show good internal consistency and reliability. Additionally, the CFA indicates that the latent factors covary, which indicates that the consumer decision-making process of the hyper-connected consumer tends to be cyclical and multi-directional as opposed to a sequential, linear process (which was proposed initially in part 1 of the empirical investigation) when examined in terms actual purchase behaviour. Strong relationships thus exist between the various dimensions underlying the model. The conceptual model initially proposed was adapted to accommodate a cyclical model that emphasises a bidirectional communication approach, which is in line with the findings of the empirical investigation (section 6.5). Figure 6.10 illustrates the proposed adapted conceptual model that will be discussed in detail in chapter 7.

To determine if the distribution of the data is normal the descriptive statistics of each latent factor identified were analysed. The results indicate a normal distribution that is slightly

skewed to the left of the distribution as the scores for each factor tends to cluster towards the right of the mean.

In understanding and determining the decision-making process of the hyper-connected consumer, the research identified six latent factors that influence the decision-making of the hyper-connected consumer. The descriptive statistics discussed in section 6.4, with the EFA discussion on each factor provided in chapter 5 (section 5.3.1) provided information about each latent factor that could assist in labelling the latent factors.

6.5 LABELLING OF THE IDENTIFIED LATENT FACTORS

In understanding and determining the decision-making process of the hyper-connected consumer, this study identified six latent factors that were shown statistically as influencing the decision-making of the hyper-connected consumer. The discussion in sections 5.3.1 and 6.4 provided information that assists in labelling the latent factors.

The terms 'intrinsic' and 'extrinsic' are used to describe the sources of influences of these factors on decision making, that is, either from within the individual or from outside the individual. The literature is replete with articles that refer to intrinsic and extrinsic influences in consumer science and decision making (Park, An, Song & Chung, 2021; Bukhari, Woodside, Hassan, Ali, Hussain & Waqas, 2021; Ali, Ashfaq, Begum & Ali, 2021). To ensure that any reference to these terms as used in this study is clearly understood, they are defined as follows:

- *Intrinsic influences* are already embedded insights that exist in the mind, memory, and psyche of the hyper-connected consumer (Shahid & Paul, 2021:2). These insights can either be deeply embedded and built up over time, or they can be shallow and transient, gained over a relatively short time (Turnbull, Karapanogiotidis, Wang, Bernhardt, Leech, Margulies, Svhooler, Jefferies & Smallwood, 2020:2). In both instances, they can be used in decision-making. If the shallow insights prove to be memorable, these insights may be processed and ensconced in the individual's mind for future use and

become embedded insights. Both embedded and shallow insights can be influenced by extrinsic factors.

- *Extrinsic influences* are events and stimuli external to the individual that is received and processed mentally. These events and stimuli may influence decision-making momentarily but may become embedded influences over time, if memorable or repeated.

The terms 'proximal' and 'distal' could be additional descriptors used to explain the factors identified. Those factors stemming from or closely related to the individual could be referred to as proximal influences. In contrast, those related to the external environment could be referred to as distal influences (Low, 2018:1). The terms are used with circumspection as proximal/distal influences have a specific meaning in psychology that does not relate to this discussion (Low, 2018:1).

6.5.1 Latent factor 1: Personal insights and influences

The results discussed in chapter 5 (section 5.3.1.1), as well as in section 6.4.1, indicate that the items that formed latent factor 1 refer to the personal insights and influences of the consumer. The items relate to embedded knowledge of the brand or product, past experiences, and the consumer's personal or internal influences such as perception, attitude, and values towards the product/brand. Based on the definition provided above, these influences can be referred to as intrinsic.

Yueh and Zheng (2019) state that consumers often form attitudes and opinions based on experiences or partial experiences that the consumer has had with a product or brand, influencing purchase behaviour. Aschemann-Witzel (2018) similarly posits that personal or internal influences such as perception and value that the consumer has attached to the product or brand influence the consumer purchase decision. Susilowati and Sugandini (2018), in turn, argue that the consumer's perceived value is directly related to the perceived quality of the product or brand. Perceived quality is the consumer's subjective evaluation of the product or brand based on intrinsic (its use, durability, features), as well

as extrinsic (the brand name, the brand image) factors (Guo, Chen & Yang, 2018:157). Perceived quality and perceived value are significant factors influencing consumers' purchase intention (Asshidin, Abidina & Borhan, 2016:643). Latent factor 1 is thus labelled as **'Personal insights and influences'**.

6.5.2 Latent factor 2: Social influences

The items in latent factor 2 appear contradictory in the sense that some items refer to internal (intrinsic) items such as mood and emotion. In contrast, others refer to external (extrinsic) items such as social influences on the individual. It is posited, however, that the items included under this factor reflect the nexus, where external social influence the consumer's view of their social standing. In other words, a positive standing in society would have a positive influence on the psyche of the individual and would, in turn, impact decision making. When an individual is exposed to inputs through their social environment (online or offline), the inputs that the consumer is exposed to can elicit integral emotions and speak to certain aspects of an individual's personality that can drive the individual's decision making (Manthiou, Hickman & Klaus, 2020:2).

The human connection, which is an essential part of a consumer's social interaction, is fundamental in influencing consumers' emotions and purchase behaviour (Yin, Wang, Xia & Gu, 2019:3). Social media and online social communication platforms have provided a platform for individuals to share their social class and to interact socially with individuals and gain a sense of belonging to individuals worldwide. Croes and Bartels (2021) state that in an online digital environment consumers' decision-making is significantly influenced by online reviews, comments, suggestions by individuals, groups, or networks that they are connected to online. Ozkara and Bagozzi (2021) indicate that consumers use product or brand reviews from online social media platforms to make purchase decisions and refer to the use of reviews to make purchase decisions as a partial experience.

Reviews and comments from social influencers influence the consumer's views, emotions, attitudes, and behaviour (Reinikainen, Munnakka, Maity & Luoma-aho, 2020:281). Social influencers refer to individuals who use any social media platform (YouTube, Facebook, Instagram) to build a specific public identity to express their emotions and opinions to their social media audience (Sokolova & Perz, 2021:2). Often viewed as opinion leaders or experts, social influencers build connections with their followers on social media and are perceived to be authentic, trustworthy and relatable to the consumer (Jin, Muqaddam & Ryu, 2019:568). Being part of the social influencer's 'tribe' can give consumers a sense of affiliation and power, resulting in consumer action (Leite & Baptista, 2021:3). Latent factor 2 is thus labelled **'Social influences'.**

6.5.3 Latent factor 3: Subjective knowledge

Latent factor 3 is made up of items that refer to subjective knowledge, which includes the attitude and motivation that the consumer has towards the product/brand. Subjective knowledge also refers to how much or what the consumer thinks they know about the product (Hwang & Nam, 2021:148). Subjective knowledge is deemed an intrinsic influence on the decision-making of the consumer. It is closer to the shallow, transient insights referred to in the definition above rather than deeply embedded knowledge. The consumer's subjective knowledge can be derived from an online or offline search into the product/brand that the consumer uses to make a decision and, if memorable or repeated, may ultimately form an attitude about the product or brand (thus embedding the knowledge in the mind of the consumer).

The product information that the consumer has gained from online or offline platforms informs the consumer's decision and often simplifies the decision-making process (Wu, Escoe & Kards, 2017:962). The consumer's reason or motivation for purchasing the product and attitude that they have towards the product is also informed by the knowledge that the consumer has about the product (Engel et al., 2006:113). Yap, Ong and Ahmad (2017) state that consumer's product knowledge directly influences the consumer's

attitude and perception towards making purchases online. Latent factor 3 is thus labelled as **'Subjective knowledge'**.

6.5.4 Latent factor 4: Sources/Channels of information

As discussed in chapter 5 (section 5.3.1), and can be seen in Table 6.2, latent factor 4 comprises items that relate to the influence of information obtained from various channels and sources of information. Sources/channels of information are an extrinsic influence on decision-making.

Consumers are exposed to information about a product or brand in-store through various online and offline channels and sources of information. Consumers are connected and exposed to a deluge of information on various online platforms daily (Klein, Zhang, Falk, Aspara & Luo, 2020:491). The constant exposure to information about products and brands has created a situation where the consumer is constantly being fed information and sold (Lee, 2021b:186). The consumer may not need a product when they are exposed to it; however, the exposure to the information can be used in deciding on purchases that may be made at a later stage. The constant exposure to information about products or brands through various channels and from various sources thus influences the consumer's purchase decision, either in the present or later (Sama, 2019:55; Dwivedi & Wang, 2021:3). Latent factor 4 is thus labelled as **'Sources/channels of information'.**

6.5.5 Latent factor 5: Price and financial influences

Latent factor 5 consists mainly of items that refer to the product's price and other financial influences. Price and the financial situation of the consumer are said to be significant contributors to consumer purchase decisions (Qalati, Yuan, Iqbal, Hussain & Ali, 2019; Albari & Safitri, 2018). Price and financial influences are extrinsic influences that impact consumers' purchase decisions. If the consumer is in a good financial situation, they can afford the price of the product and are more willing to purchase a product.

In a hyper-connected environment, consumers can search and compare the price of a product from various stores instantaneously by doing a quick online search. The ability to instantly compare prices has made consumers increasingly price-sensitive (Peteva, 2020:33). Sing, Mondal, Singh, Sahoo and Dee (2020) indicate that consumers in a hyper-connected world have a cost-saving attitude as well as a price-comparison policy in their mind when making purchase decisions. The hyper-connected consumer compares prices to ascertain the product value and determine the affordability of the product (Faulds, Mangold, Raju & Valsalan, 2018:326). If the product is perceived to have value, the hyper-connected consumer is willing to pay a premium. The hyper-connected consumer will, however, only purchase a product if they can financially afford the product. Latent factor 5 is thus labelled as **'Price and financial influences'.**

6.5.6 Latent factor 6: Personal and family needs

The items that load onto latent factor 6 focus on the consumer's current situation as well as the needs and wants of the consumer's family. The consumer's personal situation refers to the context in which the purchase decision is being made and includes external factors such as time, physical surroundings, budget if the consumer is alone or not, reasons for the purchase, consumers relationships such as family, lifestyle (Babin & Harris, 2018:228). The situational factors are extrinsic influences on the decision-making of the consumer. Jha, Kemper and Brettel (2019) indicate that external situational factors such as shopping channel used (online, mobile, in-store), time pressure and family members' experience with the brand will influence the purchase decision of the consumer.

Randjbarian, Ghasemi and Shekarchizadeh (2018) indicate that family members' needs and wants have a significant influence over an individual's purchase decisions. Family can influence the information that an individual is exposed to, where and how the individual finds information, how an individual evaluates alternative products and brands, and how a purchase is made (Lien, Westber, Stavros & Robinson, 2018:247). Latent factor 6 is thus labelled as **'Personal and family needs'**.

The six latent factors identified and confirmed in parts 1 and 2 of the investigation were used to propose an adapted conceptual model of the decision-making of the hyper-connected consumer.

6.6 PROPOSED ADAPTED MODEL OF DECISION-MAKING OF THE HYPER-CONNECTED CONSUMER

The proposed model of the consumer decision-making process of the hyper-connected consumer (illustrated in Figure 6.2) was initially considered a conceptual model for the decision-making process of the hyper-connected consumer. The research results, however, do not support a sequential process of decision-making but rather suggest that the decision-making of a hyper-connected consumer is an iterative circular multi-directional loop, involving need recognition, information search and the evaluation of alternatives. These three tasks are not sequential steps as in the traditional decision-making model (see chapter 3, section 3.4). They may occur randomly because they are influenced by the latent factors identified and by the hyper-connected nature of the consumer. The research suggests that the decision-making model of a hyper-connected consumer is ubiquitous and capricious. The term ubiquitous refers to anything that occurs everywhere, all the time and simultaneously (Mohammadian & Rezaie, 2020:5). The term capricious refers to unexpected, sudden or temperamental changes in behaviour (Merriam-Webster.com, 2022). This implies that in a hyper-connected environment, where consumers are always on, always connected and constantly exposed to information, decision-making is a constant and continuous process that happens at any given time and is not necessarily predictable.

For example, while searching on the web for a specific topic, a consumer may be presented with information or advertising about a completely different product or service. As consumers' attention is drawn away from their original purpose for being online, this new information – that may not be required then – may become subjective knowledge that influences future searches, or that even begins creating a new need in the mind of the consumer. The advertisement that attracted the consumer's attention may already be

comparing one product with another. Alternatively, the consumer may subsequently read up more about the product on offer or may follow other links to alternative products. In this way, a search for one topic has inadvertently established a need and provided a comparison of alternatives for another product, all at approximately the same time. This process is happening ubiquitously, all the time and anywhere. It could happen while at work, in the car, while watching TV, or while interacting with friends on social media – the decision-making model is ubiquitous, while the latent variables identified are affecting mediating this decision-making process. The original proposed conceptual model – see chapter 5, section 5.4.2 - was thus adapted to fit the results. Figure 6.10 illustrates the proposed capricious and ubiquitous decision-making model of the hyper-connected consumer.
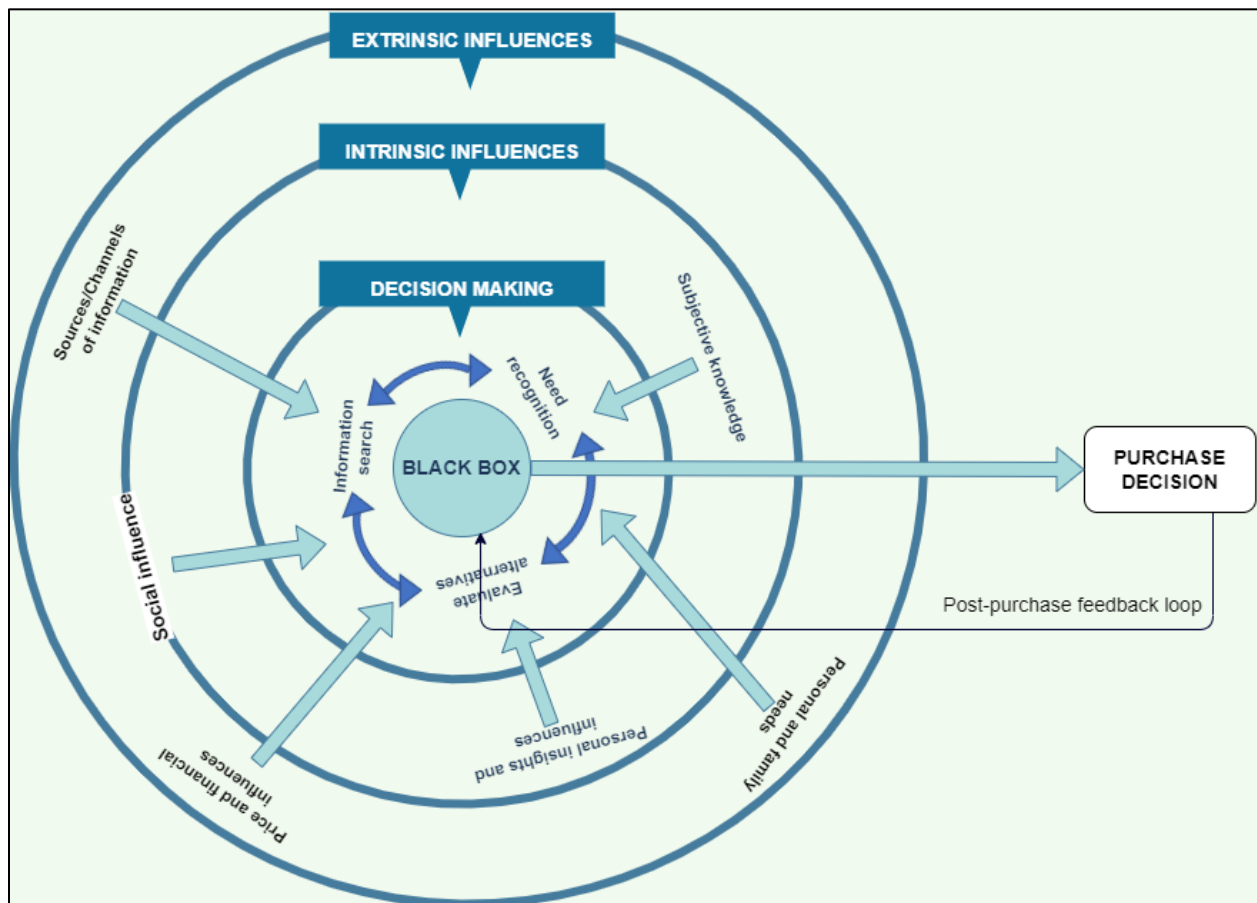
Figure 6.10: Capricious and ubiquitous decision-making model of the hyper-connected consumer

The proposed model illustrated in Figure 6.10 displays three circular layers, each of which feeds into a 'black-box; that represents the consumer's mind, and which leads to the consumer's purchase decision. The factor 'social influences' can be seen on the border of the intrinsic influences line going into the extrinsic influences circle, as it contains elements of both intrinsic and extrinsic factors. The model indicates a post-purchase feedback loop from the purchase decision. The model focuses on the individual as a consumer of intrinsic and extrinsic influences constantly being fed to the individual, resulting in a continuous decision-making loop.

Figure 6.10 illustrates the core inner circular layer of the model consisting of the need recognition, information search and evaluation alternative tasks of the decision-making of the hyper-connected consumer. The model indicates that the consumer's need recognition, information search and evaluating alternative tasks happen in a circular, iterative manner. To reiterate, a consumer may encounter a product online or offline and evaluate the product against alternatives without searching for information or even needing the product. The consumer may search for information later and then make a purchase or go back to the evaluation before making a purchase. The consumer could also realise the need for the product and go straight to purchase.

The hyper-connected consumer's decision-making process is influenced by both intrinsic and extrinsic influences. The research identified latent factors that collectively represent the intrinsic and extrinsic influences, which assist in shaping the hyper-connected consumer's decision: personal insights and influences, social influences, subjective knowledge, sources/channels of information, personal and family needs, price and financial influences.

The six latent factors and the process of need recognition, information search and evaluating alternatives, feed into a 'black-box'. The 'black-box' represents processing that occurs in the mind of the consumer, which leads to the purchase decision. Once the consumer has made the purchase decision and purchased the product, the consumer's experience with the product or brand (post-purchase behaviour) provides information that

will assist the consumer in their next purchase decision process, which results in the post-purchase loop illustrated in Figure 6.10.

The proposed model illustrated in Figure 6.10 indicates that in a hyper-connected world in which consumers are continuously and automatically connected to the internet and devices and fed information, consumer's decision-making is a process that is constant and continuous.

6.7   SUMMARY

This chapter provided a detailed discussion on the results of part 2 of the empirical investigation. The results indicate that the respondents in the sample can be considered hyper-connected consumers. Part 2 of the empirical investigation determined the structural validity of the proposed conceptual model of the latent factors extracted from the EFA in part 1 of the empirical investigation. The factors influence the decision-making of the hyper-connected consumer. Part 2 of the empirical investigation also tested the construct validity of the proposed conceptual model of decision making for the hyper-connected consumer. Confirmatory factor analysis with structural equation modelling was used to confirm the fit of the proposed model. The results indicate an adequate model fit and construct validity and internal consistency and reliability, thus confirming the six factors identified in part 1 of the empirical investigation. The results indicate that the decision-making process of the hyper-connected consumer is not sequential or linear but rather follows an iterative cyclical multi-directional process. An adapted model of a capricious and ubiquitous model of decision-making for the hyper-connected consumer is thus proposed. A detailed discussion and conclusions with regards to the objectives of the research as well as the proposed adapted model will be provided in chapter 7.

CHAPTER 7
FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

Reflecting on the previous chapters, chapter 1 served as the introduction to the study. A brief background was provided on the context (of hyper-connectivity) and a rationale of the planned research based on a preliminary literature review. The chapter also identified the primary research question, as well as the objectives of the research. Chapter 2 provided an in-depth discussion on hyper-connectivity and the hyper-connected consumer; it outlined the characteristics and the behaviour of a hyper-connected consumer. Chapter 3 included a discussion on consumer decision-making and the various models of consumer decision-making. The items used for the measurement instrument used in the empirical part of the study were identified from the theory discussed in chapter 3.

Chapter 4 introduced the research philosophy for the study. This was followed by a detailed discussion of the research process and empirical investigation to achieve the primary and secondary objectives. It was indicated in chapter 4, that to achieve the research objectives, the empirical investigation would be conducted in two parts, part 1 and part 2. The research methodology and design for both part 1 and part 2 were outlined in the chapter. Once the methodology of the research was explained, chapter 5 provided a detailed analysis of the results of part 1 of the empirical investigation. Part 1 of the empirical investigation identified and extracted the latent factors that influence the decision-making process of the hyper-connected consumer. The measurement instrument used for part 1 of the empirical investigation was also validated. The latent factors identified in part 1 of the empirical investigation were used to propose a conceptual model of the decision-making process of the hyper-connected consumer in South Africa. Chapter 6, in turn, included a detailed analysis of the results of part 2 of the empirical investigation, which confirmed the underlying factor structure of the latent factors identified that influence the decision-making process of the hyper-connected consumer

within South Africa. Part 2 of the empirical investigation also determined the structural and construct validity of a proposed conceptual model for the consumer decision-making process of the hyper-connected consumer. The results of the empirical investigation in part 2 indicated that the hyper-connected consumer decision-making is not linear but rather an iterative circular multi-directional loop that occurs capriciously and ubiquitously. As such, an amended model of the capricious and ubiquitous decision-making of the hyper-connected consumer was proposed.

Chapters 5 and 6 laid the foundation for chapter 7, which discusses the overall findings, conclusions and recommendations of the research. The chapter starts with a brief overview of the research question and objectives. The limitations, contribution of the research as well as recommendations for the research will be discussed. To facilitate the reader's understanding, the research question and objectives, as stated in chapters 1 and 4, will be revisited in the following sections.

7.2   THE RESEARCH QUESTION AND OBJECTIVES

The research question and objectives as outlined in chapters 1 and 4 are briefly revisited in this section, so as to serve as a framework against which the conclusions of the study can be discussed.

7.2.1   The research question

The research question, which arose from the extensive literature review, is as follows:
What is the decision-making process of the hyper-connected consumer?

7.2.2   The primary research objective

The primary objective of the research was to determine the decision-making process of the hyper-connected consumer within South Africa to better understand the growing hyper-connected market.

7.2.3　The secondary research objectives

The secondary objectives, which were derived from the primary objective were to:

- determine the profile of a hyper-connected consumer within South Africa,
- identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer,
- propose a conceptual model from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa,
- confirm the underlying factor structure of the proposed conceptual model of the decision-making process of the hyper-connected consumer, and
- determine areas of future research.

The findings and conclusions derived from the research will be discussed in the sections that follow.

7.3　FINDINGS AND CONCLUSIONS OF THE RESEARCH STUDY

The research findings emanated from the information derived from the detailed literature review conducted in chapters 1, 2 and 3, as well as from the empirical study (part 1 and part 2) conducted as part of the research. The literature review, as well as the empirical studies, were conducted to address the research question and objectives that were previously stated. In this section, the overall findings of the literature review, as well as the empirical studies, will be summarised. The secondary objectives, which laid the foundation of the research, will be addressed based on the findings obtained from the literature review and empirical studies. Thereafter, a discussion will be provided on the primary objective of the research.

7.3.1 Overall findings of the research study

The overall findings of the research that were derived from the literature review and the empirical studies will be summarised in the following section.

7.3.1.1 Overall findings of the literature review

Chapters 1, 2 and 3 provided a detailed literature review on hyper-connectivity, the hyper-connected consumer and consumer decision making, and the various models of consumer decision making. Various academic and industry sources such as academic articles, academic databases, textbooks, industry reports and articles and internet searches were used to conduct the literature review. A search on well-known academic bibliographic indices indicated limited research specifically on the hyper-connected consumer and their decision-making processes.

The literature found that the concept of hyper-connectivity, spurred by the growth of technology, mobile and wireless technology and the internet of things, was coined by Anabel Quan-Haase and Barry Wellman (2005) in their research on person-to-person and person-to-machine communication in networked organisations and societies. Hyper-connectivity is defined in the literature (chapter 1, section 1.2) as the continuous connection and communication between people and machines, devices and objects, as well as machines to devices, objects and individuals.

The hyper-connected consumer was defined in chapter 1 (section 1.3) as consumers who are constantly or continuously connected online to the internet and on the web through various devices such as smartphones, laptops, tablets, wearable devices and even desktop computers. In defining the hyper-connected consumer, the characteristics that make up the hyper-connected consumer were analysed. Industry reports from Euromonitor international (2015a) and GFK Global (2017), which researched the hyper-connected consumer in Europe and India, which have largely influenced the literature on hyper-connected consumers, were used to identify characteristics of the hyper-connected

consumer. The literature found several characteristics of a hyper-connected consumer, which was broken up into four main themes. The identified characteristics were used as a basis for identifying hyper-connected consumers within South Africa. The characteristics of a hyper-connected consumer include (GFK Global, 2017; Euromonitor international, 2015a; Thwaites, 2020; Brubaker; 2020):

Internet connectivity

- *Continuous access to the internet:* An individual who at any given time is connected to the Internet through a device such as a smartphone, laptop, tablet device.

- *Accesses the Internet daily on at least one digital device:* An individual who uses a smartphone, laptop, tablet device to connect to the internet.

Owned devices

- *Use multiple digital devices daily:* An individual who, for example, uses a laptop for school, work, research and makes use of a smartphone to communicate via social media to friends or family.

- *Own a smartphone and at least one other device that can connect to the internet:* An individual that owns a smartphone and a laptop and uses both devices to connect to the internet to conduct activities.

The amount of time spent on a device

- *Spend more than four hours a day on a smartphone:* With more individuals working and schooling and conducting entertainment and even gym activities online, more time is being spent on the internet through a device such as a smartphone, laptop and tablet device. The convenience of smartphones has also resulted in more activities being conducted and more time being spent on a smartphone.

The use of applications (or apps) to conduct certain activities by consumers

- *Have more than nine applications on their smartphones that they use regularly:* Apps allow individuals to handpick what activities their smartphones can do. An individual that uses their smartphone for work activities may require an e-mail app, a video conference and a meeting app such as Zoom.

- *Use a mobile communication application daily:* Mobile communication apps such as WhatsApp have become part of the everyday life of an individual and are used for

social communication, to get news and other information, as well as for work and business transactions.

- *Visit a social networking site daily:* A hyper-connected individual accesses a social media site such as Facebook, Twitter, Instagram, etc, at least once a day.

- *Access e-mails daily through a digital device:* E-mails have become a norm in communicating, especially for work and business. In a hyper-connected environment, individuals can access their work or private e-mails from various devices such as a smartphone, laptop and tablet device.

- *Regularly bank online*: Almost every bank has online functionality and a mobile banking app, allowing customers to conduct various banking activities anytime and anywhere. The ease and convenience of online and mobile banking have allowed hyper-connected consumers to regularly conduct banking activities online.

- *Regularly make purchases online:* In a hyper-connected environment, online shopping provides ease and convenience for customers. Hyper-connected consumers are said to regularly shop online.

A detailed literature review was conducted on the consumer decision-making process and the various models of consumer decision-making. The various models of consumer decision-making were reviewed, and it was found that the EBM model of the consumer decision process was one of the most widely used consumer decision-making models (see chapter 3). The EBM model was based on the 'Reflective thinking' model developed by educational theorist John Dewey (1910). The reflective thinking model indicates that an individual follows a logical sequence of five steps when solving problems. The Reflective Thinking model was adapted to a consumer behaviour context by Engel, Blackwell and Miniard to create a theoretical model of the consumer decision-making process. The EBM model consists of seven stages that an individual will go through when making a purchase decision: need recognition, search, pre-purchase evaluation of alternatives, purchase, consumption, post-consumption evaluation, and divestment. The literature review found that in the marketing and consumer behaviour fields of study, the EBM model has more commonly been modified to focus on five core stages (need recognition, search for information, evaluate alternatives, purchase decision and post-

purchase behaviour). The modified five stages of the EBM model of the consumer decision process have been widely used in many studies (see Appendix C) since its conception in 1969. To determine the latent factors that influence the decision-making process of the hyper-connected consumer and determine the decision-making process of the hyper-connected consumer, a modified version of the five-stage model of consumer decision making was adopted.

It was argued that the post-purchase behaviour variable could not be seen as a dependent variable as all post-purchase activities occur once a purchase decision has already been made. As such, post-purchase behaviour was excluded from the theoretical model adopted for the research. The literature also indicated that purchase decisions cannot truly be measured as they occur at momentary and unique periods, and in the mind of the consumers. As such, consumption was viewed as a proxy of purchase decision as consumption is an indication of the actual purchase of the product. A four-stage theoretical decision-making model was thus adopted from the literature to be used as the basis for the empirical investigation.

The literature review identified measured variables for each stage of the consumer decision-making process that was used as the basis for developing the research instruments used for both part 1 and part 2 of the empirical investigation.

7.3.1.2 Overall findings of part 1 of the empirical investigation

The research analysis in part 1 of the empirical investigation started by determining the hyper-connectivity of the sample. The criteria used to determine whether the respondents of the sample were hyper-connected were based on the definition of a hyper-connected consumer as well as the characteristics of hyper-connectivity identified in the literature. Each respondent was analysed to determine whether they had three or more of the characteristics of a hyper-connected consumer. The sample of part 1 of the empirical investigation was thus deemed hyper-connected as each respondent had characteristics of a hyper-connected consumer. The sample was continuously and at times automatically

connected to the internet. Respondents in the sample owned and used a smartphone and at least one other device. Respondents spent more than four hours a day accessing the internet from a smartphone. The respondents indicated that they regularly use apps to conduct activities such as banking, e-mail, visiting social network sites and communicating through mobile communication apps.

The sample in part 1 of the empirical investigation consisted of mostly female respondents. Most respondents were between the ages of 26 and 35 (in South Africa the millennial age group is between 16 and 31), which is deemed the millennial generational age group (Statssa.gov.za, 2020b; van der Walt et al., 2019:54). The millennial generational age group consists of individuals who grew up during the growth of technological innovation and are said to be more accustomed to using various devices and being connected online. Respondents were also predominantly from the Gauteng province, which is said to be the economic hub of South Africa.

The hyper-connected consumers in part 1 of the empirical investigation use more than 10 GB of data per month. The data usage agrees with an industry report on data usage by Tefficient.com (2021), which states that data usage per SIM card averaged 10 GB per month in 2020 across mobile network operators worldwide. The COVID-19 pandemic restrictions have also played a part in the increase in data usage as it amplified the need to move to learn, work, shop and entertainment online. These hyper-connected consumers use communication apps such as WhatsApp, use a search engine, socialise through social media apps (Facebook, Instagram), access their e-mail and conduct banking activities through their smartphone.

Once it was determined that the sample was hyper-connected, the remaining results could be analysed. Part 1 of the empirical investigation was conducted to identify and extract latent factors that influence the decision-making process of the hyper-connected consumer. A conceptual model was proposed from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa.

To achieve the objectives of part 1 of the empirical investigation, EFA, principal axis factoring with an oblique (Varimax) rotation and reliability analysis were conducted on the data. Factors were extracted using the Kaiser criterion known as the latent root criterion (eigenvalues-greater-than-one) and a visual interpretation of the scree-plot test based on 'inflection' or the 'elbow' methods. Six latent factors were identified from the EFA, which were used to propose a model of the decision-making process of the hyper-connected consumer. Reliability analysis indicated good internal consistency. A total of 37 of the 38 items of the questionnaire had significant Lambda values and, as such, confirmed the validation of the measurement instrument used to identify and extract the latent factors.

7.3.1.3 Overall findings of part 2 of the empirical investigation

Similar to part 1, part 2 of the empirical investigation also identified if the respondents in the sample were hyper-connected. Each respondent was analysed based on the characteristics of the hyper-connected consumer identified in the literature. The results indicated that each respondent in sample 2 possessed a characteristic of a hyper-connected consumer.

The respondents in part 2 of the empirical investigation were continuously and automatically connected to the internet. Respondents of the sample accessed the internet on a mobile device (smartphone, laptop, or tablet device) at least once a day. Most respondents own a smartphone and spend at least four hours a day accessing the internet through their smartphones. Most respondents regularly use between 5 and 9 apps on their smartphones that include communication apps (WhatsApp and e-mail), social networking apps (Facebook, Instagram and Twitter) and a search engine.

Respondents in part 2 of the empirical investigation were predominantly female. The consumers were between the ages of 18 and 35, including the Gen Z and millennial generation groups. This was not the case for part 1 of the empirical investigation, in which the respondents were older and fell within the Millennial generation group. Both Gen Z and millennial generation groups have grown up with technology and prioritise

connectivity and device usage. Respondents in sample 2 were predominantly from the Gauteng province in South Africa.

Once the sample was classified as hyper-connected, the validity of the proposed conceptual model identified in part 1 of the empirical research was determined. Part 2 of the empirical research was conducted to confirm the factor structure of the proposed conceptual model as well as to determine the structural validity of the six-factor model of the decision-making process of the hyper-connected consumer that was proposed in part 1. To achieve the objectives of part 2 of the empirical investigation, CFA with SEM was conducted. Several goodness-of-fit indices (RMSEA, SRMR & CFI) were used to measure the overall fit of the model. The results as discussed in chapter 6 (section 6.3.1) indicate that the RMSEA (< .068), the SRMR (< .0693) and CFI (0.884 that approximated to 0.9) suggested an adequate fit of the proposed model.

An analysis of the descriptive statistics of each latent factor identified in part 1 of the empirical investigation indicated a normal distribution that is slightly skewed to the left of the distribution as the scores for each factor tend to cluster towards the right of the mean. The results, as discussed in chapter 6 (section 6.3.1), indicate that the scales of the model were found to have good internal consistency and reliability with all Cronbach's alpha coefficients > 0.6.

The research results illustrated covariances between the factors indicating that the decision-making of the hyper-connected consumer is not a sequential, linear process as proposed, but an iterative circular multi-directional loop process. The proposed conceptual model of decision-making for the hyper-connected consumer was thus adapted to illustrate the research findings.

In labelling the latent factors, the content of each factor, the descriptive statistics, as well as the results of the EFA was analysed. As discussed in chapter 6 (section 6.4.2), the six factors were subsequently labelled:
- Personal insights and influences

- Social influences
- Subjective knowledge
- Sources/channels of information
- Price and financial consideration
- Personal and family needs

Overall, the results of part 2 of the empirical investigation thus confirm the underlying factor structure of the proposed model of the decision-making process of the hyper-connected consumer.

7.3.2 Findings and conclusions of secondary objective: To determine the profile of a hyper-connected consumer within South Africa

The context of the research was hyper-connectivity; as such, the samples used for both part 1 and part 2 of the empirical investigation were individually analysed to determine whether they were hyper-connected. The criteria used to identify if the sample was hyper-connected were based on the definition of a hyper-connected consumer and the identified characteristics of a hyper-connected consumer discussed in chapter 2. Once the samples of both part 1 and part 2 of the empirical investigation were determined to be hyper-connected, a profile of the hyper-connected consumer within South Africa could be determined.

The literature (chapter 2, section 2.4) identified four key themes that make up the characteristic of a hyper-connected consumer: internet connectivity, owned devices, the amount of time spent on a device, and the use of applications (or apps) to conduct certain activities by consumers. The four key themes were used as a basis to determine a profile of the hyper-connected consumer. From the analysis of both part 1 and part 2 of the empirical investigation, the following profile of the hyper-connected consumer within South Africa was determined (Table 7.1).

Table 7.1: Profile of the hyper-connected consumer in South Africa

Profile element	Discussion
Demographics	• Most of the hyper-connected consumers in South Africa are female. • Most of the hyper-connected consumers are between the age of 18 and 35 years. • Most hyper-connected consumers reside within Gauteng, Western Cape and Kwa-Zulu Natal. • Hyper-connected consumers within South Africa are employed and can earn up to approximately R60 000 per month.
Internet connectivity	• Hyper-connected consumers within South Africa are continuously and often automatically connected to the internet. • Hyper-connected consumers use various methods such as a fixed line or cables (ADSL or fibre) or home LTE to connect to the internet. However, the majority prefer to access the internet through a mobile network provider. • Hyper-connected consumers use anything over 1Gb data per month accessing the internet. • Hyper-connected consumers in South Africa spend more than four hours a day accessing the internet.
Owned devices	• Hyper-connected consumers in South Africa own multiple devices that can access the internet. • Most hyper-connected consumers own a smartphone and a laptop.
The amount of time spent on a device	• Hyper-connected consumers spend more than an hour a day accessing the internet from various devices (featurephone, smartphone, desktop computer, laptop, tablet device and smart television). • A smartphone and laptop are the most common devices used to access the internet with most hyper-connected consumers accessing the internet for more than four hours a day on their smartphone.
Apps used and ranking of these apps	• Hyper-connected consumers in South Africa have more than five apps that they regularly make use of their smartphones. • The most common apps that hyper-connected consumers use on their smartphones include a communication app such as WhatsApp and e-mail app, a search engine, social media such as Facebook and Instagram, a banking app and a maps/GPS app. • Most hyper-connected consumers only have between 1 - 4 apps that they regularly use on their laptops, desktops computers, tablet devices and smart televisions.
Devices used to conduct certain activities online and monthly expenditure	• Hyper-connected consumers use their smartphones to conduct most activities such as using a communication app to chat, using a search engine, accessing their e-mail, and conducting banking. • Hyper-connected consumers mostly use their smartphones for entertainment, followed by their laptops. • Accessing smart car and smart home devices are mostly done through a smartphone. • Most hyper-connected consumers make online purchases through a smartphone or laptop. • Most hyper-connected consumers in South Africa still make most of their make purchases in-store.

7.3.2.1 Conclusion

Analysing the profile of the hyper-connected consumer in South Africa in Table 7.1, it is concluded that the South African hyper-connected consumer consists of the generational cohorts' (millennials and gen Z's) that have grown up and evolved as technology has advanced. The millennials and gen Z's have had increased exposure to technology and connectedness from a young age and tended to view technology as not just a tool, but as an enabler that enhances the attainment of knowledge and skills, the creation of experiences, sharing, communicating and even conduct daily activities such as shopping and banking (Isaacs, Scott & Nisly, 2020:1388). Leiva and Kimber, (2020) state that there is a significant influence on the decision making of gen Z and millennial consumers who are considered to be hyper-connected. Gen Z and millennials decision-making is said to be influenced by novelty and prestige (Leiva & Kimber, 2020:41). Lim, Gupta, Aggarwal, Paul and Sadhna (2021) indicate that gen Z and millennials purchase intention is positively influenced by aspects such as perceived usefulness, credibility, design and personalisation of online advertisements.

The research found that the South African hyper-connected consumer encompasses the four key themes of the characteristics of the hyper-connected consumer as identified in the literature (chapter 2, section 2.4.1).

Internet connectivity: The South African hyper-connected consumer is continuously and automatically connected to the internet through various devices. Internet statistics indicate that approximately 57.5% of the South African population are actively connected to the internet (InternetWorldStats.com, 2022). The research also indicates that South African hyper-connected consumers predominantly make use of mobile data to connect to the internet. Data usage of the hyper-connected consumer in South Africa varies from anything above 1 GB of data per month. On average, it was found by South African network provider, MTN, that South African mobile network consumers make use of more than 2 GB of data per month (pre-paid consumers) (Pike, 2021).

Owned devices: From the research, it can be concluded that smartphones are indispensable to the South African hyper-connected consumer. Hyper-connected consumers in South Africa principally use a smartphone to stay connected to the internet and conduct activities such as communicating via a communication app such as WhatsApp or e-mail, searching for information using a search engine such as Google, accessing social network sites such as Facebook, Twitter and Instagram, for entertainment such as watching videos on YouTube or Netflix and even for banking activities. Osembe (2021) indicates that the use of smartphones has shaped the lives of individuals and has not only increased interaction between individuals but has resulted in increased accessibility to the world around them. Leiva and Kimber (2020) found that consumers who own smartphones are more responsive to digital advertisements that they are exposed to on apps or websites accessed through their smartphones. Rodríguez-Torrico, Prodanova, San-Martin and Jimenez (2020) state that consumers attachment to their mobile phones positively influences the consumer's mobile commerce-related activities. Other than smartphones, there is a prevalence of smart technology devices such as wearable devices, smart speakers, intelligent clothing, and smart home devices among hyper-connected consumers. Devices such as smart speakers are perceived as 'cool' device that provides functional benefits to consumers (Ashfaq, Yun & Yu, 2021:269). The perceived ease of use, compatibility and usefulness of smart speakers and voice-based smart-home products (such as Amazon's Alexa) are found to positively influence the purchase intention of the consumer (Pal, Arpnikanondt, Funilkul & Razzaque, 2020:16).

The amount of time spent on a device: Hyper-connected consumers within South Africa spend on average more than four hours a day accessing the internet daily from their smartphones. According to We Are Social and Hootsuite, (2021a) the average daily time that users between the ages of 16 and 64 spend accessing the internet on a smartphone in South Africa is 4 hours and 55 minutes. Advancements in smartphone technology have provided consumers with the ability to conveniently conduct many personal, work-related, schooling and even entertainment activities (Park & Oh, 2021:2). As a result, more time is being spent on smartphones (McCrann et al., 2020:2).

The use of applications (or apps) to conduct certain activities by consumers: South African hyper-connected consumers predominantly make use of a smartphone and laptop to conduct social as well as personal activities such as social communication and accessing e-mails, banking and online purchases. On average, South African hyper-connected consumers have more than five apps on their smartphones that they make use of regularly. The research concludes that the hyper-connected consumer is often connected with a purpose such as; communication, entertainment, searching for information or conducting specific activities such as banking or making online purchases. It can thus be inferred that the selection of apps used daily by the hyper-connected consumer is based on the functionality and purpose of the app. The research is supported by We Are Social and Hootsuite (2021a), who indicate that South Africans make use of a search engine, watch video content on YouTube, connect socially on Facebook, conduct banking, shop online and read the news online.

Hyper-connected consumers have unprecedented access to large amounts of information, which is continuously being fed to the consumer through various applications that they use their devices. The heavy use of technology and continuous and automatic connection shapes the decision-making of the hyper-connected consumer. When making decisions, hyper-connected consumers are said to expect immediacy, transparency, convenience (Webster, 2021; Khan et al., 2020). Analysing the extensive internet connection and the use of smartphones to conduct everyday activities among hyper-connected in South Africa, it can be inferred that South African hyper-connected consumers value immediacy, transparency of information and convenience of communication and interaction.

Immediacy: The research found that even though many consumers shop online, most of the consumer's monthly expenditure (sample 1=76%, sample 2=60%) is spent making purchases in brick-and-mortar stores. It is thus concluded that hyper-connected consumers value the immediacy of in-store purchases. Although online shopping does provide convenience, there is a lack of immediacy and as such brick-and-mortar stores are essential to the consumer purchase journey (Cavalinhos, Marques & Salgueiro, 2021:1198)

Transparency: In the current research, search engines ranked as one of the top 10 apps that consumers make use of daily. Hyper-connected consumers expect to have information readily available to them and search engines are a key tool in accessing information. Search engines are said to be the first option that consumers interact with when conducting product searches (Tsagkias, King, Kallumadi, Murdock & de Rijke, 2021:1). Social media such as Facebook (which is also one of the top 10 ranked apps used daily by consumers in the current research) is also increasingly being used to gain product information and product reviews by consumers (Oumayma, 2019).

Convenience: The research found that most hyper-connected consumers make use of their smartphones to conduct everyday activities such as socialising, accessing e-mail, conducting banking activities and online shopping. Smartphones offer functionalities that provide consumers with the convenience of conducting a wide variety of activities at a click of a button at any time and place (Xiao, 2019:2).

Based on the above discussion, the secondary objective, namely, to determine the profile of a hyper-connected consumer within South Africa was achieved.

7.3.3 Findings and conclusions of secondary objective: Identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer

Through the extensive literature review in chapter 3, measured variables were identified for each stage of the consumer decision-making process. The identified measured variables were used as the basis for the measuring instrument that was used to identify and extract latent factors in part 1 of the empirical investigation.

When consumers make a decision, they are often influenced by various factors that will result in the consumer making a purchase or not (Loxton et al., 2020:2). Previous consumer decision-making models, such as the EBM model of the consumer decision process (discussed in chapter 3, section 3.4), specify environmental influences (culture, social class, personal influences, family and situation of the consumer) and individual

differences (consumer resources, motivation and involvement, knowledge, attitudes, personality, values and lifestyle) as factors that will influence the consumer's decision process. To identify and extract latent factors that influence the decision-making process of the hyper-connected consumer in South Africa, EFA was conducted on the data in part 1 of the empirical investigation. A total of 37 items had significant Lambda values that loaded significantly onto six factors. As the objective of the EFA was to identify and extract the latent factors, the naming and nature of the identified factors were done later on (see chapter 6).

7.3.3.1 Conclusion

The research highlighted six latent variables that could influence the decision-making of the hyper-connected consumer within South Africa. The six identified latent variables have good internal consistency and reliability, indicating good statistical support for the validity of the six latent variables.

Based on the above discussion, the secondary objective, namely, to identify and extract the latent factors that influence the decision-making process of the hyper-connected consumer, was achieved, through the identification and extraction of the six intrinsic and extrinsic influences.

7.3.4 Findings and conclusions of secondary objective: Propose a conceptual model from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa

The results of part 1 of the empirical investigation identified six latent factors that influence the decision-making process of the hyper-connected consumer. The six factors were used to develop and propose a conceptual model of the decision-making process of the hyper-connected consumer. Figure 7.1 illustrates the proposed conceptual model.
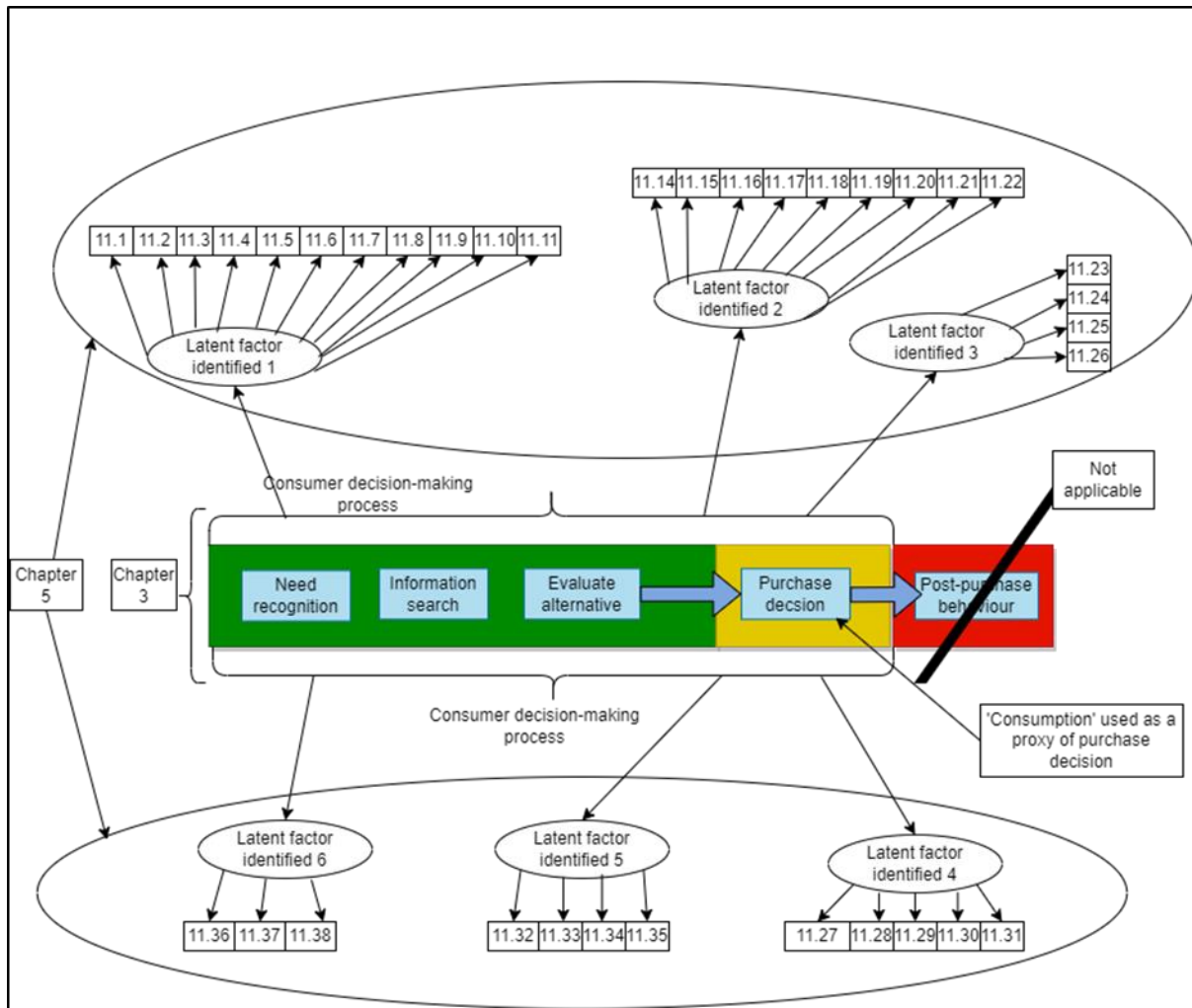
Figure 7.1: A proposed conceptual model of the decision-making process of the hyper-connected consumer within South Africa

The six latent factors and the items that load onto each factor as extracted from the EFA in chapter 5 are illustrated in Figure 7.1. The six latent factors stem from the measured variables identified from the consumer decision-making process, as discussed in chapter 3. The numbers 11.1-11.36 illustrated in Figure 7.1 represent the question items in the survey. As shown in Figure 7.1, the latent factors arguably stem from the stages of the decision-making process, need recognition, information search, and evaluate alternatives that lead to the purchase decision. As discussed in chapter 3, the post-purchase behaviour variable is not applicable in the current research, which is illustrated in Figure 7.1. Figure 7.1 also indicates that consumption is a proxy of purchase decision (discussed in chapter 3).

7.3.4.1 Conclusion

The proposed conceptual model in Figure 7.1 illustrates the stages of decision-making identified in the literature, need recognition, information search, evaluate alternative and purchase decisions are still relevant in a hyper-connected context. The proposed conceptual model indicates that the latent variables are not linked to a specific stage of decision-making, but that each of the stages of decision-making can be influenced by the various latent factors at different stages of the consumer's decision-making process. In a hyper-connected, always-on environment, latent factor 4, for example, can influence the consumer's decision-making at the need stage and the purchase stage. The consumer can also go through the entire decision-making process and only at the purchase stage consider latent factor 4. Consumers can also skip a stage based on the influence of a latent factor.

Based on the above discussion, the objective to propose a conceptual model from the latent factors identified of the decision-making process of the hyper-connected consumer in South Africa was thus achieved.

7.3.5 Findings and conclusions of secondary objective: Confirm the underlying factor structure of the proposed conceptual model of the decision-making process of the hyper-connected consumer

To confirm the underlying latent factor structure of the theoretical model that was proposed (see above conclusion), CFA with SEM was conducted in part 2 of the empirical investigation. The CFA confirmed an adequate fit of the underlying factor structure, the scales of the model was found to have good internal consistency and the Cronbach's alpha coefficients confirmed the reliability. Results of CFA indicated that the factors covary, which indicates that the consumer decision-making process is an iterative cyclical multi-directional loop process as opposed to a linear process when examined in terms of actual purchase behaviour.

7.3.5.1 Conclusion

It can be concluded from the results that six latent factors influence the decision making-of the hyper-connected consumer. These factors are seen to have strong bidirectional relationships with each other, indicating an iterative circular multi-directional loop that occurs in decision making.

After analysing the measured variables that contributed to each of the latent variables, it is concluded that these latent variables represent intrinsic and extrinsic influences that impact decision making. As far as the intrinsic and extrinsic influences are concerned, these are considered drivers for individual engagement in a specific behaviour (Park et al., 2021:3). Chen and Antonelli (2020) and Rossanty and Nasution, (2018) highlight that extrinsic factors such as price, and intrinsic factors such as product knowledge contribute to the consumer's motivation and intention to make a purchase. Supporting the findings of this study, the research by Higuchi and Maehara, (2021) identified intrinsic factors such as attitude, and extrinsic factors such as family and friends, that influence the decision making and consumption of consumers. Bizuneh, Hailmariam and Tsegaye (2021) indicate that intrinsic and extrinsic cues influence the consumer pre-purchase evaluation stage of decision making. Ali et al. (2020) and Mansah, Dankwah, Mensah and Masope-Crabb (2021) postulate the intrinsic and extrinsic stimulus of the consumer's recognition of a need as well as the consumer's purchase intention influence the way in which consumers make purchase decisions. Consumers can also skip certain stages of decision-making based on intrinsic and extrinsic influences. Rossanty and Nasution, (2018) show that factors such as subjective knowledge do not influence the 'search' and 'evaluation of alternatives' stages of decision-making. The consumer assumes that they have enough knowledge of the product and tend to skip the search and evaluation stages and go straight to making the purchase (Rossanty & Nasution, 2018:3084). The identified latent factors which represent intrinsic and extrinsic factors from the current research build onto previous research (Santeramo & Lamonaca, 2020; Hoffmann, Symmank, Mai, Stok, Rohm & Hoffman, 2020; and Bukhari et al., 2021) that highlight the relevance and influence of intrinsic and extrinsic attributes on the consumer's decision-making process.

The six latent factors are argued to be (i): personal insights and influences, (ii) social influences, (iii) subjective knowledge, (iv) sources/channels of information, (v) price and financial considerations, and (vi) personal and family needs (see chapter 6, section 6.5). The intrinsic influences, namely personal insights and knowledge and subjective knowledge are insights that are embedded (at a shallow level as well as deep level) into the mind, memory or psyche of the hyper-connected consumer. Extrinsic influences such as sources/channels of information, price and financial consideration and personal and family needs, are external stimuli that are processed mentally by the consumer. One of the factors, the social influence factor, appeared to have qualities of both intrinsic and extrinsic influences. The social influence factor indicates that external social stimuli can have an impact on internal aspects such as the consumer's mood, emotions, and psyche, which in turn impacts the decision-making of the consumer. The findings on which this conclusion is based, are similar in nature to the external and internal influences identified in earlier models.

What the factor structure identified by the statistical analysis in this study failed to confirm, however, was any linear or sequential decision-making process in a hyper-connected environment. Thus, an extension to the above conclusion that can arguably be drawn from these results, is that although the decision-making of the hyper-connected consumer is influenced by similar intrinsic and extrinsic factors as proposed in earlier models, these influences do not necessarily occur along a structured sequential path as posited by same earlier models (i.e., need identification, search for alternatives, evaluation of alternatives, etc.). It is proposed, based on this conclusion, that decision-making in a hyperconnected world, does not necessarily occur in an ordered, sequential, or even logical process.

The conclusions drawn by this research are supported by the findings of Rennie, Protheroe, Charron and Breatnach (2020) who also found that consumer decision-making is no longer a linear process. The integration of technology into everyday activities has subsequently brought about fundamental changes to consumers and the way in which consumers make purchase decisions (Grewal & Roggeveen, 2020:7). As a result, Grewal and Roggeveen (2020) posit that the consumer decision-making process could be a

looping non-linear process. The current research established that the hyper-connected consumer partakes in several tasks, that is, need recognition, search for information and evaluate alternatives, when making a decision. These tasks however do not necessarily occur in a specific sequence but is rather an iterative cyclical, multi-directional process. These decision-making tasks are influenced by the identified latent factors when the hyper-connected consumer is making a purchase decision.

The research confirmed the underlying structure of the proposed conceptual model of decision-making of the hyper-connected consumer, thus achieving the secondary objective to confirm the underlying factor structure of the proposed conceptual model of the decision-making process of the hyper-connected consumer. Based on the results of the empirical investigation. The model initially proposed from the EFA (illustrated in Figure 7.1) was adapted to more adequately fit the results of the CFA. Figure 7.2 (discussed in section 7.4) illustrates the final adapted model of the decision-making of the hyper-connected consumer.

7.3.6 Findings and conclusions for the secondary objective: To determine future areas of research

Based on the findings discussed in chapters 5 and 6 and the conclusions discussed above, there are several suggestions for future research that can be offered:

- The adapted conceptual model for the decision-making of the hyper-connected consumer within South Africa (see section 7.4), which is proposed on the basis of the aforementioned research, is required to be tested within South Africa to confirm the validity of the model.
- The conceptual model delineated within the current research can serve as a valuable baseline to examine the decision-making process of hyper-connected consumers in South Africa in future studies focussing on the practical application of the model in line with actual purchase behaviour.

- The proposed conceptual model identified within the empirical investigation identified six latent factors that influence the decision-making process of the hyper-connected consumer. Future research could identify further latent factors that could influence the decision-making of a hyper-connected consumer.
- Further research into the hyper-connected consumer can focus on developing a sales process that takes into consideration the decision-making of the hyper-connected consumer. Specific sales strategies for the hyper-connected consumer be identified.
- The current research developed a profile of the hyper-connected consumer within South Africa; it is suggested that the profile identified in South Africa be further tested in other countries to determine if the profile can be generalised to hyper-connected consumers in different geographic regions.
- The hyper-connected consumer, their habits and characteristics are not yet fully understood and researched in academia. Future research can delve into a much greater understanding of the hyper-connected consumer and conduct comparisons between hyper-connected and non-hyper-connected consumers.

7.3.7 Findings and conclusions of the primary objective

The primary objective of the research was to determine the decision-making process of the hyper-connected consumer within South Africa. From the conclusions drawn from the secondary objectives (derived from the primary objective), the six latent factors identified (personal insights and influences, response to stimuli, subjective knowledge, sources/channels of information, price and financial influences and personal and family needs) were statistically confirmed as latent factors that influence the decision-making process of the hyper-connected consumer within South Africa.

A proposed conceptual model was conceptualised from the research in chapter 5 and the structural validity and reliability of the latent factors of the proposed conceptual model were confirmed in part 2 of the empirical investigation. The results indicated that the proposed conceptual model is valid in determining the decision-making process of the hyper-connected consumer within South Africa. However, the conceptual model initially

identified from the research, reflected no apparent procedural order. As a result, this conceptual model was revisited and adapted as a *new conceptual model* that requires further research outside of this study. This new model is discussed in section 7.4

Therefore, it is evident from the findings and conclusions that the primary research objective for the study "to determine the decision-making process of the hyper-connected consumer within South Africa to better understand the growing hyper-connected market", as envisaged at the start of the study, has successfully been answered in part by the research, but that further research is still required.

7.4   THE PROPOSED CAPRICIOUS AND UBIQUITOUS DECISION-MAKING MODEL OF THE HYPER-CONNECTED CONSUMER

Traditionally, consumer behaviour has been viewed as a linear process that consists of several stages that the consumer goes through which to make a purchase decision. The EBM model (chapter 3) is one of the seminal models of consumer behaviour that has been used for decades as the backbone of consumer behaviour research. The EBM model postulates that the consumer decision process is a rational, linear process that consists of several stages. In a digitised and hyper-connected environment, as technology, digital devices and internet connections became more ingrained in the everyday lives of consumers, a more generalised model of consumer decision making was investigated. One of the first models of decision-making of consumers in an increasingly digital and connected environment was developed by Court, Elzinga, Mulder and Vetvink (2009), who proposed 'Mckinsey's consumer decision journey' also referred to as the 'Circular model of the consumer decision journey' (illustrated in Figure 7.2). The model developed by Court et al. (2009) illustrates consumer decision-making as a circular journey that consists of four phases: initial consideration, active evaluation or the process of researching potential purchases, closure, when consumers buy brands and post-purchase when consumers experience them. The model indicates that in a digital environment, consumers' evaluations are dominated by customer-driven activities such

as consulting online reviews, recommendations from family and friends as well as interactions with the retailers.
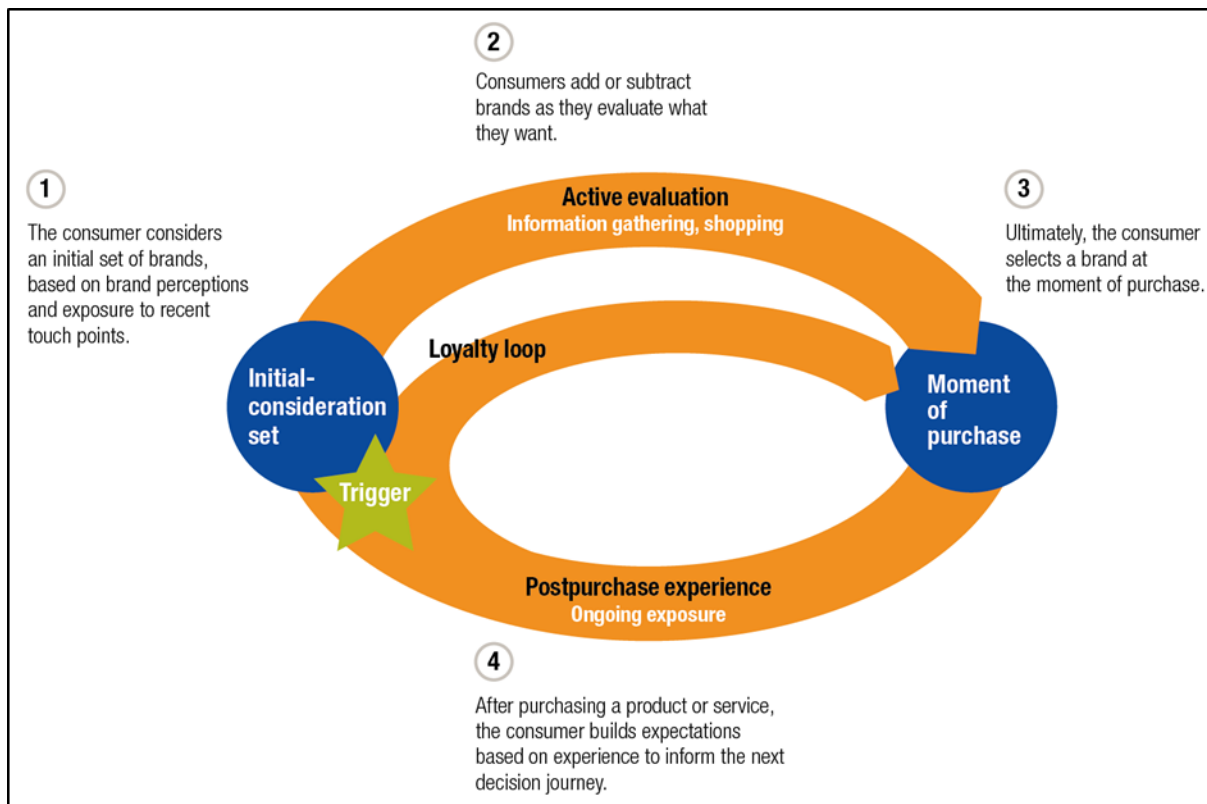
Figure 7.2: Mckinsey's consumer decision journey/Circular model of the consumer decision journey
Source: Court et al. (2009)

In the traditional sequential consumer decision models such as the EBM model, the consumer actively searches for information and evaluates information about a product or brand. The 'Mckinsey's consumer decision journey' model indicates that consumer evaluation is customer-driven in a digital environment. In a hyper-connected environment, the consumer, however, has access to large amounts of information while at the same time is also being continuously fed specific information (Rennie et al., 2020), which has led to an 'infodemic'. The term 'infodemic' is used to describe the rapid and far-reaching spread of information (Merriam-Webster.com, 2021b). Information is continuously being collected about the consumer through various devices and software applications that the consumer uses. The information that is collected is used by companies to feed information to consumers based on online searches, online communication, social media

likes, shares and searches. Two terms are proposed to describe the decision-making model of the hyper-connected consumer in light of the 'infodemic' that the consumer is currently facing. They are:

- *Capricious*

In selecting a term to describe an 'interwoven' or 'intermeshed' decision-making process that may appear random or even haphazard at times, the term 'capricious' was selected. The Cambridge (Cambridge Dictionar, 2022) dictionary defines this term as behaviour that changes suddenly or unexpectedly. Synonyms associated with this word include 'changeable', 'fluid', and 'dynamic'. While the model is difficult to capture in a single word, capricious is also defined as "changing according to no *discernible* rules". The use of the word 'discernible' is useful as it suggests that currently there are no obvious rules, but that with further research, rules and patterns make become evident and manageable. The word capricious has previously been used in research to explain unexpected, temporal changes in consumer behaviour as well as consumers who tend to switch or alternate between brands (Yaskal, Yaskal, Volovidnyk & Lziak, 2021:62; Cachero- Martínez & Vázquez-Casielles, 2021:1; Soudi & Bouallala, 2020:42).

- *Ubiquitous*

The proposed model is labelled as ubiquitous as it is suggested that the activities of decision-making can happen anytime, anywhere and can occur simultaneously. A consumer can be exposed to intrinsic and extrinsic influences at any given time and these intrinsic and extrinsic influences can assist in the decision-making tasks, which can also occur at any time, and not necessarily in any set order. The intrinsic and extrinsic influences can trigger the decision-making tasks of need recognition, information search and evaluate alternatives that occur simultaneously, or it can assist in decision-making that is already underway. The proposed ubiquitous decision-making model of the hyper-connected consumer illustrated in Figure 7.3 can be broken down into three main circular layers. Each layer of the model will be discussed.
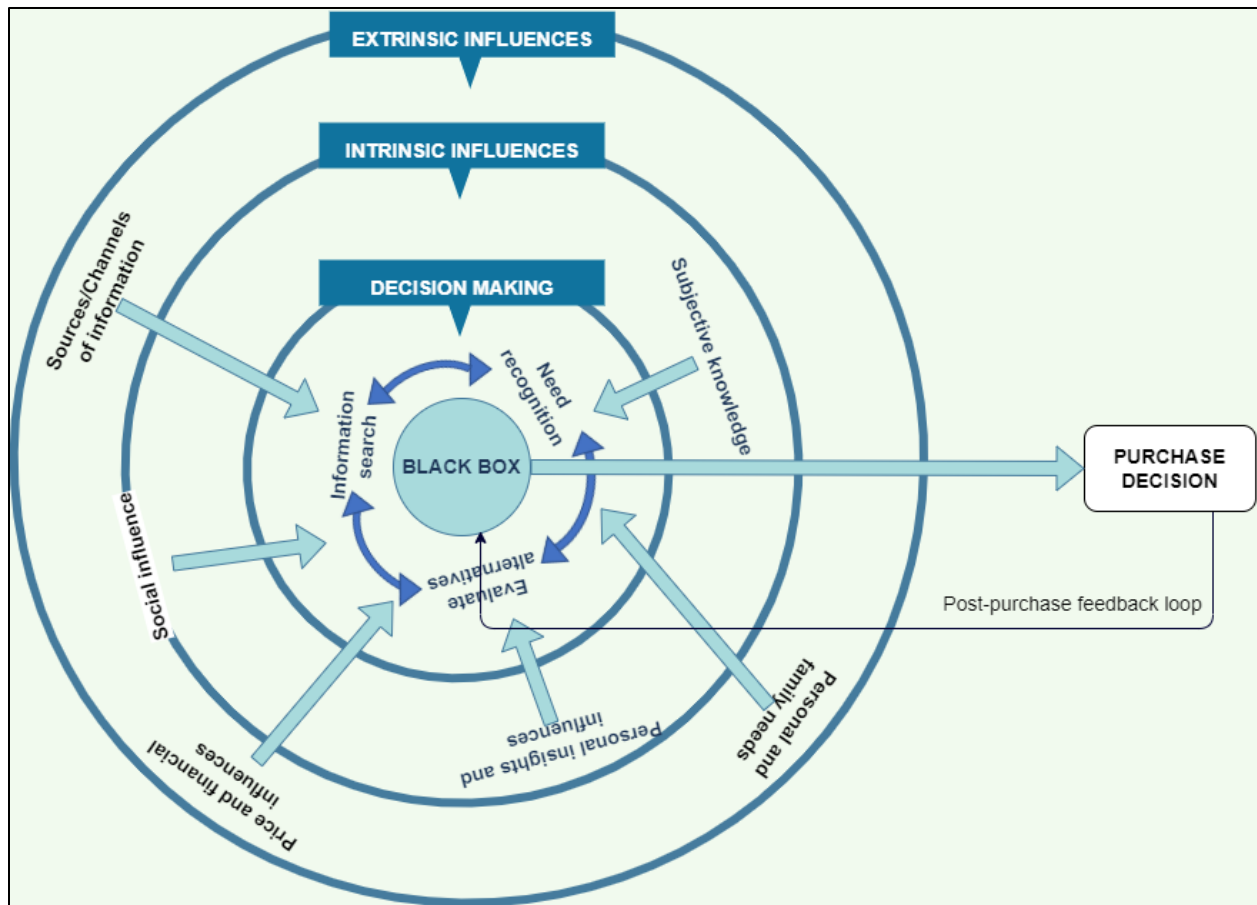
Figure 7.3: The capricious and ubiquitous decision-making model of the hyper-connected consumer

7.4.1 The first layer: Decision-making

The first layer at the centre of the model indicates the core of the model, which illustrates a 'black box'. The black box represents the human brain and the processes that occur within the human brain (Sharma, Paul, Srivastava, Yadav, Mendy, Sarker & Bansal, 2021:882). The 'black box' is what happens in the consumer's brain – it is the cognitive driver of decision making – and is surrounded by the traditional decision-making tasks (need recognition, information search and evaluate alternatives). It is important to note, however, that these tasks are argued not to be sequential, but may occur one before the other and in no particular order. For example, it may begin with searching or browsing for information or interacting socially online. The information received in the online interactions may then drive or help formulate the creation of a need. Alternatively, there may well be a need that is the originator of an online search process, much like in the

EBM model but need recognition, need not necessarily be followed by information search. The same holds true of the task of 'alternative evaluation' which may turn out to be the instigator of need creation or followed by more information search. In this way, these tasks are happening all the time, but with no fixed order or sequence, in an online, hyper-connected world. It is therefore argued that the idea of describing decision-making as 'loop', be replaced by the phrase 'multi-directional interaction'.

The first layer of the model clearly shows that in a hyper-connected environment, the consumer's decision-making has shifted from a rational, predictable and sequential process to a capricious and ubiquitous process that does not follow any specific direction or even logic, and that can occur anywhere and anytime, across physical and virtual worlds.

7.4.2 The second layer: Intrinsic influences

The second circular layer of the proposed capricious and ubiquitous model indicates the intrinsic influences that influence the decision-making of the hyper-connected consumer, and encompass the intrinsic factors identified in this study (see Figure 7.3). Intrinsic influences include factors personal to the consumer. The Intrinsic influences (which are identified from the latent factors) include:

- Personal insights and influences: The consumer's internal insights such as knowledge of the brand or product, past experiences and the consumer's personal or internal influences such as perception, attitude and values towards the product/brand.
- Subjective knowledge: The attitude and motivation that the consumer has of the product/brand. Subjective knowledge also refers to how much or what the consumer thinks they know about the product.

7.4.3 The third layer: Extrinsic influences

The third layer (the outermost layer) of the model (see Figure 7.3) indicates the extrinsic influences that influence the decision-making of the hyper-connected consumer. The extrinsic influences are external to the consumer and include:

- Sources/channels of information: The influence of information obtained from various channels and sources, on consumers' purchase decisions.
- Price and financial influence: The price of the product and finding information and comparing the different prices of a product or different brands.
- Personal and family needs: The consumer's current situation as well as the needs and wants of the consumer's family.

7.4.4 Factors that are both intrinsic and extrinsic

Factors can also fall between the intrinsic and extrinsic layers, such as the social influence factor identified in the research.

- Social influences: The social influence factor can be seen to be placed between the intrinsic and extrinsic layers in the model illustrated in Figure 7.3, as the social factor consists of both intrinsic and extrinsic elements. The social influences factor posits that social factors from the consumer's external environment will have an influence on the consumer's emotions, mood, attitudes etc. which influence how the consumer makes purchase decisions.

The proposed model illustrated in Figure 7.3 specifies that once the hyper-connected consumer has made a purchase decision, the hyper-connected consumer's purchase decision leads to a post-purchase feedback loop that feeds back into the decision-making process. The post-purchase feedback loop will entail the consumer's experience of the product or brand.

The proposed capricious and ubiquitous model illustrated in Figure 7.3 suggests that in a hyper-connected world in which consumers are continuously and automatically

connected to the internet and devices and are being fed information, consumers' decision-making is a capricious and ubiquitous multi-directional interaction that is constant and continuous. Hyper-connectivity has led to the decision-making that has moved from being a sequential process to a constant process that happens at anytime and anywhere. The research found that consumers' decision-making is influenced by their hyper-connectivity. The hyper-connected consumer is more empowered with information, communication is bidirectional. It happens in real-time and constant access to online social environments has resulted in a more dynamic and less rigid decision-making process. The hyper-connected consumer's decision process is found to be an iterative circular multi-directional interaction in which hyper-connected consumers are continuously in the process of making a purchase decision.

7.5   RECOMMENDATIONS

Grounded on the findings of the empirical investigation discussed in chapters 5 and 6, as well as the conclusions drawn, several recommendations can be offered. The recommendations are discussed below.

7.5.1.1 Future research

Hyper-connectivity has resulted in 'always-on' consumers who have become accustomed to continuous and often automatic connectivity to the internet, consumers who are more informed and empowered (Nijs, 2019:26). With a click of a button, hyper-connected consumers are able to find information, evaluate products and actively make purchase decisions within a matter of minutes (Webster, 2021). The results of the research indicate that the hyper-connected consumer segment is increasing and with the COVID-19 restrictions in 2020, hyper-connectivity among consumers have accelerated. The rise in hyper-connected consumers requires that academia, business and marketers research the hyper-connected market, their behaviour, characteristics and how they make decisions. The current research results have shed some light on the decision-making of

the hyper-connected consumer and the latent factors that influence the decision-making process, which is not covered in much detail in the literature.

It is recommended that the current research be used as a baseline for future research to delve deeper into hyper-connected consumers and how they behave and make purchase decisions. A greater understanding of the hyper-connected consumer segment will provide businesses with more information on how to develop effective marketing plans and strategies for the hyper-connected market. Business is encouraged to conduct further quantitative research assessing the needs and wants of the hyper-connected consumer. Businesses could make use of their online social media sites as well as the business website or e-commerce site to conduct research. A short survey could for example be placed at the checkout of the e-commerce site to gather information from the consumer. Mandal (2021) suggests that proper online customer research will assist businesses in building relationships with customers and formulating better marketing strategies that are based on the needs and wants of customers.

The proposed model indicates that at the core of the decision-making of the hyper-connected is a 'black box,' which represents the consumer and their thought process. The 'black box' could represent consumer perceptions formed from internal and external stimuli that the consumer is exposed to. Perception is viewed as a motivational driving force that encourages consumer engagement and guides decision-making (Stampa, Schipmann-Schwarze & Hamm, 2020:5). Perception is an unconscious process that occurs internally in the consumer's mind (Ngugi et al., 2020:34) which can also be referred to as a 'black box'. In their research, Sharma, Paul, Srivastava, Yadav, Mendy, Sarker and Bansal (2021), highlight the human brain and the process that occurs within the human brain as a 'black box' which requires further investigation. It is recommended that neuromarketing research be conducted to investigate further the consumer 'black box' and consumer perception.

7.5.1.2 Marketing strategies

Driven by hyper-connected, ubiquitous technology, the results indicate that the days of the linear decision-making models are obsolete. In a hyper-connected environment, consumers often move back and forth between the need recognition, search for information and evaluation of alternative tasks of decision making. Consumers could also skip a stage and move straight to purchase or not make a purchase at all. The research thus proposes a capricious and ubiquitous decision-making model that highlights that the decision-making process of the hyper-connected consumer occurs in an iterative circular multi-directional interaction. Grewal and Roggeveen (2020) state that as the consumer decision process increasing becomes non-linear due to the increased use and reliance on technology, IoT, automation technology, it is increasingly important for businesses to consider the consumer decision process from a cognitive, emotional and behavioural perspective. To fully connect with and influence the hyper-connected consumer, businesses and marketers must thus ensure that they can align their marketing strategies to the unique decision-making of the hyper-connected consumer.

The results also provided insight into the profile of a hyper-connected consumer within South Africa. The findings of the research would assist academia, businesses and marketers to better understand the hyper-connected consumer within South Africa and the way in which they make purchase decisions, in order to develop marketing strategies that appeal to these consumers. It is recommended that the identified profile of the hyper-connected consumer be considered when developing strategies for the hyper-connected market. A customer profile can assist the business in improving customer experience, attracting the right customer and retaining customers. The customer profile will also assist businesses in targeting and engaging with the hyper-connected consumer through the right channels and develop marketing messages, images and content that are specific to the needs and wants of the hyper-connected consumer.

At a strategy level, firms need to consider 'push' versus 'pull' marketing approaches when reaching out to hyperconnected consumers. At the same time, the choice between

'shotgun' versus 'rifle' approaches needs to be evaluated. While these strategies have been around for some time (Sharma, Raney & Luhar, 2021:2305), they are likely to take on new meaning in this new capricious and ubiquitous world. Firms will also need to implement (i) training of staff to deal with this new world, (ii) develop sales processes to cope with the disruption, as well as (iii) metrics that can be used to measure performance in a capricious and ubiquitous hyperconnected world.

7.5.1.3 Marketing communication channels

The more hyper-connected consumers become, the greater the need for businesses to find ways to engage with the hyper-connected consumer. It is recommended that businesses move their marketing channels towards hyper-connectivity, in a way that allows consumers to connect anytime, anywhere with the business through various online channels, with the focus not necessarily being on a sequential process as has traditionally been the case. Businesses can do this by unifying their marketing strategies and ensuring that all their marketing channels are connected in real-time. Unifying the marketing strategy ensures that a single unifying message is communicated across various channels (online and offline) (Al Fayad, 2020:75). A unified marketing strategy will also ensure that a customer is able to access a business through various channels and have their information, purchase history and previous data available on the different channels in real-time. A customer for example could sign up and create a profile through the businesses Instagram site using their smartphones. Later on, the customer could through e-mail notification, access the businesses e-commerce site on their laptop and put products in the online shopping cart. The customer could log out without making a purchase and at a different stage download the businesses m-commerce app where they finally make their purchase. A unified marketing strategy will ensure that the customer's data is pulled through on all the different channels (social media site, online e-commerce site and business m-commerce app). When the customer accesses each channel, it will for example notify the customer if they have products in their shopping cart or remind customers about products that they have browsed previously on a different channel and even keep a record of discounts or coupons that the customer can make use of.

Smartphones were found to be the predominant device used by hyper-connected consumers to conduct various activities. Retailers can make use of smartphones as an opportunity to engage and communicate with consumers. Businesses can make use of location-based services such as geotargeting and push notifications. Geotargeting SMS for example identifies when customers are within a specific proximity of a store to send messages notifying the customer of specific specials or just to notify the customer that their store is in close proximity (Patsiotis, Atik & Perrea, 2020:1048). Pastsiotis et al., (2020) state that geotargeting and push notifications can stimulate impulse buying by the consumer.

Businesses should also invest in the various online communication and social media platforms that are available on smartphones. The use of online communication platforms together with real-time data analytics that is provided by these platforms can assist businesses in developing personalised, real-time interaction with customers. Facebook for example provides businesses with consumer analytics that provides insights into customer demographics, customer interest, likes and hobbies, lifestyle etc for the Facebook and Instagram apps. The analytics also provides insight into who is interested in your business and what kind of content the consumers are interested in. Businesses can make use of the Facebook analytics tools to target the right customers with content that resonates specifically with the businesses' audiences using the correct tools. Facebook pop-up advertisements can also be used by businesses to target specific advertising to specific customers. Al Kurdi and Alshurideh, (2021) suggests that repeated advertisements on social media such as Facebook will have a greater impact on the target audience. Good quality advertisements on Facebook will also result in the awareness and attention of the target audience.

The research identified six factors that are grouped into intrinsic and extrinsic factors that influence the decision-making process of the hyper-connected consumer. Although further research could identify more factors, the research provides an indication of factors that businesses can make use of in influencing the decision-making of the hyper-connected consumer. Hyper-connectivity provides businesses with various

sources/channels through which to interact, communicate and influence the consumer. The research highlights the fact that social media platforms are a key communication platform for hyper-connected consumers. Businesses can thus make use of social media platforms such as Facebook and Instagram to advertise products, provide product information such as price and interact with customers. These social media platforms can also be used to target advertisements and communication with family members or social groups that may influence decision-making. Social media platforms also allow consumers to provide businesses with feedback, reviews and testimonials. The product feedback and reviews provide potential customers with insights and knowledge. Businesses can make use of the feedback and reviews to influence the subjective knowledge and personal insights that consumers form regarding their products. Product reviews from social media influencers have become a popular means through which customers gather product information. Consumers perceive product reviews from social media influencers as more credible and trustworthy as compared to paid advertisements (Weisnueller, Harrigan, Wang & Souter, 2020:168). Delbarere, Michael and Phillips (2020), indicate that reviews of social media influencers have been shown to foster brand engagement and interest. Integrating social media influencers into the marketing strategy can assist businesses with creating a positive perception of their product or brands.

The research highlights that the hyper-connected consumer is continuously fed a deluge of information from different channels and platforms both offline, more commonly today, online. It is thus important that business breaks through the clutter with their marketing messages. It is recommended that businesses make use of their customer data to ensure that the consumer is provided with the right information about the business, through the right platforms and channels at the right time. Artificial intelligent enabled chatbots are a great tool that businesses can make use of providing customers with the correct and relevant information when the customer chooses to reach out to the business. Chatbots are said to be a fast response to customer queries, build emotional relationships with customers and can assist customers in conducting product comparisons and providing personalised recommendations (Selamat & Windasari, 2021:3). Chatbots also assist businesses in collecting relevant customer data that can be analysed to provide greater

insights into their customer's needs and wants. Yen and Chiang (2021) indicate that the use of chatbots by businesses has a positive influence on the purchase intention of consumers. Presti, Maggiore and Marino, (2021) highlight that chatbots can stimulate the purchasing process through interaction with consumers.

7.5.1.4 Government support

To support the growth of hyper-connectivity and a hyper-connected society and to close the digital divide within South Africa, the government must provide support such as infrastructure that fosters high-speed connectivity, information technologies and digital literacy (Jacobs, 2021). The government needs to ensure equitable access that is universally affordable to all citizens. Although the South African government, does provide free internet access in some 'hotspots' around the country, it is often limited access and individuals have to travel a distance to access it (Buwa, Shibeshi & Terzoli, 2021:2). It is recommended that the government improve their free Wi-Fi initiative to be more accessible throughout the country.

7.6 LIMITATIONS OF THE RESEARCH

A principal limitation of the current research study centres on the sample included in the research. The sample size in both part 1 and part 2 of the empirical investigation, considering the statistical methods used, warrants some consideration. While the minimum requirements with regard to sample size were met for both the confirmatory factor analyses (minimum sample size = 100 with ≤ 5 constructs, each with more than 3 items and high commonalities) and exploratory factor analyses (sample size = 1 to 5 respondents per item), a larger sample may provide more stable solutions (Hair et al.,2018:600). The effect of sample size was somewhat controlled for by the use of more stringent cut-off criteria in terms of fit and significant factor loadings.

One of the key limitations of the research centres on the generalisability of the findings. As much as the sample is representative of the population of South Africa in terms of

income and age, most respondents were from the Gauteng province, which may thus not be representative of the greater South African population. Future research could, therefore, use a sample that is more representative of the South African population. Also, as far the application of the findings in other parts of the world is concerned, this study drew on South African respondents, and the findings are therefore only applicable in the South African context.

The digital divide, as indicated in chapter 1 could also be a limitation for the research. Although telecommunication and internet penetration has increased in South Africa, there is still a lack of infrastructure, high data costs and lack of affordability and ownership of technological devices among the different population and income groups within South Africa (du Preez & le Grange, 2020:95). South Africa is already known as one of the most unequal societies worldwide and the digital divide perpetuates this vicious cycle of inequality (du Preez & le Grange, 2020:96). The digital divide fosters the gap in socio-economic activities, business development, education, financial inclusion and job opportunities within the country (Arakpogum et al., 2020:2). The digital divide could result in a small portion of the population being classified as hyper-connected.

7.7   CONTRIBUTION TO KNOWLEDGE

One of the key drivers of societal shifts over the past few decades has been advancements in technology (Piatrov & Kusá, 2019:788). Rapid technological advancements have led to a digital age where internet connectivity, the web, digital devices and the IoT have moved the world towards hyper-connectivity (Swaminathan et al., 2020:24). Because of hyper-connectivity, consumer behaviour is evolving, where consumers today are more connected than ever before, use multiple devices, and are constantly connected through these devices (Parro & Jordan, 2017:6; Evans, 2019:4). Consumers are increasingly becoming hyper-connected and as the hyper-connected market increases, it is important that academics as well businesses and marketers gain a better understanding of the hyper-connected consumer to better understand how to serve their needs.

The research aimed to fill a void in the academic literature by determining what the decision-making process of the hyper-connected consumer is. The EBM model of the consumer decision process is the most common model used in literature and industry to under the decision-making process of consumers. An adapted version of the EBM model that consisted of four core stages (need recognition, information search, evaluate alternative and purchase decision) was thus used to identify and extract latent factors that influence the decision-making process of the hyper-connected consumer in South Africa. The research however found that the hyper-connected consumer decision-making is not a linear process, but an iterative circular multi-directional interaction that occurs capriciously and ubiquitously. An adapted model of the ubiquitous decision-making of the hyper-connected consumer was thus proposed.

The research contributes to the body of knowledge by providing a new proposed model to explain the decision-making process of the hyper-connected consumer within South Africa. Businesses and marketers can use the model to better understand their customers and what influences their hyper-connected customers' purchase decisions. The research also provides a profile of the hyper-connected consumer within South Africa. The profile of the hyper-connected consumer will provide businesses and marketers greater insight on who to target and how to segment their markets. The proposed capricious and ubiquitous model of decision-making for the hyper-connected consumer represents a shift from traditional decision-making models (such as the EBM model) that reflect a linear decision-making process. The research represents a step forward in exploring and understanding how consumers adapt and change their behaviour in an increasingly hyper-connected environment.

7.8 SUMMARY

The continuous development of technology and the increase in connectivity between individuals, devices, and things lead the world increasingly towards hyper-connectivity. The increase in connectivity and technology has resulted in changes in how consumers interact with each other and the world around them and has led to hyper-connected consumers. How hyper-connected consumers gather, process and share information is now augmented by devices such as smartphones and laptops. The hyper-connected consumer is always on, meaning that they are continuously and automatically connected to each other and devices through the internet. The rate of increase in hyper-connectivity and hyper-connected consumers has been spurred by the COVID-19 pandemic. Owing to worldwide disruptions, consumers turned towards technology and increasingly became connected. With the increase of hyper-connected consumers worldwide, it is important to understand how hyper-connectivity has influenced consumer behaviour. For the business environment, an understanding of how consumers behave and make decisions is essential in proving the right product offering, using the right communication media and essentially succeeding. As such, the research aimed to better understand the decision-making process of the hyper-connected consumer. The research objective was thus to determine the decision-making process of the hyper-connected consumer within South Africa to better understand the growing hyper-connected market.

The current research identified and extracted latent factors that influence the decision-making process of the hyper-connected consumer within South Africa. The literature review identified measured variables that were used as the basis for developing the research instruments used in parts 1 and part 2 of the empirical investigation.

Part 1 of the empirical investigation consisted of EFA through which six latent factors were identified. The six factors were used to propose a model that would be confirmed in part 2 of the empirical investigation. To confirm the proposed model of the decision-making of the hyper-connected consumer, part 2 of the empirical investigation consisted of CFA with SEM. The results indicated an adequate model fit and confirmed the structural

validity and reliability of the six factors identified. The results indicate that the decision-making process of the hyper-connected consumer is not linear but an iterative circular multi-directional interaction. As such, an amended model in line with the results was proposed.

The research results indicate that consumer behaviour within a hyper-connected world is more than just a series of stages or steps. Consumer behaviour has evolved with technology. The more hyper-connected consumers become, the more the consumer's decision-making is influenced by factors such as personal insights and influences, social influences, subjective knowledge, sources/channels of information, price and financial consideration and personal and family needs.

At the end of 2021, approximately 46 billion connected devices are predicted to have been installed (Nick, 2021). With the rapid evolution of technology and the introduction of 5G technology, this number of connected devices is predicted to exceed 75 billion by 2025 (Statista.com, 2020). The continuous advancements of technology have been a catalyst for change that has moved the world towards hyper-connectivity (Swaminathan et al., 2020:6). In a hyper-connected environment in which the increased and continuous usage of digital and mobile devices, access to the internet, and connectedness to the web have disrupted how consumers behave, the boundaries of consumer behaviour and decision-making have become blurred (Khan et al., 2020:283). As such, there is a necessity to reassess consumer behaviour and the consumer decision-making process within the context of an increasingly hyper-connected environment. The current research represents a first step approach in addressing and understanding the dynamic behaviour of the hyper-connected consumer.

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APPENDICES

APPENDIX A:

Informed consent form and research instrument for part 1 of the empirical research

Ethics clearance reference number: 2018_MRM_010
Date:

Title: Redefining consumer decision-making in a hyper-connected world: A South African context

Dear Prospective Participant,

My name is Safura M Kallier, and I am doing research with Dr Cornelius Bothma, a lecturer in the Department of Marketing and Retail Management and Professor Jan Wiid a professor in the Department of Marketing and Retail Management, towards a Doctoral degree (PhD Bus Man) at the University of South Africa. We are inviting you to participate in a study entitled Revisiting the consumer decision making in a hyper-connected world: A South African context.

WHAT IS THE PURPOSE OF THE STUDY?

This study is expected to collect important information that could contribute to the body of knowledge by providing more insight into the hyper-connected consumer and their decision-making process. The study will also benefit the South African market by providing knowledge on the decision-making process of the hyper-connected consumer and on how to better serve this segment.

WHY AM I BEING INVITED TO PARTICIPATE?

You have been invited to participate in this study as you are a consumer who resides within the nine provinces of South Africa, you are between the ages of 18 and 65, you have access to the internet and an e-mail account. You have also provided your details to iFeedback and has given them permission to include your details into their database. You will be part of a group of consumers who will be chosen to participate in this study.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves an online web-based survey that will take **approximately 30 minutes** for you to complete. You will receive an e-mail which will contain all the relevant information about the study and the researcher's details. This e-mail will also contain a link to the online platform where the questionnaire will be found. Once you click on this link, a web page will open to the questionnaire where you will be shown the details of the study and asked for your consent to participate in the study.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. You are free to withdraw at any time and without giving a reason. All information obtained in this study will be kept strictly confidential. The questionnaire will be anonymous. All identifying information will be removed from the collected materials, and all materials will be stored securely and electronically.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

As the hyper-connected consumer segment increases, it is important for businesses and marketers to gain a better understanding of these consumers' and how they make decisions. Knowledge of the hyper-connected consumers' decision-making process will provide businesses and marketers with a better understanding of how to serve the hyper-connected consumer segment. This study will also contribute to the body of knowledge by providing more insight on the hyper-connected consumer and their decision-making process. The study will also benefit the South African market by providing knowledge on the decision-making process of the hyper-connected consumer and on how to better serve the growing segment.

ARE THEIR ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

As this study is done through an online web-based platform, in order to access the questionnaire, the respondent will need access to the internet. This may result in minor cost that the respondent may incur when accessing and completing the questionnaire. This study has received written approval from the Research Ethics Review Committee of the College of Economic and Management Sciences (CEMS) Research Ethics Review Committee, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

All information provided by the respondent will be kept confidential. Your name will not be recorded anywhere, and no one will be able to connect you to the answers you give for the study. The questionnaire will be anonymous. All identifying information will be removed from the collected materials, and all materials will be stored securely and electronically on a password-protected memory device.

Your answers may be reviewed by people responsible for ensuring that research is done properly, including the research supervisors, the statisticians and those involved in the data collection and members of the Research Ethics Review Committee.

The anonymous data may be used for other purposes, such as journal articles and/or conference proceedings.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

The electronic copies of the data gathered will be stored for five years. The data will be stored on a password-protected memory device. After the five years, the data will be destroyed by permanently deleting it off the memory device.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the College of Economics and Management Science at Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact the researcher, Safura M Kallier on 0124293758 or e-mail kallism@unisa.ac.za.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Safura M Kallier on 0124293758 or e-mail kallism@unisa.ac.za. Should you have concerns about how the research has been conducted, you may contact Dr N Bothma on e-mail: Bothmach@unisa.ac.za.

Should you have concerns about how the research has been conducted, you may contact Dr N Bothma on e-mail: Bothmach@unisa.ac.za. Contact the research ethics chairperson of the Research Ethics Review Committee of the College of Economics and Management science if you have any ethical concerns.

Thank you for taking time to read this information and for participating in this study.
Thank you
Safura M Kallier

CONSENT TO PARTICIPATE IN THIS STUDY

By selecting start and completing the questionnaire, I confirm that the person asking my consent to participate in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

Dear Prospective Participant,

I am a doctoral student in the Department of Marketing and Retail at the University of South Africa. As part of my doctoral thesis I am researching under the supervision of Dr. CH Bothma and Professor JA Wiid. This research study aims to determine the decision-making process of the hyper-connected consumer within South Africa. This research will contribute to the body of knowledge by providing more insight into the hyper-connected consumer and what influences their respective decision-making processes. The research will also benefit the South African market by providing knowledge on the factors that influence the decision-making process of the hyper-connected consumer and on how to better serve this growing segment.

I am inviting you to participate in this research. The questionnaire will take **30 minutes** of your time. Your participation is completely voluntary, and you may withdraw from the research at any time during the survey. The questionnaire is anonymous, and all the information collected in this research will be kept strictly confidential. All identifying information will be removed from the collected materials, making the research anonymous other than to myself, and all materials will be stored securely and electronically.

Thank you for your time.
Mrs Safura Kallier

*I agree to participate in the study.

I agree	
I do not agree	

START SURVEY

SECTION A

QUESTION 1

Please indicate how often you connect to the internet

1.1	I **occasionally** connect to the internet.	1
1.2	I am **regularly** connected to the internet.	2
1.3	I am **continuously** connected to the internet.	3
1.4	I am **continuously and automatically** connected to the internet.	4

QUESTION 2

Please indicate which of the following methods you use to connect to the internet at home.
(*More than one option can be selected*)

2.1	Mobile (using a sim-card cellular phone - smartphone or featurephone)	1
2.2	Fixed-line or cables (ADSL or fibre)	2
2.3	Home LTE (using an LTE SIM card in a modem or router)	3
2.4	Other	4
If other, please specify:		

QUESTION 3

Please indicate how much data you use per month when accessing the internet.

3.1	Between 0-1 Gig	1
3.2	1 GB and more but less than 5 GB	2
3.3	5 GB and more but less than 10 GB	3
3.4	10 GB and more but less than 50 GB	4
3.5	50 GB and more	5
3.6	I do not know	6

QUESTION 4

On average, how **many hours a day** do you **ACTIVELY** spend on the internet?

4.1	Less than 1 hour	1
4.2	1 hour and more but no more than 4 hours	2
4.3	4 hours and more but no more than 7 hours	3
4.4	7 hours and more but no more than 10 hours	4
4.5	Over 10 hours	5

QUESTION 5

Please indicate which of the following devices you **OWN.** (*More than one option can be selected):*

5.1	Featurephone (Mobile phone that has some multimedia capabilities and can connect to the internet but lacks advanced functionality)	1
5.2	Smartphone (A mobile phone that can perform many functions of a computer, has internet access and an operating system such as Android that allows for the downloading of external applications)	2
5.3	Desktop computer	3
5.4	Laptop	4
5.5	Tablet device (Wireless portable computer that is often touchscreen, e.g., iPad, Samsung Galaxy Tab)	5
5.6	Smart Television (Television that can integrate with internet and web functionalities, e.g., Apple TV)	6
5.7	Wearable device (A device such as a Fitbit, smart watch, etc. that is worn on the human body)	7
5.8	Smart speaker (Wireless speaker that is capable of voice commands, streaming audio content and communicating with other devices such as Amazon Echo)	8
5.9	Smart home devices (Devices such as a smart thermostat, light bulbs, smart vacuum and security system)	9
5.10	Smart car devices (e.g., Smart GPS tracker, smart dash cam and smart driving assistant).	10
5.11	Gaming consoles (e.g. PlayStation, Xbox)	11

QUESTION 6

Please indicate how many **hours during a day** you **access the internet** on any of the following **devices**.

	Type of device	Not applicable (N/A)	Occasionally Over an hour but no more than 4 hours	Regularly Over 4 hours but no more than 7 hours	Very Frequently Over 7 hours but no more than 10 hours	Continuously >10 hours a day
6.1	Featurephone	1	2	3	4	5
6.2	Smartphone	1	2	3	4	5
6.3	Desktop computer	1	2	3	4	5
6.4	Laptop	1	2	3	4	5
6.5	Tablet device	1	2	3	4	5
6.6	Smart Television	1	2	3	4	5

QUESTION 7

Please indicate how many applications (apps) you **USE** regularly on each of the following devices. (*This question relates to the number of apps you actually make USE of, and not the number of apps you have on a device*)

	Type of device	Not applicable (N/A)	1-4 Apps	5-8 Apps	9-12 Apps	12-16 Apps	More than 16 apps
7.1	Smartphone	1	2	3	4	5	6
7.2	Laptop	1	2	3	4	5	6
7.3	Desktop computer	1	2	3	4	5	6
7.4	Tablet device	1	2	3	4	5	6
7.5	Smart television	1	2	3	4	5	6

QUESTION 8

From the list of apps below, rank the top **five (5)** apps that are difficult to live without on a **daily basis.**

	App	
8.1	Facebook	1
8.2	Snapchat	2
8.3	Instagram	3
8.4	Twitter	4
8.5	LinkedIn	5
8.6	Communication app (e.g. WhatsApp, WeChat, Facebook messenger)	6
8.7	Music app (e.g. Spotify)	7
8.8	Dating app (e.g. Tinder)	8
8.9	Food delivery app (e.g. Mr Delivery, Uber eats)	9
8.10	Airbnb	10
8.11	Maps/GPS app (e.g. Google maps, Waze)	111
8.12	Sleep app (e.g. Calm)	12
8.13	Health and Fitness tracker app (e.g. Fitbit app, Steps)	13
8.14	Email app (Gmail app, webmail app)	14
8.15	Ecommerce app (e.g. Superbalist or loot mobile app)	15
8.16	Banking app (e.g. FNB, Standard bank, Absa or any other bank apps)	16
8.17	Payment app (e.g. Snapscan, Zapper, PayPal, Apple pay, Samsung Pay)	17
8.18	Search engine (e.g. Google chrome app)	18

		19
8.19	Video app (e.g. YouTube, Netflix, Showmax)	
8.20	Taxi app (e.g. Uber or Taxify)	20
8.21	Safety app (e.g. Namola)	21

QUESTION 9

Indicate which of the following devices you **USE** to conduct the activities listed below. *Please select not applicable (N/A) if you do not use any of the devices for an activity.*

	Activity	**N/A**	**Smartphone**	**Tablet**	**Laptop**	**Desktop**
9.1	Purchase products online from an e-commerce website (e.g., Mr Price online store, Zando).	1	2	3	4	5
9.2	Access e-mail	1	2	3	4	5
9.3	Do banking	1	2	3	4	5
9.4	Make payments/pay bills (e.g. Telephone, credit cards etc.)	1	2	3	4	5
9.5	Socialise through social media platforms (e.g. Facebook, Instagram, Twitter)	1	2	3	4	5
9.6	Entertainment (e.g. Stream music and videos, read books, play games)	1	2	3	4	5
9.7	Use a communication application to chat (e.g. WhatsApp, Facebook Messenger)	1	2	3	4	5
9.8	Use a search engine (e.g. Google, Yahoo)	1	2	3	4	5
9.9	Access your car (e.g. open/close windows, lock car, track speedometer, tyre pressure etc.) through an app	1	2	3	4	5

9.10	Control home devices (e.g. Gate, garage, home security system through an app)	1	2	3	4	5

QUESTION 10

Please indicate the percentage of your total monthly expenditure that you spend making purchases online or in-store. (The total percentage of both must add up to 100%. For example, online 50% + in-store 50% = Total 100%)

Online	1
In store	2
Total	100%

SECTION B

QUESTION 11

Read each statement below and indicate the extent to which you agree or disagree (where 1 = strongly disagree & 5 = strongly agree) **regarding what influences you when making a purchase decision.**

		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
11.1	Past experiences I have had with the product/brand.	1	2	3	4	5
11.2	The current situation that I am in. (If I have run out of a product that I need)	1	2	3	4	5
11.3	My knowledge of the product/brand.	1	2	3	4	5
11.4	My attitude or how I feel about a product/brand.	1	2	3	4	5
11.5	Rely on the memory of previous experience of a product/brand.	1	2	3	4	5
11.6	Look at past experiences I have had with the product or brand.	1	2	3	4	5
11.7	Purchase certain products or brands out of habit.	1	2	3	4	5
11.8	Features of the product/brand.	1	2	3	4	5

11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.)	1	2	3	4	5
11.10	My perception of what indicates quality.	1	2	3	4	5
11.11	The perceived value of the product attributes.	1	2	3	4	5
11.12	The perceived value of each evaluation criteria. (If a product/brand scores low in one criterion (price) but high in other criteria (quality), the product will still be purchased because it is a good price.	1	2	3	4	5
11.13	My cultural beliefs.	1	2	3	4	5
11.14	My social standing in society.	1	2	3	4	5
11.15	The people I socialise and interact with.	1	2	3	4	5
11.16	My mood and emotional state.	1	2	3	4	5
11.17	How I feel in the moment.	1	2	3	4	5
11.18	My personality (impulsive or not)	1	2	3	4	5
11.19	My personal values.	1	2	3	4	5
11.20	My cultural norms and beliefs.	1	2	3	4	5
11.21	My social class (my standing in society).	1	2	3	4	5
11.22	Personal influences such as the people I socialise with.	1	2	3	4	5
11.23	An extensive search into the product/brand.	1	2	3	4	5
11.24	My motivation (reason) for purchasing a product.	1	2	3	4	5
11.25	The knowledge I have about a product or brand.	1	2	3	4	5
11.26	The attitude I have towards a product or brand.	1	2	3	4	5

11.27	My values and how I live my life.	1	2	3	4	5
11.28	Find information on products/brands from the market (In store)	1	2	3	4	5
11.29	Get information on products/brands through the marketing media such as advertisements or pamphlets.	1	2	3	4	5
11.30	Get information on products/brands that I need from media reports.	1	2	3	4	5
11.31	The product/brand country of origin	1	2	3	4	5
11.32	The amount of money I have available to purchase the product.	1	2	3	4	5
11.33	Find information by doing an online search about the product/brand.	1	2	3	4	5
11.34	The different prices of the products/brands.	1	2	3	4	5
11.35	The price of the product.	1	2	3	4	5
11.36	My family and their needs.	1	2	3	4	5
11.37	My family's needs and wants.	1	2	3	4	5
11.38	My current situation. (If I have run out of a product)	1	2	3	4	5

SECTION C
QUESTION 12

Please indicate which gender you identify with.

12.1	Male	1
12.2	Female	2
12.3	Other	3

QUESTION 13

Please indicate your age.

13.1	18-25	1
13.2	26-35	2
13.3	36-45	3
13.4	46-55	4
13.5	56-65	5

QUESTION 14

Please indicate your employment status.

14.1	Part-time	1
14.2	Employed	2
14.3	Unemployed	3
14.4	Self-employed	4

QUESTION 15

Please indicate where in South Africa you reside most of the time.

15.1	Eastern Cape	1
15.2	Free state	2
15.3	Gauteng	3
15.4	Kwazulu Natal	4
15.5	Limpopo	5
15.6	Mpumalanga	6
15.7	Northern Cape	7
15.8	North West	8
15.9	Western Cape	9

QUESTION 16

Please indicate the category that best describes your gross monthly income.

16.1	R0–R10 000	1
16.2	R10 001–R30 000	2
16.3	R30 001–R60 000	3
16.4	R60 001–R100 000	4
16.5	More than R100 000	5
16.6	Prefer not to answer	6

APPENDIX B:

Informed consent form and research instrument used in part 2 of the empirical investigation

Ethics clearance reference number: 2018_MRM_010
Date:

Title: Redefining consumer decision-making in a hyper-connected world: A South African context

Dear Prospective Participant,

My name is Safura M Kallier and I am doing research with Dr. Cornelius Bothma, a lecturer in the Department of Marketing and Retail Management and Professor Jan Wiid, a professor in the Department of Marketing and Retail Management towards a Doctoral degree (PhD Bus Man) at the University of South Africa. We invite you to participate in a study entitled Revisiting the consumer decision making in a hyper-connected world: A South African context.

WHAT IS THE PURPOSE OF THE STUDY?

This study is expected to collect important information that could contribute to the body of knowledge by providing more insight into the hyper-connected consumer and their decision-making process. The study will also benefit the South African market by providing knowledge on the decision-making process of the hyper-connected consumer and on how to better serve this segment.

WHY AM I BEING INVITED TO PARTICIPATE?

You have been invited to participate in this study as you are a consumer who resides within the nine provinces of South Africa, you are between the ages of 18 and 65, you have access to the internet and an e-mail account. You have also provided your details to Springvale online and have given them permission to include your details in their database. You will be part of a group of consumers who will be chosen to participate in this study.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves an online web-based survey that will take **approximately 30 minutes** for you to complete*.* You will receive an e-mail which will contain all the relevant information about the study and the researcher's details. This e-mail will also contain a link to the online platform where the questionnaire will be found. Once you click on this link, a web page will open to the questionnaire where you will be shown the details of the study and asked for your consent to participate in the study.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. You are free to withdraw at any time and without giving a reason. All information obtained in this study will be kept strictly confidential. The questionnaire will be anonymous. All identifying information will be removed from the collected materials, and all materials will be stored securely and electronically.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

As the hyper-connected consumer segment increases, it is important for businesses and marketers to gain a better understanding of these consumers' and how they make decisions. Knowledge of the hyper-connected consumers' decision-making process will provide businesses and marketers with a better understanding of how to serve the hyper-connected consumer segment. This study will also contribute to the body of knowledge by providing more insight into the hyper-connected consumer and their decision-making process. The study will also benefit the South African market by providing knowledge on the decision-making process of the hyper-connected consumer and on how to better serve the growing segment.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

As this study is done through an online web-based platform, to access the questionnaire, the respondent will need access to the internet. This may result in a minor cost that the respondent may incur when accessing and completing the questionnaire.
This study has received written approval from the Research Ethics Review Committee of the College of Economic and Management Sciences (CEMS) Research Ethics Review Committee, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

All information provided by the respondent will be kept confidential. Your name will not be recorded anywhere, and no one will be able to connect you to the answers you give for the study. The questionnaire will be anonymous. All identifying information will be removed from the collected materials, and all materials will be stored securely and electronically on a password-protected memory device.

Your answers may be reviewed by people responsible for ensuring that research is done properly, including the research supervisors, the statisticians and those involved in the data collection and members of the Research Ethics Review Committee.

The anonymous data may be used for other purposes, such as journal articles and/or conference proceedings.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

The electronic copies of the data gathered will be stored for five years. The data will be stored on a password-protected memory device. After the five-year period, the data will be destroyed by permanently deleting it off the memory device.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the College of Economics and Management Science at Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact the researcher, Safura M Kallier, on 0124293758 or e-mail kallism@unisa.ac.za.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Safura M Kallier on 0124293758 or e-mail kallism@unisa.ac.za. Should you have concerns about how the research has been conducted, you may contact Dr N Bothma on e-mail: Bothmach@unisa.ac.za.

Should you have concerns about how the research has been conducted, you may contact Dr N Bothma on e-mail: Bothmach@unisa.ac.za. Contact the research ethics chairperson of the Research Ethics Review Committee of the College of Economics and Management science if you have any ethical concerns.

Thank you for taking the time to read this information and participating in this study.
Thank you
Safura M Kallier

CONSENT TO PARTICIPATE IN THIS STUDY

By selecting start and completing the questionnaire, I confirm that the person asking my consent to participate in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

Dear Prospective Participant,

I am a doctoral student in the Department of Marketing and Retail at the University of South Africa. As part of my doctoral thesis, I am researching under the supervision of Dr. CH Bothma and Professor JA Wiid. This research study aims to determine the decision-making process of the hyper-connected consumer within South Africa. This research will contribute to the body of knowledge by providing more insight into the hyper-connected consumer and what influences their respective decision-making processes. The research will also benefit the South African market by providing knowledge on the factors that influence the decision-making process of the hyper-connected consumer and on how to better serve this growing segment.

I am inviting you to participate in this study. The questionnaire will take **30 minutes** of your time. Your participation is completely voluntary, and you may withdraw from the study at any time during the survey. The questionnaire is anonymous, and all the information collected in this study will be kept strictly confidential. All identifying information will be removed from the collected materials, making the study anonymous other than myself, and all materials will be stored securely and electronically.

Thank you for your time.
Mrs Safura Kallier

*I agree to participate in the study.

I agree	
I do not agree	

START SURVEY

SECTION A

QUESTION 1

Please indicate how often you connect to the internet

1.1	I **occasionally** connect to the internet.	1
1.2	I am **regularly** connected to the internet.	2
1.3	I am **continuously** connected to the internet.	3
1.4	I am **continuously and automatically** connected to the internet.	4

QUESTION 2

Please indicate which of the following methods you use to connect to the internet at home.
(*More than one option can be selected*)

2.1	Mobile (using a sim-card cellular phone - smartphone or featurephone)	1
2.2	Fixed-line or cables (ADSL or fibre)	2
2.3	Home LTE (using an LTE SIM card in a modem or router)	3
2.4	Other	4
If other, please specify:		

QUESTION 3

Please indicate how much data you use per month when accessing the internet.

3.1	Between 0-1 Gig	1
3.2	1 GB and more but less than 5 GB	2
3.3	5 GB and more but less than 10 GB	3
3.4	10 GB and more but less than 50 GB	4
3.5	50 GB and more	5
3.6	I do not know	6

QUESTION 4

On average, how **many hours a day** do you **ACTIVELY** spend on the internet?

4.1	Less than 1 hour	1
4.2	1 hour and more but no more than 4 hours	2
4.3	4 hours and more but no more than 7 hours	3
4.4	7 hours and more but no more than 10 hours	4
4.5	Over 10 hours	5

QUESTION 5

Please indicate which of the following devices you **OWN.** (*More than one option can be selected):*

5.1	Featurephone (Mobile phone that has some multimedia capabilities and can connect to the internet but lacks advanced functionality)	1
5.2	Smartphone (A mobile phone that can perform many functions of a computer, has internet access and an operating system such as Android that allows for the downloading of external applications)	2
5.3	Desktop computer	3
5.4	Laptop	4
5.5	Tablet device (Wireless portable computer that is often touchscreen, e.g., iPad, Samsung Galaxy Tab)	5
5.6	Smart Television (Television that can integrate with internet and web functionalities, e.g., Apple TV)	6
5.7	Wearable device (A device such as a Fitbit, smartwatch, etc. that is worn on the human body)	7
5.8	Smart speaker (Wireless speaker that is capable of voice commands, streaming audio content and communicating with other devices such as Amazon Echo)	8
5.9	Smart home devices (Devices such as a smart thermostat, light bulbs, smart vacuum and security system)	9
5.10	Smart car devices (e.g., Smart GPS tracker, smart dashcam, and smart driving assistant)	10
5.11	Gaming consoles (e.g. PlayStation, Xbox)	11

QUESTION 6

Please indicate how many **hours during a day** you **access the internet** on any of the following **devices**.

	Type of device	Not applicable (N/A)	Occasionally Over an hour but no more than 4 hours	Regularly Over 4 hours but no more than 7 hours	Very Frequently Over 7 hours but no more than 10 hours	Continuously >10 hours a day
6.1	Featurephone	1	2	3	4	5
6.2	Smartphone	1	2	3	4	5
6.3	Desktop computer	1	2	3	4	5
6.4	Laptop	1	2	3	4	5
6.5	Tablet device	1	2	3	4	5
6.6	Smart Television	1	2	3	4	5

QUESTION 7

Please indicate how many applications (apps) you **USE** regularly on each of the following devices. (*This question relates to the number of apps you make **USE** of, and not the number of apps you have on a device*)

	Type of device	Not applicable (N/A)	1-4 Apps	5-8 Apps	9-12 Apps	12-16 Apps	More than 16 apps
7.1	Smartphone	1	2	3	4	5	6
7.2	Laptop	1	2	3	4	5	6
7.3	Desktop computer	1	2	3	4	5	6
7.4	Tablet device	1	2	3	4	5	6
7.5	Smart Television	1	2	3	4	5	6

QUESTION 8

From the list of apps below, rank each of the apps on a scale of 1 to 5, where 1=do not make use of and 5=make use of daily.

	App					
8.1	Facebook	1	2	3	4	5
8.2	Snapchat	1	2	3	4	5
8.3	Instagram	1	2	3	4	5
8.4	Twitter	1	2	3	4	5
8.5	LinkedIn	1	2	3	4	5
8.6	Communication app (e.g. WhatsApp, WeChat, Facebook messenger)	1	2	3	4	5
8.7	Music app (e.g. Spotify)	1	2	3	4	5
8.8	Dating app (e.g. Tinder)	1	2	3	4	5
8.9	Food delivery app (e.g. Mr Delivery, Uber eats)	1	2	3	4	5
8.10	Airbnb	1	2	3	4	5
8.11	Maps/GPS app (e.g. Google Maps, Waze)	1	2	3	4	5
8.12	Sleep app (e.g. Calm)	1	2	3	4	5
8.13	Health and Fitness tracker app (e.g., Fitbit app, Steps)	1	2	3	4	5
8.14	Email app (e.g. Gmail app, webmail app)	1	2	3	4	5
8.15	Ecommerce app (e.g. Superbalist or loot mobile app)	1	2	3	4	5
8.16	Banking app (e.g., FNB, Standard Bank, Absa or any other bank apps)	1	2	3	4	5
8.17	Payment app (e.g. Snapscan, Zapper, PayPal, Apple pay, Samsung Pay)	1	2	3	4	5
8.18	Search engine (e.g. Google chrome app)	1	2	3	4	5

8.19	Video app (e.g. YouTube, Netflix, Showmax)	1	2	3	4	5
8.20	Taxi app (e.g. Uber or Taxify)	1	2	3	4	5
8.21	Safety app (e.g. Namola)	1	2	3	4	5

QUESTION 9

Indicate which devices you **USE** to conduct the activities listed below. *Please select not applicable (N/A) if you do not use any of the devices for an activity.*

	Activity	N/A	Smartphone	Tablet	Laptop	Desktop
9.1	Purchase products online from an e-commerce website (e.g., Mr Price online store, Zando).	1	2	3	4	5
9.2	Access e-mail	1	2	3	4	5
9.3	Do banking	1	2	3	4	5
9.4	Make payments/pay bills (Telephone, credit cards etc.)	1	2	3	4	5
9.5	Socialise through social media platforms (e.g. Facebook, Instagram, Twitter)	1	2	3	4	5
9.6	Entertainment (e.g. Stream music and videos, read books, play games)	1	2	3	4	5
9.7	Use a communication application to chat (e.g. WhatsApp, Facebook Messenger)	1	2	3	4	5
9.8	Use a search engine (e.g. Google, Yahoo)	1	2	3	4	5
9.9	Access your car (e.g., open/close windows, lock the car, track speedometer, tyre pressure, etc.) through an app	1	2	3	4	5

9.10	Control home devices (e.g., Gate, garage, home security system through an app)	1	2	3	4	5

QUESTION 10

Please indicate the percentage of your total monthly expenditure to make purchases online or in-store. (The total percentage of both must add up to 100%. For example, online 50% + in-store 50% = Total 100%)

Online	1
In-store	2
Total	100%

SECTION B

QUESTION 11

Read each statement below and indicate the extent to which you agree or disagree (where 1 = strongly disagree & 5 = strongly agree) **regarding what influences you when making a purchase decision**.

		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
11.1	Past experiences I have had with the product/brand.	1	2	3	4	5
11.2	The current situation that I am in. (If I have run out of a product that I need).	1	2	3	4	5
11.3	My knowledge of the product/brand.	1	2	3	4	5
11.4	My attitude or how I feel about a product/brand.	1	2	3	4	5
11.5	Rely on the memory of previous experience of a product/brand.	1	2	3	4	5
11.6	Look at past experiences I have	1	2	3	4	5

	had with the product or brand.					
11.7	Purchase certain products or brands out of habit.	1	2	3	4	5
11.8	Features of the product/brand.	1	2	3	4	5
11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.).	1	2	3	4	5
11.10	My perception of what indicates quality.	1	2	3	4	5
11.11	The perceived value of the product attributes.	1	2	3	4	5
11.12	My social standing in society.	1	2	3	4	5
11.13	The people I socialise and interact with.	1	2	3	4	5
11.14	My mood and emotional state.	1	2	3	4	5
11.15	How I feel in the moment.	1	2	3	4	5
11.16	My personality (impulsive or not).	1	2	3	4	5
11.17	My personal values.	1	2	3	4	5
11.18	My cultural norms and beliefs.	1	2	3	4	5
11.19	My social class (my standing in society).	1	2	3	4	5
11.20	Personal influences such as the people I socialise with.	1	2	3	4	5

11.21	An extensive search into the product/brand.	1	2	3	4	5
11.22	My motivation (reason) for purchasing a product.	1	2	3	4	5
11.23	The knowledge I have about a product or brand.	1	2	3	4	5
11.24	The attitude I have towards a product or brand.	1	2	3	4	5
11.25	My values and how I live my life.	1	2	3	4	5
11.26	Find information on products/brands from the market (In-store).	1	2	3	4	5
11.27	Get information on products/brands through the marketing media such as advertisements or pamphlets.	1	2	3	4	5
11.28	Get information on products/brands that I need from media reports.	1	2	3	4	5
11.29	The product/brand country of origin.	1	2	3	4	5
11.30	The amount of money I have available to purchase the product.	1	2	3	4	5
11.31	Find information by doing an online search about the product/brand.	1	2	3	4	5
11.32	The different prices of the products/brands.	1	2	3	4	5

11.33	The price of the product.	1	2	3	4	5
11.34	My family and their needs.	1	2	3	4	5
11.35	My family's needs and wants.	1	2	3	4	5
11.36	My current situation. (If I have run out of a product).	1	2	3	4	5

SECTION C

QUESTION 12

Please indicate which gender you identify with.

12.1	Male	1
12.2	Female	2
12.3	Other	3

QUESTION 13

Please indicate your age.

13.1	18-25	1
13.2	26-35	2
13.3	36-45	3
13.4	46-55	4
13.5	56-65	5

QUESTION 14

Please indicate your employment status.

14.1	Part-time	1
14.2	Employed	2
14.3	Unemployed	3
14.4	Self-employed	4

QUESTION 15

Please indicate where in South Africa you reside most of the time.

15.1	Eastern Cape	1
15.2	Free state	2
15.3	Gauteng	3
15.4	Kwazulu Natal	4
15.5	Limpopo	5
15.6	Mpumalanga	6
15.7	Northern Cape	7
15.8	North West	8
15.9	Western Cape	9

QUESTION 16

Please indicate the category that best describes your gross monthly income.

16.1	R0–R10 000	1
16.2	R10 001–R30 000	2
16.3	R30 001–R60 000	3
16.4	R60 001–R100 000	4
16.5	More than R100 000	5
16.6	Prefer not to answer	6

Thank you for your participation.

APPENDIX C:

Previous research conducted on consumer decision-making using the EBM model of the consumer decision process.

Author(s)	Sample size	Discussion
Fadliyah and Nurwahyuni (2021)	215	The research study aimed to explore the consumption of traditional medicine and health supplements during the COVID-19 pandemic. The EBM model of the consumer decision process was adopted for the research in order to identify factors that influence consumer behaviour. The results indicate an increase in usage of traditional medicine and health supplements due to the pandemic. Consumers often opted for branded products and their purchase behaviour was found to be influenced by their social circles.
Xue, Shen, Morrison and Kuo (2021)	338	The study aimed to investigate the online behaviour of Taiwan's net generation (individuals who were born between 1977 and 1997). The research intended to examine the relationships among the different stages of the online decision-making process of travel products and services. The EKB (known as the EBM) model was used as a basis for developing the items used in the questionnaire. The results found that information search was a key action variable during travel.
Rudkowski, Heney, Yu, Sedlezky and Gunn (2020)	Qualitative study, 5 marketplace-based-pop-up retailers	The research aimed to understand how marketplace-based pop-up fits within the customer journey and experience. The qualitative study used observations to observe and experience various touchpoints of the pop-ups from the customers perspective. The researchers also observed other customers and their shopping behaviour. The research identified three key themes of pop-ups, namely, here today gone tomorrow, which speaks to the temporary nature of pop-ups; high-touch-low-tech; and ownership and influence. The researchers indicate that consumers experience a complex customer journey when shopping at pop-ups. The customer will go through pre-purchase, purchase and post-purchase stages of consumer decision making and will experience multiple touchpoints.

Author(s)	Sample size	Discussion
Hsia, Wu, Xu, Pend, and Robinson (2020)	256	The research focused on understanding customer involvement behaviour, specifically during the pre-purchase and purchase stages of consumer decision-making in omnichannel shopping. The activity theory was used to identify omnichannel platforms, platform synergies and personalised incentives that influence the consumer's involvement and experience in omnichannel retailing. The results indicate that the factors, omnichannel platform and platform synergy, and personalised incentives have a positive influence on consumers' situational involvement, which leads to enhanced usability and hedonic experiences for the consumer.
Ho and Law (2020)	41	Ho and Law (2020) investigated the decision-making factors that influence the selection of hospitality and tourism bachelor's degrees from a consumer behaviour perspective. The research was conducted among hospitality and tourism students in Hing Kong. A total of 41 students partakes in 13 qualitative in-depth semi-structured interviews. The study, which was based on the five stages of consumer behaviour (need recognition, search for information, evaluation of alternatives, purchase decision and post-purchase evaluation), found that marketing efforts are essential in facilitating the student's choice in higher education.
Lou, Wang, Lu, Xiao and Xiao (2020)	330	Lou, Wang, Lu, Xiao, and Xiao (2020) aimed to understand the consumer decision-making process of rural people on residential construction with the intention of improving the rural living environment in China. To achieve the aim of the research, a survey was conducted. Logistic regression was used to develop the impact path of crucial factors that affect residential construction cost and duration. The research proposed a consumer decision-making model that applies to rural residential consumers. The results found that residents' demands on the preferred cost and duration can be categorized based on their willingness to pay (primary, conservative and superior demand).
Gilal, Chandani, GilaL, Gila, Gilal and Channa (2019)	Study 1: 208 Study 2: 312	The research investigated the effects of motivational regulations on consumers' green behaviour in Pakistan. Two studies were conducted involving consumers who were millennials in the Sindh (study 1) and Punjab, Khyber and Pakhtunkhwa (study 2) provinces of Pakistan. Participants were asked to complete a short questionnaire that asked questions regarding the consumer's green behaviour and their external, identified, introjected and intrinsic motivations. The results of studies 1 and 2 indicated that identified and external motivation influence the behaviour of green consumers. The results also indicate that female consumer responds more strongly to motivation associated with intrinsic regulation.

Author(s)	Sample size	Discussion
Mpotaringa and Hattingh (2019)	267	Research conducted by Mpotaringa and Hattingh (2019), aimed to gain greater insights into the demographics and the behaviour of consumers who visited the Wegry/Drive Out Bull Run motorsport event. The event occurs annually in the Northern Cape province of South Africa. A survey was used to collect the data and a structured questionnaire was administered to individuals who attended the event. The results indicate that friends and family had a bigger influence on consumer behaviour regarding attending the motorsport event compared to advertising.
Yousuf and Maitlo (2019)	443	In their research, Yousuf and Maitlo (2019) focused on exploring the factors that influence the decision-making of consumers of apparel merchandise. The research examined the association and contribution of personal, social physiological factors as well as mass media and clothing criteria on the decision-making of consumers. A survey was used to collect data among female consumers in Karachi, Pakistan The results indicate that personal factors of consumers' positively influence the decision-making styles of consumers'. From the social factors, the results indicate a positive influence on price-conscious value for money over the consumer's habit of being loyal. A positive influence was also found between the psychological factors, personal values and price and quality in decision making.
Bigne, Andreu, Hernandez and Ruiz (2018)	441	The study by Bigne, Andreu, Hernandez, and Ruiz (2018) and to analyse the impact of social media and offline influences on the consumer's behaviour within the low-cost airline industry. The low-cost airline industry was analysed, and the results found that interpersonal, offline influences such as friends, relatives and family will influence whether the consumer will repurchase a product. The study also indicated that online customer-to-customer information exchange influenced consumers' attitudes, which ultimately influenced consumers repurchase intentions.
Xu and Chen (2017)	499	The study aimed to understand consumers' purchase intention in traditional clothing purchase channels to develop corresponding marketing methods for traditional fashion stores to improve their marketing. The study was based on the five stages of the EBM model and presented a model that links consumer behaviour with the traditional clothing market.

Author(s)	Sample size	Discussion
Sudha and Sheena (2017)	200	The study intended on exploring the impact of influencers on the consumer buying decision process within the fashion industry. The study focused on women and the snowball sampling technique was used. The study results indicate that blogs of influencers, in particular, have an influence on the decision making of young women. The study found that women enjoy having someone to relate to and see influencers as a liable source of information.
Schalkwyk, Maziriri and Mokoena (2017)	400	Schalkwyk, Maziriri and Mokoena refined and validated an instrument that would be used to measure perceived social risk, buying behaviour and retail store instruments for generation Y female students in South Africa. The validity of the measuring instrument was done using factor analysis and reliability was tested by using Cronbach's Alpha. The overall results of the study indicated an acceptable model fit. It was concluded that the characteristics and multidimensional perspective of the variables tested appeared to be useful in gaining more knowledge on social risk and consumer buying behaviour in relation to consumer retail choice.
Osei and Abenyin (2016)	200	The study applied the EBM model of the consumer decision-making process in exploring the stages in the decision-making process in which social media are more influential on the decision to travel to Ghana. The study results indicated that social media was used throughout the stages of decision making as in the EBM model.
Lo, Lin and Hsu (2016)	239	The study investigated the various design elements of online stores as well as the sales promotion stimuli that can be used by e-retailers to arouse consumers' desire or to decrease the consumer's self-control to induce impulse purchases. The study used the EBM model of the decision-making process as a framework to categorise the design elements of an online store as well as sales promotion stimuli that would influence the consumers' impulse buying during each stage of the EBM model. The study resulted in a framework that included 31 factors that would influence the design of an online store as well as sales promotion stimuli.
Ashman, Solomon and Wolny (2015)	Two case studies were used to evaluate the decision-making process as per the EBM model.	The study aimed at evaluating the EBM model of the consumer decision-making process to determine the relevance of the model in online culture. It was found that the EBM model of the consumer decision-making process is still relevant in that it provides useful insights into the consumer's decision-making process within an online context

Author(s)	Sample size	Discussion
Karimi, Papamichail and Holland (2015)	55	In the study, Karimi, Papamichail, and Holland (2015) used experiments that were conducted in online retail banking and mobile network settings to explore how the consumer's online purchase process is affected by the consumers' individual decision-making style as well as the consumers' knowledge of the product. Karimi, Papamichail, and Holland (2015) proposed four archetypes of online consumers. These archetypes include satisficer with low product knowledge, satisficer with high product knowledge, maximiser with low product knowledge and maximiser with high product knowledge. The intensity of the consumer's purchase decision was examined for each archetype. The results of the study indicated that the intensity of the consumer's decision-making process in terms of the number of cycles, the duration, the number of alternatives selected, and the criteria used to evaluate the alternatives were dependent on both the individual style of decision-making and the consumer's product knowledge.
Mait and Dass (2014)	162	Maity and Dass (2014) investigated the effect that media richness has on consumer decision making and the consumer's choice of channel, including e-commerce, m-commerce (use of the mobile device) and in-store. Three experiments that were designed to test consumers' decision-making processes were conducted for this study. The study found that when consumers were involved in complex decision making the consumer's preferred channels with medium (e-commerce) and high (in-store) media richness. Consumers used low media-rich channels such as m-commerce for simple decisions. The type of product purchased also influenced the channel selected and the post-purchase evaluation of the consumer.
Huang and Hsueh (2010)	242	In their study, Huang and Hsueh (2010) studied consumer behaviour of consumers within the refurbishment industry. The study focused on three aspects, attitude towards and perception of refurbishment; identifying how consumers gain access to refurbishment information and which marketing content attracts the consumer; and decision making of consumers when selecting refurbishment firms. The results indicate that consumers select refurbishment firms based on the firm's reputation. The consumer also responds to marketing that offers more attractive services.

Author(s)	Sample size	Discussion
Teo and Yeong (2003)	148	Research conducted by Teo and Yeong (2003) focused on determining the decision-making process in the online shopping environment in Singapore. The EBM model of the consumer decision-making process was used to develop a hypothesized model that incorporated the effects of perceived benefits of search, the financial and performance risk to overall evaluation and on the willingness to purchase. The study used structural equation modelling to test the hypothesized model and found a negative relationship between perceived risk and the relationship with consumers' overall evaluation of a deal. A positive relationship was found between the overall evaluation of the deal and the consumer's willingness to purchase online. There was also a positive relationship between the perceived benefits of search and the overall evaluation of the deal.
MacDonald and Sharp (2000)	472	The study by MacDonald and Sharp (2000) found that brand awareness was an important factor that contributed to the decision-making process of the consumer when making a repeat purchase. The study, which was a replication of the study by Hoyer and Brown determined the role that brand awareness plays when consumers make a choice. The study revealed that consumers, despite the quality and price, tend to choose brands that are well known and that the consumers are aware of.
Liu and Dickerson. (1999)	232	The EBM model of the decision-making process was used in this study as a framework to examine the criteria of country preference and people in apparel purchases among male office workers in Taiwan. The research found that Taiwanese male apparel consumers emphasise the fit, colour, and price of a product when making a decision.

APPENDIX D:

Ethical clearance certificate

UNISA | university of south africa

UNISA DEPARTMENT OF MARKETING AND RETAIL MANAGEMENT ETHICS REVIEW COMMITTEE

Date   15-10-2018

Dear   Ms SM Kallier

Decision: Ethics Approval from 2018 – 2021

NHREC Registration # : (if applicable)
ERC Reference # : 2018_MRM_010
Name : Ms SM Kallier
Student #: 48814172
Staff #: 90200322

Researcher(s):   Ms SM Kallier, Kallism@unisa.ac.za, 0124293758

Supervisor (s):   Dr CH Bothma, Bothmch@unisa.ac.za, 0828808547
Prof JA Wiid, Jwiid@unisa.ac.za, 0124293939

Working title of research:
Revisiting the EBM model of consumer decision process in a hyper-connected world: A South African context

Qualification: Doctorate

Thank you for the application for research ethics clearance by the Unisa Department of Marketing and Retail Management Ethics Review Committee for the above mentioned research. Ethics approval is granted for 3 years.

The **low risk application** was **reviewed** by the Department of Marketing and Retail Management Ethics Review Committee on 4 October 2018 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Marketing and Retail Management Research Ethics Committee.

3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.

7. Minor changes suggested by the committee be amended on the Form 1.

Note:

The reference number **2018_MRM_010** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Signature
Chair of Department of
Marketing and Retail Management ERC
E-mail: jwiid@unisa.ac.za
Tel: (012) 429-2381

Signature
Executive Dean: College of Economic and
Management Sciences
E-mail: mogalmt@unisa.ac.za
Tel: (012) 429-4805

APPENDIX E:

The theoretical development of each scale item in the measurement instrument

Item no.	Item wording	Discussion
11.1	Past experiences I have had with the product/brand.	The item was developed based on the theory of the memory construct and past experiences sub-construct of the need recognition factor of the EBM model. Engel, et al. (2006) and Mothersbaugh, Hawkins and Kleiser, (2020) indicate that information that consumers have about a brand from experiences of consumption and actual usage of the product is an individual determinant of consumer behaviour that influences consumers identification of a need. Swarna and Banana, 2018 indicate that experience is a psychological factor that influences the identification of a need. See chapter 3, section 3.4.1.1.
11.2	The current situation that I am in. (If I have run out of a product that I need)	The item was developed based on the theory of the environmental influences construct and the current situation sub-construct of the need recognition factor of the EBM model. Engel et al. (2006), Ngugi, O'Sullivan and Osman (2020), as well as Babin and Harris (2021) state that consumers' current situation will influence the need for purchasing a product. See chapter 3, section 3.4.1.2.
11.3	My knowledge of the product/brand.	The item was developed based on the theory of the individual differences construct and knowledge sub-construct of the need recognition factor of the EBM model. The knowledge that the consumer has on the product or brand influences the consumer identification of a purchase need (Engel et al., 2006:334; Hoyer et al., 2021:194). See chapter 3, section 3.4.1.3.
11.4	My attitude or how I feel about a product/brand.	The item was developed based on the theory of the individual differences construct and attitude sub-construct of the need recognition factor of the EBM model. Consumer attitude towards a product or brand influences the identification of a need to make a purchase (Engel et al., 2006:392; Roberts-Lombard & Parumasur, 2017:186; Cunningham, 2018:71). See chapter 3, section 3.4.1.3.
11.5	Rely on the memory of previous experience of a product/brand.	The item was developed based on the theory of the internal search construct and memory sub-construct of the search for information factor of the EBM model. Engel et al., (2006), Ngugi et al. (2020), and Lamb et al. (2021) indicate that when consumers search for information, consumers often use the memory of consumption and actual usage of the product in finding information about the product or brand. See chapter 3, section 3.4.2.1.
11.6	Look at past experiences I have had with the product or brand.	The item was developed based on the theory of the internal search construct and experience sub-construct of the search for information factor of the EBM model. When

		searching for information, consumers often recall previous experiences they have had with the product or brand (Engel et al., 2006:85; Ngugu et al., 2020:18). See chapter 3, section 3.4.2.1.
11.7	Purchase certain products or brands out of habit.	The item was developed based on the theory of the internal search construct and habit sub-construct of the search for information factor of the EBM model. Consumers often purchase the same product or brand repeatedly out of habit (Engel et al., 2006:85; Ngugu et al., 2020:18). See chapter 3, section 3.4.2.1.
11.8	Features of the product/brand.	The item was developed based on the theory of the evaluative criteria construct and brand name sub-construct of the evaluation of alternative factor of the EBM model. The brand name is often associated with the features expected from the product or brand (Lamb et al., 2021:50). See chapter 3, section 3.4.3.1.
11.9	The value I attach to the product/brand (the minimum and maximum requirements I have set for the product/brand to be worth it.)	The item was developed based on the theory of the assessment choice alternative construct and cut-offs sub-construct of the evaluation of alternative factor of the EBM model. Engel et al. (2006) and Lamb et al. (2021) indicate that consumers use a minimum or maximum requirements during the evaluation of alternatives stage when making a purchase decision. See chapter 3, section 3.4.3.3.
11.10	My perception of what indicates quality.	The item was developed based on the theory of the assessment choice alternative construct and use signals sub-construct of the evaluation of alternative factor of the EBM model. Consumers often use signals such as perceived quality to evaluate alternative brands and products (Engel et al., 2006:132; Li, McCabe & Song, 2017:700). See chapter 3, section 3.4.3.3.
11.11	The perceived value of the product attributes.	The item was developed based on the theory of the assessment choice alternative construct and use signals sub-construct of the evaluation of alternative factors of the EBM model. Consumers often use signals such as the perceived value of product attributes to evaluate alternative brands and products (Engel et al., 2006:13; Lamb et al., 2021:50). See chapter 3, section 3.4.3.3.
11.12	The perceived value of each evaluation criteria. (If a product/brand scores low in one criterion (price) but high in other criteria (quality) the product will still be purchased because it is a good price.	The item was developed based on the theory of the select decision rule construct and compensatory sub-construct of the evaluation of alternative factor of the EBM model. Consumers often evaluate products or brands based on the value of the criterion (Engel et al., 2006: 132; Li, McCabe & Song, 2017:700). A product or brand could score low in one criterion; however, the product or brand may still be selected as it scores high on a criterion that is valued higher. See chapter 3, section 3.4.3.4.
11.13	My cultural beliefs.	The item was developed based on the theory of the environmental influences construct and culture sub-construct of the need recognition factor of the EBM model. Engel et al. (2006); Schiffman and Wisenblit (2019) and Motherbough et al., (2020); indicate that cultural beliefs are important when consumers identify product needs. See chapter 3, section 3.4.1.2.
11.14	My social standing in society.	The item was developed based on the theory of the environmental influences construct and social class sub-construct of the need recognition factor of the EBM model.

		Social class or the consumers' social standing, is a significant factor that influences the need to purchase a product (Lamb et al., 2021:56). Swarna and Banana (2018) indicate that social factors have a significant influence on consumer buying behaviour. See chapter 3, section 3.4.1.2.
11.15	The people I socialise and interact with.	The item was developed based on the theory of the environmental influences construct and personal influences sub-construct of the need recognition factor of the EBM model (See chapter 3, section 3.4.1.2). Hu, Chen and Davison, (2019) and Babin and Harris (2021) state that social interaction with individuals influences how consumers behave and make decisions.
11.16	My mood and emotional state.	The item was developed based on the theory of the evaluative criteria construct and emotions/feelings sub-constructed evaluation of alternative factors of the EBM model. Engel et al. (2006) and Lamb et al., (2021) indicate that consumers often evaluate products or brands based on their current mood or feelings towards a product or brand. See chapter 3, section 3.4.3.1.
11.17	How I feel in the moment.	The item was developed based on the theory of the intention construct and fully planned purchase sub-construct of the purchase decision of the EBM model. Unplanned purchases are often based on how the consumer feels at the exact moment (Engel et al., 2006:82; Mothersbaugh et al., 2020:221). See chapter 3, section 3.4.4.1.
11.18	My personality (impulsive or not)	The item was developed based on the theory of individual differences and/or environmental influences construct and personality sub-construct of the purchase decision factor of the EBM model. Aspects of consumers personality (such as if the consumer is impulsive not) are said to influence the consumer's actual purchase (Engel et al., 2006:392; Lamb et al., 2021:109). See chapter 3, section 3.4.4.2.
11.19	My personal values.	The item was developed based on the theory of the individual differences and/or environmental influences construct and values sub-construct of the purchase decision factor of the EBM model. According to Engel et al. (2006), Lichtenstein, Lichtenstein and Higgs (2017), and Hoyer et al. (2021), the consumer's values will influence the actual purchase of a product. See chapter 3, section 3.4.4.2.
11.20	My cultural norms and beliefs.	The item was developed based on the theory of the individual differences and/or environmental influences construct and culture sub-construct of the purchase decision factor of the EBM model. According to Engel et al. (2006), Schiffman and Wisenblit (2019), and Lamb et al. (2021), the consumer's cultural beliefs and norms will influence the actual purchase of a product. See chapter 3, section 3.4.4.2.
11.21	My social class (my standing in society).	The item was developed based on the theory of individual differences and/or environmental influences construct and social class sub-construct of the need recognition factor of the EBM model. Social class is an important factor in determining what, why, where and even how consumers

		make purchases (Engel et al., 2006:82; Ramya & Ali, 2019:79; Lamb et al., 2021:58). See chapter 3, section 3.4.4.2.
11.22	Personal influences such as the people I socialise with.	The item was developed based on the theory of individual differences and/or environmental influences construct and personal influences sub-construct of the purchase decision factor of the EBM model. Engel et al. (2006), Hu, Chen and Davison (2019), and Babin and Harris (2021) indicate that personal influence, such as the individuals with whom a consumer socialises has an influence on the consumer's actual purchase of products or brands. See chapter 3, section 3.4.4.2.
11.23	An extensive search into the product/brand.	The item was developed based on the theory of the intention construct and fully planned purchase sub-construct of the purchase decision factor of the EBM model. Consumers will often conduct an extensive search when making certain purchases (Engel et al., 2006:82; Sohan & Ko, 2021:2). See chapter 3, section 3.4.4.1.
11.24	My motivation (reason) for purchasing a product.	The item was developed based on the theory of individual differences and/or environmental influences construct and motivation sub-construct of the purchase decision factor of the EBM model. Engel et al. (2006), Cunningham (2018) and Soloman (2020) indicate that the consumers' reason to make a purchase (psychological, safety and health, love and companionship, financial or social image) the consumer's actual purchase. See chapter 3, section 3.4.4.2.
11.25	The knowledge I have about a product or brand.	The item was developed based on the theory of the individual differences and/or environmental influences construct and knowledge sub-construct of the purchase decision factor of the EBM model. The knowledge that the consumer has of the product or brand influences the consumer's actual purchase (Engel et al., 2006:334; Hoyer et al., 2021:194). See chapter 3, section 3.4.4.2.
11.26	The attitude I have towards a product or brand.	The item was developed based on the theory of individual differences and/or environmental influences construct and attitude sub-construct of the purchase decision factor of the EBM model. Consumers' attitude towards a product or brand influences the consumer's actual purchase (Engel et al., 2006:392; Babin & Harris, 2021:156). See chapter 3, section 3.4.4.2.
11.27	My values and how I live my life.	The item was developed based on the theory of individual differences construct and personality, values and lifestyle sub-construct of the need recognition factor of the EBM model. Engel et al. (2006), Lichtenstein, Lichtenstein and Higgs (201) and Hoyer et al. (2021) indicate that the consumer values, how they live and socialise influences the consumers need identification. See chapter 3, section 3.4.1.3.
11.28	Find information on products/brands from the market (In-store)	The item was developed based on the theory of the external search construct and stimuli from the market sub-construct of the search for information factor of the EBM model. Engel et al. (2006) and Lamb et al. (2021) indicate that consumers often search for information about the product or brand from advertisements found in the market.

		These include in-store advertising media. See chapter 3, section 3.4.2.2.
11.29	Get information on products/brands through the marketing media such as advertisements or pamphlets.	The item was developed based on the theory of the external search construct and information gathered from the marketing promotion sub-construct of the search for information factor of the EBM model. Consumers often gather information about a product or brand through various marketing promotions (Engel et al., 2006:75, Lamb et al., 2021:91). See chapter 3, section 3.4.2.2.
11.30	Get information on products/brands that I need from media reports.	The item was developed based on the theory of the external search construct and media reports sub-construct of the search for information factor of the EBM model. Engel et al. (2006) and Jira-Alongkorn, Anatachart, and Vungsunititum (2020) state that media reports are a source through which consumers gather information on products or brands. See chapter 3, section 3.4.2.2.
11.31	The product/brand country of origin	The item was developed based on the theory of the evaluative criteria construct and country of origin sub-construct of the evaluation of alternative factor of the EBM model. According to Engel et al. (2006) and Fauser and Agola (2021), the country of origin of a product or brand is often used as an evaluation criterion. Country of origin is often linked to product quality. See chapter 3, section 3.4.3.1.
11.32	The amount of money I have available to purchase the product.	The item was developed based on the theory of the individual differences construct and consumer resources sub-construct of the need recognition factor of the EBM model. Engel, Blackwell and Miniard (2006); Roberts-Lombard and Parumasur, (2017) and Soloman (2020) indicate that situational factors such as available funds of the consumer influence the identification of a purchase need. See chapter 3, section 3.4.1.3.
11.33	Find information by doing an online search for the product/brand.	The item was developed based on the theory of the external search construct and online web search sub-construct of the search for information factor of the EBM model. According to Engel et al. (2006), Jira-Alongkorn, Anatachart and Vungsunititum, (2020) and Lamb et al. (2021), consumers use online sources to search for product or brand information. See chapter 3, section 3.4.2.2.
11.34	The different prices of the products/brands.	The item was developed based on the theory of the evaluative criteria construct and price sub-construct of the evaluation of alternative factors of the EBM model. Consumers often use price as a criterion when evaluating products and brands (Engel et al.,1990:223; Lamb et al., 2021:50). See chapter 3, section 3.4.3.1.
11.35	The price of the product.	The item was developed based on the theory of the intention construct and partially planned purchase sub-construct of the purchase decision factor of the EBM model. Price is often used as a factor when making a partially planned purchase (Engel et al., 2006:82; Sohan & Ko, 2021:2). See chapter 3, section 3.4.4.1.
11.36	My family and their needs.	The item was developed based on the theory of the environmental influences construct and family sub-construct of the need recognition factor of the EBM model. Engel et al. (2006), Surinder and Vipul (2017),

		Cunningham (2018), and Lamb et al. (2021) indicate that consumers identify a need for a product based on the needs of the family. See chapter 3, section 3.4.1.2.
11.37	My family's needs and wants.	The item was developed based on the theory of individual differences and/or environmental influences construct and family sub-construct of the purchase decision factor of the EBM model. Consumers often make purchases based on what their family needs and wants are (Engel et al., 2006:82; Schiffman & Wisenblit, 2019:287; Babin & Harris, 2021:172). See chapter 3, section 3.4.4.2.
11.38	My current situation. (If I have run out of a product)	The item was developed based on the theory of the individual differences and/or environmental influences construct and current situation sub-construct of the purchase decision factor of the EBM model. According to Engel et al. (2006), Ngugi et al. (2021), the consumer's current situation influences purchasing a product or brand. See chapter 3, section 3.4.4.2.

APPENDIX F:
Autoethnographic reflection

An autoethnographic reflection is the writing and reflection exploring the author's personal experience (Throne, 2019:2). The autoethnographic reflection provides some insight into the author's own experiences on the topic and the research process. In this section, the author will provide an autoethnographic reflection on the research process for this study.

a) Educational journey

The PhD. journey is a unique experience that pushes one to explore and experience different areas of oneself in terms of knowledge and skills. This PhD. journey has been one of self-discovery; I have not only gained knowledge on the topic and about research but have gained skills and abilities such as organisational skills, managing time, planning as well as learning to balance work, personal life and PhD. studies.

Early on during the PhD. research, I learnt the value of my supervisors and the importance of following their expert advice. Supervisors are there to guide their students, and it was thus important for me to be flexible enough to follow their leadership and advice.

One of the biggest lessons that I learned during the PhD. process is that nothing is set in stone for research. From the topic itself, the objectives, the write up and even during the data analysis stage, there may always be changes in the research. I knew that I wanted to research hyper-connected consumers after reading some interesting industry research regarding the topic. However, focussing on the actual topic and the research objectives took some time to finalise. Some objectives were refocused and changed as I did the write-up for the research and even during the data analysis. These changes, however, helped me learn more about the topic and conduct the research itself.

b) Realistic expectations

The PhD. process is primarily driven by the student, and as such, it is important to know yourself in managing your expectations. The PhD. process is exciting, and this excitement sometimes can hinder you at the start from being realistic. It is was thus important to keep me grounded and realistic throughout the process.

In terms of managing expectations, a thing that I learned is to be realistic in managing my time frame. Not everything goes according to plan; the data collection for this study, for example, took much longer than I had initially planned for. One of the biggest issues was the respondent's willingness to complete the surveys. Another issue that delayed the data collection was finding a reliable consultant agency to gather the data. I had initially planned for four months as a maximum to collect the data for both part 1 and part 2 of the study; however, due to the issues experienced, the process took almost nine months, which threw off my initial timeline.

c) Prepare for applying for financial assistance

A PhD. study can be an expensive endeavour. One requires assistance with data collection, statistical analysis, editing and even language translation when completing a PhD, which often costs a lot. As such, many university institutions offer students bursary opportunities internally and externally. One must, however, prepare for applying for these bursaries and for the case where one does not receive an adequate bursary or does not receive one at all.

Owing to the University of South Africa's regulations, I was lucky to apply and receive funds through an internal bursary. However, the amount only covered assistance with data collection for the first part of the research. The university required that students also apply for the NRF postgraduate bursary. This NRF application process took some time and even though my application went through to the second round, it took some time for the outcome to come through. As I was busy with the data collection already, I could not

wait for the outcome of the NRF bursary and had to look for funding through a different process. Finding and applying for the different funding and bursaries does take time and can be taxing. This also delayed part two of the data collection as I required funding to use the data consultant agency in assisting with the data collection. It is thus important to be realistic, set some time for finding and applying for funding in your planning and prepare for different outcomes.

d) Managing the pressure

At the beginning of a PhD., there can be a lot of pressure, from the institution that we are registered with, from our supervisors, from bursary organisations and most importantly from ourselves. At times this pressure can be overwhelming.

A method I found helped manage the pressure was to prioritise my time as well as to prioritise tasks. It was easier to get the small tasks out of the way, so I had more time to focus on the big tasks. Smaller tasks such as filling out bursary applications, for example, took a lot more time than expected and always ended up being done during busy periods. Prioritising these tasks earlier would have given me more time to focus on my literature chapters.

APPENDIX G:

Declaration of professional edit

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Editing Certificate

Date: 23 November 2021

Dear Author,

The dissertation titled "REDEFINING CONSUMER DECISION MAKING IN A HYPER-CONNECTED WORLD: A SOUTH AFRICAN CONTEXT" was edited by Mr. Khomotso Moses Leshaba, a member of the Professional Editor's Guild (Membership number: LES003), European Association of Science Editors (Membership number: 5471), and the South African Translator's Institute (Membership number: 1003722). Mr. Leshaba is an independent contractor at the University of South Africa, where he provides academic editing in the College of Economic and Management Sciences and Unisa Press. He has an NQF Level 8 certificate in Editing: Principles and Practice from the University of Pretoria and Professional Editing Standards Certificate from Queen's University in Canada.

The services provided include:

1. Ensuring perfect grammar and punctuation to improve readability and clarity
2. Consistency and structural enhancements
3. Appropriate sentence construction and appropriate academic tone
4. Ensuring one-to-one correspondence of in-text citations and references.
5. Formatting of references

Professional EDITORS Guild

Leshaba Khomotso Moses
Associate Member

Membership number: LES003
Membership year: March 2021 to February 2022

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