



# **KEY SUCCESS FACTORS FOR DIGITAL PERSONAL BANKING IN THE ILEMBE DISTRICT: A CONSUMER PERSPECTIVE**

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Date: 13 April 2023

## **DECLARATION**

I, Avikar Ramsundra, declare that the dissertation entitled “Key Success factors for digital personal banking in the iLembe District: a consumer perspective” is a result of my own investigation and research. It has never been conducted nor submitted in part for any degree at any institution. All sources have been duly acknowledged.

Signature:

Date: 8 November 2022

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## **ABSTRACT**

The study provides insight into the constructs that influence the use of digital banking within the iLembe District, KwaZulu-Natal, South Africa. Financial technology improvements have made personal banking simpler, allowing a range of services to be accessed anytime and anywhere. It is known that financial technology advances have drastically improved the ways in which consumers bank, but it has not yet been established what impact the growth of financial technology has on the perception and use of digital personal banking among people in developing economies. The aim of this study was to identify the key success factors for digital personal banking among consumers in the iLembe district, KwaZulu-Natal. It clarifies the link between financial technology developments, and the perception and use of digital personal banking by consumers. The objectives of the study were to: (1) investigate consumers' level of adoption of digital personal banking, (2) establish the constructs encouraging the use and growth of digital personal banking, and (3) assess the relationship between consumers' level of adoption of digital personal banking and the constructs encouraging digital banking.

At the conclusion of this study, the relationship between financial technology and the different constructs of digitisation in consumer banking were identified. Income is shown to have the highest level of significance of all demographic variables influencing preference for digital personal banking, followed by the age variable. Gender and education had no significant influence. Although all the independent variable constructs had significant relationships with preference of digital personal banking, online service quality, usability and consumer experience were the most important. Branch service quality relationship was negative, while all the others were positive. How this can influence consumers in a developing economy such as South Africa is discussed, as are recommendations for banks on how better they can promote digital personal banking, and to which type of consumers. Further empirical research is suggested to further understand this situation in a developing economy.



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# CHAPTER 1: INTRODUCTION

## 1.1 Introduction to study

Technological advances have improved living conditions tremendously in various sectors including healthcare, electronics, motoring, construction, and banking. With emphasis being laid on simplicity, the banking industry has undergone many changes over several years. With interconnected advances in internet, electronics and customer service deliverables, banks have begun to offer a wider range of products and services that cater for a modern lifestyle. South Africa has a very advanced banking system, dominated by the “Big Five” banks: ABSA Bank, Capitec Bank, First National Bank, Nedbank, and Standard Bank. A list of smaller banks, including African Bank, Discovery, and TymeBank hold a growing share of the personal banking market encouraging competition and allowing clients a range to choose from. Commercial banks are facing increasing competition from financial technology (fintech) companies that are taking over traditional banking-related activities like payments (including cashless payments), lending, deposits, asset management, and, to an extent, advisory services. To combat this, traditional banks have begun investing in their own fintech projects, allowing for an intense revitalisation of banking systems resulting in improvements in online payments, e-banking, e-commerce, financing and safety. Collectively, these “digital banking” elements have had a considerable impact on consumers, with the banking industry pushing for a more “digital world”, highlighting the benefits of such. For this to take place effectively, the banking industry is expected to enhance their clients experience, knowledge, and overall value, by incorporating several different factors.

Despite the advancements in banking, South Africa’s financial and income inequality continues to impact the industry negatively. A large proportion of the population remain unbanked, while access to, and knowledge of, digital banking is more complex than initially anticipated. This leads to gaps in banking usage, where advances in technology take longer to reach some clients, while others are able to adopt to its usage immediately.

## **1.2 Background of the study**

South Africa's development from a once third-world country to a 'newly industrialised' country (Zeren and Akkus 2018: 110), has changed the ways in which technology impacts the population. For instance, demographic statistics within the iLembe District indicate that the median age of South Africans living there is 23 (iLembe Statistics 2016). As such, these "millennials" (Generation Y) (Garcia *et al.* 2018: 2; Pyoria *et al.* 2017: 1; Kotz 2016: 1163) are more likely to use advanced technology than all prior generations and are referred to as 'early adopters' (Femenia-Serra, Perles-Ribes and Ivars-Baidal 2018: 9; Benckendorff, Sheldon and Fesenmaier 2014). This has prompted companies to adopt newer technology trends (such as digital banking), which eventually affect the entire population. This is confirmed by Harchekar (2018: 103) who points out that until the past few years, banks were not envisioning the shift in consumer behaviour that arose as a result of the millennial generation, who have now become the largest consumers of financial products. Tam and Oliveira (2017: 1044) state that the evolution from a focus on local-centric (branches and ATMs) to place-centric (internet banking) and then to equipment-centric (accessible anywhere and anytime) has generated benefits within the banking industry. As digitisation increases, financial services gain in productivity. However, digitalisation in an emerging economy is not always an easy task. The World Economic Forum (2013: 35) affirms that the main reason for the differing effects of digitisation is the different economic structures of developed and emerging economies. Previous studies, such as by Talke and O'Connor (2011), discuss the impact of new services on consumer perception. However, their study used expert views, rather than collecting the data from the actual customer. Also, past studies such as by Yee and Yazdanifard (2014) and Kazmi (2012), analyse how perception influences buying behaviour on a digital and non-digital level, but fail to incorporate detailed information pertaining to how a consumer's self-perception can influence the use of digital services. This study will therefore attempt to close this gap by effectively evaluating how the perception of consumers from different demographic backgrounds directly impacts their use of digital personal banking.

## **1.3 Research problem**

Previous studies, such as by Harchekar (2018) and Thorkelsson (2017), have identified reasons behind the growth and use of digital personal banking (mobile banking, e-commerce,

self-service banking) in a robust and thriving economy. These reasons include the increase in use of smartphone devices, direct initiatives by corporations to open bank accounts for previously un-banked individuals, increased automation and capacity of key banking services, and a focus on customer value creation. However, studies within a growing, and highly unstable economy like South Africa's, which consists of significant demographic inequalities (Statistics South Africa 2016), have not identified: (a) how the growth and use of digital banking contributes to consumer perceptions and satisfaction (or a lack thereof) and (b) how demographic inequalities in such an economy affect the digitised use of personal banking.

It is known that financial technology improvements have greatly improved the ways in which consumers bank (Sharma, 2022: 71; Tunay, Yuksel, and Tunay, 2018: 264). However, it has not yet been established what impact the growth of financial technology has on the perception and use of digital personal banking among people of different demographic groups. This study will therefore attempt to close this gap by evaluating how the perception of consumers from different demographic backgrounds impacts the use of digital personal banking. Despite the widespread adoption of digital banking, there are still significant challenges and gaps in the understanding of how these technologies impact consumer behaviour, financial inclusion, and acceptance in developing countries. This research aims to identify and address the factors that contribute to the adoption of digital banking in a developing country in order to enhance the effectiveness and efficiency of digital banking, ultimately leading to better customer experiences and improved financial outcomes for individuals.

## **1.4 Aim and objectives of study**

### **1.4.1 Aim**

This study aimed to identify the key success factors for digital personal banking among consumers in the iLembe district, KwaZulu-Natal.

### **1.4.2 Objectives of the study**

The three objectives of the study were as follows:

- Objective 1: To investigate consumers' level of adoption of digital personal banking.

- Objective 2: To establish the constructs encouraging the use and growth of digital personal banking.
- Objective 3: To assess the relationship between consumers' level of adoption of digital personal banking and the constructs encouraging digital banking.

Based on the research objective, three research questions were posed:

1. What is the level of consumer adoption of digital personal banking?
2. What are the constructs that encourage use and growth of digital personal banking?
3. What is the nature of the relationship between consumers' level of adoption of digital personal banking and the constructs that encourage digital banking?

## **1.5 Overview of methodology**

### **1.5.1 Research design**

The research was conducted using a quantitative approach, and was cross sectional and descriptive, utilising appropriate statistics. Quantitative data collection involves the study of phenomena through statistics and mathematics (Xiong, 2022: 956). The questionnaire used in this study required short responses in the form of a Likert scale. To reach conclusions, appropriate statistics, and an analysis thereof, in correspondence with the literature review, was used. The research approach was a deductive approach, which Msosa (2017: 130) states is an approach that involves the testing of a hypothesis after which a concept is confirmed, refuted, or modified. It involves the elaboration of a set of principles or concepts that are later tested through empirical observation or experiment.

### **1.5.2 Target population and sample**

The target population of this study was all citizens who receive salaries in four local municipalities in the iLembe District, which consists of 657 613 people (Community Survey 2016). The target population also included those who have the means to access digital personal banking, those who actively use digital personal banking, those who are new to digital personal banking, and those who do not use digital banking. Since the iLembe district

has a young population (median age of 23) (iLembe Statistics 2016)) the population is mainly focused on Generation Y, but also incorporates the Baby Boomer and Z Generations.

### **1.5.3 Sampling method**

A non-probability approach was followed in this research as the researcher used judgement to select the location of the study, i.e., the relevant banks. This, according to Msosa (2017: 131) is referred to as a method of sampling where samples are carefully selected because they have certain characteristics which can serve the research purpose. To select the actual respondents to complete the questionnaires, convenience sampling was used based on participants availability and willingness to participate. Data was collected online using Google Forms. A letter accompanied the questionnaire, asking only those who reside in iLembe to partake in the study.

### **1.5.4 Sample size**

Yu (2016: 140) states that sampling involves a process of selecting a subsection of a population that represents the entire population to obtain information regarding the phenomenon of interest. The researcher collected 400 responses from the target population.

### **1.5.5 Measuring instrument**

A questionnaire was developed to collect data (Appendix A). All questions were drawn up using information obtained from the literature, based on various existing factors. Appendix B explains the questionnaire derivation process. All questions were closed ended with responses structured using Likert type scales.

### **1.5.6 Instrument administration**

Due to the impact of the COVID-19 pandemic, in which implemented laws and regulations prohibit large gatherings and maintenance of social distancing of at least 1.5 metres, the questionnaire was administered online through Google Forms once ethics approval was received. Having a bank account and using some aspect of digital banking, as well as all demographic variables (sex, ethnicity, income, and education) were regarded as inclusion

criteria, with non-permanent residents of the iLembe region and those residents who were not earning a salary being exclusion criteria. An isiZulu-translated questionnaire was also available.

### **1.5.7 Data analysis**

Univariate, bivariate and multivariate methods were used to analyse the data. Univariate analysis was used to analyse only one variable or construct. For instance, discussing the age of the respondents of online banking. Bivariate analysis was used to analyse the relationship between two different variables such as age of the respondents and the usability variable. Multivariate analysis was used to analyse three or more variables. Data was analysed using a regression analysis, chi-squared tests, etc. as necessary.

### **1.5.8 Validity and reliability**

Heale and Twycross (2015: 66) define validity as the extent to which a concept is accurately measured in a quantitative study. The study made use of face validity and construct validity. The validity of the questionnaire was pre-tested by the research supervisor and a statistician. A pre-test was then undertaken to detect and correct any errors. The pre-test included 20 individuals who were randomly selected. A factor analysis was completed.

Reliability is the extent to which a research instrument consistently has the same results if it is used in the same situation on repeated occasions (Heale and Twycross 2015: 66). Cronbach's alpha was used to test reliability.

## **1.6 Delimitations/limitations/assumptions**

The study was confined to the iLembe District municipality, which is one of the eleven district municipalities in KwaZulu-Natal and one of fifty-two districts of South Africa. The iLembe District Municipality is further divided into four local municipalities, which are: KwaDukuza (Stanger), Ndwedwe, Mandeni, and Maphumulo. The census in the area indicated that at least 82% of the population speak isiZulu, which required the development of a translated isiZulu questionnaire. Only residents who had a bank account, were over the age of 18 and earned a salary were considered eligible as respondents for this study.

Following the commencement of the Protection of Personal Information Act (POPIA) in South Africa in July 2021 (South Africa. Department of Justice and Constitutional Development 2021), which regulates the protection of consumers' personal information, the researcher did not collect email addresses from respondents during the data collection process to ensure respondents' complete anonymity. To avoid the same respondent answering the questionnaire twice, respondents were requested to only submit a response once, even if they received the questionnaire more than once through different social media platforms.

### **1.7 Justification for the study**

This study can add to existing theory by evaluating constructs that contribute to the perception of digital banking, such as by assessing the influence of the ease of use of digital banking, the convenience it proposes, its safety, quality and suitability for clients, as well as understanding the risks and preferences of its usage. Furthermore, the study contributes new insights into digital personal banking and how perceptions of its implementation are viewed. By conducting the study within an economy like South Africa's, the research can consider the influence that demographic inequalities have on digital banking and can consider the impact of current, unprecedented events. A quantitative research approach is therefore appropriate for this study as the research aims to collect numerical data to address specific questions relating to the beliefs and attitudes of the selected sample through a survey and to achieve statistical relationships between the variables (Taherdoost, 2022: 57).

### **1.8 Definition of terms**

Financial technology (fintech): Technological advancements in the financial industry used to enhance automation of financial services through software, mobile banking, digital banking, e-commerce, etc. (Ahmi, Tapa and Hamzah 2020: 379).

Digital/online banking: Banking using digital methods through internet connectivity i.e. cellphone banking, computer banking without having to visit a bank (Kaur *et al.* 2021: 107).

Artificial intelligence (AI): A branch of computer science in which machines incorporate human-like intelligence, allowing for comprehensive and cost saving alternatives to human labour (Kaur *et al.* 2020: 577).

Fourth industrial revolution (4IR): The current industrial revolution which has brought about significant advancements in the use of physical, digital, and biological technology to improve various factions of business, climate control, life, etc. (Menon and Fink 2019: 33).

COVID-19 pandemic: A current world-wide pandemic caused by a highly infectious disease known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The pandemic has resulted in significant setbacks in economies of the world caused by nation-wide lockdowns (Wu, Chen and Chan 2020: 217).

Blockchains: Real-time, open-source platforms that securely transmit data and value online, using the internet (Leible *et al.* 2019: 1).

Cryptocurrency: A digital currency that is stored on the internet (Narayanan *et al.* 2016: 23).

Biometrics: An automated recognition of individuals based on their biological and behavioural characteristics such as unique personal features and attributes (Nguyen *et al.* 2017: 3).

## **1.9 Chapter summary**

Chapter One - Introduction to the Topic

Listing research problem, aims, objectives and layout of dissertation.

Chapter Two – Literature Review

Content from previous studies, journals, textbooks, and other sources is surveyed to provide a theoretical background to the study topic. The eight variables of this study covered in the literature review include digital banking convenience, practical quality, branch service quality, usability, safety, online service quality, risk and preference, and consumer experience.

Chapter Three - Research Methodology



The research methodology (sampling, collection instrument, method of analysis), validity and reliability are discussed in detail. The chapter also discusses the formulation, administration and content of the questionnaire, any challenges experienced, and the software/instruments used to collect the data.

#### Chapter Four – Findings, interpretation, and discussion of the data

The data collection and analysis form the basis of this study and this chapter will focus on the presentation and interpretation of the data collected.

#### Chapter Five - Conclusion of the Study

The final chapter concludes the study, identifies any limitations of the study, offers recommendations and suggests further research.

### **1.10 Chapter conclusion**

Chapter 1 served as an introduction to the research study and research topic. The research methodology of the study was also briefly discussed, and justifications were provided for the study and for the quantitative approach selected for the study. The chapter concluded by listing definitions of key concepts used in this study and outlining the structure of the dissertation.

The next chapter is the literature review which will discuss the theoretical and empirical findings from previous research into the key success factors for digital personal banking. Also provided is information of the context of the study, namely the iLembe District, from a consumer's perspective.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

Chapter 1 formed an introduction to the research by discussing the background of the research topic, the problem statement and the aims, and objectives of the study. The scope, research methodology, ethical issues, chapter layout as well as the definition of the key concepts of the study were also examined. In this chapter, the literature on the theoretical framework of the study concerning digital banking will be discussed.

With ongoing technological advances, consumers have become aware of the wide range of products and services that are available to them resulting in intense competition among companies. The fourth industrial revolution (4IR) has introduced customers to new ideas and methods of banking and has allowed companies to offer seamless new and exciting product and service offerings. The impact of digitisation of banking will be discussed in detail, along with the growth of cashless services, e-commerce, and digital advertising of banking.

The chapter will then discuss the changes to banking in South Africa, with respects to digital banking regulations, technology upkeep, competition as well as the opportunities and challenges that have developed because of digitalisation. Consumer perception of digital banking will be discussed next, where personalisation, convenience, human interaction, safety, and cost are elaborated upon. The chapter concludes with a discussion on consumer behaviour in digital banking, the search for value, and customer service.

### **2.2 The fourth industrial revolution**

Technological advances have undeniably impacted the business and consumer industry. Throughout history, the first three industrial revolutions (that took place between the 1700s–1900s) resulted in intense mechanisation, mass production, and the implementation of electronic systems. The fourth and current revolution (4IR) has seen significant discoveries and advances in cyber connections, the internet, wireless communications, mobile technology, and artificial intelligence. Serumaga-Zake and van der Poll (2021: 3) state that the Fourth Industrial Revolution embodies technologies that conceal the lines between the

domains of biology, physical, and digital, and by extension, business domains, while Maynard (2015: 1005) refers to 4IR as the fusion between digital, biological, and physical technologies, and a subsequent transformation in how these technologies influence the production of goods and services.

### **2.2.1 Overview of the 4IR**

The 4IR has helped pave the way for the growth of cashless transactions, internet banking, e-commerce, and digital marketing. While thriving economies welcome this revolution, the same cannot be said for underdeveloped and emerging economies. As Naude (2017: 4) points out, the 4IR can result in the automation of low-skilled routine manufacturing jobs, which Africa has an unbalanced share of. This increases the unemployment rate, which then negatively impacts the economy as people are slow to adapt to its' technological changes. In contrast, Brown (2020: 2) notes a positive impact of the 4IR in Africa which is that the service industry may benefit tremendously from the 4IR. The service industry is the fastest-growing sector for job creation in most African economies. However, these studies have failed to critically evaluate the impact of the 4IR in South Africa, who's economy is substantially more advanced than that of most African countries. The banking sector has undergone considerable growth which has required its employees to upskill due to new infrastructure that is 4IR and information and communications technology (ICT)-based, from digital payments to customer service and sales. The growth of digital banking allows consumers multiple opportunities for self-employment, and makes it easier for them to access credit facilities (such as loans) and make payments.

### **2.2.2 Digitalisation of banking**

Gleason (2018: 3) describes the impact of the 4IR in mobile banking, noting that it applies to both the technological changes and how people adapt and live with these constant changes. It has become clearer that people tend to lead towards adopting new technology trends if they will benefit from them. This is further confirmed by Kayembe and Nel (2019: 82), who point out that the 4IR includes typical characteristics of an advanced digital technology sector: powerful sensors, artificial intelligence, and machine learning. From the turn of the 21<sup>st</sup> century, the use of mobile devices has increased dramatically.

Lee *et al.* (2018: 4) state that there are two prominent drivers of the 4IR: first, the advancement of the motor industry from the pre- to the post-Fordism era, and second, the development of the digital world, the internet and mobile technology, that is, all applications and infrastructures related to the internet. From the beginning of the 21<sup>st</sup> century, particularly since the 2010s, digital banking has grown tremendously. Digital technology, the use of smartphones, and the internet have significantly influenced banking behaviour, which itself is a result of newer technology. This has made banking services more accessible. For instance, Chigada and Hirschfelder (2017: 7) state that convenience and 24/7 access to digital banking are the main reasons for mobile banking adoption because these result in a minimisation of effort, time, and consultation costs. However, this is not a simple introduction-and-adoption process. It requires commitment from companies to keep up with trends and requires that all their changes be done with the interest of the consumer as the core focus. This is discussed by Fairouz and Wickramasinghe (2019: 4), who stress that in order to thrive in the digital transformation era, prominent companies need to focus on two interconnected activities: changing the perception of customer value and gaining a wider customer interaction reach by utilising digital technology. When offering a new technological service such as digital banking, companies need to ensure that the service will benefit the customer by offering a fresh experience that is in line with their needs; it is not feasible for a company to invest in a service that its customers have little or no interest in using. Therefore, to ensure the customers' needs are taken into consideration, companies need to communicate with their clients, find out which services are most used, and gather opinions on what can or should be changed.

Khan (2021: 46) and Ling *et al.* (2016: 81) state that in digital banking, e-service quality serves as important criteria to banks because it will directly influence customer satisfaction. This is further discussed by Khrais (2017: 8) states that perceived ease of use has a direct significant positive effect on behavioural intention to use internet banking. Asif (2021: 3087) and Pankomera and Greunen (2018: 25) discuss the downsides of traditional banking, in which the customers having to travel to a bank wait in queues which is time-consuming. To lower this 'time-wasting', internet banking has become prevalent among consumers to avoid long queues and save their time having to commute to the bank. Banks have taken advantage of this and have begun to promote internet banking.

South Africa's five main banks (Standard Bank, First National Bank (FNB), Nedbank, ABSA and Capitec) have all introduced user-friendly mobile banking applications within the past 10 years. Table 2.1 indicates My Broadband's (2019a) rankings of banking applications from South Africa's "big five" banks (and Discovery Bank) according to their ratings on Android's Google Play Store and Apple's iOS Application Store.

**Table 2.1: Ratings of mobile banking apps**

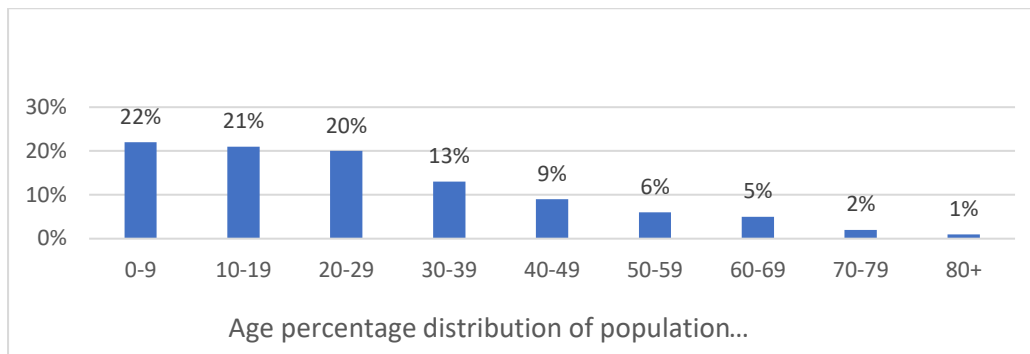
Banking App Ratings			
Bank	Android	iOS	Average
Nedbank	4.2	4.5	4.35
Absa	3.3	4.6	3.95
Capitec Bank	4.3	3.2	3.75
FNB	4.2	3.1	3.65
Standard Bank	3.7	2.8	3.25
Discovery Bank	2.0	2.6	2.30

Source: Adapted from My Broadband (2019a)

The data in Table 2.1 indicates a rating out of five, with Nedbank having the highest rated mobile banking app available with Discovery Bank having the lowest rated app. An earlier study by Ngandu (2012: 29) found that the adoption of electronic banking was related to whether customers considered internet banking to be a simple process. However, a newer study by Ananda, Devesh and Lawati (2020: 20) found that the adoption of digital banking is not significantly influenced by how easy it is to use, but rather by its perceived usefulness. Perceived usefulness is also referred to as performance expectation (Mufingatun, Prijanto and Dutt 2020: 92), with a higher level of customer satisfaction if banking applications incorporate a diverse list of essential banking services that fulfil a customer's expectations. Furthermore, demographic variables such as race, gender, and income levels may provide a vital understanding of differences between purchasing behaviours. This is discussed below.

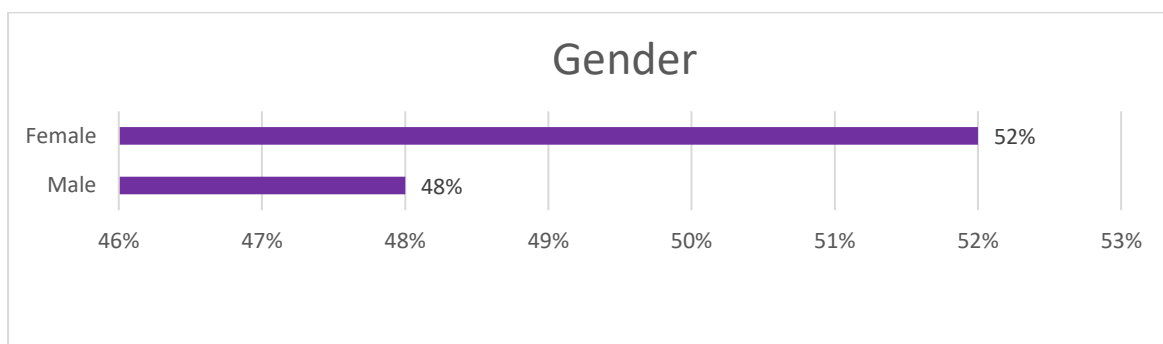
### 2.2.2.1 Demographics

According to the iLembe community census survey, conducted by StatsSA in 2016 (South Africa. iLembe Community Survey, 2016: 12). The 2016 census also detailed various demographic breakdowns as depicted in the following figures.



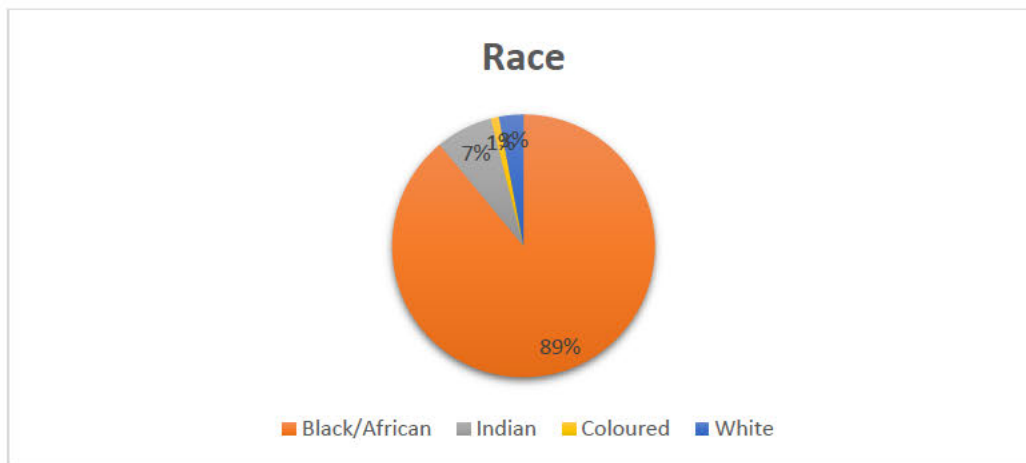
**Figure 2.1: Age percentage of the target population**  
(South Africa. iLembe Community Survey, 2016: 12).

In Figure 2.1 shows the age breakdown of the iLembe population. This is relevant because Asif (2021: 3088) and Ameme (2015: 19) discuss the impact that age has on the use of digital banking and found that younger generations, like Generation Y, adapt to the use of digital banking easier compared to older generations like the Baby Boomers, confirming at a 95% confidence level that there is a significant relationship between age of consumers and digital banking use. This may be because younger people are more likely to use technology, and find it easier to learn new technologies. Therefore, this study will consider the impact of age on the use of digital banking.



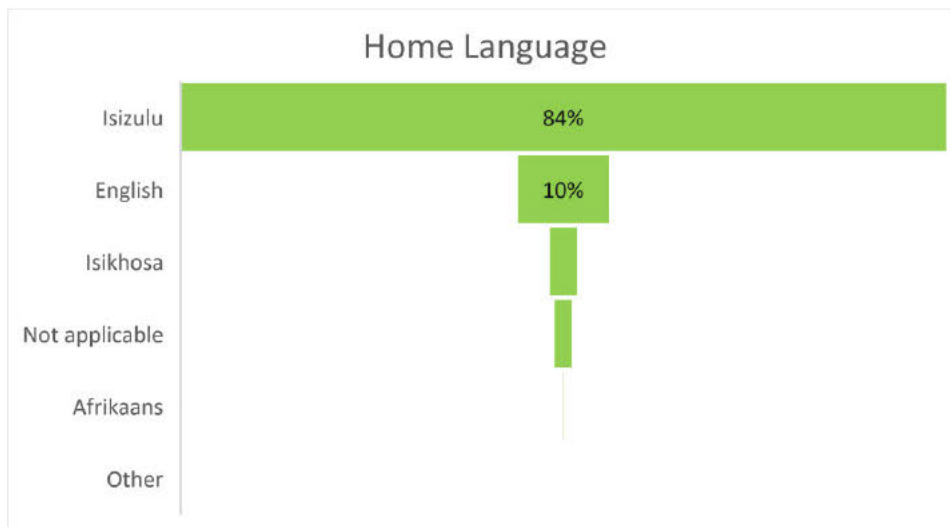
**Figure 2.2: Gender of the target population**  
(South Africa. iLembe Community Survey, 2016: 12).

Figure 2.2 indicates that females in the target population outnumber males by 4 percentage points. The literature reveals considerable differences on the perception of gender in digital banking. For instance, the study by Redda and Surujlal (2019: 1) with 310 respondents (53% male and 47% female) found no significant difference in the use of digital banking per gender. Arora (2018: 53) found that females were more likely to use digital banking and online payments compared to men. Neema and Bapna (2018: 73) found men to have a higher inclination to use digital banking. Gender will therefore be considered in this study, to determine if there is any difference in digital banking use between males and females in the iLembe district region.



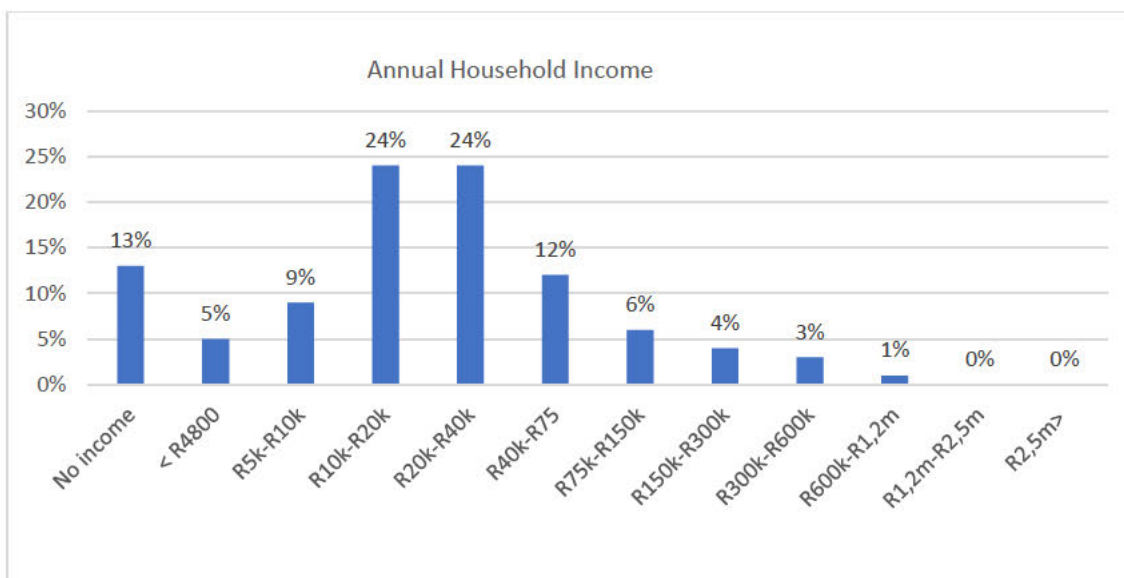
**Figure 2.3: Race of the target population**  
(South Africa. iLembe Community Survey, 2016: 12).

From Figure 2.3 it is evident that 89% of the population is African, followed by Indians (7%), whites (3%) and coloureds (1%). Multiple previous studies on digital banking, such as by Auta (2010), Oladejo and Akanbi (2012), Ameme (2015), Neema and Bapna (2018), Arora (2018), Jha (2019), Redda and Surujlal (2019), and Lin, Wang and Hung (2020), have not investigated whether race is a contributing factor in the use or perception of digital banking. This presents a gap in the study. Therefore, race will be considered during the analysis of this study.



**Figure 2.4: Home language of the target population**  
(South Africa. iLembe Community Survey, 2016: 12).

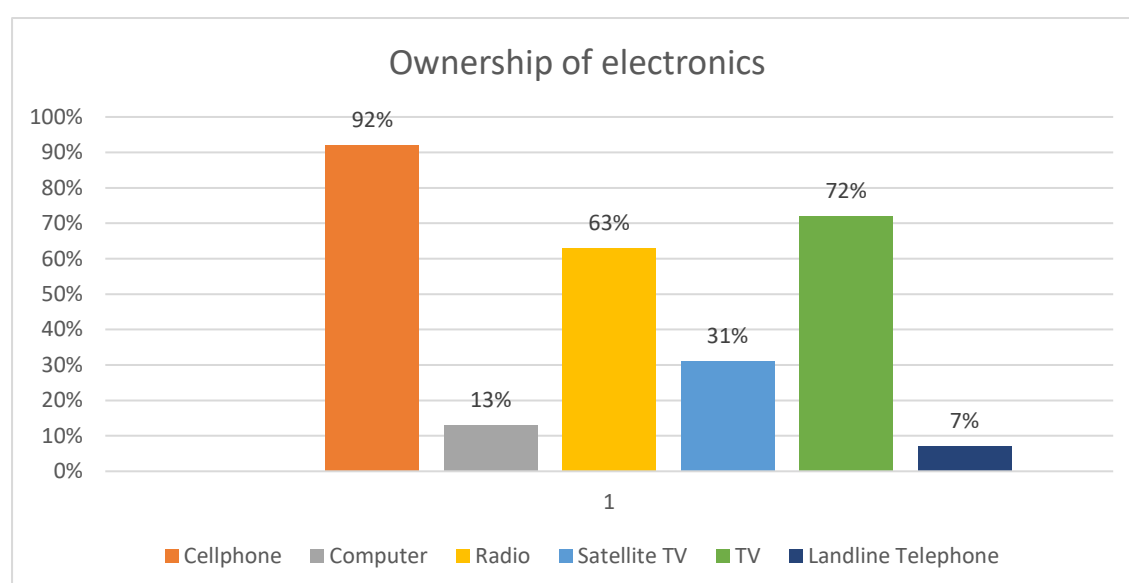
From Figure 2.4 it is evident that the home language of 84% of the population is isiZulu. While the research will consider language in the data collection process, a study by Ramlall, Hattingh and Van Deventer (2020: 83), revealed that language is not listed as a normative behaviour variable that heavily impacts digital banking use. In South Africa however, English is the third most-spoken first language, which may pose a linguistic barrier for those who wish to utilise digital banking but cannot speak, read or write English fluently.



**Figure 2.5: Annual household income of the target population**  
(South Africa. iLembe Community Survey, 2016: 12).

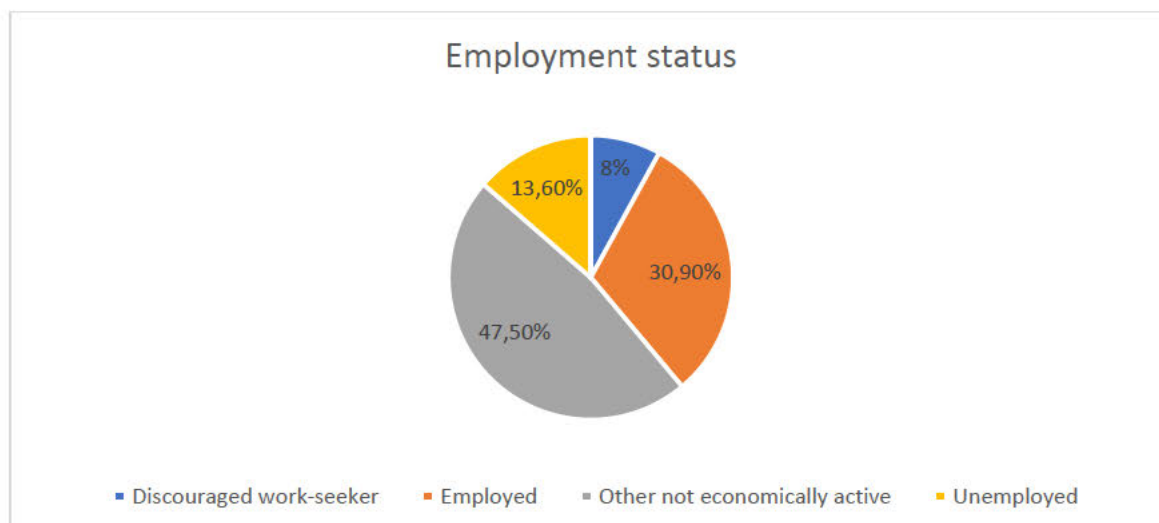


Figure 2.5 shows the annual household income of the target population. Income is an important factor in determining whether customers have the financial means to access technology that allows digital banking. For instance, a study by Mohapatra, Samantary, and Dash (2017: 109) found that income played a dynamic role in measuring the opinion of respondents' satisfaction regarding the facilities provided by banks. As such, this study will also consider annual household income as a determining factor in the use of digital banking.



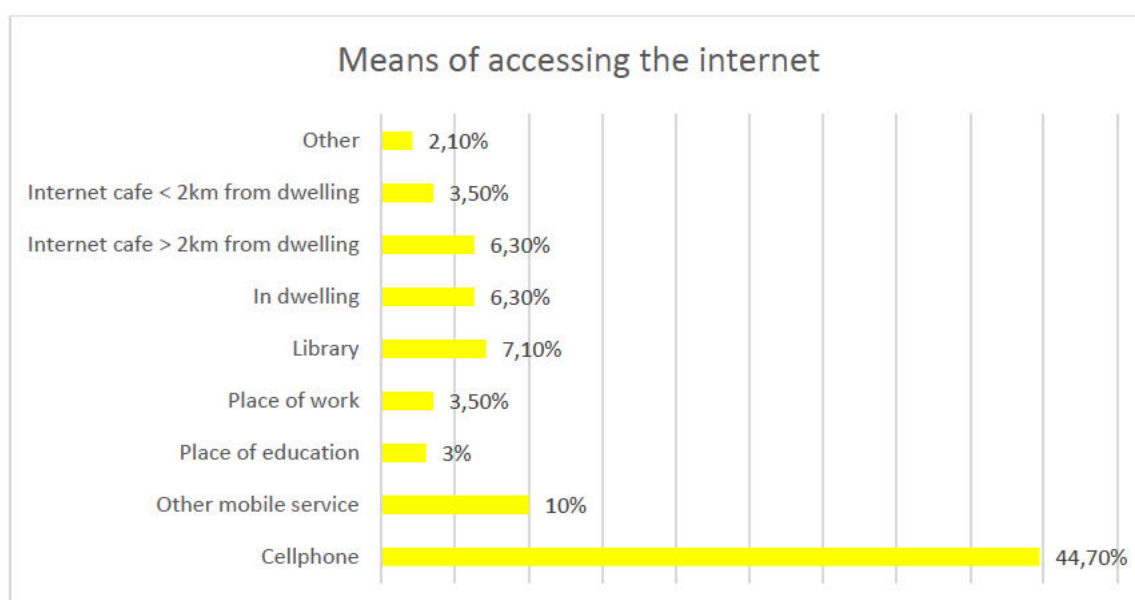
**Figure 2.6: Ownership of electronics of the target population (South Africa. iLembe Community Survey, 2016: 12).**

Figure 2.6 shows the ownership and use of the five major electronics. Cell phones account for the highest ownership, as 92% of the population in the iLembe district own a cell phone, already indicating an available instrument to access digital banking. This statistic will provide a basis for evaluating the actual use of digital banking in the district, as digital banking incorporates the use of “mobile” banking, another interchangeable digital banking term.



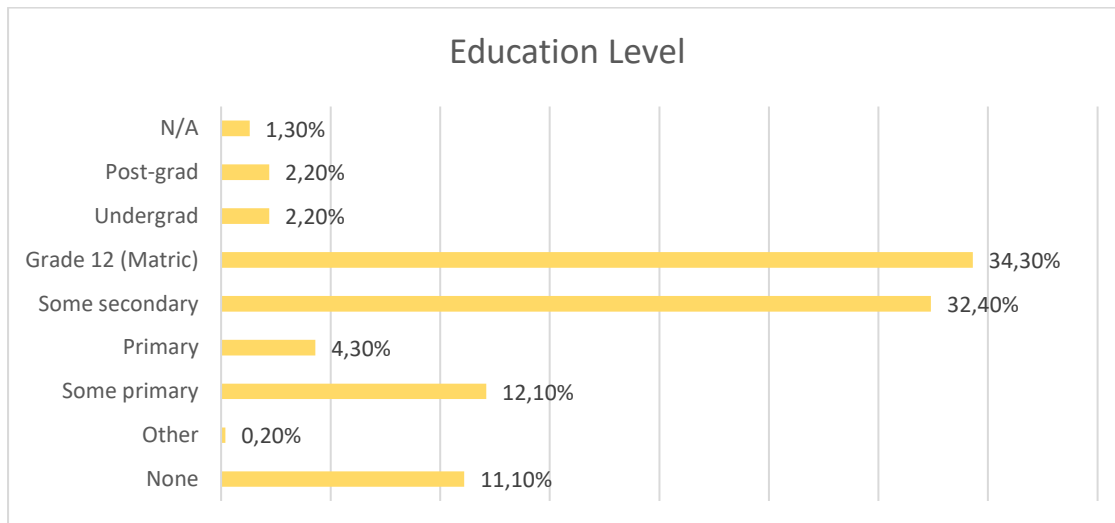
**Figure 2.7: Employment status of the target population (South Africa. iLembe Community Survey, 2016: 12).**

Figure 2.7 shows the employment status of residents within the iLembe district. The majority of the population, 47.50%, are not economically active i.e., are not looking for employment. Unemployed individuals i.e., those looking for employment is 30.90%. Discouraged work seekers are 8% of the population, while the employed population stands at 13.60%. This study will incorporate employment status into the analysis, as only those residents who are employed and receive salaries will be part of the data collection.



**Figure 2.8: Means of accessing the internet of the target population (South Africa. iLembe Community Survey, 2016: 12).**

Figure 2.8 shows the means of accessing the internet. The graph illustrates that 44.70% of the population access the internet through a cell phone. Since digital banking requires the internet, the statistics presented in this graph will be important for understanding how respondents access digital banking.



**Figure 2.9: Education level of target population**  
(South Africa. iLembe Community Survey, 2016: 12).

Figure 2.9 shows the education level of the population. 72.40% of the population have “some secondary” education or higher, whereas 11.10% of the population do not have any education and 12.10% have some primary and 4.30% have completed primary school. Studies by Nagesh *et al.* (2022: 1815) and Ameme (2015: 22) found that internet banking services should be targeted towards the educated as those with lower education levels or no education may not be able to operate computers and technology comfortably. Similarly, Sheeba and Goathi (2020: 127) state that education has a significant influence on the adoption of digital banking. This study will therefore also consider the education levels of digital banking users.

### 2.2.3 Cashless transactions

In recent times, consumers tend to avoid carrying large sums of cash due to safety concerns (Raja 2018: 175; Kaur, 2019: 524; Mohd and Pal 2020: 4). Husain (2017: 2) states that cashless transactions involve purchasing goods and services where there is no actual cash involved. The cash is instead substituted by several cashless methods that are driven by digital technology and are capable of transferring money from one person’s bank account to

another person or a business. The author goes on to discuss the use of cheques, which were one of the first ‘cashless’ transactions, stating that a cheque is a “negotiable instrument that orders a bank to pay a specific amount of money from a person's account to the person in whose name the cheque has been issued”. However, a cashless society is not easily achieved. Ehrlich *et al.* (2019: 5) state that for a wide variety of consumers, cash is instant, easy to accept without fees or complications, and can be easily spotted if fake. Also, using cash does not require consumers to have knowledge of, or require digital technology and the internet.

The World Bank (2022: 1) defines financial inclusion as “individuals and businesses having access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit, and insurance – delivered responsibly and sustainably”. In South Africa, however, access to digital technology is not the issue – adoption and use of it is. There are approximately 80 million bank cards in circulation, including +-17 million South African Social Security Agency or “SASSA” cards, and a mobile phone penetration rate of 157%. However, there is a decline in the use of these accounts and an increased utilisation of cash in the informal sector. While younger generations tend to lean towards a more cashless environment, cash transactions remain prominent in every market. Since consumers have access to several forms of payment, there is no conflict (Mercadante 2018: 1).

Indicators of a cashless society depend on different factors. For instance, Lai and Liew (2021: 3) state that usefulness and perceived ease of use are among the top contributing factors to mobile payment system adoption, whereas Khan and Craig-Lees (2009: 24) state that governments and several companies provide strong encouragement and support for cashless transactions. Commonly, due to high crime rates and complaints filed by consumers, companies, particularly banks, promote the use of cashless transactions. One of the major contributions to the promotion of cashless transactions falls is the development of the third-generation (3G), fourth-generation (4G) and now fifth-generation (5G) networks that have allowed fast and seamless internet connectivity. Banks use this technology to their advantage by releasing convenient banking applications that can provide basic and advanced transactions without going to a bank or ATM to draw cash. Some further indicators of a cashless society include:

- **Financial accessibility**

A driving factor to promote the use of cash or non-cash transactions is the actual accessibility to cash (Jumba and Wepukhulu 2019: 1380). Countries with a high population of unemployment, low education, and inequality will have more people using physical cash and less use of bank services, including services such as an ATM (Ighomereho, Ladipo and Dixon-Ogbechi, 2018: 101).

- **Preferences and technology**

Jain (2017: 2) posits that the middle class in Africa has seen a significant digital transformation, which is perceived as a business opportunity for global retailers. Jain's study further points out that South African consumers are fast becoming influenced by materialism; as a result, e-commerce is growing rapidly growing which has allowed international brands to take advantage of this transformation from a business perspective. This is supported by Visa (2021: 10), which states that digital access is primarily accessed through mobile phones across several African markets. Internet penetration is highest in South Africa at just under two thirds of the population, while Kenya and Nigeria each have just over one third of their population with digital access through the internet.

- **Positive and negative aspects of cashless transactions**

With the introduction of digital banking, banks have begun to highlight the benefits of transacting without cash. For instance, Fabris (2018: 57) notes that "the elimination of cash may seriously impair criminal activity, especially those connected with drugs and money laundering. These activities can be hardly carried out without cash". Deora (2018: 29) points out that tax evasion will drastically decrease, as the government and financial institutions can easily track the income of citizens. Khando, Islam, and Gao (2022: 168), Ordu and Anyanwakoro (2016: 11), and Parmar (2018: 11) discuss the safety and peace of mind for consumers, noting that cashless societies experience a reduction of robberies and theft at ATMs and other public spaces. Other benefits include the speed of non-cash transactions, as consumers can easily transfer large sums of money and pay large sums of money (debit and credit cards) without having to physically count banknotes and coins. Some companies also offer online-only deals, encouraging customers to shop online rather than visit a store. However, there is a debate about the potential drawbacks of cashless transactions. Deora (2018: 30) points out that identity theft remains high in cashless transactions such as through

unauthorised cellular contracts. The author's research further points out that cashless transactions can be damaging to small businesses as these businesses are dependent on high liquidity, and cashless transactions reduce liquidity. Kirobo, Lissah, and Govella (2022: 43) and Abbas (2017: 194), state that a major challenge currently facing the growth of cashless transactions is cybercrimes, where people's bank accounts, savings, and credit cards are used without their consent. Cashless transactions also pose a challenge for people who are informally employed, as many depend on cash generated by recycling and selling scrap metals.

Although cashless transactions offer benefits, concerns have arisen that these services can increase the overall consumption and debt levels due to high spending. This reduces savings and can have further negative consequences on society and the environment in the form of excess consumerism. This facet of consumerism deals with the social and economic demand that encourages the attainment of goods and services in ever-increasing amounts. Passini (2013: 369) states that the recent consumerism trends have led to an additional 'great transformation' (following the 4IR), with positives and negatives as to how people interact with, and what they expect from, the world around them, including products and services. The associated reasoning of consumption is the 'consumer ethic', which, according to Bauman (1988, cited in Chatzidakis *et al.*, 2014: 5) is that life is normatively motivated by consumption, where satisfaction, independence, and freedom are sought through consumption of goods and services. This is due to the introduction and significant growth of e-commerce, which has led to a steep increase in consumer purchasing power.

#### **2.2.4 E-commerce**

E-commerce is defined by Vipin and Satyendra (2021: 66) as the electronic media and the internet for dealing with goods and services. Khan (2016: 19) states that e-commerce also serves as a reliable indication of the prices of difference products and services, allowing consumers to shop around before making a purchase decision. In banking, e-commerce allows businesses to utilise advances in mobile technology to improve customer service by expanding their market reach, improving relationships, and offering a wider range of products and services. Azeem *et al.* (2015: 4) identify three types of e-commerce: business to business, business to customer, and customer to customer. Digital banking focuses on the business to

consumer concept that incorporates the use of e-banking. Azeem *et al.* (2015: 1) further identify that e-banking incorporates digital banking, in addition to advances in the use of ATMs, electronic funds transfers (EFTs), and direct deposits. Previous studies, such as by Havasi, Meshkany and Hashemi (2013: 41), and Fatonah, Yulandari and Wibowo (2018: 1), highlight that advances in technology positively impact e-banking, but it is generally the wealthier population that first experience and adapt to these changes. This is due to the segment having the financial means to keep up with technology and spend more.

Banks are necessary for every country's economy, which is why a well-developed banking sector needs to incorporate the needs of all their clients, and not just those who have the means to access their newer services. Khan (2016: 20) and Hammoud, Bizri and Baba (2015: 1) state that if e-commerce is implemented efficiently, advancements in technologies can result in business process improvements, which positively impacts its consumer base and satisfaction levels.

Laisuzzaman *et al.* (2010: 58) identify six core features of e-commerce as follows:

1. Ubiquity: This ensures that the service is available anywhere, at any time. Digital banking does not restrict users to be present at a place to use its services. From a consumer point of view, ubiquity diminishes transaction costs – which are the costs the consumer saves by not having to travel to a branch or wait in queues.
2. National and global reach: Consumers frequently request, or are frequently requested, to transfer money from one account to another. For instance, if a consumer who lives away from home wishes to transfer money to his or her family in another province or country, these transfers can be done easily through digital banking.
3. Universal standards: To maintain its success, it becomes imperative that e-commerce keeps up with technology. South African citizens are not adopting digital banking enough, despite a mature level of digital banking in the country (Ramavhona and Mokwena 2016: 7). This indicates that there is a gap between the advanced technology of digital banking available in South Africa (which is keeping up to universal standards), and the actual number of consumers who are making use of these advanced technology services.
4. Interactivity: This allows consumers of banking to interact with the different content available to them on a digital level

5. Information density: The internet vastly increases information density, i.e., the total amount and value of information available to the market. E-commerce reduces information collection, storage, communication, and processing costs.
6. Personalisation: One of the biggest benefits that digital banking and e-commerce proposes is that consumers receive a personalised banking experience, allowing for individual needs to be taken into account.

While banks tend to promote the use of internet-based banking, their efforts to reach a wider audience can be a challenge. With the growth and use of digital advertising, banks can focus on a niche when advertising, as opposed to the traditional methods they use in corporate advertising.

### **2.2.5 Digital advertising and its effects on digital banking**

Constant technological advancement has resulted in consumers becoming increasingly aware of the wider range of products and services that are offered to them (Murugan 2019: 24) which makes competition amongst companies widespread (Wojcik *et al.* 2018: 21; Clark and Monk (2017: 1). Following the impact of the 2008 global economic depression, banks needed to find new and innovative ways to attract and retain their clients. This involved marketing their products in such a way that consumers are drawn to not only the products and services of the bank, but to the image and branding of the company itself (An *et al.*, 2018: 71). This is where digital advertising has become a critical factor in the success of banking in the 2010s decade. Advertising has proven to be vitally important to promote companies and can be the sole factor in determining how successful a product or service is. To succeed in the rapidly growing digital era, banks must understand consumer adoption and preferences for digital advertising. While traditional advertising continues, digital advertising is growing due to the success of internet and financial technology, which focuses on relationship-building approaches in marketing (Larsson and Viitaoja 2016: 860).

According to Stokes (2018: 290), the foremost objectives of digital advertising are to raise the sales of products and services, improve the company's image and brand awareness, engage with old and new customers, and allow consumers to present their opinions in the marketplace. Digital advertising is based on the simple economics of demand and supply.



Advertisers and business focus on stimulating consumer's needs (demand) and then work towards satisfying that need (supply). The advertisements are usually in the form of pop-up advertisements, sponsor advertisements or videos.

The internet allows companies creative freedom to express their views and allows for easier and direct responses from the public. It also allows companies the possibility of tracking all metrics and interactions with the advertisement itself: the number of people it reached, how many clicks it received to view the product or service, the post-click, i.e., purchase or order, and how many new users were reached. This data serves as a vital measurement technique for businesses by allowing them to make informed decisions regarding product placement and advertising. The ability to measure the effect of online advertising allows companies to make informed decisions on which trends are likely to prove successful in attaining customers in the future.

One major difference between traditional and digital advertising is that digital advertising becomes more accustomed to reaching users in a very subtle manner through what information technology defines as an ad server. Sankuratripati, Srivastava and Shanbhag (2006: 1), and Zawandzinski (2018: 1) refer to an ad server as the technology used online to place advertisements on websites. These ad servers allow advertisements to be made visible to users even when they do not intend to shop for that product or service, allowing the possibility for customers to be drawn to a purchase they had no intention of making. Although traditional marketing can still prove highly effective for existing and former clients in banking, digital advertising and marketing can help target new audiences much faster by using ad servers. For instance, younger generations are more inclined to use digital technology (Turner, 2013: 30; Beaven, 2014: 71; Linnes and Mectcalf 2017: 15; Venter 2017: 501;), which allows banks and other companies to capture and analyse data on this audience and helps them build a more specific marketing segment, making it easier for them to draw in a newer generation of clients, most of whom are already comfortable with the use of digital technology. However, it is worth noting that banks need to focus on engaging with older clients too, as these clients are generally more brand loyal, convey value and are more profitable. This is also how banking can help target individual clients. For example, if a client had to search the term "loans" on Google, an ad server can direct a client through pop-up advertisements to a specific bank currently offering low-interest loans. Whereas with older

clients, banks keep a constant connection as they actively borrow and spend money and invest their retirement money, buy insurance, and invest in moveable property.

### **2.2.5.1 Types of digital advertising**

- **Content marketing and social media advertising**

Content marketing involves the use of social media by implementing various ‘content’ in the forms of text posts, pictures, videos, and blogs. This method also incorporates the use of direct messaging on social media accounts. Multiple previous studies have identified ways that social media advertising promotes a brand (Kathiravan, 2017: 81; Shareef *et al.* 2017: 27; Chiang, Lo and Wang 2017: 195; Voorveld *et al.* 2018: 41; Appel *et al.*, 2019: 83) and banks have used this sort of advertising to their advantage by implementing it as a means to deliver their information and promote their products and services as quickly as possible. However, these studies have failed to identify how social media impacts mobile banking users from lower-income households who may depend on visiting a bank due to the lack of resources to access digital banking. Due to the many differences between various social media platforms, each platform offers a unique context for advertising. For instance, Twitter allows clients to send banks direct messages and have qualified agents to help them with their queries. Content marketing also allows brands to practice social marketing, positively impacting a brand’s image on a large public scale. Lefebvre (2012: 119) defines social marketing as brands developing and enhancing marketing systems that support consumer well-being. These social media applications also make use of advancements in information technology in the following ways:

- **Search engine optimisation**

Durmaz and Efendioglu (2016: 36) state that the purpose of search engine optimisation (SEO) is to identify the target audience and influence them to the desired webpage through methods deployed on search engines. Bostanshirin (2014: 785) further states that the SEO strategies involve listing websites among the top results of a term searched on a search engine. This is done by displaying the website as a top result on the search engine results page when a user searches for a specific term that is related to the business. SEO works well when a website’s design is attractive and has a variety of features to view, compare and purchase different products and services. Since search engines want users to

be satisfied with their search results, the website with the best features will rank at the top of the results page.

- **Pay per click advertising (PPC)**

PPC advertising is like that of SEO, but the difference lies in that PPC is paid for. Unlike in SEO, which selects the better website for the search result, brands that opt for PPC bid for advertising space on search engines by paying for certain keywords. So, each time a user clicks on an advertisement, the company would have to pay for that click, whether the user found the website useful or not.

- **Affiliate marketing**

Affiliate marketing involves one company outsourcing to other companies who will promote their products or services in return for a commission (Beleraj, 2018: 66). This sort of marketing is popular with companies that specialise in online shopping. For instance, the online shopping company can offer free delivery to users of a particular bank or offer reward points for paying through a certain bank (Ghosal, Prasad and Behera 2020: 1).

- **Email marketing**

Email marketing has become a popular form of formal communication between companies and consumers. Banks have commonly used email as an effective way to market their products and services to existing clients, by offering them first-hand communication of new services. Despite the benefits that email marketing offers, there are some drawbacks to this method of advertising. One problem with email marketing is that a lot of marketing emails are regarded as invasive and may go unnoticed if they are sent to the spam folder of a user's email account. So, certain measures should be taken to overcome the possibility of ignoring marketing emails on the part of clients (Bostanshirin, 2014: 785).

- **Video advertisement marketing**

These are video advertising techniques that automatically play or may be played by the person who visits a website. Its advantage is that it is in video form and like the traditional electronic advertising on television, it can draw a consumer's interest due to its automatic-play structure, but can also be intrusive (Okolo *et al.* 2018: 464).

A flaw of traditional advertising is that it does not always reach all areas of a geographic location or targeted segment, whereas it is easy to do so with digital advertising, and even far

beyond the intended geographic reach. Furthermore, as soon as a marketing team starts a digital advertising campaign, the message reaches the widest audience the very moment it is sent out (Okolo *et al.* (2018: 454). However, digital advertising is generally time-based which is referred to as frequency capping and is defined as “the number of times a specific ad is seen by the same individual online” (Grover 2017: 5). The exclusivity of a company’s advertisements in a digital channel guarantees that advertisements from direct competitors are not shown on the same page, allowing the consumer to not be tempted by a similar product from another company. In traditional advertising, however, many companies may advertise in the same space (such as print newspapers, radio, television, etc.). Audience targeting is when the ad server uses the profile of a user, which displays data collected from previous website visits, to determine which adverts will have the most impact if shown during a particular visit on a webpage. Ad servers can base this profile on internet cookies or individual IP addresses. An additional aspect that has gained momentum in digital advertising is that this allows consumers to make their complaints, opinions, and suggestions openly, allowing banks and other companies to utilise this feedback by incorporating different views.

#### **2.2.5.2 Factors that influence advertising**

- **Utilisation of visual media**

According to Miessner (2016: 1), written advertising communication is likely to be overlooked if it does not show your customers what you are marketing. TV advertisements, billboards, streamers, and visual print advertisements are likely to get you more attention from your potential customers.

- **Social media and live chat**

Miessner (2016: 2) emphasises that social media and live chat can play a substantial role in making advertising campaigns a success. Promoting brands and products on social media allow companies to actively engage with prospective customers. Similarly, marketing through live chat gives companies an edge to promote brands and products in real-time.

- **Seasonality**

Cannon (2013: 2) states that it is important for advertisers to be aware of how seasons and holidays affect the company’s products and services. For example, relevant businesses and industries should advertise heavily over holidays or special events.

- **Media exposure**

This determines how much advertising is required to accomplish advertising objectives.

Exposure is described by ratings, which in turn refer to the percentage of an audience that has an opportunity to see an advertisement placed in an advertising method.

Since marketing and advertising influences people differently, banks need to adopt a range of techniques to draw in clients, particularly for winning the trust and loyalty of new clients. As such, it is crucial that organisations look at the customer experience in a holistic sense across the entire relationship, and not just consider the customer's importance when looking to secure a new client. In other words, banking customer experience should include every bank point of interaction, not just those more usually correlated with marketing and sales tactics, especially not just those that appear digitally. Ease of use ranks as an important point of reference in digital banking, as customer perception of effort is the primary determinant for loyalty (Dixon 2013). Much of the advertising and marketing of banking stems from rules and regulations governed by multiple regulations.

## **2.3 Changes to banking in South Africa**

Regulatory changes, technological advancements, competition, and opportunities and threats have significantly impacted the banking sector worldwide. South Africa's advanced banking system has adapted to changes efficiently in some sectors, while it lags behind in others. Strict banking regulations have been implemented to control the power that banks have over consumers, while technological advancements continue to see significant growth. Many digital banks have been established in the South African banking sector in recent years, bringing in a new line of competition to branch banking.

### **2.3.1 Regulations in South African banking**

Martin (2019: 1) states that while the 4IR gives rise to opportunities in convenience and efficiency, it also presents a challenge especially in the domains of data security, hacking, fraud, consumer protection, and laws regarding technology use, innovation and implementation. According to Thwaites (2016: 23), financial technology is massive and growing within South Africa. Considering this, the South African government intervened by introducing the Financial Sector Regulation Act, which was signed into law on 21 August

2017 (South Africa. National Treasury, 2017: 1). This established a “Twin Peaks” model, ensuring that financial institutions treat financial customers fairly. Financial literacy is uneven among consumers, particularly regarding the rights and regulations that protect consumers and banks. Regulators are placing more pressure on banks to realign their organisational culture and outputs to be in the interests of their clients. For instance, the Financial Services Board (FSB) has been tasked with reviewing its structures to enhance the efficiency of the financial system, to provide existing and new financial customers with financial education programmes, and to promote financial literacy (Coetzee 2018: 3). Multiple regulations have been placed into effect in South Africa to protect all parties involved in banking. The Banks Act, No. 94 of 1990, is commonly identified as the principal legal instrument for detailing the regulation and supervision of the banking industry in South Africa. One of the primary objectives of the act is to protect the value of the South African currency in balancing and sustaining economic growth (Moloi 2014: 35). The South African Reserve Bank (SARB) is the central bank of South Africa, which focuses on building stability in pricing, finance, and the operations of the banking industry. The SARB, like most central banks, identifies the need to pursue balanced economic development and growth based on the principles of a market system, which includes societal equality.

The SARB is also accountable for promoting the reliability of local banking, through the effective application of relevant regulatory and supervisory standards and to minimise systemic risk (Shapiro, 2012: 132). Objects 2 b and c of the Electronic Communications and Transactions Act, No. 25 (South Africa. Department of Finance 2002: 16) respectively state that the Act promotes universal access primarily in underserved areas and to promote the understanding and acceptance of electronic transactions in South Africa. Although electronic payments have become more widespread in use, there still exists a large gap in the number of people who can make payments through electronic methods.

Another way in which regulations or laws can affect banks is reflected in the regulations surrounding the declaration of a National State of Disaster (South Africa. Department of Co-Operative Governance and Traditional Affairs 2020a: 4) to counteract the effects of the COVID-19 pandemic. News publications and government announcements confirmed that one of the most effective ways to contain the COVID-19 pandemic is to avoid personal contact. This included restricting the movement of people in public spaces and requiring the public to

spend as much time as possible at home. In line with these indications, most banks reduced the opening hours of their branches and offered multiple counter-services online that would previously have required clients to visit a bank. The Department of Trade and Industry determined that banks would be required to make changes to their business structure in-line with the South African lockdown regulations. Some of the regulations included the COVID-19 Block Exemption for the Banking Sector (South Africa. Department of Trade and Industry, 2020a: 3) and the Disasters Management Act, 2002: Amendment of Regulations Issued in Terms of Section 27(2) (South Africa. Department of Co-Operative Governance and Traditional Affairs, 2020b: 4).

The purpose of the new regulations in banking were to implement practices between banks, the Banking Association of South Africa, and the Payments Association of South Africa, promoting conduct to prevent an escalation of the pandemic and its spread. The regulation allowed the banking industry to reduce the negative implications of the national lockdown on the ability of clients, including business and private banking clients, to access and manage their finances. A key point of the regulation was to allow clients to be able to continue standard operations beyond the effects of the pandemic by allowing the banking sector to manage infrastructure, including ATMs and branches. Payments systems, however, were affected, as banks could only operate with a fraction of their staff, and at limited capacity time availability and only with selected services. As an essential service, banks allowed the continuation of online payments, favouring these over cash-to-cash handling, but still ensured that essential payment systems continued to operate during the COVID-19 pandemic by keeping the availability of banknotes at ATMs, branches, and businesses in operation. The third point of the regulation highlighted the provision of electronic payment systems during the lockdown period. Social distancing regulations resulted in the digital distribution of channels representing a great deal of customer-focused banking operations which are critical to maintaining consistent customer satisfaction. As financing and saving becomes increasingly important due to job losses, inflation, and fluctuating interest rates during the pandemic, the effects of social distancing have also resulted in consumers opting for a safer way to access their banking services remotely. This is where customer satisfaction with digital banking becomes a crucial factor; McKinsey & Company (2019: 7) report that clients who are very content with their digital banking experience are likely to continue transacting

with their banking application and may use more services as compared to those who are less satisfied.

Ethical marketing practices also impact the banking industry. According to Schlegelmilch and Oberseder (2010: 3), ethical marketing uses practices that promote the ethical values of organisations so that consumers are attracted to purchase more from the organisation. Dincer and Dincer (2014: 151) point out that ethical marketing is not an easy task, particularly for marketing departments. Tanveer, Ahmad, Mahomood, and Ul Haq (2021: 2) further point out that while marketing is a substantial part of any business model, ethical marketing forms an integral part of corporate ethics. Built on the theoretical underpinnings of ethical marketing, ethical practices should be applied while analysing whether the product or the service is portrayed accurately and factually in terms of cultural and social values. As marketing is the visible interface with not only customers but with all other stakeholders, marketers need to take into consideration the ethics of their actions, as this directly influences the consumer's perception of the organisation. Marketing ethics centres around principles and techniques that define and promote acceptable marketing conduct. However, today, marketing ethics goes beyond legal, regulatory, and marketing issues, and help to build long-term marketing relationships. Previous studies (for example, Elegido 2011: 635), have emphasised that pricing goes against ethics when the customer is exploited financially. An example of this would be price-fixing, predatory pricing, and price discrimination.

### **2.3.2 Impact of COVID-19 on the banking industry**

Coronavirus disease (COVID-19) is a highly infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case of the virus in the world was identified in December of 2019 (World Health Organisation 2020: 1). The spread of the COVID-19 disease happens through the respiratory droplets formed when an infected individual coughs or sneezes. Symptoms and indications of infection include mild to severe respiratory-related illnesses such as coughing, sore throat, shortness of breath, and fever (South Africa. Coronavirus 2021: 1). The impact of the virus has resulted in strict local and international lockdowns, which prevent the public from public-space movements, gatherings, and meetings. As a result, several businesses, and industries, including the banking industry were forced to find alternative ways of delivering their products and services to consumers



that limited the amount of direct person-to-person interaction. Makhitha and Ngobeni (2021: 1) state that the increasing development and use of the internet has considerably altered the lives of consumers, in such a way that their behaviours towards purchasing of products and services has begun to change. The World Bank (2021: 1) indicates that South Africa has great potential to develop and expand its robust foundations in the digital economy. This has resulted in a rapid and seemingly permanent change in consumer behaviour in the banking industry, brought on by the effect of the COVID-19 pandemic (BusinessTech, 2021: 1; Accenture, 2021: 1). This was further accelerated by pressures faced by South African banks to create, communicate, and deliver COVID-relief measures through effective introduction of digital banking channels (BrandsEye 2020: 1). Mastercard (2021: 1) later revealed that this massive disruption of banking in Africa as a whole boosted financial inclusion as consumers moved to digital channels for banking and shopping. While the emergence of COVID-19 has significantly increased digital banking usage (Madubela 2021: 1; PWC 2021: 1), cybercrime and the commencement of the Protection of Personal Information Act (POPI Act) in South Africa have impacted the surge in digital banking growth (Chigada and Madzinga 2021: 4; South Africa. Department of Justice and Constitutional Development 2021; Independent Online 2021: 1).

### **2.3.3 Marketing opportunities under COVID-19**

The timeframe and effects of the COVID-19 pandemic are not well understood due to the nature of the virus. However, Khidhir (2020: 1) states that once the COVID-19 pandemic and infection rates begin to slow down, customers will have already adapted to spending less time in banks due to digital adoption. This means that banks will need to focus on promoting and selling more products and services through digital channels to balance out the losses incurred in the reduction in sales acquired through traditional branch banking. Banks have taken this as an opportunity to encourage the use of digital banking during the COVID-19 pandemic, emphasising some of the benefits of digital banking, such as convenience due to 24/7 access, online funds management, and better rates. However, due to low smartphone use among older residents in the iLembe district (iLembe Community Survey, 2016: 1), selected in-branch services are still required by a large sector of the population, particularly by elderly clients who cannot efficiently transition to digital channels in a short space of time. For instance, elderly clients, who are regarded as high risk to contract COVID-19, are less likely to

increase their use of online banking (Mitek 2020: 1). This is further discussed by Msweli and Mawela (2020: 320), who state that elderly people are not comfortable with the use of digital technology and smartphones. Thus, if elderly clients have a limited understanding or knowledge of any type of digital technology, it is likely that they will be averse to using the products and services offered through that technology. They further state that elderly members of the community are a significant business opportunity for banks, and it may become an overlooked opportunity if the elderly's needs are not taken into consideration. It thus becomes a vital opportunity for banks to attempt to draw clients of all age groups into the use of digital banking, by accelerating the opportunities that have been presented by the national and international lockdown regulations.

Oliver Wyman (2020: 17) discusses the effects of the COVID-19 pandemic on digital banking, and notes five topics in which digital acceleration can be achieved during and after the pandemic, which are discussed below

#### **2.3.3.1 Digital strategy**

Banks need to develop a solid digital strategy that caters to the needs of all their clients and offer opportunities to draw in new users to their services. This strategy needs to not only offer secure services but be user-friendly and technologically advanced, offering state of the art features. As long as two decades ago, Sheshunoff (2000: 1) suggested that the most important determinant behind the application of online banking by the banking industry was the need to create a unique barrier for existing customers. The author further maintained that once a client is content with the digital banking services of a particular bank, they will be less likely to change or move to another financial service provider. Discussing digital transformation and strategy, Kitsios, Giatsidis, and Kamariotou (2021: 1) state that digital transformation has dual functions in that it enables banking organizations to offer new service channels through new electronic platforms and service points, and also reduces their operating costs by limiting the number of physical stores and staff that they need.

#### **2.3.3.2 Digital partnership**

Due to the nature of technological digitalisation, multiple corporations have extended their businesses to take advantage of digital opportunities. For instance, First National Bank

introduced e-bucks, a consumer-based point earning system that allows their clients to earn points for shopping with certain brands. These transactions need to be processed with FNB products, such as their bank cards and EFT payments. The 'e-buck' points can then be used while clients shop online, to receive discounts and other special offers.

#### **2.3.3.3 Digital analytics**

Most large companies have an analytics team that sets up a process of collecting data from their website. This data collects information such as the number of visitors, purchases made, time spent, and items searched for. Google Analytics, an online data collection analytics tool, is available for use for businesses who wish to track the data of their webpages. This assists companies in identifying what works well for the website, and what does not. Digital analytics allows brands the ability to track and collect data to determine how their websites and applications are being found and used by consumers. In banking, this will be useful to understand what type of services clients wish to use. By making digital analytics a prominent factor of measurement, banks can enhance their client's experiences on their internet-based services, which include websites and mobile applications.

#### **2.3.3.4 Digital cost allocation**

Banks need to focus on promoting their banking services more effectively online. By spending more on digital banking, they can save in the long-term compared to traditional promotions. One of the main reasons that banks prefer to go digital is to reduce overall costs. It is significantly cheaper to use online marketing campaigns than offline ones. This works very well with SEO, which was discussed previously. By marketing online, banks can save on costs ranging from printing to transportation. Moreover, online marketing is faster, as it can be published online in an instant.

#### **2.3.3.5 Digital risk management**

Digital risk can also be affected by non-digital related activities. For instance, Foggitt *et al.* (2017: 3) discussed the collapse of African Bank in 2014. The collapse of African Bank was heavily influenced by a combination of the bank granting credit and credit cards at high interest rates to consumers who earned low incomes. Additionally, a large portion of the

credit granted to clients was to those who were not creditworthy, i.e., they had poor credit records, which the resulted in these clients defaulting on their payments.

#### **2.3.4 Keeping up with technology**

The technology acceptance model (TAM) is used to identify and evaluate the process of adoption to a specific technological trend (Davis 1989; Kamal *et al.* 2020: 2). To stay present and competitive, banks need to ensure that they keep up with technological trends and that these trends are easy for their clients to adopt. Coetzee (2018: 1) states that how banks operate will continue to change in the coming years as digital technology and changing consumer behaviour redefine a number of factors, including how to reach new clients, process business transactions, and offer solutions. Technological advances in blockchain, cryptocurrencies, artificial intelligence (AI) and biometrics, are slowly being incorporated into the banking industry.

Blockchains are defined as real-time and freely available programmes that securely transfer data and value. They can aid banks by reducing online payment costs and by developing a new line of product and service offerings that can generate new sources of revenue. Bahga and Madiseti (2016: 1) further define blockchain and state that blockchain is a digital technology platform that works to ensure safety, integrity, and reliability of transaction records without the need for a third-party source. This is done by having all the participants in the network create, record, store and verify transaction information jointly. Blockchain characteristics offer significant advantages to the digital banking industry in that they have high security, low costs, transparency, decentralised system, and speed. Albeshr and Nobanee (2020: 12) emphasise that even though blockchain technology has an exceedingly high potential to be utilised efficiently in the banking industry, the main obstacle is the lack of suitable applications.

Cryptocurrency is defined as a digital currency that is stored on the internet. It uses a technology called cryptography, which avoids the risk of double-spending its internet or digital tokens (Narayanan *et al.* 2016: 23). Information technology forms an important structure of cryptocurrencies as programming and coding are used to create these tokens and establish the process of transmitting their value in terms of monetary value. As such, these

transactions take place solely over the internet. These cryptocurrencies are not centralised like South African banks and they do not have an authority structure that maintains or monitors the currency, i.e., they are open distributed networks (Chuen *et al.*, 2018: 16), therefore, everything remains anonymous. A popular cryptocurrency in operation across the world is Bitcoin (Hileman and Rauchs, 2017: 5). In a report by Mybroadband (2019b), which discussed the sale of Bitcoin in South Africa, banks acknowledged that given the anonymous nature of cryptocurrency transactions, they are still in the process of developing policies to prevent fraud, money laundering, and transactions related to illegal activities. However, all five major banks allow their clients to transfer money into cryptocurrencies or “wallets”. Broby and Baker (2018: 2) state that public cryptocurrencies like Bitcoin make use of blockchain technology. Unlike traditional digital money, which may only be transferred a limited number of times, bitcoins can be transferred multiple times to different parties.

Biometrics is perhaps the most important digital technology adopted by the banking industry. Biometrics is defined as the automated recognition of individuals based on unique aspects of their biological, physical, and behavioural characteristics (Nguyen *et al.* 2017: 3; Gui, Ruiz-Blondet and Laszlo 2019: 2; Yang *et al.* 2019: 1). Biometrics include fingerprints, retina scanning and voice commands (Venkatraman and Delpachitra 2008: 2). South African banks is used fingerprint recognition as this is highly secure and unique. Normalini and Ramayah (2012: 364) discuss three essential approaches to the verification of an individual’s identity in banking: a physical object like a bank card, intellectual private codes such as a PIN or password, and a physical and unique identifier of the person themselves, such as a finger or hand-print. The growth of biometric technology is largely due to new mobile device technology which has developed trustworthy biometrics to secure a user’s device from theft. This is done through on-screen or rear-mounted fingerprint scanners, face recognition and voice command. Banking applications have in-turn used this to their advantage, and now offer their clients the ability to use those same biometric methods to access their digital banking applications on mobile phones. Fingerprint biometrics has many advantages for both the banks and their clients. It simplifies the authentication process by removing the need for additional equipment, helps lower operational costs and avoids the need for long and complicated passwords and PINs. From the consumer perspective, it allows all actions and transactions to be managed from any device, anywhere, at any time. Clients are not required to remember any passwords or carry any documents to gain access to their banking app.

AI is defined by Kaya (2019: 1) as the ability of computer technology to rapidly acquire and utilise knowledge without human intervention. AI has become a key technology adopted by financial institutions as it allows them the ability to practice effective management techniques. This includes banks' ability to improve products and services, provide better assessments on risk and credit, develop tools for asset pricing, and keep in line with regulatory changes (Frame, Wall and White, 2018: 11; Salunkhe 2019: 12251; Castelli, Manzoni and Popovic, 2016: 1). Advancements in technology have helped banks to perfect the skill of AI by integrating it with biometric and blockchain technology into all their business operations. Jewandah (2018: 527) identifies the role of AI as follows:

1. It allows personalised financial services. AI allows banks to analyse their client's financial status, their financial history, and the economic situation of the company before offering the client a product or service that will best fit their budgets.
2. Digital payment systems allow clients to make online payments with ease and avoid the hassle of having to own a credit card or even pay cash on delivery.
3. Using AI for underwriting decisions allows insurance sectors of banks to provide more technical support for their decisions.
4. Data analysis has become much easier, allowing clients to get an idea of loans and rates they qualify for without having to visit a bank. It also allows clients to open new accounts with their banks through online banking.
5. Customer support techniques have been positively impacted by AI as it allows clients to ask simple questions about the bank's products on their websites, and receive a response based on the most accurate answer the AI can find based on the bank's policies, procedures products and services. It also allows users to be directed to the correct department for evaluation queries and escalation, avoiding escalations being sent to the wrong departments.
6. Blockchain technology allows banks to offer increased capabilities in fraud detection, adherence to regulations, cost savings and customer services.

### **2.3.5 Competition faced by South African banks**

As discussed previously, with constant technological advancement in banking, mobile phones and artificial intelligence, consumers have become more aware than ever before of the wide

range of products and services that are offered to them, which results in stiff competition among companies. This is partially because banks want to adopt the latest trends that appeal to their clients' needs and offer them an advantage over other banks. This competition is considered beneficial to all parties, as Howitt (2009: 1) states that competition is an essential driver of innovation, economic growth, and consumer welfare. It allows banks to constantly strive towards increasing quality deliverables and allows clients to choose a service that best fits their needs and saves on costs. Simatele (2015: 826) states that a lack of competition can, firstly, reduce business efficiency, quality and originality, and, secondly, can lead to less monopolistic competitive behaviours.

The South African Reserve Bank (2020: 5) states that South Africa has 36 banks that operate through hundreds of branches. There are 33 commercial banks and 3 mutual banks. Of the 33 commercial banks (including the “big five” banks), 15 are registered banks and 18 are local branches of foreign banks. Studies that directly measure the degree of competitive behaviour usually find monopolistic competition in the South African banking sector (Moyo 2018; Claessens and Laeven, 2003; Simbanegavi, Greenberg and Gwatidzo 2015; and Simatele 2015). Monopolistic competition is a type of imperfect competition, where many companies sell similar goods and services that are differentiated through brandings and quality (Antoshchenkova and Bykadorov 2014: 537; Feenstra 2016: 35; Greenlaw and Taylor 2017: 1). Viljoen (1998: 191) further states that monopolistic competition is a hybrid form of competition, since it establishes a fair amount of competition, but it also contains elements of a monopoly.

Camarate and Brinckmann (2017: 6) observe that three new digital banks (Discovery, Tyme and PostBank) bring a new line of competition within the South African banking sector. Discovery, a brand that is already well developed in South Africa, aimed to make an impact in the digital banking landscape. Traditionally, banks and other financial institutions offer their products and services to individuals and existing businesses. However, the growth and success of digital technology has allowed these financial services providers to reshape and have more control over their value propositions, and venture beyond the scope of their traditional services into the banking market. The impact of these new digital banks has not been extensively analysed in past studies, as their impact on the financial sector within South Africa is relatively recent. Fenwick and Edwards (2015: 117) say that digital technology

solutions have a significant impact within the businesses in organisational, national, and international levels. These technologies collect data through continuous sensing from new, old, and existing clients. They process data through algorithms, which analyse data into patterns and then interpret these patterns to identify complications and suggest solutions. For instance, SAS (previously known as the Statistical Analysis System) states that financial institutions often regard consumer acquisition as a challenge in a highly competitive environment such as in the banking industry. Therefore, by collecting and analysing customer behaviour data, such as buying habits and preferences, financial institutions can identify a clear and complex picture of their consumers which allows them to personalise their products and services and develop new and innovative services. These personalisations help the institutions retain clients and these innovations offer opportunities to acquire new clients in younger generations such as Millennials and Generation Z (SAS 2015: 5).

Banks tend to receive a lot of their income from their insurance and lending services. But changing customer behaviours, technological upgrades, and business model changes (such as ABSA's break-away from Barclays) may prove to affect their consumer base. There has been a significant gap in analysing how consumer demands, technological impact, and business model changes impact digital banking. Discovery took this as an opportunity to market a new service by capturing additional clients through the expansion of their existing client base. African Bank introduced a digitally enabled transactional account, priced competitively when compared to similar services of other banks. While the digital platform allows for significantly lower costs and promotion of their other financial products and services, the transactional account proposition would provide African Bank, as well as other lenders expanding their offerings into banking, with a lower cost of funding through secure retail deposits (PWC 2017: 7). These two methods of market penetration allowed Discovery and African Bank to successfully gain a large client base in a short space of time. Mwiti (2011: viii) states that market penetration is a growth strategy that integrates range of strategies such as pricing, marketing, and promotions to maintain or increase the market share of current products and services. Market penetration can be perceived by companies as a difficult task for product launches and service delivery, especially in a market where competitors already exist. However, with already existing, successful brand images, Discovery and African Bank easily penetrated the market. The competitive drive within the digital banking landscape in



South Africa has since provided opportunistic success for leading banks, who have used market penetration techniques to take advantage of opportunities in their consumer market.

### **2.3.6 Opportunities and challenges in the South African digital banking sector**

Opportunities are aspects or characteristics which can support or enable the business establishments with links to outside organisations (Namugenyi, Nimmagadda and Reiners 2019: 1146). Opportunities are regarded as external factors, and are influenced by factors that may not be controlled (Lee and Ko 2000: 69; Ommani 2011: 9948; Ifediora, Idoko and Nzekwe 2014: 24; Phadermrod, Crowder and Wills 2016: 3; Dergisi 2017: 995). Some opportunities present a threat for some companies, while others may find it favourable. In the South African banking industry, the threat of non-traditional banks (such as Discovery) entering the finance industry might be interpreted as an opportunity to gain market share. Existing banks, however, may regard this as a challenge as they now must face more competition, particularly in the digital banking sector.

Service quality is a vital component of digital banking. Banks need to ensure that a wide range of services are offered to their clients through digital channels. Definitions of the term service quality state that it is the product of an evaluation that consumers make between their expectations about a product or service and their individual perception of the way this product or service has been delivered (Parasuraman, Baker and Grewal 1994). Nxumalo (2017: 1) states that service quality is important to achieve complete customer satisfaction. Wilson *et al.* (2012: 73) state that perceived quality is how consumers experience and evaluate the service of a business. In a threatening economic climate, consumers expect their money's worth, and the measurement of service quality becomes a vital aspect that an organisation needs to concentrate on, in order to appropriately and proficiently deliver quality that is of a superior level while in the process, meeting and exceeding their consumers' expectations. Oletewo (2017: 27) reveals that if service quality is performed efficiently, it will result in higher repurchase behaviour from consumers, and therefore limit the number of consumers switching to a competitor's brand. If clients become unhappy with a service, such as poor digital banking, it is easy for them to switch to another bank, particularly in a monopolistic competitive environment.

Economic conditions in South Africa are not always positive, as is shown by Islami, Mustafa and Latkovikj (2020: 1), who state that companies are losing their ability to find methods that present opportunities to sustain existing success in the market, as well as to increase their market share and profit margins. A larger consumer base usually means larger public visibility, as consumers tend to choose the more visible companies over companies that have just established themselves. To achieve a high market share, banks need to practice effective segmentation. This is confirmed in studies by Bach *et al.* (2013: 33) and Kabuoh (2017: 69) who state that segmentation in banking is vital in determining business models, as the practice of designing special groups of products and services for identifiable groups of clients is at the core of the modern approach to banking. Education and financial literacy also play important roles; Andreou and Anyfantaki (2019: 3) highlight the impact financial literacy has on the ability to adopt digital banking.

Creative distribution and innovation allow South African banks the opportunity to stand out from their competitors. Al-Salaymeh (2013: 142) states that new goods and services in banking are an indication of implementation of creativity by banks, and this includes digital banking. Munusamy, Annamalah and Chelliah (2012: 454) and Ramyah, Tahib and Ling (2006) state that in order for internet banking to take off there must be suitable internet access. This is because a customer will not be able to use digital banking if they do not have some form of internet connectivity. Despite the service being promoted extensively, it will remain unused unless clients have access to the internet.

May *et al.* (2018: 15) state that inequality in South Africa is exceptionally high, particularly between consumption levels and wealth, with wealth being regarded as a major source of long-term inequality. An analysis of wealth and inequality based on a set of data collected by UNISA in four separate rounds between 2008 and 2015, indicated that the top percentile of South African households had 70.9% of the wealth, while the bottom 60% 7.0% of the wealth. This further indicated that the wealthier households are nearly 10 times wealthier than the poorer households (World Bank 2018: 1). Orthofer (2016: 1) reveals that South Africa has one of the highest levels of income inequality worldwide. In economically advanced countries 10% of the population earn up to 35% of total wealth, but in South Africa 10% of the South African population earn up to 60% of total wealth. Orthofer's study also further revealed that 10% of the South African population own up to 95% of all financial assets,

whereas in progressive economics the highest earning 10 percent of the population own up to 70% of total assets (Orthofer, 2016: 3).

### **2.3.7 Consumerism**

Consumers have become more aware than ever before of the rights and regulations related to the buying and selling of products and services. Wanjuu and Roux (2017: 2) state that “a higher level of consciousness causes a higher sense of discipline and the demand for decency from the public. The demand for decency brings about high-quality institutions, for example, the rule of law, property rights, good judicial practices”. Xaba (2015: 1) observes that South Africa’s consumers are well on their way in making choices that reflect social responsibility. There are various laws in place to protect consumer rights, the central laws being the Consumer Protection Act (Act 68 of 2008) and the National Credit Act (Act 34 of 2005). Consumers have the right to have their opinions and views of matters in policies, regulations and issues heard, particularly involving the following:

- Safety: Consumers need protection against dangerous or harmful products and services.
- Recompense: Consumers should be able to return inferior quality products and receive a refund, or request a refund, on unsatisfactory services.
- Product information: Consumers must be informed about the product or service in detail before a sale can be made, allowing them to make educated and informed decisions.
- Choice: Consumers must be allowed to choose from a variety of products and services that are priced competitively.
- Basic needs: Basic needs such as food, water and education should be easily available.
- Environment: The environment that consumers shop in should be safe and clean.

Manthree *et al.* (2017: 10) state that some South African companies, such as Woolworths, have involved themselves with their supply chain, ensuring that their self-branded products and services are quality guaranteed in accordance with their stated quality promises. A similar procedure is followed by other major retailers, such as Spar, Checkers and Pick n Pay, which all have their own organisational brand of products and services. However, challenges

exist within these companies, as their size, available resources and capacity makes it difficult to process this procedure. Unlike these companies, banks in South Africa have adapted to most changes. By aligning themselves with many of these food retailers, they have allowed consumers to shop and earn loyalty points.

## **2.4 Personalisation of banking**

Individuality impacts banking like it does several other industries, as consumers seek personalised services which are in line with their requirements (Miah 2018: 22). Safety also serves as a significant determinant of a positive perception of digital banking (Lakshmi and Kavitha, 2020: 733).

### **2.4.1 Personalised banking**

Consumer perception refers to the ways in which consumers form distinct opinions and feelings towards companies and the products or services they offer through different channels. In this procedure, consumers select, categorise, and interpret data of these products or services, to inform themselves of the product or service offered to them. Tong, Wong and Lui (2012: 106) state that due to the increasing popularity and availability of smartphones, companies are now able to provide new products and services to customers. Through the implantation and offering of these services, IT has made one-to-one marketing in banking a reality by linking this to targeting clients on a personal level. Consumer perception theory, adapted by Adefulu and Van Scheers (2016: 376), explains consumer behaviour and perception by analysing reasons for buying or not buying a product or service. This theory identifies three types of perception: self-perception, price perception and benefit perception.

In self-perception, consumers individually analyse various interrelated criteria. This is discussed by Agyekum, Haifeng and Agyeiwaa (2015: 25), who state that consumers use different variables to determine the quality of a product or service. These qualities are dependent on the individual consumer in question. For instance, in digital banking, some consumers may use EFT payment methods more comfortably and efficiently, whereas other consumers may prefer going directly to a bank to process these payments. In other instances, consumers may feel that their monetary transactions are too important, and may not trust using digital banking channels, particularly because it is a new service in comparison to

traditional branch banking. Previous studies, such as by Talke and O'Connor (2011), discuss the impact of these new services on consumer perception, but their study used expert views, rather than the views of actual customer. Yee and Yazdanifard (2014), and Kazmi (2012) analyse how perception influences buying behaviour on a digital and non-digital level, but fail to incorporate detailed information pertaining to how a consumer's self-perception can influence the use of digital services.

Secondly, price perception is frequently used as an indicator for the expectations of the product or service offered (Mattila and O'Neill 2003; Han and Ryu, 2009: 491). This is further discussed by Banyte *et al.* (2016: 335) who state that the process of price perception is indirect and depends on the perceiver's expectations, previous knowledge, generated information, and stimuli. A study by Tulwin (2014: 12) found that the stronger the preference, the bigger the price advantage is required to be to compensate for a loss in satisfaction. This finding makes it clear that consumers are willing to change their preference from one brand to another, but only if the price change outperforms their expectation of satisfaction with the overall service.

Brand image can also be greatly influenced by pricing. Brand image has a positive influence on purchasing decisions and that consumers consider price as a factor that improves brand image (Albari and Safitri 2018: 330). As a result, banks need to consider using pricing techniques in digital banking that favour their brand image as this can help draw in more clients.

Cost is one of the elements that will impact clients' appropriation of web based financial applications. Costs associated with internet banking charges have decreased consistently. Cugini, Caru and Zerbini (2007: 500) state that the understanding of cost's impact on consumer loyalty and satisfaction within the service industry is less prominent than it is for the product industries in light of the fact that, as opposed to physical items, services have no physical and all around limited element whose use causes fulfilment. Some digital banking services have become easier to implement, and therefore cost may not occur as an important factor that influences adoption of internet banking, as it is significantly cheaper than branch banking (Selvanathan *et al.* 2016: 236).

**Table 2.2: Online banking charges for Standard Bank, FNB, ABSA, Capitec and Nedbank**

Transaction	Cost				
	Standard	FNB	ABSA	Capitec	Nedbank
Airtime top-up	R1.20	R0.50>	R1.50	R0.50	R1
Electricity purchase	R1.50	R2.70	R1.50	R0.50	R2
Lotto	R2.30	R2.70	R2.50	-	R2.60
EFT	Free	Free	Free	Free	Free
SMS notification	R1.35	R0.40	R0.60	R0.40	R1.15
Internal account transfer	R4	Free	Free	R1	Free
Instant Payments	R10.50>	R45	R65	R8	R10>
Balance Enquiry	Free	Free	Free	Free	Free
E-Statement	Free	Free	Free	Free	Free
Online subscription fee	Free	Free	Free	Free	Free

Source: Adapted from, [standardbank.co.za](http://standardbank.co.za), [firstnationalbank.co.za](http://firstnationalbank.co.za), [absa.co.za](http://absa.co.za), [capitec.co.za](http://capitec.co.za), [nedbank.co.za](http://nedbank.co.za)

Table 2.2 indicates that Capitec has the cheapest online banking fees, while ABSA has the most expensive online banking fees. In July 2020, IT News Africa (2020: 1) stated that Capitec has 7.5 million active users and welcomed nearly 600 000 new digital banking clients from January to July 2020. When it comes to paying a higher price for services, consumers may look to benefits as a source of worth.

Lastly, benefit perception refers to the benefits a consumer receives from using the product or service. Ever since digital banking became more popular, researchers have identified numerous benefits associated with online banking such as convenience, product selection, ease of shopping, shopping enjoyment, time management, safety, and cost (Katawetawaraks and Wang 2011: 69; Chang, 2011: 161; Kaur, 2013: 1; Kumar and Maan 2014: 103; Bashir, Mehboob and Bhatti, 2015: 11; Meixian 2015: 9).

#### **2.4.2 Perceived value**

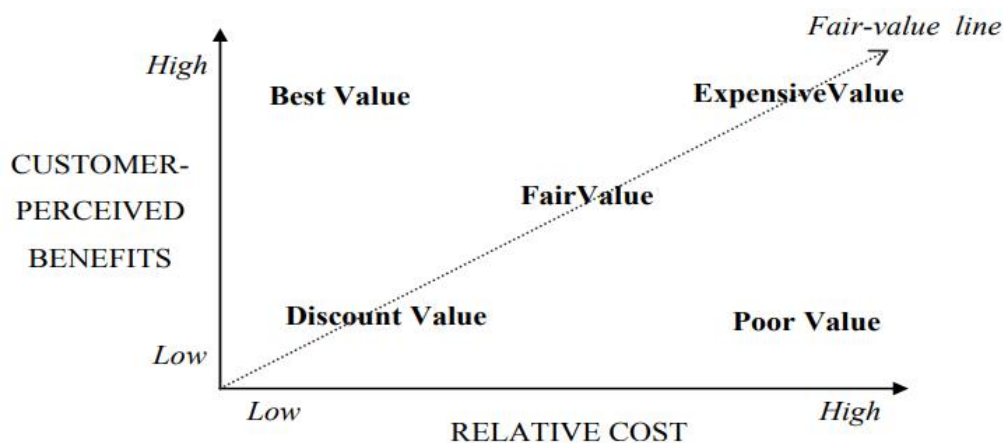
Service as a product represents an extensive range of intangible product services from both for-profit and non-profit agencies that clients pay for in the marketplace (Jones and Shandiz 2015: 49). The term value refers to the relative worth, merit, or importance of a product or service. In marketing it is referred to as “market value” which is the capacity of services or

products to satisfy a purchaser's needs and wants (Brijball and Lombard 2012: 35). The concept of market value is further analysed into a value metrics process as follows:

- Consumer acquisition: measures the rate at which the organisation (bank) attracts new customers. Banks need to acquire new clients on a consistent basis. Capitec has recorded a large number of client acquisitions in the past five years, more than any of the other top four banks (Independent Online, 2019; BusinessTech, 2020a). Marsigalia (2012: 7) states that the customer care experience is the most important part of a query and is vital in drawing in customers.
- Consumer retention: tracks the rate at which the organisation retains ongoing relationships with the customers. Hamilton, Rust and Dev (2017: 81) suggest that adding new functions may increase charges, but it can increase sales as well, both through attracting new customers or maintaining current customers. There is, however, anxiety between presenting extra functions to attract customers and providing the proper functions to bring back clients back.
- Consumer satisfaction: measures the satisfaction level of the consumers against the set performance criteria. Bell (2017: 54) reveals that satisfied customers are more loyal, spend more with the company, and refer others, which increases the company's consumer base. While digital banking has introduced a significantly less costly way to bank, it still requires customers to have smartphones with stable internet connection, preferably 3G and above. Moreover, customers need to pay for the internet connection whether it be through wi-fi or mobile data. Given that some banks have wi-fi readily available for their clients to use in the branches, having clients visit the bank to use the wi-fi may still defeat one of the core reasons for digital banking – not having a large number of clients visiting a branch for simple transactions.
- Consumer profitability: measures the net profit of a consumer after deducing the expenses to support the consumer. Decision making based solely on past values of customers can result in disappointing results. Many customers can have growth potential to become significantly profitable over a period and others can refer many new customers to the company.

Yrjola (2015: 3) refers to customer value as being a subjective assessment of the positive and negative aspects of owning or the use of a product or service. Customers often have a positive experience and view of a product or service if it not only meets and exceeds their

expectations, but also offers some sort of pleasure. Such pleasure can come from the feeling of owning or being a client of a brand that has a positive and respected or premium brand image. If the organisation can recognise what incentives leads their clients to customer satisfaction, they will have a greater likelihood of getting and holding clients. This is confirmed by one of the originators of service marketing and service quality, Parasuraman (1997), who stated that organisations that have a strong focus on customer value will develop a significant competitive advantage. For instance, all five of the “big five” banks in South Africa have, in time, developed powerful and well-respected brand images, and continue to use these positive images in providing customer value.



**Figure 2.10: Creation of value for customers by companies**

Source: Wiechoczek, 2016: 79.

As can be seen in Figure 2.10, the fair value line refers to the point at which competitors do not gain or lose market share with regards to price-quality. Discount value, fair value and expensive value refer to the points at which their perceived value by the customer coincides with the costs incurred to obtain them. Best value is the point at which the product or service delivers a value to the customer that exceeds the cost of that purchase. Most banks in South Africa attempt to remain at this point, as it allows them the opportunity to remain competitive and drive sales. However, with banking fees increasing each year, coupled with the costs of digital banking transformation, and the costs of successfully penetrating the digital market, it has become a daunting task to maintain the position of best value.



Taking into account Table 2.1, which lists the ranking of banking applications in South Africa based on Android and iOS ratings, as well as Figure 2.14 below, it is imperative that banks build on customer satisfaction by providing satisfactory customer service in order to increase value.

**Table 2.3: Satisfaction rating of banks in South Africa**

#	Bank	2018 score	2019 score	Change
1	African Bank	78.1	85.7	+7.6
2	Capitec	84.9	84.0	-0.9
3	Nedbank	79.3	80.2	+0.9
4	FNB	81.5	79.9	-0.6
	<i>Industry Average</i>	<i>78.8</i>	<i>78.2</i>	<i>-0.6</i>
5	Absa	76.3	76.8	+0.5
6	Standard Bank	77.0	75.3	-1.7

Source: BusinessTech, 2020b

### 2.4.3 Purchase intention

Purchase intention (PI), in terms of digital banking services, reflects the motivational influences that drive an individual to download the mobile banking application provided free of charge by their bank from smartphone App Stores. While this does require the user to have a stable internet connection and their own mobile data, there is no actual charge for downloading the application, i.e., there is no application fee. In that context, downloading the application can be viewed as an intention to use the application for conducting banking transactions any time anywhere on the move (Menon 2019: 1). The intent to then use the banking application is based on many factors that influence the individual decision.

Technology's constant growth has made business operations much cheaper and easier to operate. Banks are now able to offer a much larger range of services due to internet banking, which allows them to offer more personalised and direct services. However, like all businesses, banks aim to grow their business and maintain a loyal base of clients. As such, a

focus on convenience, safety, human interaction, and cost factors have significantly affected banking business structure and continue to influence the perception of banking services.

## **2.5 Constructs of digital banking**

Digital banking involves a wide range of interconnected services that require several variables to deliver the service to consumers. These services have different consumer perceptions, and impact digital banking in different ways. This is discussed below.

### **2.5.1 Digital banking convenience**

One of the core features that digital banking offers to clients is convenience (Chitungo and Munongo 2013: 71; Dhanalakshmi 2019: 753). Clients can use close to a full line of banking services without having to visit a bank. Online banking offers banking simplification by saving consumers time and money from having to travel to a branch or process lengthy paperwork (Chigada and Hirschfelder, 2017: 3; Mosteanu *et al.* 2020: 310). Consumers can make use of the services after retail banking hours and can independently open new accounts without extra charges. Different banks offer the same core digital banking services, such as payments, balance checks and transfers, but many banks attempt to offer a unique service or product in line with their brand to help in drawing in customers. These unique offerings, however, need to stand out in order to keep customers satisfied, and prevent clients from changing their bank. Revathi (2019: 22) states that digital banking benefits in a monopolistic competitive environment, as technological trends and changes in banking provides clients with options to change service provider relatively easily for what they feel offers more convenience to them individually.

### **2.5.2 Practical quality**

Durmaz and Efendioglu (2016: 36) argue that digital advertising focuses on speeding up the service to customers rather than focusing on attempting to change their perceptions and feelings as traditional advertising does. The practical ability to use internet banking, however, is not so easily achieved. It may take time for users to familiarise themselves with the application before they take a decision to use it. This means that banks need to understand the process that their clients undergo to have access to digital banking. For instance, Hadid, Soon

and Amreeghah (2020: 50) state that banks consistently work towards building services that have an “upper hand” over their competitors. As such, banks have begun to focus on computerised banking services, such as digital banking, and take into account individual issues that may impact the actual ability to use the service comfortably.

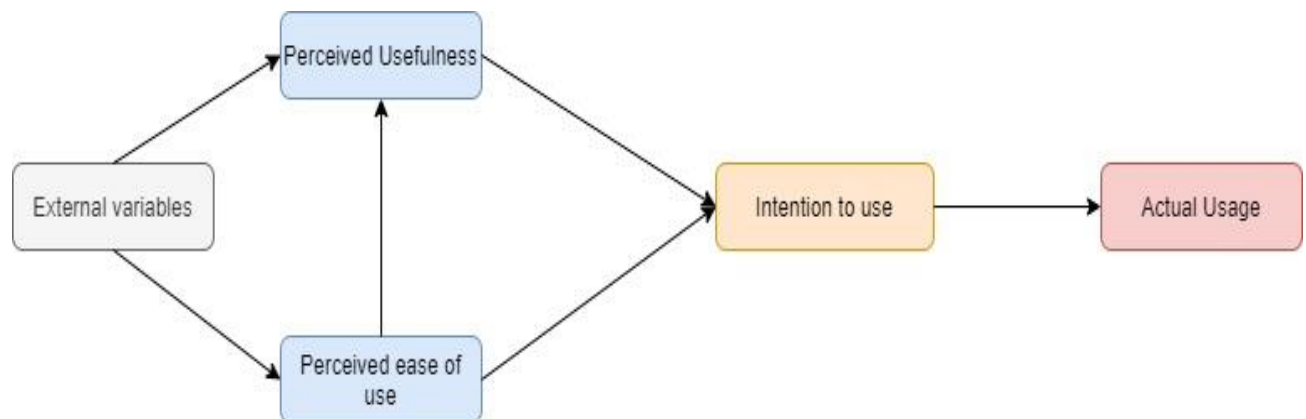
### **2.5.3 Branch service quality**

As banks and other companies continue to make use of technology advancements due to the 4IR, consumer-to-employee interaction has drastically decreased. This is due to technology outputs, which do not necessarily require an employee to carry out tasks and duties, as automated machines are able to provide the service at a significantly lesser cost. This, however, does have its drawbacks in terms of human and social interaction and trust, which is what customers often seek when banking and shopping in general (Das and Chaudhuri, 2020: 283). Uddin, Khan and Farhana (2014: 5) state that employees interacting with clients can be positive for the company, as clients seek companies whose staff are attentive and if they find this to be the case they will speak positively about the company and their services.

Ultimately, the service quality received from the company forms a basis for how clients respond to the service received. The simple definition of the term service quality is that it is the result of an evaluation that consumers make between their expectations about a service and their perceptions of the way this service has been performed (Parasuraman, Baker and Grewal 1994). Wilson *et al.* (2012: 73) state that service quality involves perceived quality, i.e., “how the quality of a business service offering is experienced”. In a threatening economic climate, consumers expect their money’s worth, and the measurement of service quality becomes a vital aspect that organisations need to concentrate on, in order to appropriately and proficiently deliver quality that is of a superior level, and while in the process, meeting and exceeding their consumers’ expectations. Foroudi *et al.* (2017: 272) state that the relationship between customers and companies benefit from emotional engagement through various methods, including through technology advancements. Thus, the utilisation of technological innovation allows retailers and customers to improve their client-business relationship and overall client experience.

### 2.5.4 Usability

Behavioural patterns relating to adoption and usage of new technological trends are evaluated by multiple methods. For this study, the TAM (Davis 1989) will be used. This model has been widely used by several authors and researchers to identify and evaluate the process of adoption of a specific technological trend (Figure 2.11).



**Figure 2.11: TAM model**

Source: Adapted from Venkatesh and Davis (1996)

The TAM identifies five stages that users undergo upon adapting to new technology. In the first stage, the influence of external variables covers all stimuli that contribute to the reason behind the proposed use. For instance, it could cover the external variables that include any variable such as organisational factors (introduction of something new), social factors (desire to keep up with others), and prior experience of using a similar product or technology (Alambaigi and Ahangari, 2015: 237). Chen *et al.* (2016: 2) elaborate on TAM's external variables, detailing that these also include system features, capabilities, and so on. These features and capabilities include the draw-in factors for the usage of the service such as online payments, balance checks, purchasing products, etc. Lin, Wang and Hung (2020: 3) define the second and third stages as perceived usefulness, “the degree to which a user believes that using new technology will improve their working performance, and perceived ease of use, which is defined as the degree to which a user believes that using a new technology will be effortless”. This is further discussed by Khrais (2017: 8) who states that perceived ease of use has a direct significant positive effect on behavioural intention to use internet banking and Selvanathan *et al.* (2016: 236) who state that there is a positive

relationship between ease of use and service delivery via online banking, where various services needed by customers can be set up online with the bank. Pankomera and Greunen (2018: 25) discuss the downsides of traditional banking in which the customer's physical presence at the bank premises, and the presence of bank staff at the branch to engage with the customers, is time-consuming. Perceived usefulness and perceived ease of use influence attitude towards using, further influence behavioural intention to use, and ultimately influence actual system use. It remains undeniable that the foremost reason for the adoption of digital banking is convenience (Ngandu 2012: 20; Imhonopi and Urim 2013: 10; Harchekar 2018: 104; Dalvi 2018: 198; Boström and Andersson 2019:11). Consumers generally want to save time and money and avoid the hassle of having to travel to banks and stand in queues. Ting *et al.* (2015: 369) discuss prominent uses of digital banking such as SMS messaging, internet-based online billing, PIN transmission, mobile web, direct-to-subscriber billing and direct to credit card transaction through mobile phones. Most banking applications run on the latest smartphone software. Bidarra *et al.* (2013: 4) found that perceived usefulness is correlated with the usage of online banking. This happens if purchasers end up more interested by the benefits supplied by online banking than supplied by regular branch banking channels. The core concept of online banking is to offer a convenient approach to banking with multiple advantages such as:

- **Services**

Digital banking offers users the ability to purchase airtime and electricity, pay accounts, transfer money and even open new accounts without having to go into a branch. Most digital banking apps and websites also allow their clients to easily manage their debit orders and monitor every transaction using an e-statement – the online version of a printed bank statement.

- **Better Rates**

Economic uncertainties have made consumers extremely wary of utilising their money in reckless and expensive ways. Where there exists an opportunity to save, consumers are easily drawn in. Digital banking charges are significantly less than branch banking charges. Direct deposits and EFTs, online shopping, and paying accounts online incur little or no service charges, in contrast to branch banking, which charges per transaction.

- **Funds management**

According to Khan H.F (2017: 5) clients can download their transactions history of their personal accounts and do a “what-if” evaluation on their own. This results in better financial management.

Digital banking also has some disadvantages:

- **Mobile and internet connectivity costs**

On mobile devices, digital banking requires a stable data connection. This means in order to use the bank’s service; customers need to have airtime and/or data. South Africa is notorious for having some of the highest data prices in the world (Masweneng 2019: 1), which makes online banking more expensive in South Africa than in many other countries.

- **Difficult user interface**

The ability to use the app may not be easy for all users. Frequent updates and changes to regulations can affect usability (Revathi 2019: 22). A low mobile-usage understanding may also negatively impact a consumer’s ability to use the service (Dhanalakshmi 2019: 753).

- **Security concerns**

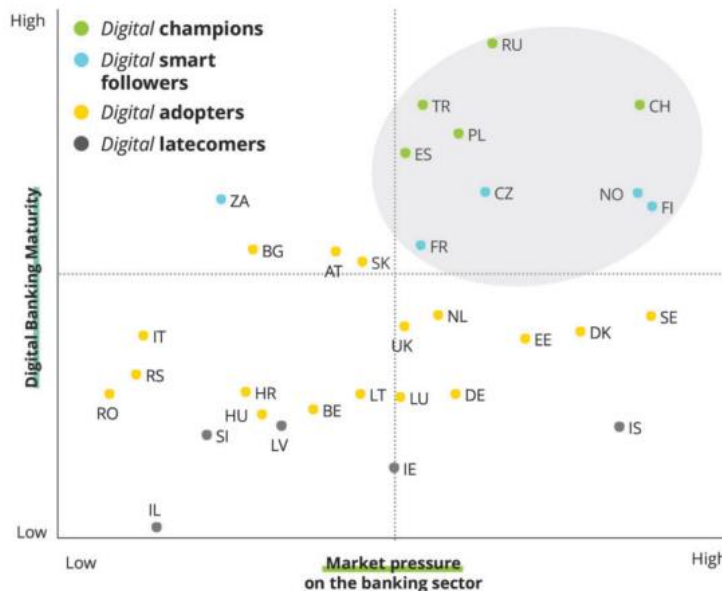
Chakravarti (2015: 3) identifies three security breach categories: (1) breaches with serious criminal intent, which include fraud, (2) theft, and (3) breaches by hackers, which are interferences with website servers, causing them to crash.

- **Transaction Issues**

Koskosas (2011: 56) states that every now and then a face-to-face interaction between clients and banking staff is essential to finish complicated transactions and/or address complicated issues. Travelling to a branch allows customers to engage with banking staff and contact experts to solve a selected issue that needs authorisation. Moreover, foreign banking is generally easier from a branch, as it requires a lot of documentation to be processed. If a customer deposits cash often, a branch visit may be more practical and efficient.

The fourth stage of the TAM model is ‘intention to use’. An intention to use a service will depend on whether the individual has the means to access the service (such as the technology or knowledge) and is aware of its existence (Ananda Devesh and Lawati 2020: 16). Digital banking on a cell phone requires the use of a smartphone.

Deloitte (2018: 12) identified the level of digital banking maturity vs. market pressure on the banking sector. Market pressure refers “to the quantity, timing, and design of a brand's interactions with its customers”.



**Figure 2.12: Market pressure vs digital banking maturity**  
Source: Deloitte (2018: 12).

Figure 2.12 shows that South Africa is a “digital smart follower” with a high level of digital marketing maturity compared to a low level of market pressure on the banking sector. This indicates that banks in South Africa may not be interacting with clients enough to adopt digital banking, despite a mature quality level of digital banking in the country.

The final stage of the TAM model discusses the actual use. This is where the consumer successfully uses the technology and has adapted to its use. While smartphone usage in South Africa has drastically increased in recent years, there remains a significant gap in those who have access to online banking and those who do not. The practical ability to use internet banking, however, is not so easily achieved, which is a contributing factor for why digital banking is not catching on so fast. Nevertheless, multiple forms of non-cash transactions have come into effect in recent years, offering multiple ways for consumers to purchase goods and services

### 2.5.5 Safety

As discussed in Section 2.3.2, biometrics has become a basis for offering a unique, personalised, and safe banking service to clients. Modern smartphones make use of biometric authentication, which Bhosale and Sawant (2012: 10) define as authentication using physical characteristics of the human body. Three major biometrics are presently used in smartphones and are explained in Table 2.4

**Table 2.4: Smartphone biometrics, cost, and SWOT analysis**

<b>Biometric</b>	<b>Cost</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<b>Face recognition</b>	Low	Fast	Low security, low quality cameras can cause delays	Modern phones use a combination of face and retina scanning	Reliability. Some phones unlock by scanning a photo
<b>Fingerprint scanning</b>	Moderate	Very fast, secure	Requires updating from time to time	Modern phones have very advanced scanners	Fraud schemes can bypass fingerprint scanning
<b>Retina Scanning</b>	High	Difficult to bypass, very secure, accurate	Expensive	Becoming more reliable due to safety	As a new technology adopted by smartphones, it still requires updates due to bugs and errors

Table 2.4 displays the core strengths, weaknesses, opportunities, and threats in biometrics, for clients consider in protecting their safety in digital banking. Safety issues exist with methods that require a physical human element since information could be affected by external factors and are relatively easy to copy and manipulate, particularly face recognition. However, newer phones tend to use a combination of these features, which allow a more advanced biometric feature. Still, these smartphones are expensive, and, as indicated in Figure 2.6, annual household income within the iLembe district means that many residents there may be unable to afford smartphones that have access to these features. Bhosale and Sawant (2012: 12) state that biometrics are relatively new, which may result in some people finding them intrusive. It may also become easier to hack as the technology is still fixings loopholes. Koskosas (2014: 56) states that accounts may be subject to phishing or hacker attacks, malware, and other unauthorised activity.



### **2.5.6 Online service quality**

Service characteristics are the vital components that make up much of the digital banking experience. Satisfaction with online services is related to the experience a consumer has of the individual e-services offered by the company (Raza, Samad and Umer 2020: 7).

Intangibility, heterogeneity, inseparability and perishability are four categories of service characteristics that have been discussed by several authors (Moeller 2010: 360).

**Intangibility:** By definition, an intangible service is a service that cannot be experienced or consumed until the consumer purchases the service. Consumers can therefore feel like they are required to make a purchase decision without adequate information. Moon and Lee (2015: 457) argue that, even with advances in online shopping, the significant drawback of online shopping is that consumers cannot use a product or service fully before choosing to purchase it. This is especially true with the purchase of electricity, airtime, and online payments with digital banking applications. If a consumer does not know how to use the application, the service will be useless to them and may incite them to not use the service at all. However, Vijay, Prashar and Sahay (2017: 2) believe that the online shopping platform has given purchasers boundless options. Buyers are now able to switch among brands, retailers, and item contributions at a low-exchanging cost, permitting them to effectively evaluate different services, which helps them settle on a decision most appropriate to their individual needs.

**Heterogeneity:** Srihadia and Setiawan (2015: 379) explain that heterogeneity in services refers to differences in service delivery that customers receive from service providers. Clients might understand the differences in the method and the outcome of a service when it is completed by a different service provider. Products that require higher rates of personal face-to-face interactions between customers and companies will show off more relational advantages to clients than services that require much less personal or face-to-face interactions between clients and the company (Srihadia and Setiawan, 2015: 382). For instance, there is significant interaction between banks and clients in a face-to-face setting. Well-dressed staff, typically in uniform, indicate professionalism. Consumers generally seek information about services from sales representatives and tellers at the bank and are more prone to a certain selection after their preferences have been considered by staff who can influence these

preferences. This is explained by Conrad (2013: 225), who believes influence is an effective resource; it offers an opportunity to change attitudes, recognise norms and values, reveal commitment and construct relationships. However, these studies have not taken into account the impact of the COVID-19 pandemic, which has reduced banking visits significantly (Goodell 2020: 2).

**Inseparability:** Hoffman and Bateson (2011: 34) classify inseparability as production and consumption processes happening simultaneously. Consumers have high expectations about how a service should be provided or delivered. If the service does not meet these expectations, it can result in consumer frustration or dissatisfaction (Kotler and Keller 2012: 41). For example, considering the effects of the COVID-19 pandemic, clients who do have to travel to a bank may find restrictions and waiting times unfavourable, which negatively impacts their banking experience. Jaw, Lo and Lin (2010: 267) explain that service organisations intend to decrease the degree of inseparability through progressive resources and rewards. The ATM was created to solve this inseparability problem. That has since developed into digital banking applications, which have seen a favourable growth during the COVID-19 pandemic. For instance, Zouari and Abdelhedi (2021: 6) state that over time, and due to the digital revolution, society is being confronted with an unprecedented shift away from an industrial to a digital orientation. The new customer generation who grew up with Internet democratization is more prone to accept technological developments.

**Perishability:** Services, unlike tangible products, are perishable, meaning that if they are not used by a specific time, they can become obsolete or cease to exist. Lovelock and Wirtz (2011: 260) state that waiting is a universal phenomenon. Bhasin (2017: 1) states that perishability is an essential issue considered by marketing experts in the service industry, and as a result, creativity in marketing is necessary.

### **2.5.7 Risk and preference**

There are significant ways in which a breach of privacy can impact digital banking. This includes the sharing of private and confidential information with third parties, fraud and hacking, and the inappropriate recording of information like cell phone numbers and addresses (Menon 2019). Bigne and Blesa (2003), Lee and Turban (2001), and Cajetan

(2018) discuss the importance of trust in digital banking, noting that the nature of digital transactions are vastly different from those conducted through a bank branch. For instance, in traditional branch banking, client documents are kept private and are not distributed to third parties. With online banking, a client may need to submit confidential documentation through an online channel (such as email), which can breach a client's privacy if the bank is impacted by cyber hacking. However, these studies have not considered the growth and use of advanced security features available on most smartphone devices and online banking channels today.

### **2.5.8 Consumer experience**

Consumer expectations have resulted in a major change in consumer behaviour. With customers now being more aware of products and services, and being financially cautious, customers feel that the best companies should not only deliver excellent service but also provide value. Service encounters provide companies with an opportunity to engage in emotional connections (Johnston and Kong 2011: 5). This is the why it is significant for banks to build an important relationship with customers. If they intend on pushing more clients towards a digital world, they need to ensure that the client has a positive experience every time they visit the bank online as well. Walls *et al.* (2011: 10) reveal that from an advertising perspective, customers want more than just products and services. They also seek consumption encounters to accompany the products and services that create memorable moments. Experiential offers deliver additional advantages to the business, for example, increased customer satisfaction, brand loyalty, dedication to repurchase, and positive social and verbal reviews of the product or service used. (McColl-Kennedy *et al.* 2015: 432). South Africa does have a very advanced banking system. While digital banking has grown exponentially in recent years, much of the desire to use digital banking depends on a number of factors that relate to how the customers have experienced banking with a specific bank and how willing they are to adopt a new service offering. Interestingly from a value creation perspective, banks – not their clients – drive the technology-based service usage by pushing customers towards digital banking, which is a cost-efficient service (Reddy and Reinartz 2017: 12).

## 2.6 Customer service

According to Ling *et al.* (2016: 81), digital banking has gained a higher acceptance from customers who are exceedingly supportive of new technology. In the banking industry, digitisation, development of banking practices, and banking improvements are effective in growing and improving the level of services to meet consumer needs and expectations. The future of the banking industry depends on how the newer generation of bankers use digital innovations and how the older generations adapt to these changes. Traditionally, banks are centred on internal organisational culture, values, legacy and maintaining the corporate image. Therefore, any new changes are generally slow, as sudden and major changes may prove too much for consumers to accept. While banks need to cater for a new generation, they cannot simply forget about their older generation of clients, who are sometimes their biggest assets, financially.

Ramavhona and Mokwena (2016: 2) state that with internet banking, security and cost are the main factors that potential users constantly list about their intention to use (or not use) digital banking. Consumers actively search for value in today's economy and are not averse to changing their consumption behaviour or service providers if they feel that their current service provider is not meeting their expectations (Bell 2017: 67). Thus, companies need to understand consumer behaviour, as perceived poor service can result in the consumer's disappointment and a perception that their expectations are not met by the company. This is confirmed by Vainikka (2015: 4) who states that in order for a marketer to communicate their brand or product message effectively to the consumer, they need to understand the nature of perception. Redelinghuis and Rensleigh (2010: 2) state that trust is a determining factor in consumers deciding on the use of online services such as internet banking. This is also affirmed by Lee (2009: 2) who states that a potential loss due to fraud or other factors compromising the security of an online bank user is known as privacy risk, which can lower the level of trust a consumer has with online banking, and Martinez-Navalon, Fernandez-Fernandez, and Alberto (2023: 18), who state that it is also important that digital banking guarantees its users that their data will be protected and that their personal information and banking data will not be shared. This will provide security to the user and, therefore, will also have a positive influence on the user's confidence and ease of use. Banks also need to understand how to effectively penetrate different segments, as state that so the use of

demographics for segmentation in the context of understanding consumers of personal financial services is critical for financial service providers (Matenge, Makgosa and Mburu 2016: 3). This is because different market segments react differently to products, services and changes. Banks can map out a customer's journey in order to gain a detailed understanding of their experiences. This can help them grow digital banking and discover common complaints regarding banking and how to improve on these setbacks, gain insights on how to make the banking process simpler, and identify the major touchpoints of banking. Some channels of customer interaction are effectively unused, despite mobile banking being the fastest growing channel for interacting with customers. This presents a gap in which banks are failing to generate sales in a channel that has significant potential. For instance, Patel (2020) discusses the techniques in which digital banking promotion can help deliver better customer service and thereby grow digital banking:

- Improve customer resolution time – By interacting with customers often, bank tellers and employees can help to guide and promote customers to understand complex banking application processes, and motivate them to use digital banking where it would save them time and money.
- Reduce sales cycle – Having direct interaction with clients assists in recognising the problems they experience with digital banking and is a more efficient and quicker way to find solutions and solve problems. This is because customers get to provide real-time feedback. Face-to-face, in-person interaction between employees and clients helps banks recognise the problems that their clients experience with digital banking. This face-to-face interaction is a more efficient way in which solutions can be found and solved quickly. This is because customers get real-time feedback.
- Number of touchpoints – Live assistance (such as through social media and banking website messengers) assists in providing an accurate resolution by analysing the issue at the first point of customer interaction. In this way, clients receive feedback and have their escalations resolved faster. A negative point regarding this, however, is that it requires an advanced understanding of social media, which also comes with its own financial costs.

## **2.7 Marketing and communication strategy**

A marketing and communication strategy details the strategic methods that companies place into effect regarding their marketing campaigns and their communication endeavours. Rai and Choudhury (2014: 52) state that the success of different companies competing in the same market is dependent on the strategies they implement. To be successful in a competitive market, particularly in a monopolistic competitive market such as the South African banking industry market, a company needs to develop practical knowledge of consumers' behaviour in general and, more exclusively, to identify the knowledge consumers have about products and services. There is no need to implement a new service if consumers do not have the means to access this service. Digital banking is growing worldwide, but previous studies have failed to identify how digital banking motivates consumers to make more use of digital platforms. Companies must therefore place their products and services in consumers' minds in such a way that it successfully connects a positive association related to their already-existing view of similar products or services. Banks can improve their marketing and communication strategies in the following ways:

- Focusing on a digital experience can be beneficial to banks that need to remain competitive. With the 4IR promoting technology use, banks need to focus not only on growing their client base and attracting younger customers, but they need to offer, at the very least, a simple digital experience (Shaikh 2019: 2). Clients must be able to perform basic transactions from their phones. Banking websites also need to become more smartphone friendly.
- By getting involved in social marketing, banks can help lift the image of their brands, which can draw in younger consumers. Luca and Suggs (2013: 1) state that social marketing is when companies promote a greater social (public) good by aligning their marketing to societal domains such as public health and the environment. French and Gordan (2015: 9) state that social marketing is not dependent on factors such as creativity, robust organisational lifestyle, leadership, or even governmental support. Instead, its focus is on central processes and the application of core standards and concepts which add value to society. Social marketing thus aims to deliver social good, with no profit motive and without openly promoting the company's products or services. This also allows the public to understand that the companies are indeed

focused on delivering value in these campaigns, often resulting in a larger impact than what may initially be perceived.

- Social media platforms are important because consumers who use social media may already have experience in using digital technology. By using social media, banks can engage with more consumers and use social media platforms as a relationship building tool (Hendriyani and Raharja, 2018: 481).
- Develop a stronger mobile marketing technique. Mobile marketing is a particularly new department of advertising and relies on two-way marketing communications. (Bala and Verma, 2018: 331).

## **2.8 Conclusion**

The research aims to fulfil a significant gap in the literature regarding digital banking in South Africa. While South Africa has the most industrialised economy in Africa, there are substantial economic challenges and setbacks. One of the most prominent challenges the country faces is inequality. Whereas companies race to keep up with digital technology, literature on the demographic inequalities and perceptions on the use of digital banking within South Africa are slow and have not been sufficiently established. This study can therefore add to existing theory by evaluating constructs that contribute to the perception of digital banking, such as by assessing the influence on the ease of use of digital banking, the convenience it proposes, it's safety, quality and suitability for clients, as well as understanding the risks and preferences on its usage. Furthermore, by conducting the study within an economy like South Africa, the research can consider the impact of current, unprecedented events.

## **CHAPTER 3: METHODOLOGY**

### **3.1 Introduction**

The previous chapter, Chapter 2, provided a review of the literature on digital banking and consumer perception on the digitisation of banking. Chapter 3 presents the research design. This chapter also explains research type, data sampling, collection and analysis of data, the delimitations and validity and reliability of the study, the anonymity and confidentiality of its participants, and the relevant ethical considerations.

### **3.2 Research design**

The research was conducted using a quantitative approach, and was cross sectional and descriptive, using appropriate statistics and analysis thereof. Quantitative data collection involves the study of phenomena through statistics and mathematics. Newman and Ridenour (1998: 3) state that a quantitative research approach is used when the researcher begins with theory and then tests for confirmation or disconfirmation thereof. The questionnaire used in this study requires short responses in the form of a Likert Scale. Basias and Pollalis (2018: 92) explain that a quantitative approach is suitable for studies containing simple and short answers, as well as data that can be quantified and compared to provide new findings. A cross sectional study is defined by Allen (2017: 1) as research data collected at one point in time to describe a population of interest. A cross-sectional design was selected for this study as the researcher recorded and collected information but did not manipulate variables. The variables collected included demographic variables such as age, race, sex, income, and geographic location. Since cross-sectional data is collected at a point in time, it can be analysed instantaneously, unlike with longitudinal data, and it allowed the researcher to compare many different variables at the same time.

### **3.3 Research approach**

For this study, the research approach was quantitative. In order to reach conclusions, the researcher conducted appropriate statistical analysis and compared the outcomes with the literature review. The research approach used was a deductive approach, which Msosa (2017:



130) states is an approach that involves the testing of a hypothesis after which a concept is confirmed, refuted, or modified. Therefore, the research involved the elaboration of a set of principles or concepts that were tested through empirical observation.

### **3.4 Sampling**

Bhardwaj (2019: 158) defines sampling as a procedure to select a sample from an individual or from a large group of population for certain kinds of research purpose. There are different advantages and disadvantages of sampling. The expenses associated in studying an entire population to answer a specific questionnaire is usually prohibitive in terms of time, money, and resources. Therefore, a subset of subject's representative of a given population must be selected (Lunsford 1995: 105).

#### **3.4.1 Target population**

Majid (2018: 3) states that the population of interest is the study's target population that it intends to study. A sample is selected from that population and then the results can be generalised to the population as a whole. Kotler and Armstrong (2013: 110) refer to a population as the whole group of topics, people, or events of interest to the researcher from which the researcher wishes to draw conclusions. The target population of this study is all citizens who receive salaries in the iLembe District, which consists of 657 613 people (Community Survey 2016: 1), from four local municipalities. This target population was selected as a location-based population would prove adequate for this study's aim. The iLembe district represents a diverse demographic profile (iLembe District Municipality, 2020: 35). A location-based population also allows high accuracy in data collection, allows a quick response rate, and is cost effective, particularly with the impact of the COVID-19 pandemic, and the researcher's familiarity with the area (Lowhorn, 2007; Eyisi 2016: 94; Abuhamda, Ismail and Bsharat 2021: 79). The iLembe population is also the fastest growing population in KwaZulu-Natal between the years 2007 and 2016. It has a 15,7% share of the population changes in the province (Department of Cooperative Governance and Traditional Affairs, 2020: 11). The target population included those who have the means to access digital personal banking, those who actively use digital personal banking, those who are new to adopting digital personal banking and even those who do not use digital banking. Although the study was only interested in digital banking users, the target population had to be all with

access to digital banking as a sample frame of users was not available. Since the iLembe district has a young population with a median age of 23 (iLembe Statistics 2016), the target population was focused on Generation Y (Millennials), but also incorporates the Boomer and Z Generations.

### **3.4.2 Sampling method**

The sampling technique used is a non-probability sampling method. Wisniowski *et al.* (2020: 121) state that non-probability sampling involves some form of non-random selection of elements into the sample, and Allan (2017: 1) states that non-probability sampling is a method of selecting cases from a population without the use of random selection. A non-probability judgemental approach was followed in this research because the researcher used judgement to select the location of the study, i.e., the relevant banks within a specified geographic location (iLembe District). Purposive sampling was used, which Bhardwaj (2019: 161) defines as a type of sampling that is used according to the purpose of the study, where potentially knowledgeable members for the sample are selected. It is also called deliberate sampling. This method was used as the researcher selected only those members of the population that use digital banking. A letter accompanied the questionnaire asking only those who reside in iLembe to partake in the study. This, according to Msosa (2017: 131) is referred to as a method of sampling where samples are carefully picked because they have certain characteristics which can serve the research purpose.

To select the actual respondents to complete the questionnaires, convenience sampling was used based on participants availability and willingness to participate. Furthermore, respondents decided whether to participate or not, and so the sample was effectively self-selected, which implies a convenience sample.

### **3.4.3 Sampling frame**

Since a sample frame of digital banking users was not available, a screening question was included in the questionnaire to ensure that only responses from those who use digital banking were considered. Data was collected using Google Forms and a link was posted on Facebook, under an iLembe Public Matters and News Group, as well as through email. A

letter accompanied the questionnaire, asking only those who reside in iLembe to partake in the study.

#### **3.4.4 Sample size**

Yu (2016: 140) states that sampling involves a process of selecting a subsection of a population that represents the entire population in order to obtain information regarding the phenomenon of interest. The researcher aimed to obtain 400 respondents from the target population, since Sekaran and Bougie (2003: 1) suggest that a sample of 384 is adequate to represent a population of a million, which is relevant for this study. A sample size of 400 people can provide sufficient statistical power to detect meaningful effects or relationships in the data, as Rahman (2023: 57) states that social science and behavioural researchers widely use the Krejcie and Morgan Table (Krejcie and Morgan, 1970) to determine sample sizes. This information can be used without calculations and applies to any specified population. According to the KMT, a sample size of 384 is enough for a population of 1000000 or more. The population of the iLembe district was listed as 657 612 in the 2016 demographic municipal statistics, which is under one million. Therefore, the sample of 400 was deemed appropriate as it allowed for any unusable or incomplete questionnaires that might be returned.

### **3.5 Data collection**

#### **3.5.1 Data collection instrument**

A questionnaire was developed to collect data (Appendix A). All questions were drawn up using theory obtained from literature, based on various existing factors. Appendix B provides an explanation of the questionnaire derivation process. The questionnaire was composed of 38 questions and was drawn-up according to, and based on, the research objectives. Of the 38 questions, five are demographic-based, seven are screening questions to factor out all ineligible participants, and 26 are related to the research objectives. The questions are closed ended, using Likert-type scales, in which participants were given a list of responses to select from. The questionnaire was pilot tested with experts, namely the supervisor and a statistician. A pre-test was then undertaken with 20 people who matched the population criteria, after which the questionnaire was evaluated for errors and corrected. The errors

corrected included the directionality of the questions. To allow easier interpretation, the questions were all reworded to follow a positive direction as opposed to a mix of positive and negative directions. This would have affected correlations, since these double negatives would have to be taken into account. Rewording of education level and race was also done, to provide a simpler understanding. The 20 test respondents were not included in the main sample. Survey questionnaires generate quantitative data, which can be analysed statistically to identify patterns, trends, and relationships among variables. This can provide valuable insights and support evidence-based decision making. This particular research method was selected as quantitative studies lay heavy stress on facts that researchers tend to study in the general public, and is assumed to be more objective. Furthermore, data collection and analysis are more effective and less time consuming when utilising quantitative research (Xiong, 2022: 956).

### **3.5.1.1 Likert scale**

The questionnaire was developed in which 26 objective-based questions were asked on 5-point Likert scale (Strongly Agree 5), (Agree 4), (Neutral 3), (Disagree 2), (Strongly disagree 1). Joshi *et al.* (2015: 398) state that analysis of Likert scale data largely depends upon two major diversities, i.e., symmetric versus asymmetric Likert scale. If the position of neutrality lies exactly in between two extremes of strongly disagree (1) to strongly agree (5), it provides independence to a participant to choose any response in a balanced and symmetric way in either direction. This study and questionnaire therefore used the construction of a symmetric Likert scale. To test the reliability of the questionnaire, Cronbach's alpha was used on the pre-test sample. The Cronbach coefficient alpha results are provided in Table 3.1, showing that overall alpha was  $> 0.7$  so the questionnaire could be considered as reliable – only one of the constructs was a little below the 0.7 cut-off. Taber (2018: 1278) states that Cronbach alpha scores are regarded as excellent (0.93–0.94), strong (0.91–0.93), reliable (0.84–0.90), robust (0.81), fairly high (0.76–0.95), high (0.73–0.95), good (0.71–0.91), relatively high (0.70–0.77), slightly low (0.68), reasonable (0.67–0.87), adequate (0.64–0.85), moderate (0.61–0.65), satisfactory (0.58–0.97), acceptable (0.45–0.98), sufficient (0.45–0.96), not satisfactory (0.4–0.55) and low (0.11).

**Table 3.1: Cronbach alpha pre-test of reliability**

	<b>Section</b>	<b>Number of Items</b>	<b>Cronbach's Alpha</b>
D	Digital Banking Convenience	3	0.953
E	Practical Quality	3	0.717
F	Branch Service Quality	4	0.740
G	Usability	3	0.766
H	Safety	3	0.741
J	Online service quality	3	0.847
K	Risk and Preference	3	0.495
L	Consumer Experience	4	0.959
Overall		26	0.942

### 3.5.1.2 Structure of the questionnaire

The questionnaire was split into three parts: (1) three screening questions to include only those with bank accounts; (2) 26 research objective-based questions, structured according to a 5-point Likert scale, as follows:

- Three questions based on Digital Banking Convenience. Questions were developed from Chigada and Hirschfeider (2016: 3); COEFS Fintech Report (2018: 21), Kinsman (2019: 3); Al-Jabri (2015: 25); COEFS Fintech Report (2018: 63), and Nkoyi (2018: 1).
- Three questions based on Practical Quality, i.e., the ability to make informed decisions on use of digital banking. Questions were developed from Ramavhona and Mokwena (2014: 3, 4), Fairouz and Wickramasinghe (2019: 72), Nkoyi (2018: 3); Schoombee (2012: 176), and Adefulu and Louise (2016: 375).
- Four questions based on Branch Service Quality. Questions were developed from Uddin et al. (2015: 3), and Dalvi (2018: 198), Revathi (2019: 22)
- Three questions based on Usability, i.e., the actual ability to use digital banking. Questions were developed from Saini, Bick and Abdulla (2011), and Saidi (2008).
- Three questions based on Safety. Questions were developed from Maduku (2016: 535, 536); Redelinghuis and Rensleigh (2010: 2), Harchekar (2018: 109), Nel and Boshoff (2014: 626), Dalvi (2018: 199), Serrao and Van Vuuren (2019: 17), and Dalvi (2018: 199).
- Three questions based on Online Service Quality. Questions were developed from Rootman, Tait and Bosch (2007: 184), Schoombee (2012: 176), and Cajetan (2018: 31).

- Three questions based on Risk and Preference. Questions were developed from Schoombee (2012: 168), Serrao and Van Vuuren (2019: 17), Chaturvedi (2019: 1927), Maziriri (2018: 2), Schoombee (2012: 173), and Heerden and Westhuizen (2008).
- Four questions based on Consumer Experience. Questions were developed from Kinsman (2019: 3); Al-Jabri (2015: 25); COEFS Fintech Report (2018: 63), World Bank Report, South Africa (2017: 7), Nkoyi (2018: 1), Ramavhona and Mokwena (2016: 3), and Sujana (2018: 335).

And finally, (3) a demographic section that entailed five demographic questions, ranging from age to income. All demographic questions represent variables that are important to the study.

In Table 3.2, the questionnaire numbering (column 3) is listed according to the research objectives (column 1) and the different sections of the literature review (column 2).

**Table 3.2: Linkage of objectives, literature, and questions in questionnaire**

RESEARCH OBJECTIVES	LITERATURE REVIEW SECTIONS	QUESTIONS NUMBERING IN THE QUESTIONNAIRE
Objective 1: To investigate consumers' level of adoption of digital personal banking	2.2 The fourth industrial revolution	Part 2: Questions 4, 5, 6, 7
	2.3 Changes to banking in South Africa	
	2.4 Personalisation of banking and safety	
Objective 2: To establish the constructs encouraging the use and growth of digital personal banking	2.5.1 Perceived value	Part 2: Questions 1, 6, 7
	2.5.2 Purchase intention	Part 2: Question 5
	2.5.3 Convenience	Part 3: Questions 1.1, 1.2, 1.3
	2.5.4 Practical quality	Part 3: Questions 2.1, 2.2, 2.3
	2.5.5 Perceived usefulness and perceived ease of use	Part 3: Questions 4.1, 4.2, 4.3
	2.5.6 Branch service quality	Part 3: Questions 3.1, 3.2, 3.3, 3.4
	2.5.7 Online service quality	Part 3: Questions 6.1, 6.2, 6.3
	2.5.8. Consumer experience	Part 3: Questions 8.1, 8.1, 8.3, 8.4
Objective 3: To assess the relationship between consumers' level of adoption of digital personal banking and the constructs encouraging digital banking	2.5.9 Risk and preference	Part 3: Questions 5.1, 5.2, 5.3, 7.1, 7.2, 7.3
	Chapter 4: Data analysis	----

### 3.5.2 Administration of the questionnaire

Due to the impact of the COVID-19 pandemic and the related laws and regulations which prohibited large gatherings and required social distancing of at least 1.5 metres, the questionnaire was administered online, through Google Forms. A link to the form was posted on Facebook, under an iLembe District Public Matters and News group. The questionnaire was also emailed to respondents. A letter was attached (Appendix F) to each email, as well as placed on Facebook, indicating that only current residents of the iLembe District area should complete the questionnaire. The questionnaire requested the respondents to select which one of the four local municipalities of iLembe the respondent resided in. Any respondents who selected the “other” answer were not included in the study.

Only resident of the iLembe district who had an active bank account and earned a salary, qualified to answer the questionnaire, i.e., resident in the iLembe district and having a bank

account were inclusion criteria. All demographic variables under sex, ethnicity, income, and education were also regarded as inclusion criteria. Exclusion criteria covered those residents who had since relocated and were no longer permanent residents of the iLembe region as well as those residents who were not earning a salary. An isiZulu-translated questionnaire was made available for respondents who wished to answer in isiZulu. The collection of data took eleven months (15<sup>th</sup> February 2021 to 14<sup>th</sup> January 2022), and the questionnaire was sent out multiple times and each mailing received between 45 and 50 responses. Data cleaning and removal of duplicate responses was done to ensure the same person did not answer twice.

The questionnaire on Google Forms was structured in such a way that each part was presented in order, and respondents needed to complete each section in sequential order: demographics → screening → objective-based questions. Each question needed to be completed for the participant to continue to the next page of the questionnaire. A notification was given if a question was missed.

### **3.6 Data analysis**

Quantitative analysis techniques were used, and the data analysis made use of univariate, bivariate and multivariate analysis. Univariate analyses were used where it was necessary to analyse only one variable or construct, for instance, discussing the age of the respondents of online banking. Bivariate analysis analysed the relationship between two different variables such as age of the respondents and the usability variable. This analysis included cross tabulations and correlations. Multivariate analysis was used to analyse three or more variables at the same time. This included multiple regression analysis, factor analysis and structural equation modelling (SEM). Descriptive statistics included the use of tables and graphs (pie charts and bar charts), and cross-tabulations. Inferential statistics were done using chi-square tests and spearman's correlation, and regression and SEM.

### **3.7 Reliability and validity**

Several methods of measurement were adopted to ensure reliability and validity. For instance, Boeren (2018: 11) asserts that when starting a new questionnaire or survey, existing questionnaires can be explored by borrowing or adapting existing questions which will increase the validity and reliability of your research. As such, past studies on banking have



been analysed, and questions from studies of Jaruwachirathanakul and Fink (2005), Miranda, Cortes and Barriuso (2006), Munusamy, Chelliah and Mun (2010), Sabir *et al.* (2014), Barasa, Devesh and Lawati (2017), and Rahi and Ghani (2016) have been adapted for this research. Furthermore, new questions, which have not been asked before, have also been incorporated to find new measurements. Further measurements of reliability and validity are discussed below.

### **3.7.1 Reliability**

Reliability is the extent to which a research instrument consistently produces the same results if it is used in the same type of situation on repeated occasions (Heale and Twycross, 2015: 66). Cronbach's alpha is the most used test to determine reliability of the items measuring the respective constructs. In this test, the average of all correlations in each combination of split-halves is determined. Instruments with questions that have more than two responses can be used in this test. The Cronbach's alpha result is a number between 0 and 1. An acceptable reliability score is one that is 0.7 and higher - Haradhan (2017: 68) states that for higher stakes settings, such as licensure examination, reliability should be greater than 0.9, but for less important situations values of 0.8 or 0.7 may be acceptable. The Cronbach coefficient alpha results for this study are provided in Chapter 4.

### **3.7.2 Validity**

Heale and Twycross (2015: 66) define validity as the extent to which a concept is accurately measured in a quantitative study. In this study, the validity was assessed to indicate the extent to which the questionnaire covered the three objectives using face validity and construct validity.

#### **3.7.2.1 Face validity**

Connell *et al.* (2018: 1894) state that face validity measures whether the items of each domain are sensible, appropriate, and relevant to the people who use the measure on a day-to-day basis, while Gravetter and Forzano (2012: 78) state that face validity concerns the superficial appearance, or face value, of a measurement procedure. The questionnaire was assessed by the research supervisor and a statistician for face validity.

### **3.7.2.2 Construct validity**

Zikmund and Babin (2012: 250) state that construct validity evaluates whether the measurement instrument measures what it is intended to measure. The statistician and supervisor reviewed the questionnaire to ensure that it covered all vital measurement components of the study. An exploratory factor analysis was also undertaken which was used to check the accuracy of the factors making up the variables.

### **3.8 Ethical considerations**

The researcher obtained ethical clearance from the DUT ethics committee (Appendix F). Thereafter an email was sent out to potential respondents, informing them of the nature of the research and how the data would be collected. Respondents were informed that their decision to participate was completely voluntary and that they could willingly withdraw from the survey at any point without having their responses collected and without having to provide a reason. In addition, respondents were also informed that the questionnaire did not collect any confidential information, and that their participation would be kept anonymous, even to the researcher.

### **3.9 Conclusion**

This chapter discussed the methodology implemented during the study, namely the research design, research approach, sampling methods, questionnaire structure, data collection, data analysis techniques, reliability and validity, and the ethical considerations. The next chapter, Chapter 4, will present and discuss the results from the collected data.

## CHAPTER 4: FINDINGS, INTERPRETATION, AND DISCUSSION OF THE DATA

### 4.1 Introduction

Chapter 3 presented and discussed the research methodology used to conduct this study. This chapter presents the results and discusses the findings obtained from the questionnaires in this study. The questionnaire was the primary tool that was used to collect data which was analysed with SPSS version 27.0. The results from the quantitative analysis are presented as descriptive statistics in the form of graphs, cross tabulations, and other figures. Inferential techniques include the use of correlations and chi square tests, which are interpreted using p-values..

### 4.2 Reliability statistics

The two most vital aspects of precision are reliability and validity. Reliability is computed by taking numerous measurements on the same subject. A reliability coefficient of 0.60 or higher is considered as “acceptable” for a newly developed construct (Daud *et al.*, 2018: 1035). Table 4.1 reflects the Cronbach’s alpha score for all the items that constituted the questionnaire.

**Table 4.1: Cronbach’s alpha score for all the items that constituted the questionnaire**

	Section	Number of Items	Cronbach's Alpha
D	Digital Banking Convenience	3	0.943
E	Practical Quality	2	0.889
F	Branch Service Quality	4	0.816
G	Usability	3	0.767
H	Safety	3	0.841
J	Online Service Quality	3	0.896
K	Risk and Preference	3	0.629
L	Consumer Experience	4	0.913
Overall		26	0.941

The reliability scores for all sections exceed the recommended Cronbach’s alpha value, excepting for ‘risk and preference’, which scored 0.629. Daud et al. (2018: 1035) suggests

that coefficients above 0.60 are significant and acceptable, especially for a newly designed instrument. This plus the fact that the construct also showed a clear allocation in the factor analysis, and that well-established scales that have been validated in previous research (risk and preference is common in research about banking) were used for the questions comprising the construct, supported the decision to retain the construct 'risk and preference' in the model for analysis. However, this lower reliability is noted as a possible limitation of the study and should be interpreted with caution, acknowledging the limitations of the measure, and a recommendation for further study into the components of 'risk and preference', especially in a developing country context, is made in Chapter 5. Therefore, based on the above explanation, the instrument was accepted as providing reliable and consistent scoring for this research.

### **4.3 Factor analysis**

Factor analysis is a statistical technique that is used to summarise data so that relationships and patterns can be easily construed and understood (Yong and Pearce, 2013: 79). Factor analysis is commonly used in survey research several questions comprise a smaller number of hypothetical factors. This approach determines what theoretical constructs underlie a given data set and the extent to which these constructs represent the original variables (Henson and Roberts, 2006: 396).

The KMO and Bartlett's tests indicate the suitability of data for structure detection. The KMO is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with the data. If the value is less than 0.50, the results of the factor analysis probably will not be very useful. Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix and that the variables are unrelated and therefore unsuitable for structure detection. Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data (Shrestha 2020: 6).

**Table 4.2: KMO and Bartlett's test**

	Section	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Approx. Chi-Square	df	Sig.
D	Digital Banking Convenience	0.756	1133.179	3	0.000
E	Practical Quality	0.508	410.782	3	0.000
F	Branch Service Quality	0.783	538.624	6	0.000
G	Usability	0.618	447.251	3	0.000
H	Safety	0.710	508.212	3	0.000
J	Online Service Quality	0.730	747.526	3	0.000
K	Risk and Preference	0.585	211.838	3	0.000
L	Consumer Experience	0.836	1434.384	6	0.000

All of the conditions for factor analysis are satisfied, as shown in Table 4.2, that is, the KMO value should be greater than 0.500 and the Bartlett's test of sphericity significance value should be less than 0.05, which is the case.

Table 4.3 indicates the rotated component matrix for the eight constructs of the questionnaire.

**Table 4.3: Rotated component matrix**

	Component							
<b>D Digital Banking Convenience</b>	1							
D1 - Online banking is more convenient than visiting a branch	0.943							
D2 - Online banking is faster	0.962							
D3 - I can use online banking at any hour	0.939							
<b>E Practical Quality</b>		2						
E1 - I understand how to use online banking		0.940						
E2 - The online information offered by my bank is clear and easy to understand		0.942						
E3 - I prefer to visit a bank for new information or for more complicated queries		0.433						
<b>F Branch Service Quality</b>			3					
F1 - There are more services available when going to a branch than are offered online			0.756					
F2 - I visit my bank to fix issues such as replacing a lost or stolen card			0.803					
F3 - I get to ask about new products and services when I visit a bank			0.836					
F4 - Human interaction (speaking to tellers/sales consultants) is important for my banking relationship			0.816					

<b>G Usability</b>				4				
G1 - I use online banking regularly				0.906				
G2 - I would prefer a more personalised online banking experience				0.689				
G3 - My smartphone banking application covers all my basic banking requirements				0.893				
<b>H Safety</b>					5			
H1 - Internet banking is safer in terms of online fraud and theft					0.846			
H2 - When paying physically, I prefer paying with my bank card					0.868			
H3- I am happy with the safety regulations from my bank					0.903			
<b>J Online Service Quality</b>						6		
J1 - I have had positive experiences using online banking						0.903		
J2 - Online banking is clear and easy to use						0.936		
J3 - Online banking has sufficient services						0.893		
<b>K Risk and Preference</b>							7	
K1 - Online banking saves on banking fees and is cost efficient							0.843	
K2 - I have more control of my banking when I bank online							0.851	
K3 - Branch banking charges are reasonable							0.592	
<b>L Consumer Experience</b>								8
L1 - Online banking saves time								0.944
L2 - I prefer to not travel to a bank to process simple transactions								0.929
L3 – Online banking is more convenient due to its 24/7 operation								0.946
L4 - Online banking has no delays in processing								0.760
Extraction Method: Principal Component Analysis. a. 1 components extracted								

With reference to Table 4.3, the principal component analysis was utilised as the extraction method, and the rotation method was varimax with Kaiser normalisation. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor, and does not cause factors to become uncorrelated (Sakaluk and Short 2017: 8). It simplifies the interpretation of the factors. A factor analysis therefore shows the inter-correlations between the variables of the study. The items of questions that loaded similarly imply a measurement along a similar factor. An examination of the content of items loading at or above 0.5 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) effectively measured along the various components. The statements

that constituted all sections loaded perfectly along a single component. This implies that the statements that constituted these sections perfectly measured what they set out to measure.

#### **4.4 Section A analysis: Biographical data**

This section summarises the biographical characteristics of the respondents.

##### **4.4.1 Age and gender**

Table 4.4 describes the overall gender distribution by age between males and females. As indicated in the table, age was grouped into eight different age categories for both males and females.



**Table 4.4: Gender distribution by age between males and females**

Age (years)		Gender		Total
		Male	Female	
18-23	Count	69	90	159
	% within Age	43.4%	56.6%	100.0%
	% within Gender	40.4%	39.3%	39.8%
	% of Total	17.3%	22.5%	39.8%
24-29	Count	64	72	136
	% within Age	47.1%	52.9%	100.0%
	% within Gender	37.4%	31.4%	34.0%
	% of Total	16.0%	18.0%	34.0%
30-35	Count	18	24	42
	% within Age	42.9%	57.1%	100.0%
	% within Gender	10.5%	10.5%	10.5%
	% of Total	4.5%	6.0%	10.5%
36-40	Count	5	8	13
	% within Age	38.5%	61.5%	100.0%
	% within Gender	2.9%	3.5%	3.3%
	% of Total	1.3%	2.0%	3.3%
41-46	Count	4	10	14
	% within Age	28.6%	71.4%	100.0%
	% within Gender	2.3%	4.4%	3.5%
	% of Total	1.0%	2.5%	3.5%
47-52	Count	5	13	18
	% within Age	27.8%	72.2%	100.0%
	% within Gender	2.9%	5.7%	4.5%
	% of Total	1.3%	3.3%	4.5%
53-58	Count	3	7	10
	% within Age	30.0%	70.0%	100.0%
	% within Gender	1.8%	3.1%	2.5%
	% of Total	0.8%	1.8%	2.5%
59+	Count	3	5	8
	% within Age	37.5%	62.5%	100.0%
	% within Gender	1.8%	2.2%	2.0%
	% of Total	0.8%	1.3%	2.0%
Total	Count	171	229	400
	% within Age	42.8%	57.3%	100.0%
	% within Gender	100.0%	100.0%	100.0%
	% of Total	42.8%	57.3%	100.0%

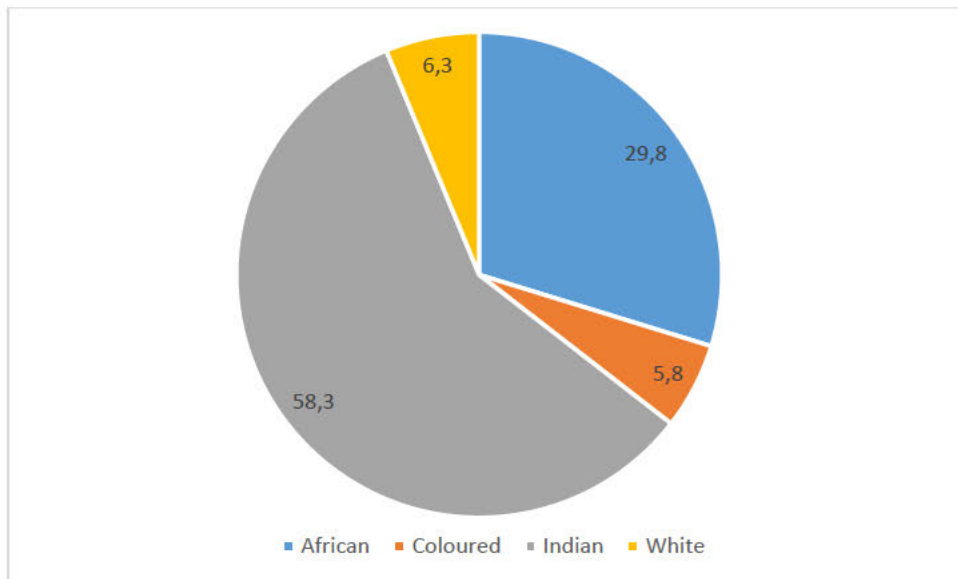


Overall, the ratio of males to females overall is approximately 2:3 (42.8%:57.3%) ( $p = 0.004$ ) compared to the iLembe District Municipality Profile (2020: 12), which indicates that 51.3% of the population are female. The highest count of male respondents was in the 18 to 23 age category, 69 (40.4%) (69), as and the same for female respondents, 90 (39.3%). The highest percentage within age for males came from the 24 to 29 age category with 47.1%, and for females it was from the 47 to 52 age category with 72.2%.

In accordance with the males to females age ratio, all eight age categories, as expected, had a higher percentage of females to males, which is in accordance with the iLembe District Profile Analysis (2020: 4), which indicates a higher percentage of females to males. The two age categories that fall under the age of 30 had the highest concentration of respondents; age group 18-23 represented 39.8%, while age category 24-29 represented 34.0%. Combined, these two categories alone represented 73.8% of the respondents (or 295 out of 400 respondents), indicating that the Millennial and Z generations within the sample are the most frequent users of digital banking, as discussed in the literature (Linnes and Mectcalf 2017: 15; Venter 2017: 501). It is probable that such a finding may also be applicable to the population. The remaining six age categories, namely those from 30-35 to 59+, made up the remaining percentage of respondents, namely 26.3% or 105 respondents. The biggest group of respondents belonged to the 18-23 age category, achieving a respondent percentage of 39.8% or 159 respondents. This is in accordance with the literature, as younger generations are more likely to adopt and partake in digital banking, as they generally have a higher rate of digital literacy (Ameme, 2015: 19). The smallest respondent age category belonged to the 59+ age category, which was only 2.0% (8) of respondents. This also supports the literature, as older generations are less likely to adopt newer methods of banking as opposed to traditional in-branch banking which they are accustomed to. Thus, the age distributions of the sample and the population are not similar as there are more respondents younger than 40 years in the sample.

#### **4.4.2 Ethnicity**

Figure 4.1 indicates the racial composition of the sample.

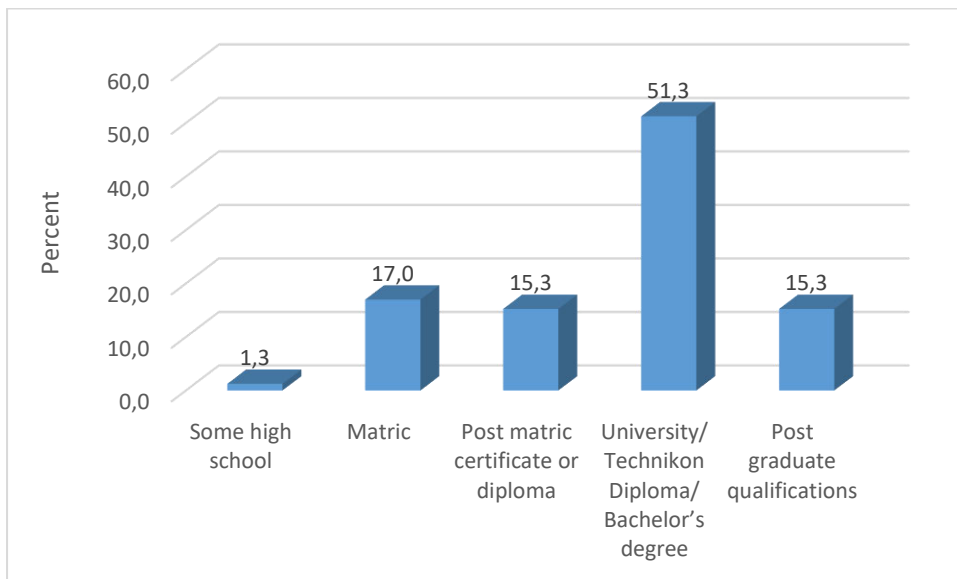


**Figure 4.1: Racial composition of the sample**

Approximately 60% of the respondents were Indian (traditionally and historically, the area of Stanger had become an “Indian area” pre-1994) (Maharaj, 1994; Khan, S, 2017: 90), with a further 30% being African. There were smaller numbers of white and coloured respondents. The digital banking applications by the big five banks in South Africa (ABSA, First National Bank, Standard Bank, Capitec, and Nedbank) are all in the English language. In South Africa, the most spoken home language is IsiZulu, followed by isiXhosa as second, and Afrikaans as third (Statista 2019: 1). While English remains the second most understood language, it is in the minority as a first language, so understanding in second language groups may be limited. Many of these first languages are related to race and ethnicity, with African languages being spoken predominantly by African people, Afrikaans by white and coloured people, and English by Indian and white people, with minorities of the other racial groups.

#### **4.4.3 Education**

Figure 4.2 indicates the education levels of the respondents.



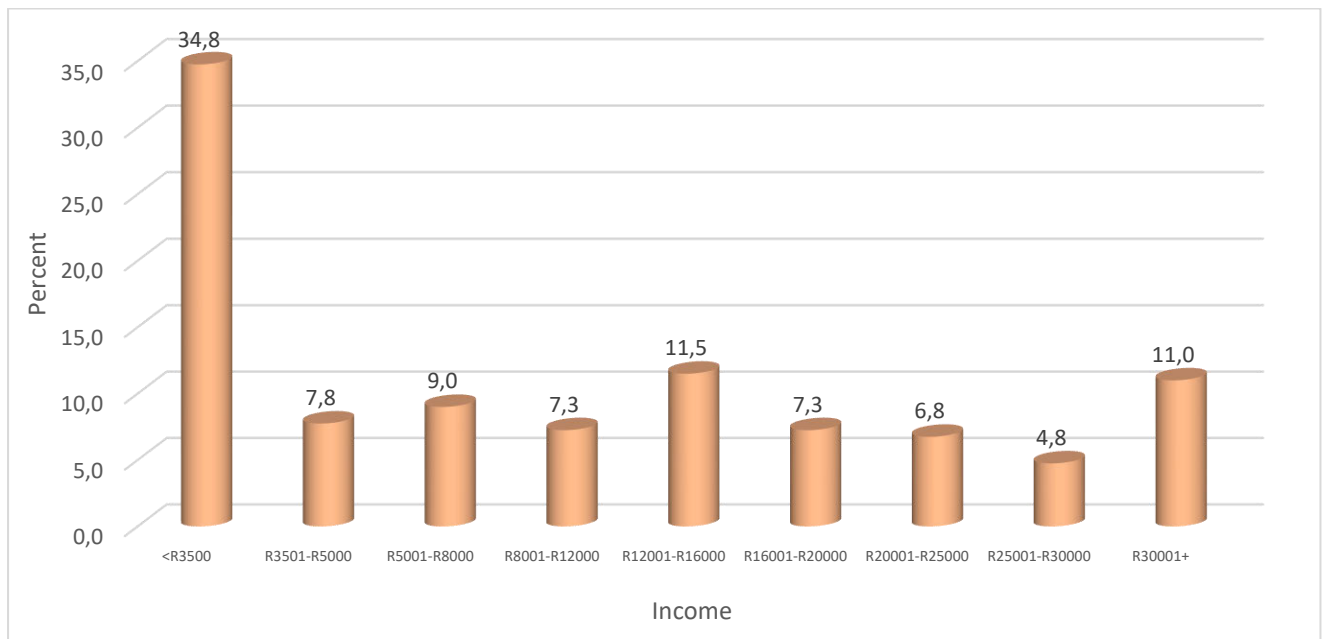
**Figure 4.2: Education levels of respondents**

The majority of respondents (> 80%) had a post school qualification. Approximately one-seventh of the respondents (15.3%) had a post graduate degree. Figure 2.9 (subheading 2.2.2.1) shows that the sample of iLembe district only a combined 4.40% with at least an undergraduate degree.

When combined with the results of this study, this reveals a useful statistic as it indicates that a high proportion of the respondents in this study had a post school qualification. This could be expected as it is probable that the more educated would have bank accounts and would be more digitally savvy. This further indicates that the responses gathered would have been from an informed (learned) source and also indicates that there may exist a digital literacy barrier.

#### **4.4.4 Income**

Figure 4.3 indicates the income levels of the respondents.



**Figure 4.3: Income levels of respondents**

Approximately a third of the respondents (34.8%) had an income of R3 500 per month, with significantly smaller but similar numbers in each of the other categories ( $p < 0.001$ ) This income bracket percentage is 22.9% higher than the percentage of those who earn the second highest percentage 11.5% (R12001-R16000) . These results match the 2016 Community Survey by Statistics South Africa in iLembe, which indicated that the majority earn below R4 800 (Figure 2.5 in subsection 2.2.2.1) (iLembe Community Survey, 2016). This indicates that low-income earners may not have the financial means to access digital banking through the use of smartphones and because of the internet costs. All income data collected refers to gross income.

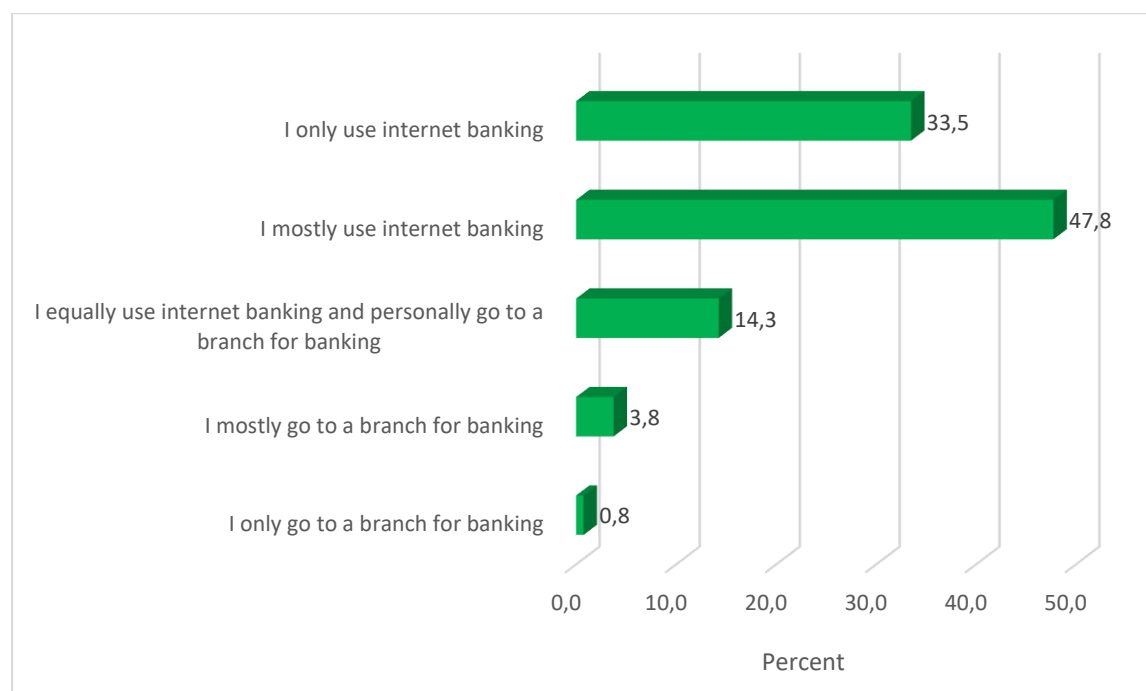
#### **4.4.5 Conclusion**

The analysis of the demographics in the study is consistent with the literature in terms of the demographic characterises of the iLembe district. For instance, a large number of respondents earn a salary within the region's average, while the most digitally literate respondents are the younger generations who have grown up in the digital age.

#### 4.5 Section B and C analysis: Use of digital banking services

This section discusses the use of digital banking services. With digital banking consistently growing, services that once required clients to visit a branch can now be done at the client's own leisure through digital banking. This has resulted in a significant growth opportunity for banks, to deliver services to clients without having to ask people to stand in queues or make appointments to visit a bank. The different methods of utilising digital banking vary according to the type of service required, but most banks have introduced provisions that allow even those clients visiting a branch bank to use a digital platform inside a bank (such as self-services machines, ATM's etc.).

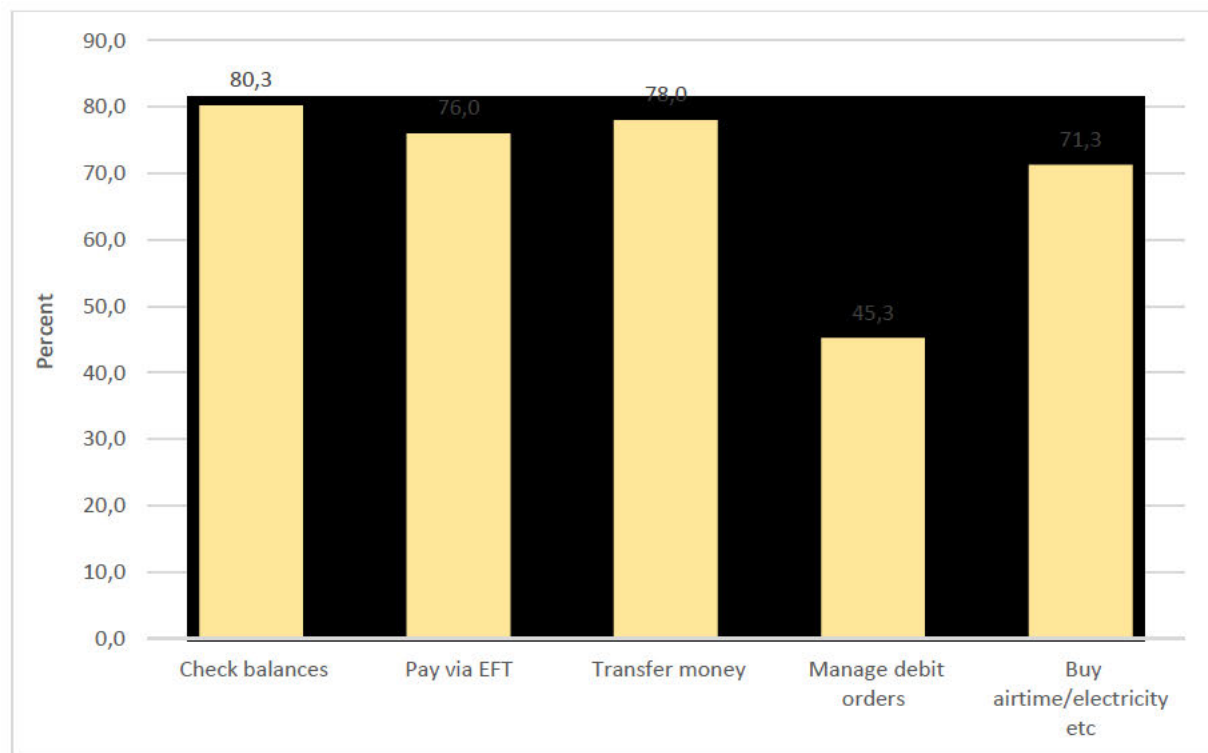
All the respondents had a bank account, and all used internet banking. Respondents who do not use digital banking were not included in this study and any who did respond were thanked and informed to not proceed with the questionnaire



**Figure 4.4: Trends of banking**

“I mostly use digital banking” accounted for the highest response rate at 47.8%. The smallest response rate was “I only go to a branch for banking” at 0.8%. It should be noted here that branch banking now offers several on-site digital banking platforms, particularly for those who do not have the means to conduct digital banking at home. These services include

ATM's, self-service machines (including those to print payment notifications and statements) and computers. Business owners and employees of small medium enterprises (SMEs) also frequently use ATMs to deposit their cash takings for the day. These services are often used without the assistance of a bank employee. Those who use digital and branch banking (14.3%) can be doing so because they still want some human interaction, or because they want their questions answered face-to-face, as that will be more understandable for them (Das and Chaudhuri, 2020: 283). A high percentage of respondents selected that they only use digital banking (33.5%). Thus, the results indicate that respondents use a range of different digital banking services.

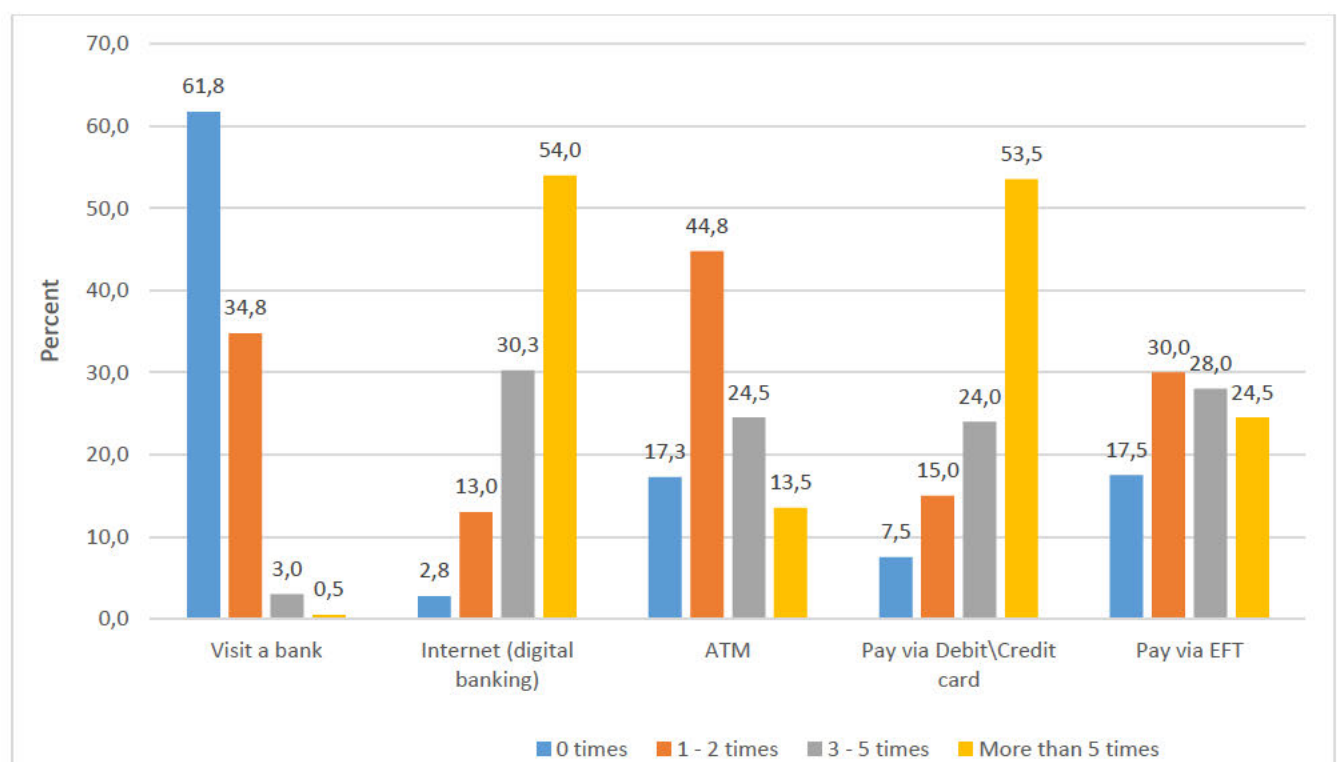


**Figure 4.5: Which banking services do you use (multiple responses were allowed)**

Figure 4.5 shows that there are similar, and high, usage for most activities, except managing debit orders. Respondents were allowed to select multiple responses for the banking services they use. Polat (2020: 78) states that multiple responses in questions allows critical content in the research topic to be covered, contributing to high content validity. Checking balances received the highest percentage at 80.3%, which suggests that respondents find it important to be able to have a consistent and easily accessible platform to check their banking balance, which allows control of spending. Paying via EFT (76.0%) suggests the frequency of online



shopping and purchases, which has become more prominent during the impact of COVID-19 (Prebreza and Shala 2021: 10; Wiscicka-Fernando 2021: 3419; Pham, Thi, and Le 2020: 12). This is partially due to the change in shopping habits attributed to the impact of the pandemic, as discussed in the literature. Managing debit orders received the lowest score at 45.3%. This may be due to most debit orders being automatic, and would only require attention due to debit disputes, failed debits, new debits, and other debit order issues. Transferring money also scored highly at 78.0%, which suggests that respondents may have more than one account (such as savings or investment accounts) or may transfer money to other individuals without having to go to a bank for the service. Lastly, 71.3% of respondents also find it convenient to purchase airline, electricity etc. through online banking rather than visiting a retail outlet or visiting a local municipality to pay for these.



**Figure 4.6: Use of banking services in a month**

Regarding the use of banking services, Figure 4.6 illustrates the frequency of use of five key banking services.

The figure shows that the majority of respondents hardly ever physically go to a branch (96.6%). This indicates a high level of digital banking usage among respondents. This further

indicates that branch banking services may only be required when absolutely necessary. A very high percentage (97.3%) of respondents use internet based (cellphone, computer) digital banking, with 54% using internet banking more than five times a month. A small proportion of respondents (2.8%) do not use internet banking, but do use other digital banking services such as the use of self-service branch banking machines. It is observed that there is a low frequency of use of ATMs (62.1% draw cash fewer than 2 times in a month). This may indicate that respondents use other methods of drawing cash, such as cash backs from retail tillpoints or pay by card, as indicated by the 77.3% of respondents who pay using a card more than 3 times a month. This may indicate an emphasis on safety, as ATM withdrawals may pose a safety risk. Paying via EFT obtained a similar scoring pattern to the other listed services. This indicates that most EFT payments may be used for once-off monthly purchases or bulk items that the respondent may need to purchase less frequently. It may also indicate a level of mistrust about using EFT payments, as a payment is generally made for an order that the respondent does not yet physically have. Further, there may be a general fear of paying an EFT using the wrong reference, payment or account number. This indicates that EFT payments are probably considered for payments that are made less frequently, such as once-off and large-sum payments. It may also indicate that there exists a level of mistrust about the use of EFT payments – EFT payments are generally made before a product or service can be delivered (such as through online shipping). Furthermore, EFT payments also pose a weakness as there exists a possibility of respondents using a wrong reference number for payments.

To investigate whether the alternative responses were significantly different per statement, a chi-square goodness-of-fit test was done in order to identify if there is a real difference in the answers to the response alternatives, or if these responses occurred merely due to chance. The null hypothesis states that there is no difference between the response alternatives for each statement (one statement at a time). The alternate hypothesis states that there is a significant difference between the five response alternatives.



**Table 4.5: Scoring patterns for use of banking services**

	0 times		1 - 2 times		3 - 5 times		More than 5 times		Chi Square p-value
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	
Visit a bank	247	61.8%	139	34.8%	12	3.0%	2	0.5%	< 0.001
Internet (digital banking)	11	2.8%	52	13.0%	121	30.3%	216	54.0%	< 0.001
ATM	69	17.3%	179	44.8%	98	24.5%	54	13.5%	< 0.001
Pay via DebitCredit card	30	7.5%	60	15.0%	96	24.0%	214	53.5%	< 0.001
Pay via EFT	70	17.5%	120	30.0%	112	28.0%	98	24.5%	0.002

As can be seen in Table 4.5, the counts for each of the response alternatives are very different because the p-values are all less than 0.05 (the level of significance). This clearly shows that the distributions were not similar, that is, the differences between the way respondents scored (usage levels) were statistically significant.

#### 4.6 Analysis of constructs

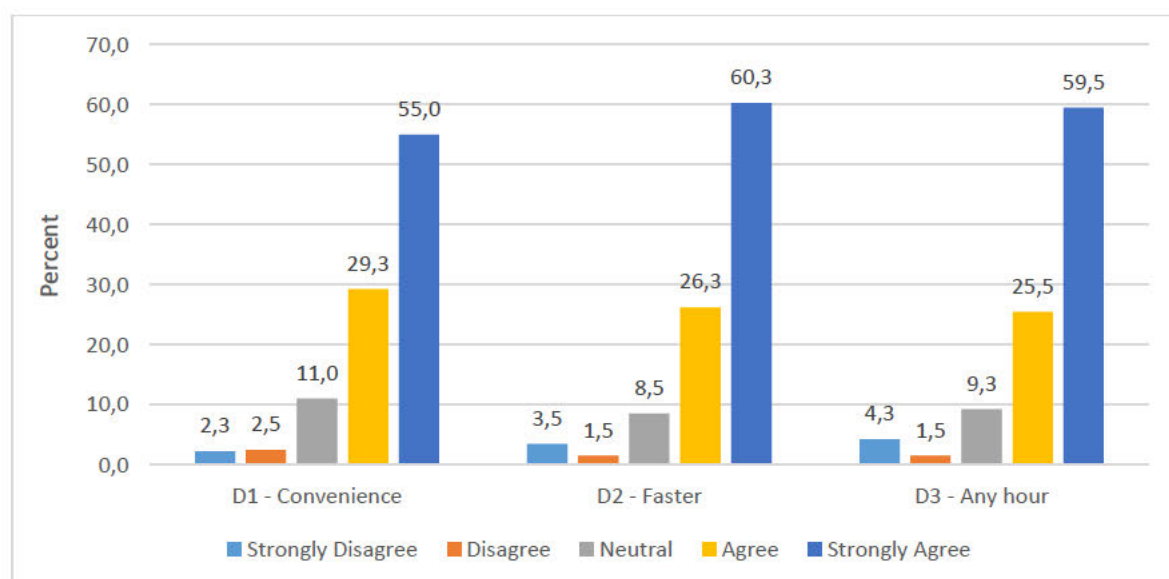
This section analyses the constructs of digital banking, by using eight constructs, namely: (1) Digital Banking Convenience, which aims to investigate the level of convenience that digital banking proposes; (2) Practical Quality, the practical ability to use the service without difficulty; (3) The respondents' perception of branch Service Quality; (4) Usability, the actual ability to use digital banking, and the level of ease of use of digital banking services; (5) Safety, how secure respondents find digital banking services; (6) Online Service Quality, investigates the perception and quality of the services offered on digital banking platforms; (7) Risk and Preference, the personal attributes related to the use of digital banking; and (8) Consumer Experience, the overall experience of utilising banking services.

This section further details the views of the respondents on the factors influencing digital banking usage. Graphs are used to indicate response percentages, and chi-square tests were performed to measure if the scoring patterns of the respondents were different. All p-values were less than 0.05, as shown in Appendix H, thus indicating that all findings discussed in this section were statistically significant. The results are presented in the sections that follow,

with each section letter providing a link to the relevant questions in the questionnaire provided in Appendix A.

#### 4.6.1 Section D: Digital Banking Convenience

As shown in Figure 4.7 and indicated by the level of significance in Figure 4.7 and in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring digital banking convenience is significant ( $p < 0.05$ ), that is, there are differences between the way respondents scored. This indicates that there is a real difference in the opinions of those providing the different alternative answers, and that such differences are not due to chance. For instance, it can be observed that the majority of the respondents (84.3%) were in agreement with the statement: “*Online banking is more convenient than visiting a branch*” (D1). When examining the statement “*Online banking is faster*” (D2), 86.6% were in agreement with the statement. Moreover, 85% of the respondents agreed with the statement “*I can use online banking at any hour*” (D3).



**Figure 4.7: Percentage levels of Digital Banking Convenience**

The following patterns are observed:

- All statements show higher levels of agreement. This suggests that respondents are in agreement that digital banking poses a significantly more convenient approach to banking. This further indicates that respondents also feel that digital banking is faster

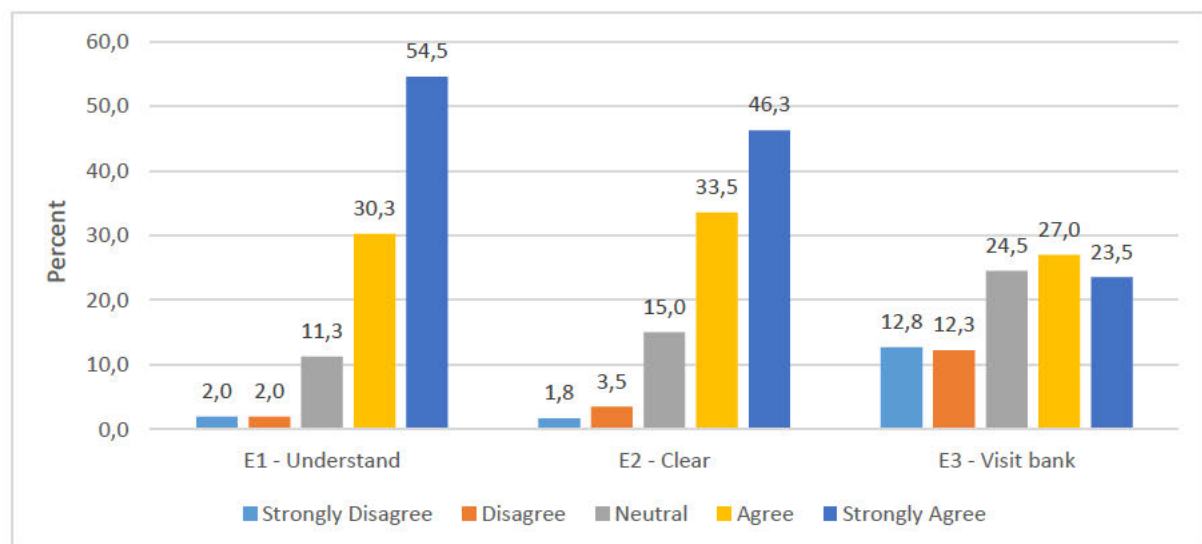
and can be used at any hour, whereas branch banking requires them to wait in queues and ta they can only do business in operating hours.

There are no statements with higher levels of disagreement

An overall conclusion arising from ‘*digital banking convenience*’ is that convenience plays an important role in determining the satisfaction level of using digital banking.

#### 4.6.2 Section E: Practical Quality

As shown in Figure 4.8 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring practical quality is significant ( $p < 0.05$ ), that is, there is a difference between the way respondents scored. For example, 84.8% of the respondents were in agreement with E1, “*I understand how to use online banking*”. Similarly, for statement E2, “*The online information offered by my bank is clear and easy to understand*”, 79.8% of respondents were in agreement. The third statement of the construct “*I prefer to visit a bank for new information or for more complicated queries*” (E3) presented a dominant agreement (50.5%), but also presented a higher level of neutrality (24.5%) compared to “strongly agree” (23.5%).



**Figure 4.8: Percentage levels for Practical Quality**

The following patterns are observed:

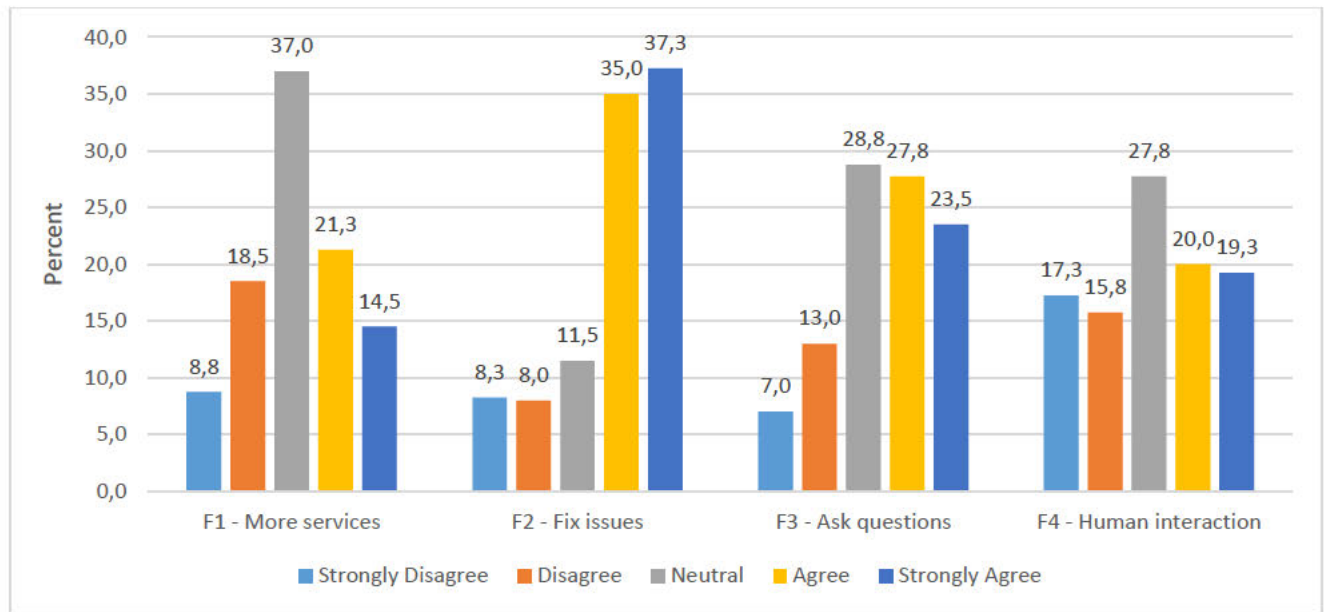


- Statements E1 and E2 show significantly higher levels of agreement. This indicates that respondents have the knowledge of how to use digital banking and have a high level of satisfaction with the information that is presented to them in terms of the digital banking applications and software.
- Statement E3 presented the most evenly spread responses. Three out of the five responses between “Neutral” and “Strongly Agree” scored between 23% and 27%. This indicates that 49.6% of respondents would often prefer or be open to visiting a bank for more complicated queries. This further indicates that there are a lot of respondents who are uncertain about their ability to resolve complicated queries themselves through a digital banking platform, therefore explaining the need to visit a bank.

The conclusion from the results of the practical quality construct is that digital banking is easily understood and concise, yet there exists a fair preference for visiting a branch for more complicated queries. This suggests that respondents have more trust and ease of mind when sensitive or personal enquires are handled by a bank employee.

#### **4.6.3 Section F: Branch Service Quality**

As shown in Figure 4.9 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring branch service quality are significant ( $p < 0.05$ ), that is, there are differences between the way respondents scored. For example, most of the respondents (37%) were neutral about the statement: *“There are more services available when going to a branch than are offered online”* (F1), which was higher than any agreement (35.8%). When investigating the statement *“I visit my bank to fix issues such as replacing a lost or stolen card”* (F2), 72.3% were in agreement with the statement. Additionally, F3, *“I get to ask about new products and services when I visit a bank”* had a dominant individual neutrality score of 28.8%, but it was still lower than an overall agreement score of 51.3%. Similarly, F4, *“Human interaction (speaking to tellers and sales consultants) is important for my banking relationship”* also had a dominant individual neutral score of 27.8%, but still had a lower overall level of agreement score, 39.3%.



**Figure 4.9: Percentage levels of Branch Service Quality**

The following patterns are observed:

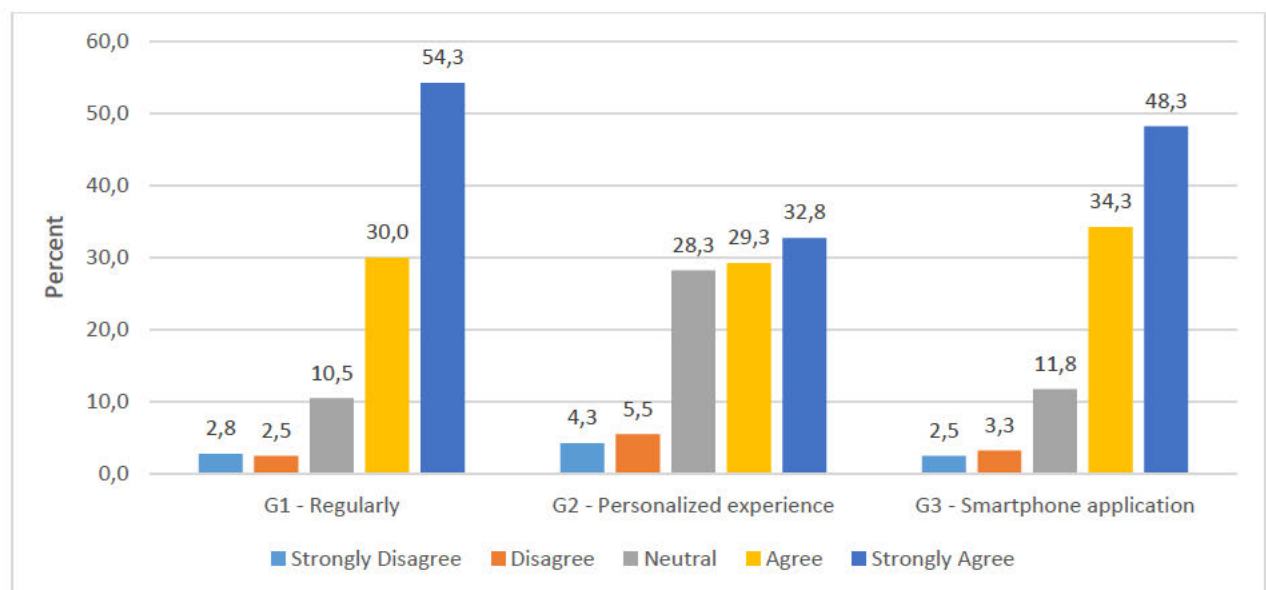
- Statements F1, F3, and F4 displayed dominant individual levels of neutrality. This indicates that respondents will only visit a branch when absolutely necessary.
- Statement F2 was the only statement that had a dominant level of agreement that was higher than any level of disagreement or neutrality. This also indicates, as per F1, F3, and F4, that respondents will consider visiting a branch only when absolutely necessary, or when vital to do so (such as replacing lost/stolen cards).

This naturally displayed the overall highest level of response for *“There are more services when visiting a branch than there are online”*. It can, therefore, be concluded that simple transactions may be easily processed online, yet respondents have a preference for visiting a branch when dealing with their finances, or to simply be assisted by a bank employee. There are no statements with higher levels of disagreement.

#### **4.6.4 Section G: Usability**

As shown in Figure 4.10 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements

measuring usability are significant ( $p < 0.05$ ) That is, there are differences between the way respondents scored. Examining the statement “*I use online banking regularly*” (G1), 84.3% agreed with the statement. Furthermore, 62.1% had a level of agreement for G2, “*I would prefer a more personalised online banking experience*”. Similarly, the majority (82.6%) were in agreement with the statement “*My smartphone banking application covers all my basic banking requirements*” (G3).



**Figure 4.10: Percentage levels of Usability**

The following patterns are observed:

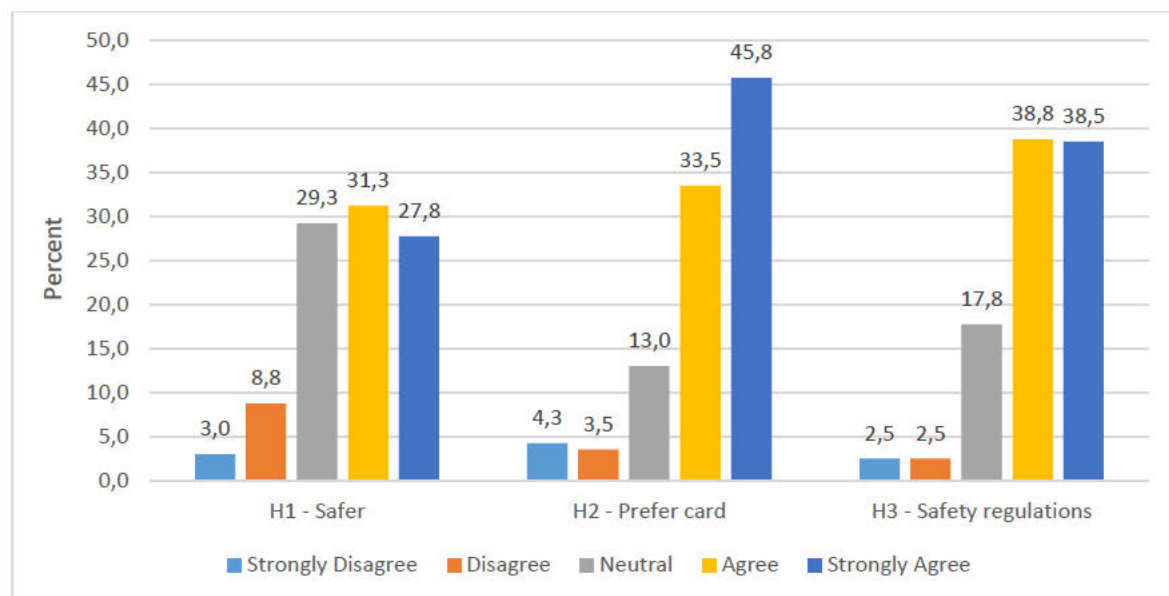
- All statements show a very high level of agreement with an extremely low level of disagreement. This indicates high levels of usability, which is dependent on the smartphone capabilities (banking apps are regularly updated and may require more advanced software to operate all functions).
- There was no dominant level of disagreement with any statement.
- “Strongly agree” had a minimum level of 32.8% between all three statements, while G2 showed a high level of agreement, there was only a 4.5% difference between “Neutral” and “Strongly Agree”. This possibly indicates room for improvement for the banking application.

The conclusion from these results is that a fair level of satisfaction exists with the usability of digital banking, yet there are opportunities to present a more personalised experience on the

banking application, while implementing new ways to incorporate more services for online banking.

#### 4.6.5 Section H: Safety

As shown in Figure 4.11 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring safety are significant ( $p < 0.05$ ). That is, there were differences between the way respondents scored. For instance, it can be observed that the majority of the respondents (59.1%) were in agreement with the statement: “*Internet banking is safer in terms of online fraud and theft*” (H1). When examining the statement H2, “*When paying physically, I prefer paying with my bank card*” 79.3% were in agreement with the statement. Similarly, 77.3% were in agreement with the statement “*I am happy with the safety regulations from my bank*” H3.



**Figure 4.11: Percentage levels of Safety**

The following patterns are observed:

- All statements show high levels of agreement, with H2 and H3 showing a dominant level of agreement. This indicated that there is a high level of agreement that safety levels are at a satisfactory level.
- All statements also display low levels of disagreement, with no statement displaying any dominant level of disagreement.

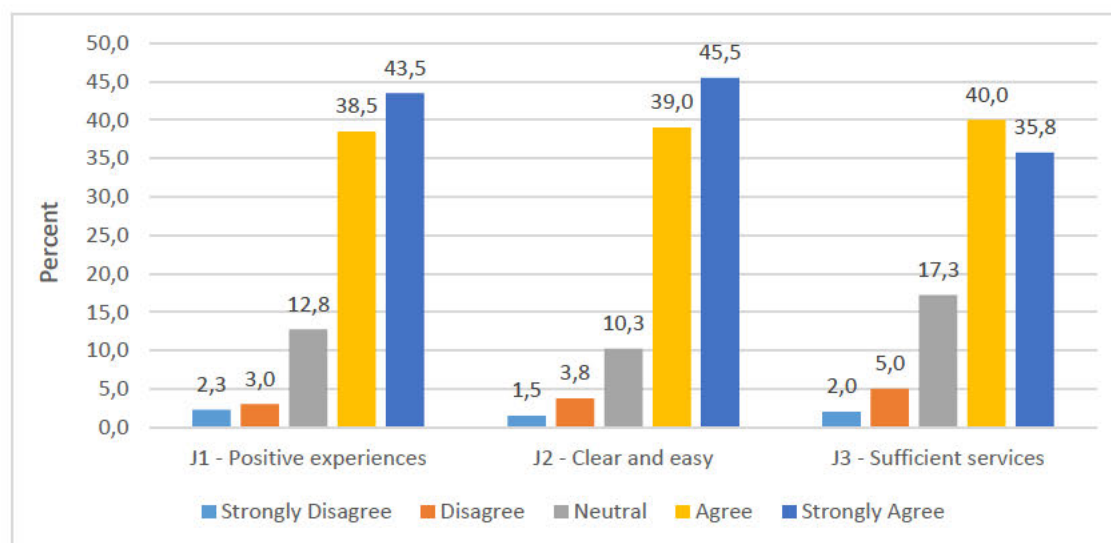


- While statement H1 displays a high level of agreement (59.1%), there also exists a high level of neutrality (29.3%). This may indicate that while the view of internet-based banking is safe, there is some level of ambiguity, possibly due to the growth of cybercrimes and hacking.

From these results it can be concluded that safety in digital banking is a vital component that affects its usage. This is in accordance to the literature, in which safety is discussed as one of the major contributors to the adoption of digital banking (Katawetawaraks and Wang 2011: 69; Chang 2011: 161; Kaur, 2013: 1; Kumar and Maan 2014: 103; Bashir, Mehboob and Bhatti, 2015: 11; Meixian 2015: 9).

#### 4.6.6 Section J: Online Service Quality

As shown in Figure 4.12 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring online service quality are significant ( $p < 0.05$ ), that is, there are differences between the way respondents scored. When examining statement J2 *"I have had positive experiences using online banking"*, 82% were in agreement. Similarly, 84.5% in statement J2 *"Online banking is clear and easy to use"* were in agreement. Furthermore, 75.8% of respondents were in agreement with the statement *"Online banking has sufficient services"* (I3).



**Figure 4.12: Percentages of online service quality**



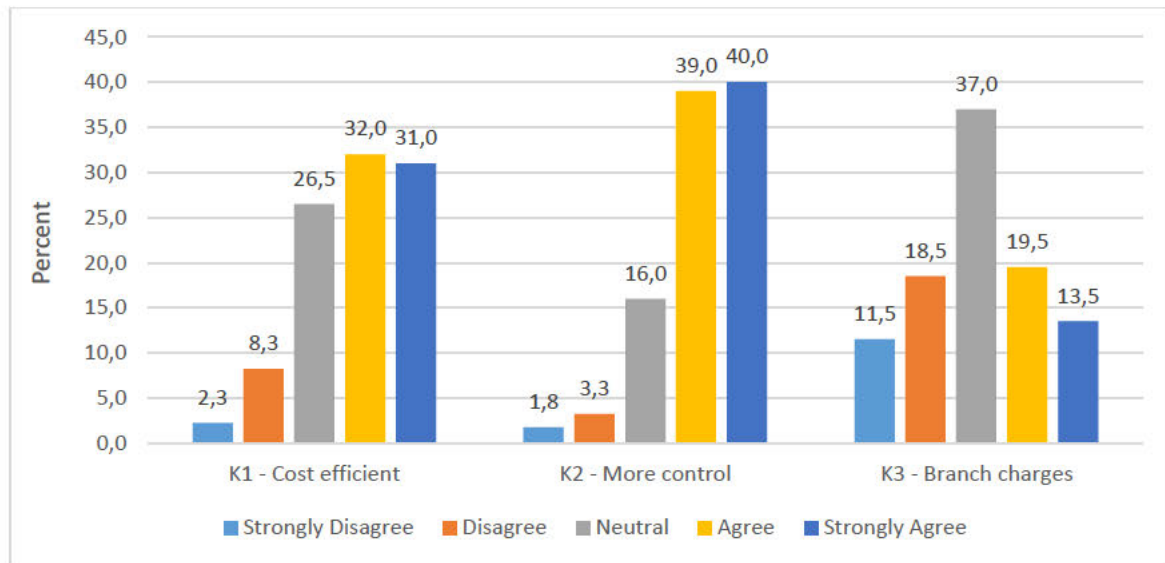
The following patterns are observed:

- All statements show significantly high levels of agreement, with very low levels of neutrality and disagreement. This indicates that there very high levels of satisfaction over the online service quality of digital banking.
- Both J1 and J2 had very high levels of “strongly agree” (43.5% and 45.5), and extremely low levels of “strongly disagree” (2.3% and 1.5%). This indicates that the overall experience of using digital banking and the ability to easily access its usage is very positive.
- There are no statements with higher levels of disagreement.

It is concluded that the quality of online banking is of a satisfactory level. This is supported by the literature, as Raza, Samad and Umer (2020: 1446) and Ling *et al.* (2010: 81) state that a positive customer experience of online service quality will result in satisfaction with the actual service provided by the company.

#### **4.6.7 Section K: Risk and Preference**

As shown in Figure 4.13 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring risk and preference are significant ( $p < 0.05$ ). That is, there are differences between the way respondents scored. When analysing K1 “*Online banking saves on banking fees and is cost efficient*”, 63% were in agreement with this statement. Similarly, 79% of statement K2 “*I have more control of my banking when I bank online*” were in agreement. Statement K3 indicated a fairly spread-out response score, with 30% having some level of disagreement, 37% having a dominant level of neutrality, while 33% had some level of agreement.



**Figure 4.13: Percentage scores of risk and preference**

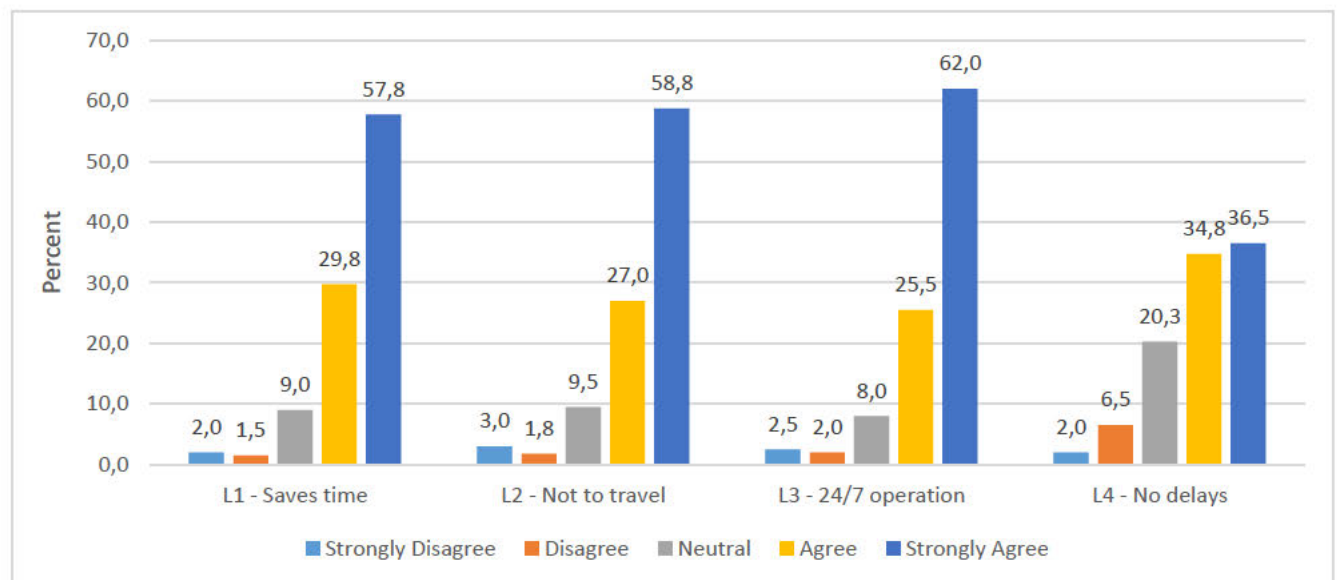
The following patterns are observed:

- Statement K1 and K2 displayed significant levels of agreement. While K1 had a higher level of neutrality (26.5%) when compared to K2 (16%), both statements still had a level of agreement that exceeded 60%. This indicates that respondents agree that online banking is cost efficient. A neutrality of over 25% should be taken into consideration, as is the case with statement K1, which can indicate there are hidden costs or service fees that can be costly for respondents. This could be a cause for concern, possibly indicating some ambivalence about banking fees and costs. It might not take much of a fee increase, or active marketing by a competitor, to push opinions and attitudes about a banks costs into negative territory.
- Statement K3 displayed a fairly spread-out response rate, with neutrality obtaining a dominant score of 37%, higher than any level of disagreement (30%), and any level of agreement (33%). This indicated that respondents have a mixed view of branch bank charges. This varies on a number of factors, such as type of account used, number of transactions per month, and service charges.

This finding indicates that there is a potential for further growth in digital banking to offset the costs incurred from branch banking, which supports the finding of Selvanathan *et al.* (2016: 236).

#### 4.6.8 Section L: Consumer Experience

As shown in Figure 4.14 and indicated by the level of significance in Appendix H, the chi-square test indicates that the scoring patterns of the respondents with regard to the statements measuring consumer experience are significant ( $p < 0.05$ ). That is, there are differences between the way respondents scored. When examining the statement L1, “Online banking saves time”, 87.6% were in agreement with this statement. Similarly, 85.8% of respondents had a level of agreement with statement L2 “I prefer to not travel to a bank to process simple transactions”. Furthermore, 87.5% were in agreement that “Online banking is more convenient due to its 24/7 operation” (L3). When analysing, statement L4 “Online banking has no delays in processing”, 71.3% were in agreement.



**Figure 4.14: Percentage score of Consumer Experience**

The following patterns are observed:

- All statements display a significantly high level of agreement with significantly low levels of disagreement. Statements L1, L2, and L3 all display a very high level of “strongly agree”, which is at least 25% higher than every other response option. This indicates that respondents are in agreement that online banking is less time consuming than branch banking. It further indicates that respondents would rather bank from the comfort of their homes and offices than travel to a bank, which has cost and time factors. Respondents were also in agreement that online banking facilities are available 24/7.

- Statement L4 displayed strong levels of agreement, but also displayed the highest level of neutrality within the construct at 20.3%. This indicates that there is a satisfactory level of agreement for speed in processing of digital banking service, but this will also depend on the kind of service requested and the level of complexity required to resolve the query.

The results from 'consumer experience' give rise to the conclusion that digital banking is significantly quicker, but also presents an opportunity for banks to develop a faster allocation and processing of digital banking queries.

#### **4.7 Crosstabulations and chi-square tests between trends of banking, and banking services**

In this section the appropriate biographical data were cross analysed with the relevant (1) trends of banking (as per Figure 4.4) and (2) banking services (as per Figure 4.5). A chi-square test of independence was performed to investigate whether or not there was a statistically significant relationship between the variables selected (see Appendix H). If the p-value is less than 0.05, the null hypothesis states that there is no association between the two (therefore a significant difference does exist). The alternate hypothesis indicates that there is an association. Therefore, if the p-value is larger than 0.05, then there is no significant difference. Only the significant scores ( $p < 0.05$ ) are listed and discussed, while all statistical scores larger than 0.05 are provided in Appendix H.

- The p-value between Age and "Internet (digital) banking" of 0.006 indicates that there is a significant relationship between the two ( $\chi^2 = 40.580$ ,  $df = 21$ ,  $p < 0.05$ ). That is, the age of the respondents did play a significant role in terms of how they used digital banking. This corresponds to the literature, as older generations are less likely to adopt to changes within the banking industry (Linnes and Mectcalf 2017: 15; Venter 2017: 501).
- The p-value between Education and "Internet (digital) banking" of 0.002 indicates that there is a significant relationship between the two ( $\chi^2 = 31.151$ ,  $df = 12$ ,  $p < 0.05$ ). That is, the education of respondents did play a significant role in terms of how they used digital banking, as the more educated were likely to use digital banking. This is

supported by the literature, in which Andreou and Anyfantaki (2019: 5) state that financial illiteracy could be holding consumers back from the broad adoption of financial technology, such as internet banking.

- The p-value between Income and "Internet (digital) banking" of 0.002 indicates that there is a significant relationship between the two ( $\chi^2 = 48.715$ ,  $df = 24$ ,  $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of how they used digital banking, as high-income earners were more likely to use digital banking. This is supported by the literature, in which a study by Orthofer (2016) highlights the impact income inequality has on banking usage. The p-value between age and "ATM" of 0.013 indicates that there is a significant relationship between the two ( $\chi^2 = 38.062$ ,  $df = 21$ ,  $p < 0.05$ ). That is, the age of the respondents did play a significant role in terms of their likelihood to use an ATM, as younger generations tend to adopt for digital banking more than the older generations, which is supported by the literature (Ameme, 2015: 19).
- The p-value between Education and "ATM" of 0.004 indicates that there is a significant relationship between the two ( $\chi^2 = 28.789$ ,  $df = 12$ ,  $p < 0.05$ ). That is, the education level of respondents did play a significant role in terms of the likelihood of their use an ATM, as highly educated respondents were more likely to use ATMs often. This is supported by the literature, in which Ighomereho, Ladipo and Dixon-Ogbechi (2018: 101) found that the higher educated a respondent, the more likely they were to use an ATM.
- The p-value between Income and "ATM" of 0.000 indicates that there is a significant relationship between the two ( $\chi^2 = 96.579$ ,  $df = 24$ ,  $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of their likelihood to use an ATM. For instance, 34.8% of respondents who use an ATM earn R3 500 or less, the highest percentage out of all income levels. This indicates that lower income earners use an ATM more often than their higher income earning counterparts.
- The p-value between Age and "Pay via debit/credit card" of 0.000 indicates that there is a significant relationship between the two ( $\chi^2 = 53.825$ ,  $df = 21$ ,  $p < 0.05$ ). That is, the age of respondents did play a significant role in terms whether they paid using a debit or credit card rather than cash. For instance, the age categories of 18-23, and 24-29 contributed to more than 60% of the total respondents who pay via debit or credit card, with 153 of respondents between 18-23 and 24-29 using it five or more times a

month. This indicates that younger generations are more prone to the use of card payments compared to older generations.

- The p-value between Education and "Pay via debit/credit card" of 0.000 indicates that there is a significant relationship between the two ( $\chi^2 = 36.388$ ,  $df = 12$ ,  $p < 0.05$ ). That is, the education level of respondents did play a significant role in terms whether they paid using a debit or credit card rather than cash. For instance, the highest number of respondents in the study who paid via card had obtained a diploma/bachelor's degree, indicating that higher educated users were more likely to pay via card.
- The p-value between Income and "Pay via debit/credit card" of 0.000 indicates that there is a significant relationship between the two ( $\chi^2 = 82.897$ ,  $df = 24$ ,  $p < 0.05$ ). That is, the income of respondent did play a significant role in terms whether they paid using a debit or credit card rather than cash. For instance, 34.8% of respondents who earned R3 500 or less indicated that they pay via card. A further 53.3% of all users pay via card at least five times a month. This indicates that while paying via card is more prevalent in low-income earners, there exists a fair number of high-income earners who also prefer to pay via card.
- The p-value between Age and "Pay via EFT" of 0.000 indicates that there is a significant relationship between the two ( $\chi^2 = 72.024$ ,  $df = 21$ ,  $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of their preference to pay via EFT. For instance, in Appendix H, 58.1% of those aged 18-23 and 24-29 pay via EFT at least once a month, whereas those aged between 53-58 and 59+ had an average of 3 who paid by EFT at least once per month. This further indicates that younger people tend to pay via EFT more often than older people.
- The p-value between Income and "Pay via EFT" of 0.000 indicates that there is a significant relationship between the two ( $\chi^2 = 73.695$ ,  $df = 24$ ,  $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of their preference to pay via electronic funds transfer.

#### **4.8 Crosstabulation of constructs of digital banking**

This section analyses the crosstabulations of the constructs in the questionnaire. At least one individual statement within each construct was utilised to determine if there is a relationship.

A chi-square test of independence was performed to investigate whether or not there was a statistically significant relationship between the variables selected. If the p-value is less than 0.05, the null hypothesis states that there is no association between the two (therefore a significant difference does exist). The alternate hypothesis indicates that there is an association. Therefore, if the p-value is larger than 0.05 there is no significant difference. Only the significant scores ( $p < 0.05$ ) are listed and discussed, while all statistical scores larger than 0.05 are provided in Appendix H.

- The p-value between Education and *"Online banking is more convenient"* (D1) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in determining if online banking is more convenient than visiting a branch.
- The p-value between Education and *"Online banking is faster"* (D2) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in terms of how respondents perceived the speed of banking online compared to visiting a branch.
- The p-value between Age and *"I can use online banking at any hour"* (D3) of 0.006 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in determining preference for using online banking at any hour.
- The p-value between Education and *"I can use online banking at any hour"* (D3) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in determining preference for using online banking at any hour.
- The p-value between Age and *"I understand how to use online banking"* (E1) of 0.006 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of whether respondents understood how to use digital banking. For instance, 292 of the 400 respondents under the age of 35 have a level of agreement that they understood how to use digital banking. Whereas 92.6% of respondents within the age category of 24-29 had a level of agreement that they understand how to use digital banking, compared to the age group of 59+ which declines to 50%. This indicates that younger generations have a

greater understanding of how to use digital banking, and are more digitally literate than older generations, as discussed in the literature (Azeez and Akhtar, 2021: 10).

- The p-value between Education and "*I understand how to use online banking*" (E1) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in terms of whether respondents understood how to use digital banking. Of the 400 respondents, 285 who had at least obtained a diploma agreed that they understood how to use digital banking.
- The p-value between Income and "*I understand how to use online banking*" (E1) of 0.009 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of whether they understood how to use digital banking.
- The p-value between Age and "*Online information is clear*" (E2) of 0.005 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of determining the simplicity of online banking information.
- The p-value between Education and "*Online information is clear*" (E2) of 0.002 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in terms of determining the simplicity of online banking information.
- The p-value between Age and "*I prefer to visit the bank for new information*" (E3) of 0.036 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in determining a preference to visit a bank for new information.
- The p-value between Education and "*I prefer to visit the bank for new information*" (E3) of 0.007 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in determining a preference to visit a bank for new information.
- The p-value between Income and "*I prefer to visit the bank for new information*" (E3) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in determining a preference to visit a bank for new information.



- The p-value between Income and *"More services at a branch than online"* (F1) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role determining whether they felt there are more services offered at a branch compared to online.
- The p-value between Income and *"I visit my bank to fix issues"* (F2) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of a preference to visit a branch to resolve more complicated queries and issues.
- The p-value between Age and *"I get to ask about new services at a bank"* (F3) of 0.002 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in determining whether they preferred to visit a branch to ask about new products and services. It can therefore be concluded that the age of the respondent is significant in determining a preference for face-to-face interaction at a bank.
- The p-value between Income and *"I get to ask about new services at a bank"* (F3) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in determining their preference for visiting a branch to ask about new products and services.
- The p-value between Education and *"Human interaction is important for banking"* (F4) of 0.018 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education level of respondents did play a significant role in terms of their preference for human interaction as a basis of a positive banking experience.
- The p-value between Income and *"Human interaction is important for banking"* (F4) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of their preference for human interaction as a basis of a positive banking experience.
- The p-value between Education and *"I use online banking regularly"* (G1) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in terms of how respondents used digital banking regularly. For instance, the cross tabulation shown in Appendix H signifies those 233 respondents with at least a university education scored high on

agree and strongly agree (58.25%), while those 167 without a university education scored lower on agree and strongly agree (41.75%).

- The p-value between Income and *"I use online banking regularly"* (G1) of 0.022 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of how they used digital banking regularly.
- The p-value between Age and *"I prefer personalised online banking experience"* (G2) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in determining a preference for a more personalised online banking experience.
- The p-value between Gender and *"I prefer personalised online banking experience"* (G2) of 0.029 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the gender of respondents did play a significant role in determining a preference for a more personalised online banking experience.
- The p-value between Income and *"I prefer personalised online banking experience"* (G2) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in determining a preference for a more personalised online banking experience.
- The p-value between Age and *"Banking application covers all my basic banking requirements"* (G3) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of the respondents did play a significant role in the perception that their banking application covered all their basic banking requirements.
- The p-value between Education and *"Banking application covers all my basic banking requirements"* (G3) of 0.012 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant the perception that their banking application covered all their basic banking requirements.
- The p-value between Age and *"Internet banking is safer in terms of online fraud and theft"* (H1) of 0.011 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of how respondents viewed online banking safety in terms of fraud and theft.
- The p-value between Income and *"Internet banking is safer in terms of online fraud and theft"* (H1) of 0.008 indicates that there is a significant relationship between the

two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of how respondents viewed online banking safety in terms of fraud and theft.

- The p-value between Age and *"When paying physically, I prefer paying with my bank card"* (H2) of 0.001 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of how respondents preferred to pay when paying physically. For instance, Appendix H shows that age categories 24-29 and 30-35 both had achieved over 50% for "strongly agree" within their age group, whereas all older age groups scored below 50% as the age increased. It can therefore be concluded that younger generations have a significantly higher usage of paying by card compared to older generations.
- The p-value between Age and *"I am happy with the safety regulations from my bank"* (H3) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of how respondents viewed the safety regulations of their bank. For instance, 81.80% of respondents of all age groups had some level of agreement that they were happy with the safety regulations of their respective banks. This is compared to a very low (5%) level of disagreement between all age groups. The highest level of "strongly disagree" came from the 18-23 age group (5.7%), whereas the highest level of "strongly agree" came from the 30-35 age group. For instance, within a percentage of the age group, the highest level of "disagree" was from the 59+ age group (25%), compared to below 2% for any age group under the age of 30. It can therefore be concluded that younger generations are more satisfied with the safety regulations from their banks compared to older generations.
- The p-value between Age and *"I have had positive experiences using online banking"* (J1) of 0.004 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of positive experiences using digital banking. However, there was a higher percentage within certain age groups that scored a dominant level of neutrality. For instance, within the age group of 58-59, 40% had a neutral view that they have had positive experiences using online banking, whereas those 59+ scored a 50% neutrality. This contrasts with younger generations, as all age groups below the age of 40 had a neutrality score below 15% each. This may indicate that younger age groups are significantly more satisfied with their experiences using online banking compared to older generations,

who, although not dissatisfied, do possess some level of dissatisfaction with, or uncertainty about, using online banking. This is in accordance with the literature, as younger generations are much more digitally literate, and therefore have a much more in-depth understanding of how to use digital banking effectively.

- The p-value between Education and *"Online banking is clear and easy to use"* (J2) of 0.012 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education level of respondents did play a significant role in determining if respondents found online banking simple to use.
- The p-value between Age and *"Online banking saves on banking fees and is cost efficient"* (K1) of 0.004 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of determining whether respondents viewed online banking as cost efficient. The data indicates that there was a high level of agreement between the ages of 24 and 46. It can therefore be concluded that the age of the respondent did play a significant role in determining an agreement that online banking is cost efficient.
- The p-value between Income and *"Online banking saves on banking fees and is cost efficient"* (K1) of 0.013 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms of determining if respondents viewed online banking as cost efficient. Different age groups displayed varying levels across the 5-point score on the Likert scale. It is therefore concluded that this relationship exists based on the allocation of accounts targeted to age groups, in addition to charges for income-specific accounts
- The p-value between Age and *"I have more control of my banking when I bank online"* (K2) of 0.005 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of how respondents viewed their level of control in using online banking rather than visiting a branch.
- The p-value between Education and *"I have more control of my banking when I bank online"* (K2) of 0.006 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education level of respondents did play a significant role in terms of how respondents viewed their level of control in using online banking compared to visiting a branch.

- The p-value between Age and *"Online banking saves time"* (L1) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of determining whether online banking saved time compared to visiting a branch.
- The p-value between Education and *"Online banking saves time"* (L1) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in terms on determining whether online banking saved time compared to visiting a branch.
- The p-value between Income and *"Online banking saves time"* (L1) of 0.044 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the income of respondents did play a significant role in terms on determining whether online banking saved time compared to visiting a branch.
- The p-value between Age and *"I prefer to not travel to a bank to process simple transactions"* (L2) of 0.001 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of the respondent did play a significant role in terms of respondents preferring to not travel to a bank to process simple transactions. For instance, 85.8% of respondents from all age groups had a level of agreement that they would prefer to not travel to a bank to process simple transactions. This is opposed to 4.8% who had a level of disagreement. Age group 36-40 scored the highest value of "strongly agree" (69.2%), while 18-23 scored the highest "strongly disagree" (6.9%). It can therefore be concluded that younger generations prefer to not travel to a bank, whereas older generations had a more neutral view on this compared to younger generations.
- The p-value between Education and *"I prefer to not travel to a bank to process simple transactions"* (L2) of 0.000 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondents did play a significant role in terms respondents preferring to not travel to a bank to process simple transactions.
- The p-value between Age and *"Online banking is more convenient due to its 24/7 operation"* (L3) of 0.005 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in determining if respondents found digital banking convenient due to its 24/7 access.

- The p-value between Education and "*Online banking is more convenient due to its 24/7 operation*" (L3) of 0.006 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the education of respondent did play a significant role in determining if respondents found digital banking convenient due to its 24/7 access.
- The p-value between Age and "*Online banking has no delays in processing*" (L4) of 0.008 indicates that there is a significant relationship between the two ( $p < 0.05$ ). That is, the age of respondents did play a significant role in terms of how respondents viewed the processing timeframe of online transactions and banking.
- The p-value between Education and "*Online banking has no delays in processing*" (L4) of 0.045 indicates a significant relationship between the two ( $p < 0.05$ ). That is, the education of the respondent did play a significant role in terms of how respondents viewed the processing timeframe of online transactions and banking.

## 4.9 Correlations

Correlation is a measure of a monotonic relationship between two variables. A monotonic relationship between two variables is one in which either: (a) as the value of one variable increases, so does the value of the other variable; or (b) as the value of one variable increases, the other variable value decreases (Schober, Boer and Schwarte 2018: 1763).

### 4.9.1 Correlations of constructs with demographics

Table 4.6 displays the correlations between the eight constructs and the demographic variables included in the study. A correlation between B4, preference to use digital banking (dependant variable), and the demographics is also included. The test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of each of the eight constructs where significance is represented by  $p < 0.05$ .

**Table 4.6: Correlations of constructs with demographics**

	<b>B4 -Preference to use digital banking</b>		<b>Age</b>		<b>Gender</b>		<b>Education</b>		<b>Income</b>	
	Corr	Sig	Test stat	Sig	Test stat	Sig	Test stat	Sig	Test stat	Sig
D – Digital Banking Convenience	.331	0.000	14.099	0.049	1.302	0.254	7.714	0.103	20.366	0.009
E – Practical Quality	.133	0.008	11.214	0.130	0.462	0.497	6.354	0.174	32.457	<0.001
F – Branch Service Quality	-.239	0.000	19.334	0.007	2.005	0.157	4.288	0.368	29.000	<0.001
G – Usability	.363	0.000	41.259	<0.001	2.215	0.137	8.354	0.079	33.043	<0.001
H – Safety	.309	0.000	14.807	0.039	1.986	0.159	3.656	0.455	24.400	0.002
I – Online Service Quality	.417	0.000	21.657	0.003	0.174	0.676	5.406	0.248	20.560	0.008
J – Risk and Preference	.238	0.000	15.511	0.030	0.777	0.378	7.769	0.100	21.424	0.006
K – Consumer Experience	.358	0.000	14.238	0.047	1.056	0.304	4.326	0.364	26.763	0.001

#### 4.9.1.1 Digital Banking Convenience

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of Digital Banking Convenience. Perceptions of digital convenience only differs significantly among the income categories, i.e., Income seems to influence Digital Banking Convenience, while Age, Gender and Education have no influence.

#### 4.9.1.2 Practical Quality

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of Practical Quality. Perceptions of Practical Quality only differ significantly among the income categories, i.e., income seems to influence Practical Quality, while Age, Gender and Education have no influence.

#### 4.9.1.3 Branch Service Quality

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of

Branch Service Quality. Perceptions of Branch Service Quality only differ significantly among the income and age categories, i.e., Income and Age seem to influence Branch Service Quality, while Gender and Education have no influence.

#### **4.9.1.4 Usability**

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of digital banking usability. Perceptions of Usability only differ significantly among the income and age categories, i.e., Income and Age seem to influence Usability, while Gender and Education have no influence.

#### **4.9.1.5 Safety**

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of digital banking safety. Perceptions of Safety only differ significantly among the income categories, i.e., Income seems to influence Safety, while Age, Gender and Education have no influence.

#### **4.9.1.6 Online Service Quality**

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of Online Service Quality. Perceptions of Online Service Quality only differ significantly among the income and age categories, i.e., Income and Age seem to influence Online Service Quality, while Gender and Education have no influence. Online service quality is the only construct that was not significantly influenced by income. For instance, the p-value between Age and *“I have had positive experiences using online banking”* of 0.004 indicates that there is a significant relationship between the two. That is, the age of respondents did play a significant role in terms of positive experiences using digital banking. However, there was a higher percentage within certain age groups that scored a dominant level of neutrality. Respondents under the age of 35 have a level of agreement that they understand how to use digital banking; 92.6% of respondents within the age category of 24-29 had a level of



agreement that they understand how to use digital banking, compared to the age group of 59+ which declines to 50%. This indicates that younger generations have a greater understanding of how to use digital banking, and are more digitally literate than older generations, as discussed in the literature (Azeez and Akhtar, 2021: 10).

#### **4.9.1.7 Risk and Preference**

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of digital banking risk and preference. Perceptions of Risk and Preference only differ significantly among the income and age categories, i.e., Income and Age seem to influence Risk and Preference, while Gender and Education have no influence. For instance, the p-value between Income and “*Online banking saves on banking fees and is cost efficient*” of 0.013 indicates that there is a significant relationship between the two. That is, the income of respondents did play a significant role in terms of determining if respondents viewed online banking as cost efficient. Different age groups displayed varying levels across the 5-point score on the Likert scale. It is therefore concluded that this relationship exists based on the allocation of accounts targeted to age groups, in addition to charges for income-specific accounts.

#### **4.9.1.8 Consumer Experience**

As indicated by the level of significance in Table 4.6, the test statistic and significance analysis indicate the scoring patterns of the respondents with regard to the measurement of digital banking consumer experience. Perceptions of Consumer Experience only differ significantly among the income categories, i.e., Income seems to influence Consumer Experience, while Age, Gender and Education have no influence.

#### **4.9.1.9 Summary of correlations between constructs and demographics**

In summary, it can be concluded that respondents’ level of income has a significant influence on all the constructs influencing ‘preference to use digital banking’. In other words, the opinions of all respondents regarding all the constructs differ according to their level of income. Furthermore, the constructs Branch Service Quality, Usability, Online Service

Quality, and Risk and Preference, vary according to the age of the respondents, while the constructs Digital Banking Convenience, Practical Quality, Safety, and Consumer Experience, do not vary according to age categories, i.e., all Age categories feel much the same about these constructs. Finally, Gender and Education do not vary for any of the constructs, i.e., all respondents felt similarly regardless of gender or level of education. According to the literature, education plays a significant role in understanding digital technology; Ameme (2015: 22) states that internet banking services must be targeted towards the educated as those with lower education levels or no education may not be able to operate computers and technology comfortably. Similarly, Sheeba and Goathi (2020: 127) state that education has a significant influence on the adoption of digital banking. Even though education and practical quality are not significantly correlated, it is worth mentioning that one component of practical quality could be linked to better education, not for individual education categories, but for all digital banking users.

This summary shows that that Objective 3 (To assess the relationship between consumers' level of adoption of digital personal banking and the constructs encouraging digital banking) has been achieved by showing the importance of income level and age in the adoption of digital banking.

#### **4.9.2 Relationship between the eight constructs and preference to use digital banking**

Table 4.7 displays the relationship between the eight constructs (independent variables) and preference to use digital banking (dependant variable).

**Table 4.7: Correlation between constructs and preference to use digital banking**

Constructs	Preference to use digital banking	
	Corr	Sig
D – Digital Banking Convenience	.331	0.000
E – Practical Quality	.133	0.008
F – Branch Service Quality	-.239	0.000
G – Usability	.363	0.000
H – Safety	.309	0.000
I – Online Service Quality	.417	0.000
J – Risk and Preference	.238	0.000
K – Consumer Experience	.358	0.000

Interpretation of these correlations is done according to the criteria suggested by Pallant (2007: 132), namely, that a small correlation is .1 to .29; medium is .3 to .49; and large is .5 to 1.0.

The correlation for Digital Banking Convenience is .331, which can be considered to be moderately correlated. This indicates that the construct Digital Banking Convenience has a moderate impact on respondent's use of digital banking. The highest correlated question in the construct is "*I can use online banking at any hour*" at a score of .315. This finding supports the literature, in which Chigada and Hirschfelder (2017: 7) state that the ability to use online banking at any hour increases respondents' preference to use digital banking (B4).

The second construct, Practical Quality, has a correlation of .133, which indicates a low positive correlation. Therefore, it can be concluded that the construct Practical Quality does not have a prominent influence on the respondent's use of digital banking. However, the highest correlated question in the construct is "*I understand how to use online banking*" at a correlation of .341. This signifies that a respondent's preference to use digital banking (B4) will increase with an increase in understanding how to use digital banking

The third construct, Branch Service Quality, has a correlation of -.239, which indicates a low negative correlation. It can therefore be concluded that branch service quality does not have much influence on the respondent's use of digital banking, although as Branch Service Quality is perceived to decline, there is a tendency to increased digital banking use. According to the literature, this can be motivated by the increasing development and use of the internet which has considerably altered the lives of consumers in such a way that their behaviours towards purchasing of products and services has begun to change (Makhitha and Ngobeni 2021: 1).

The fourth construct, Usability, has a correlation of .363, which can be considered moderately correlated. This is the second highest correlation. Therefore, it can be concluded that digital banking application usability does have an influence on respondents' adopting digital banking, i.e., the more useable the application is perceived to be, the more respondents were likely to use digital banking. For instance, the highest correlated question in the construct "*I use online banking regularly*" has a score of .456, which indicates that using

online banking on a regular basis increases the preference to use digital banking (B4). This finding supports the literature that indicates that perceived usefulness is correlated with the usage of online banking. This happens if purchasers are more interested by the benefits supplied by online banking than with the advantages of regular branch banking channels (Bidarra *et al.* 2013: 4).

The fifth construct, Safety, has a correlation score of .309. This indicates that digital banking safety has a moderate influence on the respondent's use of digital banking, i.e., as safety is perceived to increase, then digital banking may increase (Lakshmi and Kavitha 2020: 733).

The sixth construct, Online Service Quality, has a correlation score of .417, the highest of the eight constructs. This indicates a moderately high correlation, and it can therefore be concluded that the online service quality of digital banking has the greatest influence on the growth and use of digital banking, and is therefore of most importance. The highest correlated question of the construct "*Online banking is clear and easy to use*" has a score of .405. This indicates that the easier it is to use online banking, the more influence it will have on a preference to use digital banking (B4). This is in accordance with the literature, in which Khrais (2017: 8) states that perceived ease of use has a direct significant positive effect on behavioural intention to use internet banking, while Selvanathan *et al.* (2016: 236) state that there is a positive relationship between ease of use and service delivery via online banking, where various services needed by the customers can be set up online by the bank.

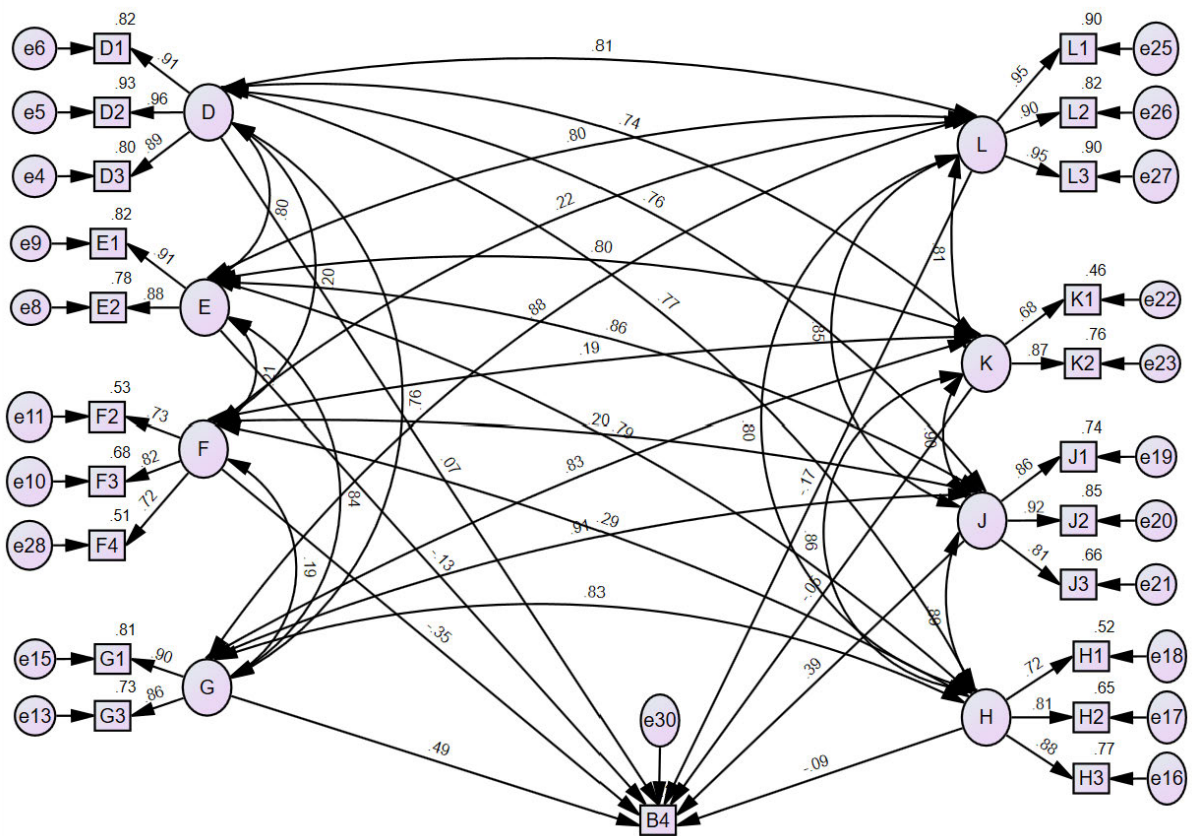
The seventh construct, Risk and Preference, has a correlation score of .238. This indicates a small correlation. It can therefore be concluded that risk and preference of digital banking does not have much influence on the use of digital banking. For instance, Bigne and Blesa (2003), Lee and Turban (2001), and Cajetan (2018), discuss the role of trust in digital banking, noting that the nature of digital transactions are considerably different from transactions done at a bank branch. While these studies highlight that a client's privacy can be negatively impacted by cyber hacking, they have not considered the growth and use of advanced security features available on most smartphone devices and online banking channels today.

The eighth and final construct, Consumer Experience, has a correlation score of .358, the third highest correlation. This indicates a moderately high correlation. Therefore, it can be concluded that the consumer experience does have an influence on respondent's use of digital banking, which supports the findings of McColl-Kennedy *et al.* (2015: 432) and Reddy and Reinartz (2017: 12). The question with the highest correlation in the construct is "*I prefer to not travel to a bank to process simple transactions*", which has a score of .362. This indicates that a preference to use digital banking (B4) is positively affected by users not willing to travel to a bank.

From this discussion it can be concluded that Online Service Quality, Usability and Consumer Experience are the most important factors encouraging consumers to adopt digital banking, thereby showing the achievement of Objective 2 (To establish the constructs encouraging the use and growth of digital personal banking).

#### **4.10 Structural equation model (SEM)**

The SEM model is a multivariate statistical result obtained using structural relationships, applying a combination of factor analysis and multiple regression analysis techniques. It is used to analyse the structural relationship between measured variables and latent constructs. The dimensions are coded as under reliability.



**Figure 4.15: The path diagram for the modified SEM.**

For a key to the meaning of individual question numbers (e.g., D1, E2, etc.) please see Table 4.3

#### 4.10.1 Results of the SEM (default model)

The results of the SEM analysis are as follows, with the minimum requirements being achieved:

Chi-square = 375.399

Degrees of freedom = 174

Probability level = .000

This chi-square statistic tests the null hypothesis that the overidentified (reduced) model fits the data as well as a just-identified (full, saturated) model. In a just-identified model there is a direct path (not through an intervening variable) from each variable to each other variable. In such a model, the chi-square will always have a value of zero, since the fit will always be perfect. The probability should **not** be significant. In this model, the chi square p-value is < 0.050 ( $p < 0.001$ ).

It is important to note that even though the chi-square should be non-significant in model testing, this is hard to achieve due to the large sample usually required. Therefore, if it is in fact significant, that is not a problem so long as the other indicators of fit are good.

#### 4.10.2 Maximum likelihood estimates

Maximum likelihood estimation determines the likelihood that the values of the model parameters accurately describe the data that is observed in reality. These findings are presented in Table 4.8.

**Table 4.8: Regression weights: (group number 1 - default model)**

			Regression weights				Standardised regression weights
			Estimate	S.E.	C.R.	P	Estimate
D3 – Use online banking at any hour	<---	Digital Banking Convenience	1.000				.894
D2 – Online banking is faster	<---	Digital Banking Convenience	1.026	.031	32.759	***	.963
D1 – Online banking is more convenient	<---	Digital Banking Convenience	.935	.033	28.331	***	.907
E2 – Online information is clear to understand	<---	Practical Quality	1.000				.882
E1 – Understand how to use online banking	<---	Practical Quality	.988	.040	24.769	***	.907
F3 – Ask about new products/services at bank	<---	Branch Service Quality	1.000				.823
F2 – Visit bank to fix issues	<---	Branch Service Quality	.921	.071	12.938	***	.726
G3 – Banking app covers all my requirements	<---	Usability	1.000				.856
G1 – Use online banking regularly	<---	Usability	1.051	.044	23.962	***	.901
H3 – Happy with safety regulations from bank	<---	Safety	1.000				.876
H2 – Prefer to pay with card	<---	Safety	1.029	.051	20.082	***	.809
H1 – Internet banking is safer	<---	Safety	.928	.055	16.866	***	.723
J1 – Positive experiences using online banking	<---	Online Service Quality	1.000				.859
J2 – Online banking is clear and easy to use	<---	Online Service Quality	1.031	.040	26.054	***	.921
J3 – Online banking has sufficient services	<---	Online Service Quality	.976	.047	20.640	***	.812

			Regression weights				Standardised regression weights
			Estimate	S.E.	C.R.	P	Estimate
K1 – Online banking is cost efficient	<---	Risk and Preference	1.000				.681
K2 – More control when I bank online	<---	Risk and Preference	1.126	.076	14.727	***	.871
L1 – Online banking saves time	<---	Risk and Preference	1.000				.947
L2 – Prefer not to travel to bank for simple transactions	<---	Risk and Preference	1.040	.031	33.170	***	.905
L3 – Online banking is more convenient due to 24/7 access	<---	Risk and Preference	1.048	.027	39.218	***	.946
F4 – Human interaction is important for banking experience	<---	Branch Service Quality	.990	.077	12.832	***	.716
B4 – Preference to use digital banking	<---	Digital Banking Convenience	.061	.090	.673	.501	.066
B4 – Preference to use digital banking	<---	Practical Quality	-.128	.125	-1.025	.305	-.128
B4 – Preference to use digital banking	<---	Branch Service Quality	-.297	.047	-6.351	***	-.350
B4 – Preference to use digital banking	<---	Usability	.501	.203	2.470	.014	.493
B4 – Preference to use digital banking	<---	Usability	.406	.260	1.557	.119	.389
B4 – Preference to use digital banking	<---	Risk and Preference	-.062	.205	-.300	.764	-.052
B4 – Preference to use digital banking	<---	Risk and Preference	-.169	.132	-1.280	.200	-.168
B4 – Preference to use digital banking	<---	Safety	-.089	.159	-.560	.575	-.088

Variables loaded strongly along their various factors (significant p-values shown by \*\*\*  $p < 0.001$ ). These verify the EFA obtained under factor analysis. All coefficients were above the suggested value of 0.600. Three statements that loaded poorly were omitted from the model. These statements were E3 - *I prefer to visit a bank for new information or for more complicated queries*, F1 - *There are more services available when going to a branch than are offered online* and G2 - *I would prefer a more personalised online banking experience*.

The dependent variable interactions are also reflected in the table. These are further analysed in the regression analysis section.



#### 4.11 Regression analysis

The level of significance relates to the strength of the relationships between the various latent variables. Therefore, the correlation covariances between the independent variables were tested and the ‘estimates’ are indicated in Table 4.9

**Table 4.9: Covariances: (group number 1 - default model)**

			Estimate	S.E.	C.R.	P
Digital Bank Convenience	<-->	Practical Quality	.591	.054	11.020	***
Digital Bank Convenience	<-->	Branch Service Quality	.178	.051	3.479	***
Digital Bank Convenience	<-->	Usability	.554	.052	10.573	***
Digital Bank Convenience	<-->	Safety	.571	.053	10.790	***
Digital Bank Convenience	<-->	Online Service Quality	.544	.051	10.710	***
Digital Bank Convenience	<-->	Risk and Preference	.466	.051	9.142	***
Consumer Experience	<-->	Digital Banking Convenience	.595	.051	11.572	***
Practical Quality	<-->	Branch Service Quality	.171	.049	3.514	***
Practical Quality	<-->	Usability	.562	.051	10.998	***
Consumer Experience	<-->	Practical Quality	.538	.048	11.266	***
Practical Quality	<-->	Risk and Preference	.466	.050	9.385	***
Practical Quality	<-->	Online Service Quality	.560	.050	11.213	***
Practical Quality	<-->	Safety	.535	.050	10.717	***
Branch Service Quality	<-->	Usability	.148	.048	3.083	.002
Consumer Experience	<-->	Branch Service Quality	.174	.047	3.737	***
Branch Service Quality	<-->	Risk and Preference	.129	.044	2.924	.003
Branch Service Quality	<-->	Online Service Quality	.154	.046	3.342	***
Branch Service Quality	<-->	Safety	.235	.050	4.684	***
Consumer Experience	<-->	Usability	.586	.050	11.763	***
Usability	<-->	Risk and Preference	.475	.050	9.444	***
Usability	<-->	Online Service Quality	.590	.052	11.454	***
Usability	<-->	Safety	.555	.051	10.905	***
Consumer Experience	<-->	Risk and Preference	.470	.048	9.766	***
Consumer Experience	<-->	Online Service Quality	.553	.048	11.637	***
Consumer Experience	<-->	Safety	.539	.048	11.265	***
Online Service Quality	<-->	Risk and Preference	.503	.051	9.854	***
Safety	<-->	Risk and Preference	.498	.051	9.669	***
Safety	<-->	Online Service Quality	.578	.051	11.399	***

In testing these covariances, the null hypothesis is “There is no correlation between each of the dimensions” while the alternate hypothesis is “There is a significant correlation”.

All relationships are significant ( $p < 0.001$ ), including that between F and G ( $p = 0.002$ ), and F and K ( $p = 0.003$ ). The results indicate a strong, directly proportional relationship between the latent variables, with each of the  $r$  estimates being positive. There are a few weaker correlations associated with dimension F.

In addition to testing the covariances between the latent constructs, the correlations between the observed construct (dependent variable) and the latent constructs were also assessed, with the findings (Table 4.10), showing correlations between all of the latent constructs, with most of them being very strong.

**Table 4.10: Correlations: (group number 1 - default model)**

			Estimate
Digital Banking Convenience	<-->	Practical Quality	.797
Digital Banking Convenience	<-->	Branch Service Quality	.203
Digital Banking Convenience	<-->	Usability	.757
Digital Banking Convenience	<-->	Safety	.773
Digital Banking Convenience	<-->	Online Service Quality	.763
Digital Banking Convenience	<-->	Risk and Preference	.735
Consumer Experience	<-->	Digital Banking Convenience	.808
Practical Quality	<-->	Branch Service Quality	.213
Practical Quality	<-->	Usability	.837
Consumer Experience	<-->	Practical Quality	.796
Practical Quality	<-->	Risk and Preference	.800
Practical Quality	<-->	Online Service Quality	.856
Practical Quality	<-->	Safety	.789
Branch Service Quality	<-->	Usability	.187
Consumer Experience	<-->	Branch Service Quality	.219
Branch Service Quality	<-->	Risk and Preference	.187
Branch Service Quality	<-->	Online Service Quality	.200
Branch Service Quality	<-->	Safety	.294
Consumer Experience	<-->	Usability	.879
Usability	<-->	Risk and Preference	.827
Usability	<-->	Online Service Quality	.914
Usability	<-->	Safety	.830
Consumer Experience	<-->	Risk and Preference	.813
Consumer Experience	<-->	Online Service Quality	.850

			Estimate
Consumer Experience	<-->	Safety	.800
Online Service Quality	<-->	Risk and Preference	.898
Safety	<-->	Risk and Preference	.858
Safety	<-->	Online Service Quality	.887

Furthermore, the correlations between the dependent variable (B4) and the latent variables (independent variables) were assessed. As shown in Table 4.11, there is a statistically significant correlation between the dependent variable (B4) (preference to use digital banking) and each of F (branch service quality), G (usability) and J (online service quality).

**Table 4.11: Regression analysis statistics**

Model Summary								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate				
1	.538 <sup>a</sup>	.290	.275	.70602				
Dependent Var: My preference towards banking; a. Predictors: (Constant), Consumer Experience, Branch Service Quality, Risk and Preference, Practical Quality, Safety, Usability, Digital Banking Convenience, Online Service Quality								
ANOVA <sup>a</sup>								
Model		Sum of Squares	df	Mean Square	F	Sig.		
1	Regression	79.493	8	9.937	19.935	<.001 <sup>b</sup>		
	Residual	194.897	391	.498				
	Total	274.390	399					
Coefficients <sup>a</sup>								
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.934	.221		13.269	<.001		
	Digital Banking Convenience	.063	.066	.069	.947	.344	.343	2.917
	Practical Quality	-.109	.076	-.100	-1.436	.152	.376	2.662
	Branch Service Quality	-.250	.043	-.298	-5.746	<.001	.677	1.476
	Usability	.227	.074	.226	3.081	.002	.339	2.952
	Safety	.004	.071	.004	.057	.955	.319	3.131
	Online Service Quality	.276	.087	.280	3.170	.002	.233	4.290
	Risk and Preference	-.040	.063	-.038	-.624	.533	.492	2.033
	Consumer Experience	.050	.084	.050	.595	.552	.254	3.932

a. Dependent Variable: B4

a. Dependent Variable: B4

The model summary in Table 4.11 shows that there is a high correlation between the predictors (independent variables) and the dependent variable ( $r = 0.538$ ), with approximately 30% of the variation being explained in the dependent variable by the predictors ( $r^2 = 0.290$ ). As shown in the ANOVA analysis in Table 4.11, the model is significant ( $p < 0.001$ ). This means that the predictors (independent variables or latent constructs) do influence the dependent variable. In addition, a variance inflation test (VIF) to assess multi-collinearity indicated that the VIF condition of being below 10 was met ( $VIF < 5$ ), i.e., there was low multi-collinearity.

It is noted that the three statistically significant dimensions reflected in Table 4.11 all have coefficients that are considerably different from zero – their Beta scores are the largest. There

is a negative relationship between Branch Service Quality and B4 (preference to use digital banking), which means that an increase in one unit of Branch Service Quality results in a decrease of 0.250 units of the dependent variable. The remaining two significant relationships with B4 (preference to use digital banking) are for dimensions G (Usability) and J (Online Service Quality). These are positive, implying that an increase in one (independent variable) is accompanied by an increase in the other (dependent variable).

#### 4.12 Model fit summary

The suggested acceptable value for relative chi-square, CMIN/DF should not be greater than 5, which are used to reduce dependency on sample size. However, the cut-off points for TLI, CFI, NFI and IFI are between zero to one. A good model is indicated by RMSEA value of less than or equal to 0.05.

**Table 4.12: CMIN**

Model	NP	AR	CMIN	DF	P	CMIN/DF
Default model	101	375.399	174	.000	2.157	
Saturated model	275	.000	0			
Independence model	44	8121.360	231	.000	35.157	

CMIN is a Chi-square statistic comparing the tested model and the independence model to the saturated model. The ratio, CMIN/DF, the relative chi-square, is an index of how much the fit of data to the model has been reduced by dropping one or more paths. The CMIN/DF, illustrated in Table 4.12, is less than the acceptable value of 5 (2.157). This meets the CMIN condition.

**Table 4.13: Baseline comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.954	.939	.975	.966	.974
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

These goodness-of-fit indices compare the model to the independence model rather than to the saturated model. The normed fit index (NFI) is the difference between the two models'

chi-squares divided by the chi-square for the independence model. For this data, shown in Table 4.13, the NFI is 0.954, which is more than the recommended value of 0.90 for a good fit. The comparative fit index (CFI) uses a similar approach (with a noncentral chi-square) and is said to be a good index for use even with small samples. Its ranges are from 0 to 1, like the NFI, and 0.90 indicates a good fit. The CFI value is 0.974, also implying a good fit.

**Table 4.14: RMSEA**

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.054	.046	.061	.192
Independence model	.293	.287	.298	.000

The root mean square error of approximation (RMSEA) estimates lack of fit compared to the saturated model. RMSEA of 0.050 or less indicates a good fit, and between .05 and .08 an adequate fit. LO 90 and HI 90 are the lower and upper ends of a 90% confidence interval on this estimate. As shown in Table 4.14, the model is a reasonably good fit, with the PCLOSE value (0.192) being non-significant. This condition is met (recommended > 0.050).

Three of the low loading factors (statements) were omitted from the model. These statements were E3 - *I prefer to visit a bank for new information or for more complicated queries*, F1 - *There are more services available when going to a branch than are offered online* and G2 - *I would prefer a more personalised online banking experience*. An inspection of the coefficients for each latent variable indicated high factor loadings. In addition, the path coefficients are reflected on the path diagram in Figure 4.15. All the coefficients are positive (proportional relationship) between the latent variables.

As this was a newly developed model, it is expected that the structural relationships may not have fitted accurately. However, required indices are met and the model is a good fit.

### 4.13 Conclusion

As per the data analysed in this chapter, age does play a significant role in determining the usage of digital banking. This is in accordance with the extant literature discussed in Chapter 2. The majority of the respondents were under the age of 30, which consists of the Millennial

and Z Generations. In this study, the younger generations tended to use digital banking more often, particularly for more advanced banking services such as paying via EFT.

Income also did have an impact on the study, with a majority of the sample earning under R3 500. Level of education also influenced some decisions, although gender had no impact on responses.

Furthermore, the path diagram from the SEM, illustrated in Figure 4.15, was shown to be an accurate indication of the relationships between the dependent variable (preference to use digital banking) and the independent variables (Digital Banking Convenience, Practical Quality, Branch Service Quality, Usability, Safety, Online Service Quality, Risk and Preference and Consumer Experience).

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

Chapter 4 discussed the analysis and findings of the research and ascertained relationships to the conceptual framework and literature chapter of the study. Chapter 5 expands on the conclusions that were obtained from the study to resolve the research problem and to achieve the research objectives as set out in Chapter 1. Also covered in this chapter is how the findings contribute to academic knowledge and the implications and recommendations for the banking industry, identification of the study's limitations, and recommendations for further research.

The aim of the study was to identify the key success factors for digital personal banking among consumers in the iLembe district, KwaZulu Natal. The aim was divided into three objectives. The first objective was to investigate consumers' level of adoption of digital personal banking. This utilised various independent variables (the eight constructs), and a dependent variable (preference to use digital banking). The second objective sought to establish the constructs encouraging the use and growth of digital personal banking, and the third objective assessed the relationship between consumers' level of adoption of digital personal banking and the constructs encouraging digital banking.

### **5.2 Summary of the research**

The study highlights the use of digital banking in the South African consumer market. In Chapter 1 the background to the study was provided, and it was determined that there was a lack of research to analyse the growth and use of digital banking and how it contributes to consumer perceptions and satisfaction (or lack thereof), as well as how demographic inequalities in an economy like South Africa can affect the use of personal digital banking. The structure of the research was also discussed.

In Chapter 2, the extant literature underpinning the research was provided, in which a South African overview of digital banking was discussed. This chapter also identified the constructs that were to be used in Chapter 4 for the data analysis. The chapter discussed the impact of



the 4IR and the unanticipated and unprecedented impact of COVID-19 on the digital consumer market.

Chapter 3 discussed the research design and methods that were applied in the study. The research instrument and sampling methods were identified in accordance with the study requirements. An online questionnaire was designed by the researcher to collect data from residents of the iLembe district in northern KwaZulu-Natal.

Chapter 4 discussed the findings obtained from the data collected. Using appropriate statistical methods, findings were made based on the relevant analyses appropriate to the objectives.

### **5.3 Research limitations and delimitations**

The research was constrained to a specific, pre-determined geographic location. In order to overcome the selection bias of convenience sampling, the researcher posted the Google Form questionnaire on a public platform (through social media). In this way, the respondents were not people known to the researcher. The result of this study would have been more complete if there were samples from more than one area, and the results from different districts across South Africa compared. This weakness can be remedied by further research in other districts.

#### **5.3.1 Coverage bias**

Since the study was conducted in a particular area, it is possible that certain excluded populations may attribute to a population bias. The research instrument was an electronic questionnaire, which effectively eliminated respondents who did not have access to the internet. Therefore, it should be noted that the study may not represent the entire population of South Africa but this is not too pertinent as the study objectives do not indicate an attempt to generalise and are, in fact, focused on this specific area. However, to overcome any potential issues arising from this limitation, the researcher first identified which banks in the area cover low-, middle-, and high-income areas. From there, the researcher utilised the influence of social media and segmentation in order to effectively collect data from respondents in different locations as identified by the municipality wards in which they lived.

### **5.3.2 Impact of COVID-19 and regulations**

The impact of COVID-19 resulted in significant delays to the research as COVID regulations prohibited a vast number of social interactions. Due to social distancing requirements, the physical collection of data was regarded as unsafe, and as such the method of data collection was changed to an online questionnaire. Furthermore, the implementation of the POPI act in South Africa resulted in a lengthier data collection timeframe, as people had become more wary of sharing information online. To overcome these limitations, the researcher collected the data completely anonymously, and the data collection was solely conducted online to eliminate the risk of face-to-face interactions.

### **5.3.3 Reliability of 'Risk and preference' construct**

This construct received a Cronbach alpha score of 0.629, which is lower than the usually acceptable 0.7 (Sekaran & Bougie, 2013: 1), but a justification for retaining the construct in the analysis was given in section 4.2. Nevertheless, the findings related to this construct should be interpreted with caution, acknowledging the limitations of the measure.

## **5.4 Conclusions**

The conclusions of this study are categorised according to the three main objectives of the study.

### **5.4.1 Objective 1: To investigate consumers' level of adoption of digital personal banking**

The first objective sought to investigate consumers' level of adoption of digital personal banking. It was observed that the majority of respondents hardly ever physically go to a branch (96.6%). This indicated a high level of digital banking usage among respondents. This further indicated that branch banking services may only be required if or when necessary. A very high percentage of respondents (97.3%) use internet based (cell phone, computer) digital banking. It was further observed that there is a low frequency of use of ATMs (62.1% draw cash fewer than 2 times in a month). This indicated that respondents use other methods of drawing cash, such as cash backs from retail till points, or pay by card, as indicated by the 77.3% of respondents who pay using a card more than 3 times a month. This may indicate an

emphasis on safety, as ATM withdrawals may pose a safety risk. Paying via EFT obtained a similar scoring pattern to the other listed services. This indicates that most EFT payments may be used for once-off monthly purchases or bulk items that the respondent may need to purchase less frequently. It may also indicate a level of mistrust about using EFT payments, as a payment is generally made for an order that the respondent does not yet physically have. Further, there may be a general fear of paying an EFT using the wrong reference, payment, or account number. This indicates that EFT payments are probably considered for payments that are made less frequently, such as once-off and large-sum payments. It may also indicate that there exists a level of mistrust about the use of EFT payments – EFT payments are generally made before a product or service can be delivered (such as through online shopping).

#### **5.4.2 Objective 2: To establish the constructs encouraging the use and growth of digital personal banking**

The second objective sought to establish the constructs that encourage the use and growth of digital personal banking. This was accomplished by analysing the relationship between the eight constructs (independent variables) and Preference to Use Digital Banking (dependent variable). The analysis concluded that the constructs of Online Service Quality, Usability, and Consumer Experience are the most important factors encouraging consumers to adopt digital banking.

The role of both online service quality and usability is especially significant for consumers of different incomes and ages, while gender and education have no influence but only income influences customer experience.

Thus, the research to meet Objective 2 has clearly provided direction for those wanting to encourage the use of digital personal banking.

#### **5.4.3 Objective 3: To assess the relationship between consumers' level of adoption of digital personal banking and the constructs encouraging digital banking**

The third objective sought to assess the relationship between the consumers' level of adoption of digital personal banking and the constructs that encourage digital banking. To

determine the level of significance, correlations and significance analysis were performed. The constructs encouraging digital banking were identified, showing the importance of income level and age in the adoption of digital banking. Income had a significance for all eight constructs, while age had a significance for four out of the eight constructs. The other demographics variables, education and gender, did not have any major significance.

With regard to the significant relationships between the dependent variable (preference to use digital banking) and the two significant independent variables (age and income), with the exception of branch service quality, all the relationships between the dependent variable and the independent variables were positive. In other words, as the consumers' perceptions of the constructs (independent variables) increased, so did their preference for digital personal banking. Clearly therefore there is a potential benefit for banks to take actions to increase consumers' perceptions of their services, namely convenience, practical quality, usability, safety, online quality, risk and preference and the consumer experience.

Regarding the branch service quality, with which preference for digital banking has a negative correlation, when branch quality declines, customers migrate to digital banking. It is not known, however, if this migration would happen even if the branch quality stayed the same or increased, as other, external, factors were not considered in this study

#### **5.4.4 Conclusions arising from the demographics**

The majority of the respondents were between the ages of 18 and 23, followed by the 24-29 cohort. Females constituted the majority of the respondents. Most respondents had a diploma/bachelors degree and earned R3 500 or less a month.

### **5.5 Recommendations**

#### **5.5.1 Recommendation one**

Banks should provide more training and support for their older clients on how to conduct EFT payments.

A large proportion of respondents indicated an unwillingness to adopt digital banking, particularly for EFT payments. Encouraging older clients to become more familiar with EFT payments can assist in lowering the number of clients who have to visit banks during peak times, thereby raising customer satisfaction. For instance, SASSA grant recipients should be allowed to setup, or make EFT payments for accounts without having to go to a bank by incorporating a transaction fee waiver or a loyalty point system.

### **5.5.2 Recommendation two**

Banks should concentrate on the informal business sector to serve the underserved.

All eight constructs indicated that income had a significant role in digital banking usage, that is, those who earn a higher income tend to use digital banking more. Banks should therefore increase access to financial services for the unbanked and underbanked (including those who have not adapted to digital banking). This needs to be accessible, reliable, and deliver high value. This helps promote financial inclusion for potential clients of all income levels. By utilising the latest financial technology, banks can therefore surpass the current target, better assess risk, and facilitate digital payments through local partners such as supermarkets. This encourages people to deposit their daily earnings, as opposed to carrying large sums of cash – a safety hazard.

### **5.5.3 Recommendation three**

Bank should make their websites a major touchpoint by advancing self-service capabilities.

Younger generations are more prone to using online services rather than having business representatives such as bank tellers and customer service agents serve them. While banking applications are focused on the payment and transaction aspect of banking, bank websites should provide information which users can access 24/7, and which incorporates self-help facilities such as live chat and even video chats to enhance the customer experience.

### **5.5.4 Recommendation four**

Banks should encourage digital growth by investing in ICT.

The results of the study indicate that the population of the area are young. By investing in ICT educational resources through private colleges and schools in the area, banks can provide these innovative educational resources to encourage active learning and acquisition of digital technological knowledge. By building on digital literacy, banks can ensure that the digital literacy gap that exists in the area lessens. This can also be done by allowing more ATM rollouts, enhancing self-service platforms in branch banks, utilising more home languages, and providing incentives for utilising digital services.

#### **5.5.5 Recommendation five**

Improve mobile banking user interface.

Banks need to ensure that their customer experiences on banking applications are more positive by introducing in-app customer support, such as a live-chat option. This real time assistance can provide a key factor in building loyalty. This can further help banks gain insights into how they can improve customer service by understanding emerging and changing digital preferences. The live-chat option could be an AI system to answer simple questions, which could then lead to a specialised consultant for more complicated questions should the client not be satisfied with the information received.

#### **5.5.6 Recommendation six**

Provide easy access to additional bank products and services through digital channels.

The results indicated that respondents did not like to travel to banks unless absolutely necessary. Banks should allow customers easier access to additional service offerings through their mobile applications, such as for loan applications, credit checks, debit order management, card replacements (by scheduling deliveries), and appointment setting to see a bank consultant.

## **5.6 Contribution of this research to knowledge and theory**

This study has added to existing theory by evaluating the constructs that contribute to the perception of digital banking. Previous research has lacked the actual customer view (Talke and O’Conner 2011) and the link between customer perceptions and use of digital services (Yee and Yazdanifard 2014; Kazmi 2012). This study has thus created new insights regarding digital personal banking and how perceptions on its implementations are viewed.

Furthermore, the perceptions of consumers from different demographic backgrounds are shown to impact their use of digital personal banking. By conducting the study within an economy like South Africa, the research has also provided an insight into the influence that demographic inequalities, such as income, have on digital banking, and also considering the impact of current, unprecedented events.

## **5.7 Further research**

Although this study has contributed considerable new knowledge and understanding about consumers attitudes towards digital banking, there are many areas that are still under-researched and which would benefit from further research, based on this study:

- This study focused on only one geographic region of South African bank retailers. A broader research study should be conducted, with a larger sample size, to be able generalise to the broader South African population.
- To further generalise or replicate this research, especially with reference to South Africa, research should be conducted with different groups (demographic, sociographic, heavy versus light user, etc.) which can then be compared.
- The study was conducted on the consumer users’ perceptions of digital banking. Future research could be done into the methods banks use to encourage non-users to become users, in order to identify more effective ways to attract non-users to digital banking.
- A number of different qualitative studies could be conducted in order to research the extent to which consumers use, and really understand, digital banking and its possibilities.
- This study only focused on those factors (the independent variable constructs) that might potentially influence preference for digital personal banking. Not considered

were other factors that could influence the consumers' decisions to adopt digital banking, i.e., those covering about 70% of the variance measured in preference for digital banking, as reflected in the regression analysis in Table 4.51. Therefore, research needs to be conducted into other factors that might influence the preference for digital personal banking, for example, the state of the economy, access to unlimited data, the cost of data, the reliability of internet infrastructure, whether friends and family use digital banking, distance from a bank branch, availability of transport to travel to a branch, attitude to computers in general (i.e., fear of technology) and many other similar issues. The recommended qualitative studies above could identify such factors, which could then be investigated quantitatively.

- Due to the construct 'risk and preference' receiving a Cronbach alpha score of 0.629 (lower than the usually acceptable 0.7 (Sekaran & Bougie, 2013: 1), it is suggested that future research should investigate the components of 'risk and preference', especially in a developing country context, in more depth.

## **5.8 Conclusion to the study**

The empirical findings of this research have found that the eight identified constructs form a crucial aspect of determining the level of adoption of digital banking within the iLembe district of KwaZulu-Natal, South Africa. With South Africa being a newly industrialised country, financial technology advances have presented significant opportunities for digital banking development. The banking industry in South Africa is very well developed, and all major banks have successfully introduced digital banking into their catalogue of services, as the literature shows. A major point of differentiation is that these banks attempt to offer a unique digital banking experience by incorporating a range of individual benefits and improving ease of use. Although South Africa has the most industrialised economy in Africa, substantial economic challenges and setbacks still exist. One of the most prominent challenges the country faces is inequality. Demographic inequalities, specifically that of income, play a significant role in the lack of growth of digital banking within lower income earners.



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## APPENDICES

### Appendix A: Questionnaire

This study aims to identify the key success factors for digital personal banking among consumers in the iLembe district, KwaZulu Natal

#### Part 1

##### Introduction (Screening)

1. Do you have an account of any kind with a bank?	
Yes	
No	

2. Do you use internet banking?	
Yes	
No	

3. Which bank do you bank with? (please select only your main bank)	
ABSA	
First National Bank (FNB)	
Standard Bank	
Nedbank	
Capitec Bank	
Other (please specify)	

#### Part 2

##### Level of Adoption of digital personal banking:

1. My preference towards banking is (select one)	
I only use internet banking	
I mostly use internet banking	

I equally use internet banking and personally go to a branch for banking	
I mostly go to a branch for banking	
I only go to a branch for banking	

2. Which online banking services do you use?	
Pay via EFT	
Check balances	
Transfer money	
Manage debit orders	
Buy airline/electricity etc.	

3. How often do you use the following in a month?				
	0 times	1 – 2 times	3 – 5 times	More than 5 times
Visit a bank				
Internet (digital banking)				
ATM				
Pay via DebitCredit card				
Pay via EFT				

### Part 3

**Constructs encouraging the use and growth of digital personal banking, and relationship between level of adoption of digital personal banking and the constructs encouraging digital banking**

**Please indicate your level of agreement with the following:**

	1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
1. Digital Banking Convenience					
1.1 Online banking is more convenient than visiting a branch					
1.2 Online banking is faster					

1.3 I can use online banking at any hour					
2. Practical Quality					
2.1 I understand how to use online banking					
2.2 The online information offered by my bank is clear and easy to understand					
2.3 I prefer to visit a bank for for new information or for more complicated queries					
3. Branch Service Quality					
3.1 There are more services available when going to a branch than are offered online.					
3.2 I visit my bank to fix issues such as replacing a lost or stolen card					
3.3 I get to ask about new products and services when I visit a bank					
3.4 Human interaction (speaking to tellers and sales consultants) is important for my banking relationship					
4. Usability					
4.1 I use online banking regularly					
4.2 I would prefer a more personalised online banking experience					
4.3 My smartphone banking application covers all my basic banking requirements					
5. Safety					
5.1 Internet banking is safer in terms of online fraud and theft					
5.2 When paying physically, I prefer paying with my bank card					
5.3 I am happy with the safety regulations from my bank					

6. Online service quality					
6.1 I have had positive experiences using online banking					
6.2 Online banking is clear and easy to use					
6.3 Online banking has sufficient services					
7. Risk and Preference					
7.1 Online banking saves on banking fees and is cost efficient					
7.2 I have more control of my banking when I bank online					
7.3 Branch banking charges are reasonable					
8. Consumer Experience					
8.1 Online banking saves time					
8.2 I prefer to not travel to a bank to process simple transactions					
8.3 Online banking is more convenient due to its 24/7 operation					
8.4 Online banking has no delays in processing					

## Demographic

### 1. Age

18-23	24-29	30-35	36-40	41-46	47-52	53-58	59+

### 2. Race

African	Coloured	Indian	White	Other

### 3. Gender

Male	Female	Other/diverse/not specified

### 4. Education Level

Please indicate your highest qualification obtained

<b><i>None or primary school</i></b>	
<b><i>Some high school</i></b>	
<b><i>Matric</i></b>	
<b><i>Post matric certificate or diploma</i></b>	
<b><i>University/ Technikon Diploma/ Bachelor's degree</i></b>	
<b><i>Post graduate qualifications</i></b>	

5. Income

Income per month								
<R3500	R3501- R5000	R5001- R8000	R8001- R12000	R12001- R16000	R16001- R20000	R20001- R25000	R25001- R30000	R30001+

## Appendix B: Questionnaire derivation table

Type	Con-structs	Question in questionnaire	Res-ponse	Mea-sure	Calcu-lation	References
Depen- dent variable	consumers' level of adoption to digital banking	1. Do you use internet banking?	Yes/No	1 or 0	Sum of each questionnaire scores out of 14 – convert to % to give adoption level	Researcher
		2. My preference towards banking is	Likert scaled	1 to 5		Researcher
		3.1 to 3.5. How often do you use the following in a month?	4 poss – 0, 1-2,3-5,6+	1 to 4		Researcher
		4. Which online banking services do you use? 5 options	Yes/No	4 X 1 or 0		Researcher
Indepen- dent variable 1	Digital Banking Con-venience	1.1 Online banking is more convenient than visiting a branch	All Likert scaled	1 to 5	Sum Q scores & average for score out of 5	Chigada and Hirschfeider (2016: 3); COEFS Fintech Report (2018: 21)
		1.2 Online banking is faster		1 to 5		Kinsman (2019: 3); Al-Jabri (2015: 25); COEFS Fintech Report (2018: 63);
		1.3 I can use online banking at any hour		1 to 5		Nkoyi (2018: 1).
Indepen- dent variable 2	Practical Quality	2.1 I understand how to use online banking		1 to 5	Same as above	Ramavhona and Mokwena (2014: 3, 4); Fairouz and Wickramasinghe (2019: 72)
		2.2 The online information and content offered by my bank is clear and easy to understand		1 to 5		Nkoyi (2018: 3); Schoombee (2012: 176)
		2.3 I prefer to visit a bank for any information I am unaware of		1 to 5		Adefulu and Louise (2016: 375)
Indepen- dent variable 3	Branch Service Quality	3.1 There are more services offered when going to a branch		1 to 5	Same as above	Uddin <i>et al.</i> (2015: 3)
		3.2 I visit my bank to fix issues such as replacing a lost or stolen card		1 to 5		Dalvi (2018: 198), Revathi (2019: 22)
		3.3 I get to ask about new products & services when I visit a bank		1 to 5		

Independent variable 4	Usability	4.1 I use online banking regularly		1 to 5	Same as above	Saini, Bick and Abdulla (2011); Saidi (2008)
		4.2 I would prefer a more personalised online banking experience		1 to 5		
		4.3 My smartphone banking application covers all my basic banking requirements		1 to 5		
Independent variable 5	Safety	5.1 I am concerned about the safety of online banking		1 to 5	Same as above	Maduku (2016: 535, 536); Redelinghuis and Rensleigh (2010: 2); Harchekar (2018: 109); Nel and Boshoff (2014: 626)
		5.2 I do not like to draw large sums of cash at a bank due to safety concerns		1 to 5		Dalvi (2018: 199), Serrao and Van Vuuren (2019: 17)
		5.3 I have changed my bank due to safety concerns		1 to 5		Dalvi (2018: 199)
Independent variable 6	Online service quality	6.1 I have had negative experiences using online banking		1 to 5	Same as above	Rootman, Tait and Bosch (2007: 184); Schoombee (2012: 176)
		6.2 There is a lack of assistance with online banking		1 to 5		
		6.3 Online banking has limited services		1 to 5		Cajetan (2018: 31)
Independent variable 7	Risk and Preference	7.1 Online banking uses too much data		1 to 5	Same as above	Schoombee (2012: 168), Serrao and Van Vuuren (2019: 17)
		7.2 I have less control of my banking when I bank online		1 to 5		Chaturvedi (2019: 1927)
		7.3 Branch Banking charges are too high (withdrawals, depositing etc.)		1 to 5		Maziriri (2018: 2); Schoombee (2012: 173); Heerden and Westhuizen (2008)
Independent variable 8	Consumer Experience	8.1 Visiting a bank is too time consuming		1 to 5	Same as above	Kinsman (2019: 3); Al-Jabri (2015: 25); COEFS Fintech Report (2018: 63)
		8.2 I must travel a far distance to visit my bank		1 to 5		World Bank Report, South Africa (2017: 7)
		8.3 Bank operating hours are not always in my favour		1 to 5		Nkoyi (2018: 1), Ramavhona and Mokwena (2016: 3)

		8.4 I don't like waiting in queues at the bank			1 to 5		Sujana (2018: 335)
Moderating variable 1-5	Demographics	Gender	3 categories	Nominal	Simple count – Categories can merge if have too few responses		Ramavhona and Mokwena (2016: 3)
		Age	8 categories	Ordinal			
		Race	5 categories	Nominal			
		Income	9 categories	Ordinal			
		Education	5 categories	Ordinal			



## Appendix C: Letter of information



### LETTER OF INFORMATION

**Title of the Research Study:** Key Success factors for digital personal banking in the iLembe District: a consumer perspective

**Principal Investigator/s/researcher:** Avikar Ramsundra, BTech – Marketing Management, Durban University of Technology

**Co-Investigator/s/supervisor/s:** Professor B Rodger Mason, PhD

**Brief Introduction and Purpose of the Study:** Previous research has identified reasons behind the growth and use of digital banking in a robust and thriving economy. However, studies within a growing and highly unstable economy like South Africa's, which consists of significant demographic inequalities, have not identified how

- (a) growth and use of digital banking contribute
- (b) to consumer perceptions and satisfaction (or lack thereof) and
- (c) demographic inequalities in such an economy affect the digitized use of personal banking.

**Outline of the Procedures:** A questionnaire is used to collect data from you. All questions were drawn up using theory obtained from literature. A total of 450 participants will be approached, from which 400 of completed questionnaires will be used for the data analysis. Your participation is voluntary, and you will be asked to complete an anonymous questionnaire. Data collected will only be used for data analysis together with all other collected data and used only for academic purposes. Once the data analysis is completed, the questionnaires will be shredded and disposed of.

**Risks or Discomforts to the Participant:** There are no risks or discomforts to you.

**Benefits:** There are no specific benefits to you, other than the improvements to banking that may result from this study.

**Reason/s why the Participant May Be Withdrawn from the Study:** There will be no adverse consequences for the participant should they choose to withdraw.

**Remuneration:** You will not be paid for participating.

**Costs of the Study:** There are no costs to you for participating.

**Confidentiality:** Collected questionnaires to be stored in locked safe, and shredded once analysis is completed.

**Research-related Injury:** There is no likelihood of any injury or damage to you from participation.

**Persons to Contact in the Event of Any Problems or Queries:**

Please contact me on (cell: 0813074019, email: [Avikar.a.r@gmail.com](mailto:Avikar.a.r@gmail.com)), my supervisor, Professor RB Mason (tel: 0799208208, email: [rogerm@dut.ac.za](mailto:rogerm@dut.ac.za)) or the Institutional Research-Ethics Administrator on 031 373 2375. Complaints can be reported to the DVC: Research, Innovation and Engagement Prof S Moyo on 031 373 2577 or [moyos@dut.ac.za](mailto:moyos@dut.ac.za).

**General:**

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population e.g. isiZulu.

## Appendix D: Letter of informed consent



### CONSENT

#### Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Avikar Ramsundra, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number:
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

\_\_\_\_\_  
Full Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Time

\_\_\_\_\_  
Signature/Right Thumbprint

I, \_\_\_\_\_, herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study

\_\_\_\_\_  
Full Name of Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Full Name of Witness (If applicable)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Full Name of Legal Guardian (If applicable)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

***Please note the following:***

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level

- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counselling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

**References:**

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes*

<http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/>

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed. Available at:

[http://www.nhrec.org.za/?page\\_id=14](http://www.nhrec.org.za/?page_id=14)

## **Appendix E: Online Form Letter**

*Good day*

*I trust you are well and keeping safe.*

*I have developed a questionnaire which we need to test before sending it out to a sample of consumers. I will be investigating the key success factors for digital personal banking in the iLembe District: a consumer perspective. Would you be prepared to complete the questionnaire, which is available via the link below. When you click on the final Submit button, Google Forms sends your response to me.*

Please find the questionnaire through the following link:

*Completing the questionnaire will take approximately 5 minutes. Participation is voluntary and you are free to withdraw from the study at any time. The information you give will only be used for research purposes, and your identity and individual answers will be kept totally confidential. By clicking on the link to start the survey you are confirming your willingness to participate in this research project. Should you wish to discuss this further please feel free to contact me on 0813074019 or my supervisor (Prof Mason, on [rogerm@dut.ac.za](mailto:rogerm@dut.ac.za))*

*If you wish to receive a copy of the study's findings when complete, please send me a reply email indicating your request.*

*Once you have completed the questionnaire, would you please, by replying to this mail, advise of any....*

- problems you had in completing the questionnaire....*
- questions you did not understand....*

*Your responses will be highly appreciated*

*Kind regards,*

*Avikar*

## Appendix F: Ethics approval



### MANAGEMENT SCIENCES: FACULTY RESEARCH ETHICS COMMITTEE (FREC)

26 November 2020

Student Name: **Mr A Ramsundra**

Student No: 21304680

Dear Mr A Ramsundra

### **MASTER OF MANAGEMENT SCIENCES: MARKETING**

**TITLE: Key Success factors for digital personal banking in the iLembe District: A consumer perspective**

Please be advised that the FREC Committee has reviewed your proposal and the following decision was made: **Approved – Ethics Level 2**

**Date of FRC Approval: 7 October 2020**

Approval has been granted for a period of two years from the above FRC date, after which you are required to apply for safety monitoring and annual recertification. Please use the form located at the Faculty. This form must be submitted to the FREC at least 3 months before the ethics approval for the study expires.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the FREC according to the FREC SOP's. Please note that ANY amendments in the approved proposal require the approval of the FREC as outlined in the FREC SOP's.

Yours sincerely

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Prof JP Govender  
Chairperson: Faculty Research Ethics Committee

## Appendix G: Ethics training certificate



# Zertifikat Certificat

# Certificado Certificate

Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale  
Promoting the highest ethical standards in the protection of biomedical research participants



## Certificat de formation - Training Certificate

Ce document atteste que - this document certifies that

### Avikar Ramsundra

a complété avec succès - has successfully completed

### Introduction to Research Ethics

du programme de formation TRREE en évaluation éthique de la recherche  
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# Appendix H: Crosstabulation and chi-square tests between trends of banking, and banking services

Questionnaire	Value	df	Asymptotic Significance (2-sided)
Age and "Visit Bank"	18.201	21	0.636
Race and "Visit Bank"	48.489	9	< 0.001
Gender and "Visit Bank"	2.127	3	0.546
Education and "Visit Bank"	10.177	12	0.600
Income and "Visit Bank"	33.948	24	0.086
Age and "Internet (digital) banking"	40.58	21	0.006
Race and "Internet (digital) banking"	19.265	9	0.023
Gender and "Internet (digital) banking"	0.450	3	0.930
Education and "Internet (digital) banking"	31.151	12	0.002
Income and "Internet (digital) banking"	48.715	24	0.002
Age and "ATM"	38.062	21	0.013
Race and "ATM"	58.165	9	< 0.001
Gender and "ATM"	3.054	3	0.383
Education and "ATM"	28.789	12	0.004
Income and "ATM"	96.579	24	< 0.001
Age and "Pay via debit/credit card"	53.825	21	< 0.001
Race and "Pay via debit/credit card"	30.347	9	< 0.001
Gender and "Pay via debit/credit card"	5.282	3	0.152
Education and "Pay via debit/credit card"	36.388	12	< 0.001
Income and "Pay via debit/credit card"	82.897	24	< 0.001
Age and "Pay via EFT"	72.024	21	< 0.001
Gender and "Pay via EFT"	5.005	3	0.171
Education and "Pay via EFT"	20.999	12	0.050
Income and "Pay via EFT"	73.695	24	< 0.001
Age and "Online banking is more convenient"	38.809	28	0.084
Race and "Online banking is more convenient"	39.058	12	0.000
Gender and "Online banking is more convenient"	2.668	4	0.615
Education and "Online banking is more convenient"	44.168	16	< 0.001
Race and "Online banking is faster"	15.647	12	0.208
Gender and "Online banking is faster"	3.166	4	0.530
Education and "Online banking is faster"	64.299	16	< 0.001
Income and "Online banking is faster"	34.902	32	0.332
Age and "I can use online banking at any hour"	50.465	28	0.006
Race and "I can use online banking at any hour"	19.447	12	0.078
Gender and "I can use online banking at any hour"	1.025	4	0.906
Education and "I can use online banking at any hour"	67.411	16	< 0.001
Age and "I understand how to use online banking"	50.106	28	0.006
Race and "I understand how to use online banking"	27.253	12	0.007



Gender and "I understand how to use online banking"	1.008	4	0.909
Education and "I understand how to use online banking"	52.645	16	< 0.001
Income and "I understand how to use online banking"	54.136	32	0.009
Age and "Online information is clear"	51.257	28	0.005
Gender and "Online information is clear"	0.269	4	0.992
Education and "Online information is clear"	37.401	16	0.002
Age and "I prefer to visit at bank for new information"	42.837	28	0.036
Race and "I prefer to visit at bank for new information"	41.849	12	< 0.001
Gender and "I prefer to visit at bank for new information"	8.368	4	0.079
Education and "I prefer to visit at bank for new information"	33.398	16	0.007
Income and "I prefer to visit at bank for new information"	76.212	32	< 0.001
Age and "More services at a branch than online"	39.732	28	0.070
Race and "More services at a branch than online"	32.862	12	0.001
Gender and "More services at a branch than online"	8.58	4	0.073
Education and "More services at a branch than online"	12.907	16	0.680
Income and "More services at a branch than online"	70.48	32	< 0.001
Race and "I visit my bank to fix issues"	16.902	12	0.153
Gender and "I visit my bank to fix issues"	2.214	4	0.696
Education and "I visit my bank to fix issues"	12.197	16	0.730
Income and "I visit my bank to fix issues"	71.553	32	< 0.001
Age and "I get to ask about new services at a bank"	54.570	28	0.002
Race and "I get to ask about new services at a bank"	34.212	12	0.001
Gender and "I get to ask about new services at a bank"	6.386	4	0.172
Education and "I get to ask about new services at a bank"	25.781	16	0.057
Income and "I get to ask about new services at a bank"	81.132	32	< 0.001
Age and "Human interaction is important for banking"	37.104	28	0.117
Race and "Human interaction is important for banking"	40.700	12	0.000
Gender and "Human interaction is important for banking"	8.403	4	0.078
Education and "Human interaction is important for banking"	29.906	16	0.018
Income and "Human interaction is important for banking"	75.342	32	< 0.001
Age and "I use online banking regularly"			0.001
Race and "I use online banking regularly"	37.451	12	< 0.001
Gender and "I use online banking regularly"	2.019	4	0.732
Education and "I use online banking regularly"	54.042	16	< 0.001
Income and "I use online banking regularly"	50.12	32	0.022
Age and "prefer personalised online banking experience"	64.024	28	< 0.001
Race and "prefer personalised online banking experience"	17.185	12	0.143
Gender and "prefer personalised online banking experience"	10.759	4	0.029
Education and "prefer personalised online banking experience"	11.112	16	0.803
Income and "prefer personalised online banking experience"	67.163	32	< 0.001
Age and "Banking application covers all my basic banking requirements"	72.708	28	< 0.001
Race and "Banking application covers all my basic banking requirements"	29.93	12	0.003
Gender and "Banking application covers all my basic banking requirements"	4.635	4	0.327



Education and "Banking application covers all my basic banking requirements"	31.425	16	0.012
Income and "Banking application covers all my basic banking requirements"	38.259	32	0.206
Age and "Internet banking is safer in terms of online fraud and theft"	47.945	28	0.011
Race and "Internet banking is safer in terms of online fraud and theft"	17.466	12	0.133
Gender and "Internet banking is safer in terms of online fraud and theft"	6.087	4	0.193
Education and "Internet banking is safer in terms of online fraud and theft"	11.397	16	0.784
Income and "Internet banking is safer in terms of online fraud and theft"	54.662	32	0.008
Age and "When paying physically, I prefer paying with my bank card"	57.250	28	0.001
Race and "When paying physically, I prefer paying with my bank card"	23.073	12	0.027
Gender and "When paying physically, I prefer paying with my bank card"	1.959	4	0.743
Education and "When paying physically, I prefer paying with my bank card"	17.483	16	0.355
Income and "When paying physically, I prefer paying with my bank card"	44.892	32	0.065
Age and "I am happy with the safety regulations from my bank"	60.41	28	< 0.001
Race and "I am happy with the safety regulations from my bank"	19.656	12	0.074
Gender and "I am happy with the safety regulations from my bank"	4.105	4	0.392
Education and "I am happy with the safety regulations from my bank"	22.510	16	0.127
Income and "I am happy with the safety regulations from my bank"	41.125	32	0.129
Age and "I have had positive experiences using online banking"	51.857	28	0.004
Race and "I have had positive experiences using online banking"	37.675	12	< 0.001
Gender and "I have had positive experiences using online banking"	3.467	4	0.483
Education and "I have had positive experiences using online banking"	24.587	16	0.077
Income and "I have had positive experiences using online banking"	37.984	32	0.215
Age and "Online banking is clear and easy to use"			
Race and "Online banking is clear and easy to use"	24.575	12	0.017
Gender and "Online banking is clear and easy to use"	1.752	4	0.781
Education and "Online banking is clear and easy to use"	31.498	16	0.012
Income and "Online banking is clear and easy to use"	43.676	32	0.082
Age and "Online banking has sufficient services"	35.415	28	0.158
Race and "Online banking has sufficient services"	35.718	12	< 0.001
Gender and "Online banking has sufficient services"	1.521	4	0.823
Education and "Online banking has sufficient services"	23.357	16	0.105
Income and "Online banking has sufficient services"	43.698	32	0.081
Age and "Online banking saves on banking fees and is cost efficient"	51.448	28	0.004
Race and "Online banking saves on banking fees and is cost efficient"	32.433	12	0.001
Gender and "Online banking saves on banking fees and is cost efficient"	5.212	4	0.266
Education and "Online banking saves on banking fees and is cost efficient"	23.122	16	0.111
Income and "Online banking saves on banking fees and is cost efficient"	52.532	32	0.013
Age and "I have more control of my banking when I bank online"	50.909	28	0.005
Race and "I have more control of my banking when I bank online"	26.315	12	0.010
Gender and "I have more control of my banking when I bank online"	1.519	4	0.823
Education and "I have more control of my banking when I bank online"	33.488	16	0.006
Income and "I have more control of my banking when I bank online"	45.26	32	0.060

Age and "Branch banking charges are reasonable"	33.38	28	0.222
Race and "Branch banking charges are reasonable"	22.759	12	0.030
Gender and "Branch banking charges are reasonable"	4.126	4	0.389
Education and "Branch banking charges are reasonable"	15.442	16	0.493
Income and "Branch banking charges are reasonable"	36.928	32	0.252
Age and "Online banking saves time"	69.647	28	< 0.001
Race and "Online banking saves time"	24.247	12	0.019
Gender and "Online banking saves time"	3.959	4	0.412
Education and "Online banking saves time"	67.498	16	< 0.001
Income and "Online banking saves time"	46.832	32	0.044
Age and "I prefer to not travel to a bank to process simple transactions"	57.742	28	0.001
Race and "I prefer to not travel to a bank to process simple transactions"	23.804	12	0.022
Gender and "I prefer to not travel to a bank to process simple transactions"	7.451	4	0.114
Education and "I prefer to not travel to a bank to process simple transactions"	42.236	16	< 0.001
Income and "I prefer to not travel to a bank to process simple transactions"	38.568	32	0.197
Age and "Online banking is more convenient due to its 24/7 operation"	51.145	28	0.005
Race and "Online banking is more convenient due to its 24/7 operation"	17.510	12	0.131
Gender and "Online banking is more convenient due to its 24/7 operation"	6.473	4	0.166
Education and "Online banking is more convenient due to its 24/7 operation"	33.584	16	0.006
Income and "Online banking is more convenient due to its 24/7 operation"	41.668	32	0.118
Age and "Online banking has no delays in processing"	48.975	28	0.008
Race and "Online banking has no delays in processing"	18.850	12	0.092
Gender and "Online banking has no delays in processing"	4.650	4	0.325
Education and "Online banking has no delays in processing"	26.717	16	0.045
Income and "Online banking has no delays in processing"	41.819	32	0.115




## Appendix I: Statistician Declaration



### STATISTICIAN DECLARATION FOR CONSULTATION

This is to confirm that I have given appropriate recommendations relating to the student's research:

<b>Student Name</b>	Avikar Ramsundra
<b>Student number</b>	21304680
<b>Title</b>	Key Success factors for digital personal banking in the iLembe District: a consumer perspective
<b>Department</b>	Marketing and Retail
<b>Faculty</b>	Management Sciences

	19 October 2022
Deepak Singh DUT Panel of Statisticians	Date

## Appendix J: Editing certificate

### **DR RICHARD STEELE**

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Practice No. 0807524

**Freelance academic editor**

**Associate member: Professional Editors'**

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### **EDITING CERTIFICATE**

Re: **AVIKAR RAMSUNDRA**

Durban University of Technology master's dissertation: **KEY SUCCESS**

**FACTORS FOR DIGITAL PERSONAL BANKING IN THE ILEMBE**

**DISTRICT: A CONSUMER PERSPECTIVE**

I confirm that I have edited this dissertation and the references for clarity and language. I returned the document to the author with track changes so correct implementation of the changes and clarifications requested in the text and references is the responsibility of the author. I am a freelance editor specialising in proofreading and editing academic documents. My original tertiary degree which I obtained at the University of Cape Town was a B.A. with English as a major and I went on to complete an H.D.E. (P.G.) Sec. with English as my teaching subject. I was a part-time lecturer in the Department of Homoeopathy at the Durban University of Technology for 13 years and supervised many master's degree dissertations during that period.

Dr Richard Steele

**05 November 2022**

*per email*

## Appendix K: Turnitin report

10/18/22, 2:58 PM

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Turnitin report approved

Professor R B Mason (Supervisor)

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