

https://dspace.org/

Factors that hinder South African Banking Customers from using Digital Banking

Mola, Vincent

2025
University of the Witwatersrand, Johannesburg
https://hdl.handle.net/10539/49239
Mola, Vincent. (2025). Factors that hinder South African Banking Customers from using Digital Banking [Master`s dissertation, University of the Witwatersrand, Johannesburg]. WIReDSpace. https://hdl.handle.net/10539/49239

Downloaded from a DSpace repository. https://dspace.org/



Factors that hinder South African Banking Customers from using Digital Banking

Vincent Mola

Student number: 2756174

2756174@students.wits.ac.za and 082 574 7728

Supervisor:

Dr Euphemia Godspower-Akpomiemie

The research report is submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in fulfilment of the requirements for the degree of Master of Management in the field of Digital Business

Johannesburg, 2025

DECLARATION

I, Vincent Ngwako Mola, confirm that this research report is my own work except as indicated in the references and acknowledgments. It is hereby submitted to fulfill the requirements for the Master of Management in Digital Business degree at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Vincent Ngwako Mola



Signed: 27 February 2025

ACKNOWLEDGEMENTS

I want to thank Almighty God for the guidance, strength, mental fortitude, and skills I needed to complete this research.

I sincerely appreciate all the respondents who participated in the interviews and promptly assisted with data collection. Your dedication and time are genuinely valued. May the good Lord bless you abundantly.

I express my gratitude and appreciation to my supervisor, Dr. Euphemia Godspower-Akpomiemie. Her guidance, knowledge, motivation, and, most importantly, her patience, have been invaluable during my research and the writing of this thesis. Your critical thinking and bold questioning are thought-provoking. Your guidance and encouragement have been both constructive and invaluable throughout this work.

This study would not have been possible without my employer, Absa. I wish to express my gratitude for funding my academic pursuits and allowing me the time I needed to complete my studies.

Lastly, and very importantly, I want to thank my wife for her spiritual and academic support. I love you, Mrs. Mola. Also, my mom always asks me about my progress. Thanks, Ma.

To the Almighty, Father - Thank You!

KEYWORDS

Keywords:

Digitalization; Digital Banking; Online Banking; Mobile App, User Experience; Adoption; Customers; Cybersecurity.

Table of Contents

DECLARATION ..... **ii**

ACKNOWLEDGEMENTS ..... **iii**

KEYWORDS ..... **iv**

LIST OF TABLES ..... **viii**

LIST OF FIGURES ..... **ix**

LIST OF ACRONYMS ..... **x**

CHAPTER 1 INTRODUCTION

1.1 STATEMENT OF PURPOSE 1
1.2 BACKGROUND OF THE STUDY 1
1.3 RESEARCH PROBLEM 3
1.4 RESEARCH OBJECTIVE 5
1.5 RATIONALE 6
1.6 SIGNIFICANCE OF THE STUDY 6
1.7 DELIMITATIONS OF THE STUDY 7
1.8 DEFINITION OF TERMS 8
1.9 ASSUMPTIONS 10
1.10 RESEARCH OUTLINE 11

CHAPTER 2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION 12
2.2 BACKGROUND DISCUSSION 13
2.3 TECHNOLOGICAL LITERACY AND ADOPTION OF DIGITALIZED BANKING SERVICES 15
2.4 TRUST AND SECURITY IN THE ADOPTION OF DIGITAL BANKING 16
2.5 DEMOGRAPHIC GROUPS AFFECTED BY SOCIO-ECONOMIC BARRIERS 19
2.6. THEORETICAL FRAMEWORK 20
2.7 CONCLUSION OF LITERATURE REVIEW 22

CHAPTER 3. RESEARCH METHODOLOGY

3.1 RESEARCH APPROACH....25
3.2 RESEARCH DESIGN....26
3.3 DATA COLLECTION METHODS....26
3.4 POPULATION AND SAMPLE....27
3.5 THE RESEARCH INSTRUMENT....28
3.6 PROCEDURE FOR DATA COLLECTION....28
3.7 DATA ANALYSIS STRATEGIES AND INTERPRETATION....29
3.8 LIMITATIONS AND CHALLENGES OF THE RESEARCH....30
3.9 QUALITY ASSURANCE....31
3.10 ETHICAL CONSIDERATIONS....33

CHAPTER 4: DATA ANALYSIS AND RESULTS

4.1 INTRODUCTION....35
4.2 PARTICIPANT DEMOGRAPHICS....35
4.3 TECHNOLOGICAL LITERACY AND THE ADOPTION OF DIGITAL BANKING .39
4.4 PERCEPTIONS OF TRUST AND SECURITY....43
4.4.2 TRUST FACTORS....44
4.5 SOCIO-ECONOMIC BARRIERS....47
4.6 DIGITAL BANKING USE PATTERNS....51
4.7 CUSTOMER SUPPORT EXPERIENCE....55
4.8 KEY BARRIERS TO ADOPTION....59
4.9 CHAPTER SUMMARY....63

CHAPTER 5: DISCUSSION

5.1 INTRODUCTION
5.2 TECHNOLOGICAL LITERACY AND DIGITAL BANKING ADOPTION....64
5.3 PERCEPTION OF TRUST AND SECURITY....67
5.4 SOCIO-ECONOMIC BARRIERS AND FINANCIAL INCLUSION....69
5.5 INTEGRATION OF BANKING CHANNELS....72
5.6 EXTENSIONS TO THE TECHNOLOGY ACCEPTANCE MODEL (TAM)....74
5.7 CONTRIBUTIONS TO DIFFUSION OF INNOVATIONS THEORY (DIT)....74
5.8. NOVEL THEORETICAL CONTRIBUTIONS TO DIGITAL BANKING ADOPTION....75
5.9 SOUTH AFRICAN CONTEXT SPECIFICS....76
5.10 CHAPTER SUMMARY....77

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION 79
6.2 CONCLUSION 79
6.3 POLICY RECOMMENDATIONS 82
6.4 RECOMMENDATIONS FOR BANKING INSTITUTIONS 83
6.5 RECOMMENDATIONS FOR FURTHER RESEARCH 84

REFERENCES 86

APPENDIX A 91

APPENDIX X 92

LIST OF TABLES

Table 4.1	Participant Demographic Summary (N=20)
Table 4.2	Alignment of Research Objectives, Propositions, Themes and Sub-themes

LIST OF FIGURES

LIST OF ACRONYMS

AI	Artificial Intelligence
App	Applications
BASA	The Banking Association of South Africa
DBS	Digital Banking Services
FICA	Financial Intelligence Centre Act
IFWG	Intergovernmental Fintech Working Group
POPIA	Protection of Personal Information Act, 2013
RPA	Robotic Process Automation
SABRIC	South African Banking Risk Information Centre
SARB	South African Reserve Bank

CHAPTER 1 INTRODUCTION

This chapter introduces the study subject, background, issue, goals, reasoning, delimitations, terminology, assumptions, and chapter framework. It introduces the study's background, relevance, and emphasis.

1.1 STATEMENT OF PURPOSE

This qualitative study explores factors that hinder South African banking customers from using digital banking services and seeks to uncover the barriers to South African banks consumers adopting digital banking. Despite technological advances and the banking sector's attempts to innovate and deliver easy, efficient, and secure digital banking systems, many clients still need to decide whether to switch. Banking organizations that want to increase client happiness, service delivery, and competitiveness in a digital economy must understand these obstacles.

Digital banking services provide 24/7 financial services, fewer branch visits, faster transactions, and cheaper operating expenses for banks and clients (Moser, 2015; Puschmann, 2017). However, South Africa's low acceptance rate makes digitalization difficult for banks. This study tries to understand the technical, psychological, and socio-economic causes behind this resistance. Furthermore, seeks to explore hurdles in adopting digital banking through qualitative analysis.

1.2 BACKGROUND OF THE STUDY

Digital banking has transformed financial services globally. South African banks embrace digital technologies to enhance customer service (Arnaboldi & Claeys, 2008; Puschmann, 2017). Despite these efforts, customers remain sluggish to adopt digital banking. Most South Africans use physical branches for banking (Klein & Mayer, 2011). Digital banking solves the long lineups of branches, limited hours, and high costs (Villasenor, West, & Lewis, 2016). Digital banking will reach remote and poor communities, improving financial inclusion (Ozili, 2018).

The banking industry is rapidly changing, with variable business operations due to the digital revolution. Digital transformation in commercial banks is receiving substantial attention from businesses. The development of financial and banking software, digital banking, mobile banking solutions, fintech, and more are just a few examples of how commercial banks are adapting to meet customer demands for big data, mobile finance, risk management, internet finance, and customer relationship management.

South African banks have made significant investments in enhancing their digital capabilities and have achieved notable successes. In 2022, South Africa was ranked first in the average digital maturity score in the Oliver Wyman Digital Banking Index, outperforming eight other nations, including Spain and the UK. With this exciting recognition, there has also been steady improvement in South Africa's digital maturity, presenting opportunities to provide differentiated service channels, and banks are expected to take advantage of those opportunities. In response to this, and with the advent of the 4IR, traditional (offline) banks may arguably experience increased pressure in growing and retaining their customer base while also addressing the heterogeneity expected by customers using the digitalization of consumer services (Pallant, Sands & Karpen 2020).

Digital banking involves the digitization of conventional banking services to provide financial solutions to customers. This encompasses marketing, customer onboarding, service channels, processes, products, and features.

Most South African banks go beyond traditional financial services, they offer different services to address the digital lifestyle of their customers. Since numerous studies highlight the significance of consumer perceptions in adopting digital banking, as shown in Ananda et al. (2020) and Mufingatun et al. (2020), South African consumers' perceptions of digital banking were clearly emphasized. According to Achieng and Malatji (2022), in South Africa, enhanced mobile telecommunication infrastructure and the Internet, especially mobile broadband networks, underpin the growth of digital initiatives.

Digital banking is hard to embrace. Research indicates that technological knowledge, trust in digital platforms, perceived security concerns, and socio-economic barriers impact digital banking adoption (Laukkanen, 2016; Martins, Oliveira, & Popovič, 2014). The digital divide, which affects internet and device access among South African populations, complicates these challenges (Mlitwa & Koranteng, 2013).

Digital banking adoption depends on tech knowledge. Older and lower-income clients may need more skills and confidence to use digital banking systems (Raman & Don, 2013). The quick rate of technical improvements might overwhelm less tech-savvy people and make them unwilling to use digital banking (Yousafzai, Foxall, & Pallister, 2010).

Banks are data-rich organizations; however, they often lag when using data to generate value. Banks need more tools to access their data effectively and convert it into actionable insights that can help generate value for their customers and develop data-informed banking services. Banks now find themselves in a position where they need to adapt to retain existing customers and attract new customers to maintain or grow market share, revenues, and profitability. Implementing a digital business strategy to digitalization is a complete change of model, moving away from the traditional banking organization to a laser focus on improving customer experience and meeting their needs.

1.3 RESEARCH PROBLEM

This research examines South African banking customers' reluctance to embrace digital banking despite its benefits. Due to this hesitation, banks pursuing digital transformation and service delivery confront considerable challenges.

Digitalization allows banks to scale from the traditional brick-and-mortar architecture to open and beyond banking. In South Africa, banks have made significant investments in technological solutions. However, socio-economic complexities and challenges are hindering the adoption of digital banking services. As banks strive to gain a competitive edge, they recognize the importance of differentiating their services

from competitors through optimized channel strategies, including mobile banking applications, robotic process automation, AI and chatbots, and online channels.

The banking customer technological literacy gap is a big factor. Many consumers, particularly elderly and low-income people, lack digital banking expertise and confidence (Raman & Don, 2013). Rapid technology growth may terrify non-technical individuals, expanding this difference (Yousafzai, Foxall, & Pallister, 2010).

In a study by Ramavhona and Mokwena (2016), they found that the lack of customer education about digital banking services and their benefits, such as convenience and flexibility, contributes to the slow adoption of electronic banking. Most commercial banks in South Africa offer digital banking capability at lesser and affordable charges than traditional channels. Despite the convenience of digital channels, the adoption rate remains relatively low as compared to other countries. The risks associated with cybersecurity, technology failures, data integrity, and privacy are among the factors that deter the large population from utilizing electronic banking channels (Bernstein et al., 2018).

Common mistrust of digital financial services is also crucial. Internet buyers fear identity theft and money loss (Suh & Han, 2002). Digital platforms have lost public confidence owing to high-profile hacks and data breaches, making customers wary of digital banking (PwC, 2019). Building trust and digital banking acceptability requires addressing these concerns.

Socioeconomic variables also slow digital banking adoption. Digital banking is problematic for low-income and educated populations because they need internet and digital equipment (Mlitwa & Koranteng, 2013). Financial constraints may prohibit these people from buying digital banking equipment and internet connectivity (Olatokun & Igbinedion, 2009). The digital divide in South Africa widens. World Bank (2020) indicates significant disparities in internet access and digital device ownership across urban and rural areas and socioeconomic groups. Digital banking usage variations affect marginalized groups. Regulatory issues help. Despite South African efforts to encourage digital banking, regulatory gaps and inconsistencies persist (South African

Reserve Bank, 2018). Solid and flexible regulations that protect clients and foster innovation are needed for digital banking adoption.

Financial institutions continuously invest in and using electronic service delivery channels to engage with their clients (Nyiranzabamwita and Harelimana, 2019). Electronic banking has been rapidly transforming worldwide, offering exciting and relevant content on banking services (Alkhowaiter, 2020; Zhang, Zhu, and Liu, 2012). There was a total of 112.7 million mobile connections were active in South Africa in 2023, with this equivalent to 187.4% of the total population.

1.4 RESEARCH OBJECTIVE

The main objective of this research is to investigate the constraints experienced by South African banking customers regarding digital banking services. To achieve this, the study is guided by the following specific objectives:

- To examine how technological literacy among South African banking customers influences the adoption of digital banking services.
- To evaluate how trust and security concerns influence customers' use of digital banking services.
- To explore the primary socio-economic barriers affecting the adoption of digital banking services among various demographic groups in South Africa.
- To explore the hindrances of adopting digital banking by South African bank clients.

These objectives aim to provide a holistic picture of diverse hurdles impacting the growth in digital banking adoption, thereby helping banks and policymakers formulate specific strategies based on market demographics to stimulate digital banking uptake potentially.

1.5 RATIONALE

The growing relevance of digital banking in modern financial systems and the need to overcome adoption hurdles inspire this study. In technology-driven global banking, digital banking enhances service, efficiency, and financial inclusion (Puschmann, 2017; Moser, 2015). Economic development and access to new financial services need an understanding South Africa's traditional banking practices' digital banking adoption obstacles (Ozili, 2018).

A technological literacy gap among South African banking customers prompted this study. Poor and elderly people lack digital banking abilities and confidence (Raman & Don, 2013; Yousafzai, Foxall, & Pallister, 2010). This limits their digital banking benefits and hinders company digitization. This study investigates how this gap affects digital banking adoption and suggests remedies.

Customers' digital banking attitudes are also affected by trust and security. Cybercrime and data breaches make South Africans leery of online transactions (PwC, 2019; Suh & Han, 2002). Client confidence and adoption need digital banking system trust. This study examines how these challenges influence digital banking and proposes solutions to increase security and reliability.

Socioeconomic factors impede South African digital banking adoption. Economic, educational, and technical gaps limit digital banking access for some demographic groups (Mlitwa & Koranteng, 2013; Olatokun & Igbinedion, 2009). Understanding these socio-economic barriers is crucial to providing inclusive financial services. This study explores how these characteristics impact digital banking adoption and recommends methods to close the digital divide so everyone can benefit from it.

1.6 SIGNIFICANCE OF THE STUDY

This research analyses these factors to improve digital banking competence and customer acceptability. This research will also identify policy initiatives to ease the

transition to digital banking, improving financial inclusion and economic growth in South Africa.

The literature research strategy employed involves an organized structure of key terms used to search a wide range of databases. This strategy combines the key concepts of the research question to retrieve accurate results. Since each database operates differently, the researcher had to adapt the search strategy for each one to achieve accurate and desired outcomes.

This research strategy includes the following elements:

- Possible search terms for the topic
- Searching with keywords
- Searching with phrases
- Searching with subject headings (where applicable)

During the research process, it was necessary to test the strategy and refine it as needed after reviewing the search techniques.

The findings of this study are to advance the understanding of digital banking adoption. This will help South African banks plan and execute strategies to overcome the challenges of digital banking adoption and use. The results will benefit banks, policymakers, and other financial ecosystem players, boosting financial inclusion and economic prosperity in South Africa.

1.7 DELIMITATIONS OF THE STUDY

This study has clear parameters to keep it focused and manageable. This survey only targets South African bank clients. While this study may apply to other settings, it focuses on the specific issues and dynamics of the South African banking system.

The report only covers online banking, mobile banking, and other bank digital platforms. Non-bank financial services and digital payment systems are excluded. This distinction helps emphasize on the issues affecting conventional banks' digital banking adoption (Villasenor, West, & Lewis, 2016).

This research focused on retail banking consumers alone. Corporate and institutional consumers, whose digital banking demands and obstacles may vary from individual customers, are excluded (Arnaboldi & Claeys, 2008).

This research analyses digital banking uptake using the Technology Acceptance Model (TAM) and Diffusion of Innovations Theory (Davis, 1989; Rogers, 2003). These ideas illuminate technological acceptability and implementation, laying the groundwork for understanding digital banking hurdles.

Finally, this study recognizes data collecting and analytic constraints. Self-reported data from interviews may include social desirability or recollection biases. Thorough questionnaire design and data triangulation will reduce these biases. The research interpretation of qualitative data analysis may also affect the conclusions.

1.8 DEFINITION OF TERMS

To ensure clarity and consistency throughout this study, several key terms are defined as follows:

Digital Banking: Digital banking uses Internet, mobile, and digital wallets to perform transactions and access financial services (Puschmann, 2017). It includes digital interfaces for cash transfers, bill payments, account management, and financial product applications.

Technological Literacy: Technological literacy involves using, understanding, and interacting with digital technology (Raman & Don, 2013). It involves digital gadget use, web navigation, and cybersecurity basics. Technological literacy is key to digital banking adoption.

Trust: Customers' faith in online banking systems' safety, security, and dependability is called trust (Suh & Han, 2002). It entails trusting the bank to safeguard personal and financial data and secure transactions.

Security Concerns: Online transactions may lead to cyberattacks, data breaches, and identity theft in digital banking (PwC, 2019). These concerns may negatively impact client digital banking uptake.

Socio-Economic Barriers: Economic and social issues may limit digital banking (Mlitwa & Koranteng, 2013). Examples include low income, inadequate education, and lack of digital devices and internet access.

Digital Divide: People with and without modern ICT form the digital divide (World Bank, 2020). According to this study, South African demographics utilize digital banking differently.

Internet Banking: A channel that allows consumers to access a broad array of financial and non-financial services via a bank's website (Hoehle, Scornavacca, & Huff, 2012).

Cybersecurity: The practice of protecting systems, networks, and programs from digital threats**.** To mitigate cybersecurity risk, a multi-pronged strategy including multifactor authentication, cyber risk assessment, cyber insurance, and employee training should be put in place.

Mobile Banking: Mobile banking uses smartphones and tablets to access financial services via apps or mobile-optimized websites (Laukkanen, 2016). It simplifies mobile banking.

Customer satisfaction: 'A person's feelings of pleasure or disappointment that result from comparing a product's perceived performance (or outcome) to expectations' (Kotler & Keller, 2012, p. 128). Customer satisfaction evaluates how effectively each transaction within a company fulfills a customer's expectations.

Loyalty: 'A deeply held commitment to rebuy or repatronise a preferred product or service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour' (Oliver, 1999, p. 34)

Financial Inclusion: Financial inclusion guarantees that every person and business receives affordable and simple financial services (Ozili, 2018). Digital banking promotes financial inclusion by making banking services more accessible to the poor.

Technology Acceptance Model (TAM): The TAM outlines how consumers adopt and utilize technology (Davis, 1989). It claims that technology adoption is driven by perceived utility and simplicity of use.

Diffusion of Innovations Theory: The Everett Roger's Diffusion of Innovations Theory explains how new ideas and technology spread throughout society (Rogers, 2003). It describes how people accept innovations and what variables affect adoption.

1.9 ASSUMPTIONS

This research methodology and findings are based on the following assumptions.

- Research participants answered interview questions truthfully. This assumption is essential for data validity and dependability (Creswell, 2014). To encourage individuals to communicate their honest thoughts, a trustworthy and confidential atmosphere was created.
- Survey respondents expressed willingness to participate and had the resources to do so, including adequate knowledge of digital banking gained from their active and regular interactions with the bank. It was assumed that a sufficient number of those contacted were willing to participate and had sufficient time to attend the interview. Those who participated online had access to a device with internet capability from which they could engage in the interview.
- South African banks' digital banking services have similar functionality, security, and user interface (UI). This research was not affected by bank differences. This assumption allows focused digital banking adoption factors research (Venkatesh, Morris, Davis, & Davis, 2003).
- The Technology Acceptance Model (TAM) and the Diffusion of Innovations Theory are used to evaluate the acceptance of digital banking in South Africa

(Davis, 1989; Rogers, 2003). By explaining technology adoption and distribution, these frameworks aid data analysis and interpretation.

1.10 RESEARCH OUTLINE

This research outlines the issue, goals, reasoning, delimitations, terminology, assumptions, and the study's background, relevance, and emphasis. It includes a literature review on digital banking adoption, including theoretical frameworks, research, and critical aspects. Furthermore, it assesses the existing state of knowledge, revealing gaps and contradictions in the literature that the present research addresses. The method adhered to in analyzing the data covers ethical considerations and the validity-reliability of the study.

The data analysis results were obtained by explaining qualitative outcomes, interpreting the results, and explaining what the results mean for banking institutions, policymakers, and other stakeholders. The research summarizes and concludes the important results of the research objectives. It ends with suggestions on what applying enterprise governance can offer to bank institutions, policymakers, and future research.

CHAPTER 2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The integration of digital technology within the banking industry has fundamentally transformed the financial sector, giving rise to what is now recognised as Digital Banking. Haralayya (2021) defines digital banking as the computerisation of traditional banking services, providing customers with access to banking products and services via online or electronic platforms, effectively reducing the necessity for in-person branch visits. According to Al-Shbiel and Ahmad (2016), digital banking enables clients to conduct banking transactions using internet-connected computers. The advent of internet technology has conferred significant benefits across a broad spectrum of businesses and organisations. In recent years, technological advancements have notably influenced the operations and success of financial institutions. Furthermore, the widespread adoption of digital or electronic banking has facilitated the development of delivery channels that cater to consumer preferences rather than focusing solely on operational efficiency (Masocha et al., 2011).

The recent advancements in digital technology have fundamentally transformed banking operations. Since the emergence of the digital age, the business landscape has experienced significant disruption, prompting innovative approaches to service delivery. Banks in South Africa consistently pursue strategies to remain aligned with technological developments. As both technology and consumer preferences evolve, banks continually adapt their operations, service offerings, and methods of engagement.

This chapter critically assesses the existing state of knowledge, revealing gaps and contradictions in the literature that the present research addresses. It lays a broad platform on barriers to digital banking adoption by South African bank customers based upon reviewing existing literature, defining core concepts, and exploring relevant theories that underpin digital banking adoption specifically within a South African context.

2.2 BACKGROUND DISCUSSION

Digital banking is a range of services that enable customers to perform financial transactions through electronic means, such as the Internet or mobile phones (Puschmann, 2017). The main driver of shifting from traditional to digital banking is the demand for convenience, efficiency, and a better customer experience (Villasenor et al., 2016). Digital banking is supposed to be a win-win for everyone, yet we now live in an era where there are haves-and-have-nots when it comes to the usage of user-friendly digital tools. With the growth and increased adoption of the Internet and online technologies over the past few decades, many opportunities for business digitalization and new digital business model formulation have arisen (Louw & Nieuwenhuizen 2019). As a result, businesses worldwide are being reinvented and reconfigured with the advent of the Fourth Industrial Revolution (4IR), with banks being no exception to the rule.

South Africa may need to catch up on the uptake of digital banking services, but this has been met with a lot of resistance and barriers to entry. Digital solutions have been made accessible by the country's banking sector, but still, a large part of the population still prefers to bank in a traditional way (Ozili, 2018). With the advent of the 4IR, traditional banks may arguably experience increased pressure to grow and retain their customer base while also addressing the heterogeneity expected by customers by means of digitalization of consumer services (Pallant, Sands & Karpen 2020). The general reluctance to use Health technology was a result of various factors including technological literacy, trust and security concerns (Mlitwa & Koranteng, 2013), and socio-economic related barriers among others.

Technological literacy involves the use of digital technologies, a key precursor to using electronic banking (Raman & Don, 2013). A significant proportion of South African customers, particularly elderly clients and non-affluent households do not have the requisite literacy skills or faith needed to make useful use of digital banking platforms (Yousafzai et al., 2010). This technological knowledge divide makes it inconvenient for them to enjoy the benefits digital banking offers - convenience and efficiency.

Another impediment to digital banking is trust and security concerns. Especially cyber-attacks, data breaches, and identity theft are reported to be the reasons that customers feel unsafe during online transactions (Suh & Han, 2002). This has been furthered by various cybercrime incidents in South Africa, with implications for digital banking safety (PwC, 2019). As customer adoption and use are critical in digital banking platforms, establishing trust becomes inevitable.

Additionally, socio-economic factors play an inhibitive role in the migration to digital banking. Income, education, and technological access differences challenge different demographic groups in their engagement in digital banking (Mlitwa & Koranteng, 2013; Olatokun & Igbinedion, 2009). Technology (such as smartphones, tablets and phablets) to access these services is typically more expensive and may be perceived as intimidating or overwhelming from a user experience perspective (Louw & Von Solms 2018; Louw 2017). Users who do not own such devices may, therefore, be excluded from making use of digital banking features and services. The barriers are much greater in rural and underserved areas, where there is limited access to digital devices and the Internet (World Bank, 2020). These three key factors help in inspiring tactics to make digital banking popular in South Africa.

As noted in a McKinsey report by Dallerup (2018), the United States has experienced a significant decrease of more than 10,000 bank branches since the financial crisis in the late 2000s. This reduction may pose challenges for customers, particularly those residing in underserved or economically disadvantaged communities. Wentzel, Diatha, and Yadavalli (2016) highlight that certain individuals and groups have limited access to financial services infrastructure as a result of these closures. Furthermore, Wentzel et al. indicate that both individuals and organizations may face exclusion from formal financial systems if suitable alternative providers are not available.

The next sections discuss, through a literature review as it relates to specific research questions and objectives in this study, a detailed analysis of the key barriers including their implications.

2.3 TECHNOLOGICAL LITERACY AND ADOPTION OF DIGITALIZED BANKING SERVICES

The first objective of this research is to determine the extent to which technological literacy amongst South African banking customers influences their adoption of digitalized banking services. This research critically assesses existing literature on how technological literacy impacts digital banking adoption, providing further understanding of the challenges and opportunities.

2.3.1 TECHNOLOGICAL LITERACY AND DIGITAL BANKING ADOPTION

Technological proficiency is a key factor in digital online financial service use as it incorporates the capability and information to utilize any new computerized technologies (Raman & Don, 2013). Research shows that higher levels of technology literacy positively correlate with the adoption and use of digital banking services (Yousafzai, Foxall & Pallister, 2010). Conversely, persons with limited technical aptitude struggle to communicate and participate on digital platforms, which frustrates them and makes them shun these services (Laukkanen, 2016).

Digital literacy disparities between older persons and poorer socioeconomic groups are especially pronounced in South Africa. Mlitwa and Koranteng (2013) found that many South African clients lack the fundamental abilities needed to use digital banking systems, such as smartphone operation, internet security, and technical troubleshooting. Technology advances quickly for non-" digital natives" (Yousafzai, Foxall, & Pallister, 2010).

Technology literacy education is key to digital banking adoption. Raman and Don (2013) stated that digital literacy programmes teach and help clients to improve their digital abilities. These programmes may overcome the digital literacy gap and empower customers to employ tech efficiency confidently to reap its advantages.

2.3.2 CHALLENGES AND OPPORTUNITIES IN ENHANCING TECHNOLOGICAL LITERACY

Technology literacy has advantages and drawbacks. Digital literacy programmes are rare in rural and impoverished communities. Without infrastructure and funding, these initiatives are limited in many ways (Mlitwa & Koranteng, 2013).

Demographic change resistance is another issue. Due to complexity and a desire for conventional banking, older individuals may resist new technology (Laukkanen, 2016). Communication and education on digital banking's advantages and simplicity must dominate. Community-based and educational partnerships may promote technological literacy. Schools and colleges can teach digital literacy, while community centres and libraries can teach it (Raman & Don, 2013). Banks may also teach and support clients with digital skills.

Proposition 1: Technological Literacy is perceived to significantly influence individuals' adoption of digital banking services, shaping their experiences and perceptions in various ways.

Based on the existing literature on technology literacy, this study proposes that better technology literacy significantly influences individuals' adoption of digital banking services, shaping their experiences and perceptions in various ways. Studies show that technical literacy is strongly linked to digital banking use (Yousafzai, Foxall, & Pallister, 2010; Laukkanen, 2016). Improved technology literacy via focused education is expected to help more clients utilize digital banking systems comfortably and successfully.

2.4 TRUST AND SECURITY IN THE ADOPTION OF DIGITAL BANKING

The second goal of this study is to assess how trust and security issues influence consumers' reluctance to use digital banking platforms. This section explores the literature on trust, security, and digital banking uptake to highlight difficulties and potential.

2.4.1 TRUST IN DIGITAL BANKING

Trust is essential for digital banking adoption. Online banking trust is based on users' impressions of platform security and dependability, according to Suh and Han (2002). Customers use digital banking more if they trust it with their financial and personal data. Customers are hesitant to use these services because they are worried about data security.

Several research has shown that trust promotes digital banking adoption. Trust minimizes perceived risk and boosts online banking adoption, according to Lee and Turban (2001). They said the bank's reputation, platform integrity, and customer service affect trust. Martins, Oliveira, and Popovič (2014) revealed that trust strongly affects consumers' inclination to utilize online banking, emphasizing the need of strong security and clear communication for banks to create and sustain trust.

Shipalana (2019:21-25) found that individuals in low-income brackets in South Africa generally exhibit a lack of trust in banking institutions. The study also indicated that members of this demographic are concerned about potential exploitation, and many prefer cash transactions over digital channels due to limited familiarity or literacy, as well as apprehension regarding ATM and mobile/Internet banking fraud. Fear of fraud emerged as the primary reason for avoiding digital financial services.

Due to cybercrime and data breaches, trust concerns are especially acute in South Africa. Cyberattacks on financial institutions in South Africa have increased, eroding public trust in digital banking, according to PwC (2019). Customers' lack of digital security knowledge and comprehension fuels this mistrust, raising worries about money loss and identity theft. For trust and digital banking adoption, strong security measures and clear communication are required (Lee & Turban, 2001).

2.4.2 SECURITY CONCERNS

Digital banking usage is hindered by security concerns. Online shoppers worry about their personal data being hacked (Suh & Han, 2002). This anxiety is justified by worldwide cyber-attacks and fraud, including in South Africa.

Suh and Han (2002) and PwC (2019) found that security concerns strongly influence digital banking adoption. Hacking, phishing, and unauthorized access to personal and financial data are the main issues. Banks must deploy two-factor authentication, encryption, and frequent security audits to solve these issues and grow digital banking.

Banks must educate clients about internet security in addition to technical precautions. Martins et al. (2014) and Laukkanen (2016) found that raising consumers' digital security knowledge may reduce worries and create trust. Digital banking confidence depends on clear information about the bank's security procedures and client protections.

Proposition 2: Trust and Security Concerns may Influence Digital Banking Adoption

From the literature review, it is proposed that trust and security issues reduce the intentions to adopt digital banking services among South African bank customers. Such support may be found in prior evidence where perceived risks and distrust serve as strong impediments to using digital banking services (Suh & Han, 2002; Lee & Turban, 2001). Banks may address these issues with robust security protocols and clear messaging to create greater trust among their users, facilitating the adoption of digital banking features.

2.5 DEMOGRAPHIC GROUPS AFFECTED BY SOCIO-ECONOMIC BARRIERS

This part of the study reviews literature that points to socio-economic factors and their impact on adopting digital banking, illustrating some gaps in knowledge to uncover possibilities associated with challenges.

2.5.1 SOCIO-ECONOMIC FACTORS AND DIGITAL BANKING ADOPTION

This highlights the influence of socio-economic factors on digital banking uptake. Inequalities in income, education, and technology levels offer unequal opportunities for different demographic groups to use digital banking services (Mlitwa and Koranteng, 2013). People from the middle and upper class would typically be more interested in banking digitally because they are usually repeat internet users as well, due to their higher income level. It has also been noted that socio-economic barriers are thought to be a significant problem for developing countries, such as South Africa. For example, Olatokun and Igbinedion (2009) research came to the result that people with low-income are less likely to use digital banking services because they do not have access to technology or the internet. Likewise, Ozili (2018) reveals that wealth level is the most significant driver for digital banking adoption and that those with higher education are more likely to use financial transactional aspects on these platforms.

2.5.2 BRIDGING THE DIGITAL DIVIDE

Digital banking adoption among socioeconomically disadvantaged communities requires bridging the digital gap. To promote digital inclusion, Villasenor, West, and Lewis (2016) suggest increasing internet and device availability and educating digital literacy. These initiatives may help all socioeconomic groups experience digital banking's convenience and efficiency.

A research report by PricewaterhouseCoopers (2020) indicates that the shift toward digital and mobile banking systems prior to the Covid-19 pandemic led to a significant increase in banking transactions conducted through cost-effective digital channels across all customer segments in 2020.

The South African digital divide has been addressed by several programmes. South Africa has programmes to promote internet connectivity and digital literacy in underserved areas (World Bank, 2020). Banks provide cheap digital banking systems and marketing to educate users (Donner & Tellez, 2008). Economically disadvantaged populations are hard to engage. Mlitwa and Koranteng (2013) found that rural and disadvantaged people lack digital devices, internet connection, and digital literacy training, which hinders digital banking adoption. The government, banks, and other stakeholders must work together to make digital banking inclusive.

Proposition 3: Socio-Economic Barriers may have Influence on Digital Banking Adoption

Socioeconomic hurdles prohibit South African bank clients from embracing digital banking, the survey revealed. Technology, education, and poverty limit digital banking adoption, according to Mlitwa & Koranteng (2013) and Olatokun & Igbinedion (2009). By addressing socio-economic hurdles with targeted programmes and inclusive legislation, banks and regulators may boost digital banking adoption and financial inclusion.

2.6. THEORETICAL FRAMEWORK

This research is underpinned by the Technology Acceptance Model (TAM) and Diffusion of Innovations Theory (DIT), which clarify technology adoption factors.

2.6.1 TECHNOLOGY ACCEPTANCE MODEL (TAM)

Davis (1989)'s Technology Acceptance Model (TAM) explains technology uptake, which is often used in digital banking adoption studies (Venkatesh, Morris, Davis, &

Davis, 2003). TAM emphasizes that utility and simplicity influence technology adoption. Perceived utility is how much a system will boost job performance, whereas perceived ease of use is how simple it will be to use.

The model predicts that customers would adopt digital banking if it is helpful and easy to use. The more complex or unhelpful it is, the less likely they are to use it. This research aims to investigate the influence of technical skills, trust, and security on digital banking adoption. Based on TAM, this research focused on these three main components:

- **Technological Literacy**: This section examines how technical literacy affects digital banking. This covers digital skills including using a device, accessing online platforms successfully, and understanding fundamental device safety ideas. The model shows that technological knowledge increases digital banking adoption.
- **Trust and Security Concerns**: Digital banking adoption trust and security are examined here. It includes perceived risk, bank trust, and security awareness. The model says trust and security problems hurt digital banking adoption.
- **Socio-Economic Factors**: This subject examines socio-economic factors influencing digital banking adoption. Income, education, technology, and geography are included. The concept argues societal and economic barriers hinder digital banking adoption.

2.6.2 DIFFUSION OF INNOVATIONS THEORY

Rogers (2003)'s Diffusion of Innovations Theory outlines how new ideas and technology spread. The premise is that adoption involves knowledge, persuasion, decision, execution, and confirmation. Adoption rate characteristics include relative benefit, compatibility, complexity, trialability, and observability.

The Diffusion of Innovations Theory explains how socioeconomic factors impact digital banking adoption. It suggests that consumers will use digital banking if it is helpful, suitable, and easy. Communication pathways and social structures impact adoption, says the idea.

2.7 CONCLUSION OF LITERATURE REVIEW

A comprehensive literature review presented a synthesis of the drivers and inhibitors obstructing digital banking services adoption by South African customers. The review found that the main challenges included digital literacy, trust and security concerns, as well as socio-economic patterns. These barriers are examined by using extant theoretical frameworks along with empirical studies to better understand the difficulties faced by banks in increasing digital banking adoption.

Technological literacy is a critical element in digital banking adoption. Technically literate people use digital banking more (Raman & Don, 2013; Yousafzai, Foxall, & Pallister, 2010). Conversely, persons with limited digital abilities and little experience of online banking systems are more inclined to avoid such platforms because they think they won't utilize the features appropriately. This computer literacy gap is notably large among elderly folks and low-income people (Mlitwa & Koranteng, 2013).

Trust and security are major impediments to digital banking adoption. Online transaction security worries customers may think digital banking services are susceptible to cyberattacks and data breaches (Suh & Han, 2002; PwC, 2019). Building trust in digital banking requires strong security measures (Lee & Turban, 2001) and constant contact with clients (Martins, Oliveira, & Popovič, 2014).

Socioeconomic circumstances complicate digital banking. Different demographic groups engage with digital banking differently according to income, education, and technological availability (Olatokun & Igbinedion, 2009; Ozili, 2018). Digital devices and internet connectivity are scarce in rural and underserved areas, making these issues worse (World Bank, 2020). Expanding financial inclusion and addressing these

socio-economic issues requires cutting-edge tactics and inclusive policies to promote digital banking.

The TAM model and Diffusion of Innovations Theory help us comprehend digital banking uptake. TAM links technological acceptance to perceived utility and ease of use (Davis, 1989; Venkatesh & Davis, 2003), whereas the Diffusion of Innovations Theory emphasizes communication channels and social systems (Rogers, 2003). These theories guided the investigation of digital banking adoption hurdles and the conceptual foundation for this research.

2.7.1 PROPOSITION 1

This study proposes that technological literacy influences South African bank customers' digital banking adoption. According to the Technology Acceptance Model (TAM), perceived ease of use and usefulness promote technology adoption (Davis, 1989). Technology literacy is linked to digital banking (Yousafzai, Foxall, & Pallister, 2010; Laukkanen, 2016).

Digital literacy courses reduce technical literacy gaps, say Raman and Don (2013) and Mlitwa and Koranteng (2013). These courses may increase customers' digital banking confidence and skills, promoting adoption. Through targeted education, banks can help customers utilize digital and online banking.

2.7.2 PROPOSITION 2

Second proposition assumes that trust and security problems reduce South Africans' digital banking adoption. Suh & Han (2002) and Lee & Turban (2001) found that perceived risks and mistrust impact digital banking adoption. Banks must address trust and security problems because clients who see digital banking as risky are less likely to utilize it.

According to PwC (2019) and Martins et al. (2014), strong security and open communication build trust and decrease security concerns. Banks may protect

sensitive data and online transactions using two-factor authentication and encryption. Teaching customers about online security and the bank's security measures may increase confidence and digital banking uptake.

2.7.3 PROPOSITION 3

Third proposition presumes that Socio-economic barriers, including limited access to technology, low levels of education, and poverty hinder the adoption of digital banking services among South African banking customers.

Socioeconomic hurdles prohibit South African bank clients from embracing digital banking, the survey revealed. Technology, education, and poverty limit digital banking adoption, according to Mlitwa & Koranteng (2013) and Olatokun & Igbinedion (2009). By addressing socio-economic hurdles with targeted programmes and inclusive legislation, banks and regulators may boost digital banking adoption and financial inclusion.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 RESEARCH APPROACH

Saunders, Lewis, and Thornhill (2019:27) state that research methodology outlines the research process, measures progress, and defines success. It guides the researcher in framing the problem and objectives, and presenting outcomes from data analysis (Sileyew, 2019).

Additionally, it is described as a systematic method for collecting and interpreting data, which is subsequently analysed to derive meaningful findings (Sekaran and Bougie, 2016:50). Research methodology refers to the procedure commonly used to carry out research (Aaker, Kumar, Leone, and Day 2017:42).

This research deploys a qualitative approach to explore South African’s viewpoints, experiences, and attitudes towards digital banking (Creswell, 2014). Qualitative research examines people's motives and justifications, whereas quantitative research analyses numbers and statistics (Denzin & Lincoln, 2011). Lincoln & Guba (1985) note that qualitative research is inherently interpretive, requiring researchers to analyse data and draw conclusions from their observations. Newman & Ridenour (1998) add that qualitative studies often focus on a single subject, case, or unit over an extended period.

This qualitative research explores digital banking adoption and complexity. Researchers learn consumers' diverse opinions via interviews and focus groups (Merriam & Tisdell, 2015). This technique helps technical literacy, confidence, security, and socioeconomic disparity studies. Qualitative researchers might change data collecting depending on new results (Patton, 2015). Studying digital banking adoption requires adaptability since new themes and patterns may develop. Thus, qualitative research is suitable for this issue.

3.2 RESEARCH DESIGN

According to Vosloo (2014), a research design is a functional plan that links research methods and procedures to reliably collect data for empirical analysis, conclusions, and theory building.

Kidder & Selltiz (1981) define research design as the organisation of data collection and analysis to balance relevance and efficiency. It involves choosing methods that best test your thesis and, if needed, show causality (Jankowicz, 2000). This study will use a cross-sectional descriptive research design.

According to Hair, Bush & Ortinau (2010), this design collects raw data to describe the characteristics of a target group through systematic methods. Cross-sectional studies aim to be descriptive, typically using surveys (Levin, 2006), and sometimes examine relationships between risk factors and outcomes.

Case studies provide in-depth examinations of contemporary events in their natural setting (Yin, 2014). Case studies examine unique events and experiences to determine why South African bank clients don't use digital banking. A multiple-case study examines demographic groups' digital banking experiences. Compare and contrast these samples to see patterns and themes across demographics and groups (Stake, 1995). Document analysis, focus groups, and interviews support findings.

3.3 DATA COLLECTION METHODS

This research featured semi-structured interviews and document analysis as the research design for this study. They offer rich data structures and allow a deep dive into the features of digital banking adoption.

Semi-Structured Interviews: Digital banking experiences, viewpoints, and attitudes are discussed with the digital self-reports of professional users. This method allows researchers to investigate issues as they arise (Kvale & Brinkmann, 2009). Interviews address digital literacy, trust and security, and socioeconomic barriers.

Document Analysis: Document analysis examines bank data, policy papers, and marketing materials to better understand digital banking adoption. This strategy contextualizes and supports interview and focus group results (Bowen, 2009).

3.4 POPULATION AND SAMPLE

3.4.1 POPULATION

The population of this research is South African bank clients. This diverse population includes people of many ages, genders, economic levels, educational backgrounds, and places. Given South Africa's diversity, it's necessary to gather a broad variety of experiences and opinions to fully understand digital banking adoption barriers (Statistics South Africa, 2020).

3.4.2 SAMPLE AND SAMPLING METHOD

Purposive sampling was employed to identify participants likely to provide relevant and rich information about the research issues (Palinkas et al., 2015). Qualitative research benefits from purposeful sampling as it concentrates on key characteristics and experiences.

The sample includes 20 banking customers divided into different demographic groups to ensure diversity and representation.

The groups include young adults (18-30 years), Middle-aged adults (31-50 years), older adults (51 years and above), Low-income customers, Middle-income customers, High-income customers, urban residents, and Rural residents.

Participants were recruited using social media and community organizations. The researcher informed participants about the study's goal, their rights, both confidentiality and voluntary participation (Bryman, 2016).

A sample size was based on data saturation, which occurs when no new themes or insights emerge (Guest, Bunce, & Johnson, 2006). Integrating a broad sample and

utilizing several data-gathering techniques allows this research to identify digital banking adoption barriers in South African banks.

3.5 THE RESEARCH INSTRUMENT

This study adopts semi-structured interviews as data collection technique. The use of interviews helped acquire extensive, comprehensive qualitative data on what prevents South African bank clients from utilizing digital banking.

Semi-Structured Interview Guides: Semi-structured interview uses open-ended questions to get in-depth replies. The interview questions were divided into categories based on the objectives and propositions of the study - trust and security, and socio-economic constraints. This structure lets the interviewer go deeper into certain subjects and follow up on intriguing participant comments (Kvale & Brinkmann, 2009).

3.6 PROCEDURE FOR DATA COLLECTION

The data-gathering process for this study adopted the following several steps in order to be systematic and ethical.

Recruitment of Participants: Subsequently, participants were recruited based on a combination of purposive and snowball sampling. Initial participants were selected by certain criteria (age, income status, location). Those were then asked to refer other potential recruits that fit the study's requirements. By doing this, the approach ensures that a sample is diverse and representative (Palinkas et al., 2015).

Conducting Interviews: Participants were interviewed via semi-structured interviews in a quiet room to preserve confidentiality and minimize distractions. Each interview lasted for about 30 to 45 minutes.

Recording and Transcription: The consent of responses allowed the participation in audio-recorded interviews. Afterward, transcripts are generated from the recordings to maintain a faithful representation of participants' answers. The researcher reviewed and validated all transcriptions to ensure that there were no errors or omissions.

Ethical Considerations: This study is subjected to ethical considerations. A participant information sheet was issued to all participants stating the aims of the study, that their participation in this research is voluntary, and that they have the right to withdraw from the proposed interviews without any penalty. All participants received an informed consent form before data collection. All data is stored in confidence.

3.7 DATA ANALYSIS STRATEGIES AND INTERPRETATION

Data analysis in a qualitative study includes data organization, coding, and interpretation to find possible patterns and themes from the decoded information. The data gathered from the interviews was analyzed using a thematic analysis approach (Braun & Clarke, 2006).

Familiarization with the Data: The initial step in the analytics pipeline is data discovery. This involves reading and re-reading the transcriptions to establish an overview of all content and initial development for emerging themes from this analysis.

Coding: The second step, after data collection, is coding the data—identifying stretches of text by means of descriptive codes that encapsulate significant ideas and concepts within it. Open coding is used to generate as many codes as possible while also avoiding limiting the analysis based on predefined categories (Charmaz, 2014). Following completion of initial coding, codes were reviewed and refined to identify broader themes and sub-themes.

Identifying Themes: Based on commonalities and correlations, codes are categorized into themes. Themes are key data patterns relevant to research topics. Examples of technological literacy topics include "ease of use," "digital skills," and "technical support." Trust and security themes include "perceived risk," "privacy," and "bank reputation." Socioeconomic constraints include "access to technology," "income level," and "education."

Reviewing and Defining Themes: Themes were examined to verify if they appropriately reflect the data and are different. This required reviewing coded data

extracts for each topic to ensure adequate proof. To express their essence and significance to the study topics, themes were identified and designated.

Writing Up the Findings: Final step: write out results coherently and systematically. Provide extensive explanations of each subject with participant quotations. The results are analyzed considering the study aims and literature, emphasizing their importance and implications for digital banking uptake.

3.8 LIMITATIONS AND CHALLENGES OF THE RESEARCH

Ross and Zaidi (2019) define study limitations as aspects of research design that may affect results and underlying assumptions. Identifying these limitations contributes to transparency, transferability, and reproducibility. This study examined internet and cell phone banking due to their widespread use, and included participants who held accounts at ABSA, Capitec, First National Bank, Nedbank, Standard Bank, or Tyme Bank.

Several limitations and challenges that have affected the study are acknowledged.

Sample Diversity: Purposive sampling was tried for diversity, although total representativeness is difficult. Technology-challenged and rural populations may be underrepresented.

Time Constraints: The availability of research participants had an impact on planned timelines due to few postponements from participants. To manage this, the researcher allowed participants to schedule themselves at their time of convenience, including weekends and at night.

Qualitative research has limits, but good preparation and methodological rigor reduced them. The researcher acknowledged and addressed these constraints to get information into South African bank clients' digital banking uptake.

3.9 QUALITY ASSURANCE

Quality research is crucial, particularly in qualitative investigations where subjective data collecting and interpretation might introduce biases and inaccuracies. This section covers study quality improvement techniques, concentrating on external validity or transferability, internal validity or credibility, and reliability or dependability.

3.9.1 EXTERNAL VALIDITY OR TRANSFERABILITY

External validity or transferability measures how well a study's results may be applied elsewhere. Rich, thorough explanations in qualitative research help readers apply the results to their own circumstances (Lincoln & Guba, 1985).

Detailed descriptions of the research environment, participants, and data-collecting procedures improve transferability in this work. Included are demographic and socio-economic profiles of South African bankers. Purposive sampling captures a variety of views, increasing the likelihood that the results may apply to comparable circumstances (Shenton, 2004).

This study uses extensive, context-rich narratives to record participants' complicated experiences and viewpoints. By detailing the elements affecting digital banking adoption, other academics and practitioners may evaluate the results' applicability (Geertz, 1973).

3.9.2 INTERNAL VALIDITY OR CREDIBILITY

Findings' trustworthiness and credibility are called internal validity or credibility. Qualitative research credibility is attained by improving data quality and interpretation. Lincoln & Guba (1985).

Several strategies were employed to enhance the credibility of this study:

Triangulation: Triangulation checks and validates conclusions utilizing diverse data sources, methodologies, and viewpoints (Patton, 2015). Triangulation is used in this

research using semi-structured interviews, focus groups, and document analysis. The convergence of data from multiple sources strengthens the results.

Member Checking: To ensure accuracy and resonance, data and interpretations are returned to participants (Creswell & Plano Clark, 2017). Transcriptions and early findings helped to ensure that participants views are accurately represented.

Peer Debriefing: Discussing the research method and outcomes with peers or experts is peer debriefing (Lincoln & Guba, 1985). Regular debriefings were held with other researchers to enhance analysis, reveal biases, and build trust.

Prolonged Engagement: Long-term participation in the field is needed to create trust and knowledge of the study setting (Shenton, 2004). Multiple interviews throughout the research time provided long-term participation in this research.

3.9.3 RELIABILITY OR DEPENDABILITY

The consistency and stability of research outcomes are termed dependability. Qualitative research is trustworthy when it is well-structured and reproducible. Lincoln, Guba (1985).

Audit Trail: The audit trail captures data collection, coding, and analysis for all research operations (Shenton, 2004). By recording all research choices and activities, this study provides an audit trail for independent review.

Code-Recoding: Re-coding data at various times checks for coding consistency (Creswell, 2014). Multiple coders separately code the data and then compare and reconcile their codes in this research.

Reflexivity: Reflexivity entails researchers considering their biases, preconceptions, and impact on research (Patton, 2015). The researcher kept a reflective notebook to record their thoughts and avoid bias in the results.

3.10 ETHICAL CONSIDERATIONS

Qualitative research prioritize ethics to protect participants' dignity, rights, and well-being. The findings of this study are reported with integrity, and strict confidentiality is maintained to encourage open and truthful responses from participants, thereby enhancing the study's significance and relevance. Before participation, all individuals were fully informed about the scope and nature of the research. All data collected is handled with the utmost confidentiality, and no information is disclosed in a manner that could compromise participant privacy.

This research followed the institutional review board and professional association ethical criteria.

Informed Consent: All participants provided informed permission before data collection. An information leaflet informs participants of the study's goal, voluntary nature, and freedom to leave without penalty. Participants agreed to participate by signing consent papers.

Confidentiality and Anonymity: Data is securely stored to maintain confidentiality and anonymity. Only the researcher can access raw data.

Risk of Harm: Research themes and questions were not obtrusive or disturbing to reduce participant damage. Participants were told they could skip questions or leave the interview if they were uncomfortable.

Debriefing: After data collection, participants were debriefed to answer questions and depart the study site without stress. Participants will learn about the study's results and how their contributions were utilized.

Ethical Approval: Before starting the research, ethics applications, and approval were made and obtained from the ethics department of The University of Witwatersrand. The research proposal, instruments, and informed consent forms were examined for ethical compliance.

CHAPTER 4: DATA ANALYSIS AND RESULTS

4.1 INTRODUCTION

This chapter presents the findings of this research, organized according to the key themes and patterns that emerged from the analysis. These themes, as identified from the literature review, include technological literacy, trust and security perceptions, and socio-economic barriers as the main factors affecting the adoption of digital banking. These themes are further elaborated in relation to the propositions outlined in the theoretical framework for a nuanced understanding of the challenges faced by different demographic groups.

4.2 PARTICIPANT DEMOGRAPHICS

This section provides a critical overview of the participant demographics, which form the necessary background for understanding the diversity and representativeness of the research sample. Table 4.1 summarizes the key demographic characteristics of the participants.

Table 4.1: Participant Demographic Summary (N=20)

Demographic Category	Sub-category	Number of Participants
Age Group		
	18-30 years	4
	31-50 years	10
	51+ years	6
Employment Sector		
	Banking/Financial Services	4
	Telecommunications	4
	Manufacturing/Industrial	2
	Civil Service	1
	Education	2
	Other Sectors	7
Employment Status		
	Formally Employed	18
	Self-employed	2
Banking Relationships		
	Single Account	2
	Two Accounts	6
	Three Accounts	8
	Four or More Accounts	4
Primary Bank		
	FNB	7
	ABSA	6
	Standard Bank	4
	Capitec	2
	Nedbank	1

The sample composition reflects strategic choices to support the research objectives. The focus on economically active age groups (31-50 years) while including both younger (18-30) and older (51+) participants enabled examination of age-related

adoption patterns (Yousafzai, Foxall, & Pallister, 2010; Laukkanen, 2016). The urban-centric geographic distribution, primarily in the Johannesburg and Pretoria metropolitan areas, allowed investigation of digital banking adoption in contexts with well-developed infrastructure, though this limited rural perspectives (Mlitwa & Koranteng, 2013). The diverse representation across employment sectors, particularly in banking and telecommunications, provided insights into how professional exposure to technology influences digital banking adoption (Martins, Oliveira, & Popovíc, 2014).

4.2.1 PRESENTATION OF FINDINGS

The analysis revealed several key themes and sub-themes that align with the research objectives and propositions. Table 4.2 presents this alignment, providing a framework for the detailed findings discussed in subsequent sections.

Table 4.2: Alignment of Research Objectives, Propositions, Themes and Sub-themes

Objectives	Propositions	Themes	Sub-themes
Effect of technological literacy on the adoption of digital banking services	Technological literacy influences digital banking adoption	**Digital Competency**	• Digital skills and confidence levels • Professional technology exposure • Navigation challenges
		Training and Support	• Educational resources • Hands-on learning needs • Support accessibility
		Generational Factors	• Age-related comfort levels • Technology adaptation patterns • Support requirements
Impact of trust and security perceptions on digital banking adoption	Trust and security concerns influence digital banking adoption	**Security Issues**	• Cybersecurity concerns • Fraud experiences • Risk mitigation strategies
		Trust Elements	• Bank reputation • Security features • Communication effectiveness
		Authentication	• Biometric preferences • Traditional methods • Multi-factor authentication
Role of socio-economic factors in digital banking adoption	Socio-economic barriers affect digital banking adoption	**Access Issues**	• Device availability • Internet connectivity • Cost considerations
		Geographic Factors	• Urban-rural divide • Infrastructure availability • Network reliability
		Economic Barriers	• Income-related constraints • Banking costs • Resource requirements

4.3 TECHNOLOGICAL LITERACY AND THE ADOPTION OF DIGITAL BANKING

The first objective of this study is to establish how technological literacy influences the adoption of digital banking services among South African banking customers. This objective is linked to the first proposition that technological literacy influences digital banking adoption. Drawing from the thematic framework presented in Table 4.2, the analysis revealed three main themes: digital competency, training and support needs, and generational factors. These findings represent important pieces of the broader Technology Acceptance Model by Davis (1989), which stated that perceived ease of use and usefulness are principal determinants of technology adoption. The Diffusion of Innovations Theory from Rogers (2003) also informs how technological literacy may impact the adoption process among different demographic groups.

4.3.1 DIGITAL SKILLS AND CONFIDENCE

The study revealed sharp contrasts in the self-reported comfort levels of participants with technology, with some clear patterns emerging across demographic groups. Most participants under 50 years of age reported moderate to high confidence in their digital skills, especially when it came to basic banking functions. However, the data showed that confidence levels often did not align perfectly with actual technological proficiency. This agrees with findings by Raman and Don (2013), who stated that perceived overconfidence in digital literacy masks a lot of knowledge gaps, especially in the navigation of complex digital systems.

The relationship between professional exposure to technology and the adoption of digital banking became key. Regular exposure to technology in a professional setting made participants far more confident in trying out digital banking features. As Participant 12 (Female, 28, Telecommunications) explained:

> *"Working in telecommunications means I'm comfortable with technology. I find digital banking intuitive because I'm used to exploring new applications and features."*

This corroborates the findings of Martins, Oliveira, and Popović (2014), who reported that individuals with greater exposure to technology are more likely to adopt digital banking due to familiarity with digital instruments and platforms. Even for those who are confident in using technology, various challenges were found in the course of navigation through systems and feature discovery. Most of these issues related to functions about security, which generally require a higher level of digital literacy. Participant 7, Male, 45, Financial Services, described this shared frustration:

> *"Sometimes it's just not really getting an answer because you don't really know who else is there. People can hack your phone. They can do all sorts of things. So I always try to stay away from trouble."*

This sentiment reflects the broader concerns around cybersecurity and trust in digital banking, which are critical barriers to adoption, as discussed in Chapter 2 (Suh & Han, 2002; PwC, 2019).

The impact of network reliability on user confidence also emerged as a significant theme. Participant 16 (Female, 38, Manufacturing) described:

> *"Sometimes you just forget your password out of nowhere... and sometimes if your network is not strong enough, it's another challenge, especially when you want to make a quick transaction because you know sometimes things can be urgent."*

This finding affirms the imperative of good infrastructure in facilitating digital banking adoption in contexts where there is inconsistent network connectivity, as noted by Mlitwa & Koranteng (2013).

4.3.2 TRAINING AND SUPPORT NEEDS

A wide gap was observed in the analysis between the availability of educational resources and user needs. Although a number of training programs have been put in place by banks, these often do not meet users' needs. This gap became most evident

during the switch from traditional to digital banking services, as Participant 19 (Female, 52, Civil Service) explained:

> *"When we were converting from your normal cheque using cheque to digital banking, the education that we got, the training that we got, I felt it was not sufficient."*

This is further supported by the argument of Ramavhona and Mokwena (2016), who stated that for an effective transition into digital banking, complete customer education is important. The participants preferred practical, hands-on methods of learning to improve the ability of people to build up their digital literacy and confidence. Participant 4 (Male, 41, Energy Sector) shared:

> "*Something that's more practical and real time so that the customer will see. Because you could throw as many words as possible... but I think something that's more practical, invisible to the customer to see is a better option."*

Assessment of existing resources provided by banks proved to be inconsistent. Participant 15 (Female, 33, Banking) said:

> *"They are valuable depending if you want to use the service. Because the most recent one was always popping up on my on the app, but I wasn't aware until I saw it frequently just popping up."*

This finding underlines the need for more focused and user-oriented training programs, as pointed out in the literature review by Raman & Don (2013). Banks should make educational resources available, relevant, and customized to meet the needs of different user groups, particularly those with relatively low levels of technological literacy.

4.3.3 Age-Related Technology Gaps

The analysis identified clear generational patterns in digital banking adoption. Participant 2 (Male, 55, Religious Organization) observed:

"I've got 2 young adults now. So, they are not interested in going into a branch. They want to do everything on their phone and, it should everything should be available to them."

more likely to adopt digital banking because of their familiarity with technology, while older users face major challenges in adapting to digital platforms. Participant 9 (Female, 58, Retired) described their initial hesitation:

"Initially, scary because, you know, you're so used to go seeing a consult you know, filling out your deposit form and whatever. And everything becomes scary when it's introduced."

This reflects the broader issues older users experienced who generally lack confidence and skills required to navigate the digital banking systems as suggested by Laukkanen (2016). Successful adaptation strategies did emerge however, particularly where appropriate support had been provided: Participant 11 (Male, 49, Telecommunications) shared their experience:

"The transition from traditional to fully digital has made life an overall and positive experience for me. While there were some initial challenges and concerns, I now appreciate the convenience, efficiency and security that digital banking offers."

These findings indicate that age-related technology gaps create significant challenges but can be effectively responded to with appropriate support mechanisms and an understanding of particular user needs. The present study helps in evidencing the need for recognition and accommodation of different generational approaches toward the adoption of technology in digital banking strategies, while at the same time highlighting potential successes in transition when appropriate support systems are in place.

4.4 PERCEPTIONS OF TRUST AND SECURITY

The second objective of this study is to ascertain how trust and security concerns influence the adoption and use of digital banking services by customers. This objective is linked to the second proposition, that trust and security concerns influence digital banking adoption. As shown in Table 4.2, three main themes were generated under this objective: security issues, trust elements, and authentication preferences. These findings have been contextualized within the Technology Acceptance Model, highlighting perceived risk and trust as key antecedents to technology adoption (Davis, 1989). Diffusion of Innovations Theory by Rogers (2003) provides a theoretical framework on how trust and security concerns affect the adoption process in general, with relevance to the specific case of digital banking.

4.4.1 SECURITY CONCERNS

The results indicated profound security concerns among the participants, who showed different levels of anxiety about the safety of digital banking. These were often based on personal experiences and the awareness of general cybersecurity threats. Participant 5 (Female, 43, Financial Services) identified a basic concern:

> *"I don't think they really solve our problems, like the way it would be solved, like going to the branch. Yes, I know sometimes we just get so lazy to go to the branch. I mean, you get this is something that you think you can just solve with your phone by asking those questions, doing those emails."*

This reflects the broader issues of trust and security in digital banking highlighted in the literature review, from Suh & Han (2002) to PwC (2019). For most participants, general concerns were further exacerbated by direct fraud experiences that greatly influenced their security perceptions. Participant 14 (Female, 46, Banking) reported the following:

> "*I went through a very bad batch. It was coincidentally on the day that we received our salaries, it was early morning. I was getting ready for work. And*

the next thing I saw transactions going off my bank account... while speaking to the agent, the one transaction after the other after the other went off."

Such experiences also highlight the need for strong security measures and appropriate communication by banks in order to rebuild trust and confidence in general in digital banking platforms. Martins, Oliveira, & Popovi, (2014)

Different strategies of risk mitigation were used by the participants to protect themselves from the perceived security threats. Participant 8 (Female, 35, Telecommunications) explained her prudent behaviour:

"I don't prefer to use public Wi-Fi or connect to external networks. Even when I'm in a restaurant and it's load shedding, I can rather hotspot from my own mobile phone. I don't know who else is there or who might try to hack my information."

This behaviour is also in line with the findings of Laukkanen (2016), who postulated that perceived risks are a factor that could influence users to adopt precautionary measures, especially in an environment faced with cyber threats.

4.4.2 TRUST FACTORS

Bank reputation emerged as a crucial factor in building trust. Participant 3 (Male, 42, Manufacturing) emphasized institutional history:

"I trust my main bank because I've been with them since I've been in school. You've got to build that relationship and trust over time. Even with the digital platforms, knowing it's backed by a reputable institution makes a difference."

This finding is in line with the study of Lee and Turban (2001), which identified institutional trust as a significant variable to increase the adoption of digital banking. It brings into focus that trust in the reputation and reliability of the bank helps reduce perceived risks and thus increases the use of digital services.

However, security feature awareness varied significantly among participants. Participant 17 (Male, 39, Banking) highlighted opportunities for improvement:

> *"I think they are doing something, but there's room for improvement. They need to look at international best practices, how other countries secure customer information, and how they can upgrade their online banking and apps."*

The findings reveal that it is important for banks to implement best international practices in cybersecurity and effectively communicate such measures to customers. According to Martins et al. (2014), transparency and clear communication about security features are necessary in building trust and reducing perceived risks.

The effectiveness of communication regarding security measures received mixed reviews. Participant 1 (Female, 51, Civil Service) suggested:

> *"The banks need to be more proactive with their communication. When there's suspicious activity, they should have multiple contact methods - not just the primary phone number. We need backup verification channels for emergencies."*

This feedback evidence that pro-activity in communication is a method of addressing safety concerns and restoring trust. A bank should inform customers of the risks potentially arising and offer reliable channels through which customers can be supported in case of emergency (PwC, 2019).

4.4.3 AUTHENTICATION PREFERENCES

The participants also showed mixed reactions to authentication methods, reflecting the trade-offs between security and convenience. Biometric authentication using fingerprint and face recognition showed equal measures of enthusiasm and caution. Participant 20 (Male, 36, Technology) showed enthusiasm:

> *"I love biometric authentication. It's quick, convenient, and feels secure. If I don't remember my passwords, I can still use my fingerprint or face recognition.*

When it doesn't work, that's actually more frustrating than having to enter a PIN."

This positive perception is supported by the findings of Flaming and Jeník (2020), who established that biometric authentication increases user convenience without compromising on security. On the other hand, some participants had concerns about the potential risks of biometric authentication. Participant 13 (Female, 48, Education) explained:

"I'm very cautious about biometric authentication. What happens if someone forces you to use your fingerprint or face? At least with a PIN, you have some control over whether to share it under duress."

This concern reflects the broader debate around the trade-offs between convenience and security in digital banking authentication methods (Suh & Han, 2002).

Participants also showed preferences for PINs and passwords, often citing perceived control as a key factor. Participant 6 (Male, 53, Religious Organization) explained:

"I still prefer using PINs and passwords. Yes, they can be forgotten, but they can also be changed quickly if compromised. With biometrics, you can't change your fingerprint if it gets compromised somehow."

This indicates that the traditional authentication methods are preferred, and thus a range of options should be provided to meet comfort levels and security needs of customers.

Multi-Factor Authentication (MFA) was viewed to be a good security measure; however, participants indicated that a balance between security and convenience needs to be struck. Participant 10 (Female, 44, Telecommunications) reflected:

"Having multiple layers of security makes me feel safer, but it needs to be streamlined. Sometimes I need to do a transaction quickly, and going through multiple authentication steps can be frustrating. Banks need to find the right balance."

This finding supports the recommendations of PwC (2019), which called for the need to design user-friendly security measures that do not compromise customer experience.

4.5 SOCIO-ECONOMIC BARRIERS

The third objective of this study is to investigate the socio-economic barriers to the adoption of digital banking services among various demographic groups in South Africa. This objective is linked to the third proposition that socio-economic barriers affect digital banking adoption. As outlined in Table 4.2, the results revealed three main themes: access issues, geographic factors, and economic barriers. Such findings are located within the Technology Acceptance Model, which states that external variables such as socio-economic conditions play a vital role in shaping technology adoption (Davis, 1989). Moreover, the Diffusion of Innovations Theory by Rogers (2003) further details how socio-economic barriers affect the adoption process in the context of digital banking.

4.5.1 ACCESS CHALLENGES

The study found significant barriers in device availability and internet access across socio-economic groups. Similarly, Participant 11 (Female, 45, Civil Service) addressed device-related constraining factors as follows:

> *"Technology like smartphones, tablets to access these services are typically more expensive and may be perceived as intimidating or overwhelming from a user experience perspective. Users who are not in possession of such devices may therefore be excluded from making use of digital banking features and services."*

This is in line with the observations of Mlitwa and Koranteng (2013) when they asserted that high prices of digital gadgets coupled with unaffordable internet services reduce the ability, mainly among the poor and the most rural populations, to accept digital banking services. It was indicated in Chapter 2 that the digital divide is

persistent, where imbalances in access to technology and digital skills sustain the socio-economic inequality between classes within the economy of South Africa. World Bank (2020).

Internet connectivity emerged as another significant barrier. Participant 4 (Male, 38, Manufacturing) described his experience:

> *"In the areas that I normally go to, it's always connected. I don't experience any troubles on that. But when I go home to Eastern Cape, I'm really going to have those challenges. The network is very slow. I mean, sometimes you struggle to even log in."*

This finding underscores the geographic disparities in internet infrastructure, which disproportionately affect rural and underserved areas. As Olatokun and Igbinedion (2009) noted, limited access to reliable internet services hinders the ability of individuals in these areas to engage with digital banking platforms, further marginalizing them from the financial system.

Cost considerations also significantly influenced digital banking adoption. Participant 16 (Female, 52, Retail) explained:

> *"When you talk data, when you talk device, when you talk about maintaining these things, it becomes expensive for some people. Even if they want to do digital banking, they have to think twice about the costs involved."*

The findings bring to light the unequal geographical settings of internet infrastructure and how such unequal geographical settings disproportionately affect rural and underprivileged communities. In the words of Olatokun and Igbinedion (2009), inadequate access to the internet reduces the population's ability to use digital banking services and increases financial exclusion.

4.5.2 GEOGRAPHIC DISPARITIES

The research has shown striking contrasts between urban and rural experiences in the adoption of digital banking. Participant 8 (Male, 41, Banking) observed:

> *"If it's in a high traffic area, and where you've got your Wi-Fi sort of restrictions and all of that, that's where you get problems. When I go to Mpumalanga, particularly in the rural areas, the network in the village is always a problem."*

This supports the finding of Mlitwa and Koranteng (2013), who found that the problems of infrastructure in rural areas, where access to reliable internet and electricity is limited, affect the adoption of digital services. The urban-rural divide is a critical factor in shaping the pattern of digital banking adoption, since urban areas have better infrastructure and higher levels of digital literacy compared to rural regions (World Bank, 2020).

Participant 19 (Female, 35, Telecommunications) further elaborated on the challenges faced in rural areas:

> *"In the urban areas, you have got more consistency in terms of that and reliability in terms of that. But when you go to the outskirts, you struggle. Sometimes you have to walk outside of the establishment where we were, walking in the parking area just to get a signal."*

This finding calls for the development of infrastructure in rural areas to bridge the digital gap and facilitate financial inclusion. Ozili (2018) added that an improvement in internet connectivity and access to digital devices in deprived regions is required to facilitate broader participation in the digital economy.

Network reliability issues varied significantly by location, further complicating the adoption of digital banking services. Participant 3 (Male, 48, Financial Services) shared:

> *"During the day, sometimes you find that it's the line is very busy, and the response is slow. But when I transact after hours, I tend to find that it goes*

quicker. So it's not like something that would actually prevent me from maybe doing what I wanted to do."

This observation points to temporal variability in network performance, which may influence user experience and generally discourage the use of digital banking platforms, at least in areas where infrastructure is still a challenge.

4.5.3 ECONOMIC FACTORS

Income-related barriers emerged as a significant theme in the analysis. Participant 7 (Female, 42, Education) observed:

"People from the middle and upper class would typically be more interested in banking digitally because they are usually repeat internet users as well, due to their higher income level. Those with lower incomes often struggle with the basic requirements for digital banking."

This finding aligns with the literature on socio-economic barriers to digital banking adoption, which highlights the role of income and education in shaping individuals' ability to access and use digital services (Olatokun & Igbinedion, 2009; Ozili, 2018). Higher-income individuals are more likely to have access to digital devices and internet services, enabling them to engage with digital banking platforms more effectively.

Banking costs also impacted digital banking adoption. Participant 13 (Male, 39, Retail) explained:

"With manual banking, when you transact and you deposit cash, you've got the cash deposit fee that you pay depending on how much you are transferring. But now with online or digital banking, if both parties are online, the transaction fees are very minimal."

This observation highlights the potential cost savings associated with digital banking, which can make it an attractive option for individuals seeking to reduce banking fees. However, as Participant 15 (Female, 47, Civil Service) noted, the resource

requirements for digital banking can still pose significant challenges for low-income individuals:

> *"It's not just about having the app or knowing how to use it. You need reliable electricity, good internet connection, a proper smartphone, and the ability to maintain all these resources. For many people, these basic requirements are already a challenge."*

This finding underscores the interconnected nature of socio-economic barriers, where access to resources, geographic location, and income levels often overlap to create significant obstacles to digital banking adoption.

4.6 DIGITAL BANKING USE PATTERNS

This section examines the usage patterns that emerged across all three research objectives, providing insights into how technological literacy, trust perceptions, and socio-economic factors manifest in actual digital banking behavior. The revealed three distinct usage groups: primary digital users (twelve participants), hybrid users (five participants), and limited digital users (three participants). These patterns are contextualized within the Technology Acceptance Model, which emphasizes the role of perceived usefulness and ease of use in shaping technology adoption (Davis, 1989). Furthermore, the Diffusion of Innovations Theory by Rogers (2003) presents a systematic guideline for explaining how digital banking use develops over time, considering the transition from traditional to digital services.

4.6.1 DIGITAL BANKING USAGE PATTERNS

The analysis of the participants' digital banking usage patterns produced large variation in three distinct use groups. The first was a group of twelve primary digital users who had frequent use of mobile banking applications, were very comfortable transacting online, and used very few in-branch services. This finding corroborates the study by Laukkanen (2016), who identified a new, growing segment of technologically savvy customers who would rather use digital channels because of

their convenience and efficiency. Five participants demonstrated hybrid usage patterns, wherein they used digital and traditional banking services but also continued to visit the branches regularly for certain transactions. This group of customers represents a transition phase for most customers who gradually adopt digital banking due to lingering trust and security concerns (Suh & Han, 2002; PwC, 2019). In this light, three participants showed rather less engagement digitally, exhibiting very strong preference for traditional branch banking and displaying low comfort levels in digital platforms. This is quite symptomatic of continuing barriers to adoption of digital banking, particularly from older, and less technology literate, customer groups (Raman & Don, 2013).

4.6.2 CURRENT USAGE

The analysis showed different preferences in the choice of banking channels, with mobile applications emerging as the most used channel by the participants. Participant 2 (Female, 36, Banking) described her usage pattern:

> *"I prefer mobile app. I don't even know my credentials for Internet banking. Yeah. That's how bad it is. It is. It saves time, and it's more it's more easy to understand."*

This preference for mobile banking is supported by the findings of Laukkanen (2016), who observed that mobile applications are increasingly preferred because of their convenience, easy access, and user-friendly interfaces. The shift towards mobile banking reflects broader trends in digital transformation, where customers prioritize platforms that offer seamless and efficient experiences (Puschmann, 2017).

The nature of transactions on these digital platforms varied considerably. Participant 9, Male, 43, Telecommunications, described his usage thus:

> *"I use it for everything - paying bills, sending money to family, checking balances. The only time I don't use digital banking is for very large transactions. For those, I still prefer going to the branch for security reasons."*

This observation shows that many digital banking users exhibit dual-channel behavior, combining digital and traditional services based on the nature and perceived risk of the transaction. As Suh and Han (2002) mentioned, security concerns often drive customers to prefer in-person interactions for high-value or complex transactions, even when they are comfortable using digital platforms for routine tasks.

Frequency of use showed interesting patterns, with many participants engaging with digital banking platforms multiple times a day. Participant 17 (Female, 41, Financial Services) shared:

> *"I might go into my app 4 or 5 times in a day just to check different things. If I had to walk into a branch that many times, I'd be frustrated. I think the branch staff would be frustrated too. Digital banking just makes everything more efficient."*

This high frequency of use underscores the convenience and efficiency of digital banking, which enables customers to manage their finances in real-time without the need for physical branch visits (Martins, Oliveira, & Popovič, 2014).

4.6.3 BRANCH DEPENDENCE

Despite high digital adoption, several services still require branch visits, especially in the case of complex issues or transaction verifications. As explained by Participant 11 (Male, 55, Manufacturing):

> *"The only time when I visit the bank is when I have issues. Like, maybe there was some fraud that actually took place. Or the cyberattacks sort of thing. For normal transactions, I never go to the branch anymore."*

This reliance on branches for specific services reflects the limitations of digital platforms in addressing certain customer needs, particularly those requiring personalized assistance or face-to-face interaction (PwC, 2019). As Participant 4 (Female, 49, Civil Service) said:

"If I'm required to, like, verify something, then I would go to the bank. But most of the transactions, I do them online. Or, like, when you need to verify intercountry transfers or large amounts."

This observation underlines the continued relevance of branches in the digital banking ecosystem, especially for services requiring high levels of trust, security, or regulatory compliance.

Transition challenges were evident in the shift from branch to digital services. Participant 13 (Male, 38, Retail) described:

"Previously, like, when we used to have check accounts, one would need to get signatures from multiple people. Now with digital, you just need to get all the relevant parties to do the approvals online. It's much more efficient, but it took time to adjust to this new way."

This points to the significance of transition support programs that would help customers adjust to digital banking. Raman and Don (2013) have observed that proper training and guidance during the transition period are vital components of any transition process if customer experience and sustained use of digital services are to be ensured.

4.6.4 FEATURE USAGE

The study showed a pattern in the use of features; some capabilities were used more often than others. Participant 8 (Female, 44, Technology) said:

"The nice part about digital banking is that you can have your beneficiaries saved. So you don't have to go through the same process over and over again. The only thing you check is that you're paying the correct amount."

This finding reveals how the characteristics of digital banking introduce convenience and speed up routine tasks in order to enhance customer experience. At the same time, underused capabilities were typically associated with a lack of awareness. As participant 15, a 46-year-old male banker, said:

"I think I don't even use half of what's available on the app. Sometimes I discover new features by accident, like the ability to create virtual cards or set up recurring payments. The functionality is there, but we don't always know about it."

This finding points to the importance of feature communication and education strategies in ensuring that customers are aware of and can use the capabilities of digital banking platforms (Ramavhona & Mokwena, 2016).

The awareness of features among users varied, with some participants not knowing how to navigate through the digital platforms. Participant 6 (Female, 52, Education) explained:

"When the banks were stopping sending us the manual bank statements, they just sent us a communicator. By the time I wanted the statement, I had to call them because I didn't know how to find it on the app. The education wasn't there."

This observation underlines the necessity for customer education to enable them to switch to digital banking. Yousafzai, Foxall, and Pallister (2010) have argued that clear, accessible guidance through digital platforms is necessary for the development of customer confidence in using such facilities.

4.7 CUSTOMER SUPPORT EXPERIENCE

This section examines customer support experiences, which are particularly relevant to both the first objective (technological literacy) and second objective (trust and security) of this study. The analysis of support mechanisms connects directly to the training and support theme identified in Table 4.2, while also influencing trust development in digital banking services. These findings are contextualized within the Technology Acceptance Model, which emphasizes the importance of perceived ease of use and support in shaping technology adoption (Davis, 1989). In addition, the

Diffusion of Innovations Theory by Rogers (2003) explains how effective customer support influences the adoption and sustained use of digital banking services.

4.7.1 CHANNEL PREFERENCES FOR SUPPORT

The support channel preferences exhibited variation among participants, with an emergent pattern across the nature and urgency of issues related to banking. Participant 7 (Female, 45, Banking) expressed a recurring sentiment about support preferences:

> *"I think that services have improved whenever there's a situation of fraud or customer dissatisfaction. They normally respond quicker, and they attend to the matter. I think on services, they are very good. The diligence, it's better."*

This observation is crucial since responsive and effective support for issues like fraud can easily determine the level of customer trust and satisfaction in services (Suh & Han, 2002). However, satisfaction with response time was very inconsistent among participants. Participant 12 (Male, 38, Telecommunications) reported:

> *"I wouldn't expect delays. That's the number one concern. Because I feel like with banking, the more delays you get from the banker, the more you panic or the more chances of something going wrong happens. So if they can maybe speed up the process, even though I know it's a bit of a challenge."*

This finding highlights the importance of providing prompt and efficient support in digital banking, as delays can heighten customer anxiety and diminish trust in the platform (PwC, 2019). Martins, Oliveira, and Popovič (2014) emphasize that effective customer support plays a vital role in sustaining user confidence and promoting ongoing use of digital services.

The effectiveness of the resolution emerged as another important factor in support satisfaction. Participant 3 (Female, 52, Financial Services) shared the following elaborate view:

"When you phone in and I have a problem to want to, maybe say, apply for a loan or something, and then your bank declines your application. The next thing you start getting calls from these companies that will tell you, no. We received the information from your bank. We wish to help you. That isn't what I expect from customer support."

This observation supports the relevance of clarity and consistency in customer support. According to Lee and Turban (2001), customers require support channels for information when either financial decisions are involved or sensitive personal information is at stake.

4.7.2 EDUCATIONAL RESOURCES

The use of tutorial resources varied quite a bit across the participants. Participant 19 (Male, 41, Manufacturing) reflected on his experience thus:

"The app is straightforward and its user friendly. But, for now, I don't have concerns. The notifications that we get, the power the pop ups, sometimes when you open the app, you are giving tips, like, oh, no. It's festive. Like, currently, it's festive. We are even giving tips of, like, no, just be on the lookout for this."

This observation assessed the potential of in-app notifications and tips to improve user experience and support in a timely manner. However, the usefulness of these resources often relies on how relevant and clear they are, as Participant 15 (Female, 36, Civil Service) observes:

"I think with tutorials, no. But they frequently ask questions. I think they're always going to be valuable in in any situation, and, especially when you also realize, no, actually, a lot of people experience the same thing that I'm experiencing. And then you can get a quick answer before you even try to escalate it."

The result underscores how contextual and actionable the educational resources are required to be about common user concerns and practical solutions. As pointed out by Raman and Don (2013), good educational resources close the gap of technological literacy with digital banking adoption, at least for those users who possess low levels of digital skills.

Learning preferences among the participants varied widely. Several were eager to get somewhat more personalized approaches. For instance, Participant 8 (Male, 49, Banking) explained in detail:

> *"I find there's not much education around that, how that benefits me as a customer because it says, do you accept cookies? And because I've logged in and it's my bank and I want to trust, I always say, yes. But really explaining to customers what it is, what that you are accepting, how that works, and how that benefits you as a customer, it's not something that the banks normally do."*

This observation has further supported that customer education needs personalized, transparent communication. According to Yousafzai, Foxall, and Pallister (2010), understanding how specific digital features and processes benefit customers serves to increase their engagement on the platforms.

The findings show a number of possibilities for enhancing customer experiences related to support in digital banking. While valuable in their own right, traditional mechanisms of support often cannot meet the immediate expectations of digital banking users. Participant 5 (Female, 43, Telecommunications) summarized this challenge:

> *"The education wasn't there to say, now we are no longer email statement. You will find them when you go this way, give you the menu part. That is the type of education that I'm saying. If you are not working with this thing, you will only realize when you need that kind of information."*

The findings indicate that effective customer education should be proactive and comprehensive to assist customers in transitioning smoothly to digital banking. In

support, Ramavhona and Mokwena (2016) post that banks are supposed to create awareness among customers when there are changes on digital platforms and clearly explain how such changes can be accessed and utilized.

4.8 KEY BARRIERS TO ADOPTION

The fourth objective of this study is to highlight barriers to the adoption of digital banking, including various primary and secondary obstacles. These findings are contextualized within the Technology Acceptance Model, which stipulates that external variables such as technical barriers, trust, and access influence the adoption of technology. Davis (1989). Moreover, the Diffusion of Innovations Theory by Rogers (2003) provides a theoretical framework to understand how such barriers interact with each other to influence the adoption process in digital banking.

4.8.1 PRIMARY BARRIERS

The study identified three fundamental barriers impeding the adoption of digital banking: technical barriers, trust barriers, and access barriers. These are the major underlying barriers that somewhat confirm findings by previous studies to have identified infrastructure, trust, and accessibility as critical variables determining the adoption of digital banking services (Mlitwa & Koranteng, 2013; Olatokun & Igbinedion, 2009).

The main issues that kept cropping up regardless of the participant groupings were technical barriers. For example, Participant 11 (Female, 46, Financial Services) articulated this challenge:

> *"Network connectivity is a major issue, especially in certain areas. When we are here in the urban areas, the speed of network, the ability to check your balances, transfer funds or pay bills is seamless. But in rural areas, the network is very slow. Sometimes you can't even log in."*

This is indicative of the irregular geographical division in internet infrastructure that has been very dire in most rural and underprivileged areas. According to Mlitwa and

Koranteng (2013), limited access to reliable internet services decreases the likelihood of using digital banking platforms among people in such areas and worsens their marginalization from the financial system.

Trust barriers represented another major barrier to adoption. Participant 3 (Male, 52, Banking) provided the following view:

> *"The bank can try and put systems in place and whatnot. But if I'm not careful with where and who I share these things with, that's where the problem comes in. People click on certain links that would prompt them to put in their banking transaction details for whatever reason, and they easily fall for those kind of things."*

This view is indicative of the general concerns regarding cybersecurity and trust in digital banking, which are considered crucial barriers to adoption, as seen in Chapter 2 (Suh & Han, 2002; PwC, 2019). For customers to have confidence in digital banking, there needs to be appropriate security and clear communication about how customer data is protected (Martins, Oliveira, & Popovi, 2014).

Access barriers presented substantial challenges for many participants. Participant 16 (Female, 38, Telecommunications) described the multifaceted nature of access issues:

> *"It's not just about having a smartphone. You need reliable electricity, stable internet connection, and enough data to perform transactions. When any one of these elements fails, the entire digital banking experience becomes compromised. Many people struggle with maintaining all these requirements consistently."*

This finding indicates the interlinked nature of access barriers, where economic constraints, geographic location, and infrastructure limitations often combine to pose serious challenges to the adoption of digital banking (World Bank, 2020). According to Ozili (2018), these barriers can be overcome with a holistic approach that takes into consideration all types of challenges faced by people from different walks of life.

4.8.2 SECONDARY BARRIERS

In addition to the primary barriers, other secondary barriers that emerged from the research included educational, cultural, and process barriers. Most often, these secondary barriers compound the primary barriers and add to the mishaps of adoption of digital banking.

Educational barriers were important in the adoption patterns. Participant 8 (Male, 43, Manufacturing) explained:

> *"The training provided during the transition to digital banking was insufficient. We received a basic overview, but when actually using the system, many questions arose that weren't covered in the initial training. People need more comprehensive education about these systems."*

This observation is consistent with the conclusion reached by Ramavhona and Mokwena (2016) that effective customer education is important in facilitating a shift to digital banking. In the absence of proper training and support, customers may have difficulty using the digital platforms; they may subsequently become frustrated and resist using the services (Raman and Don, 2013).

Equally important are cultural barriers, expressed in the resistance to adoption. The following reflects participant 14 (female, 55, Civil Service):

> *"Many older customers prefer face-to-face interaction. There's a cultural aspect where people want to build relationships with their bankers. Digital banking removes this personal element, and for some customers, this represents a significant loss in their banking experience."*

The results show that the factors of culture and generation affect the adoption of digital banking. According to Yousafzai, Foxall, and Pallister (2010), elderly customers prefer traditional banking methods because they are used to it and know most of the bank personnel personally. In dealing with these cultural barriers, balance between benefits

brought by digital banking and personalized interaction with customers needs to be balanced.

Process barriers emerged as another significant challenge. Participant 6 (Male, 41, Technology) detailed his experience:

> *"The process of setting up digital banking can be overwhelming. From registration to authentication, to learning various features - each step presents its own challenges. Even something as simple as resetting a password can become a complex process requiring branch visits or lengthy calls to customer service."*

This observation underlines how important it is to streamline the processes of digital banking in order to enhance the user experience and reduce friction during the adoption process. According to Laukkanen (2016), complex or difficult processes may prevent customers from using digital platforms, especially those who have limited technological literacy.

The study showed that these barriers sometimes interact and are compounding on each other. Participant 19 (Female, 48, Education) captured this interconnection:

> *"It's rarely just one issue that prevents people from adopting digital banking. Technical problems combine with trust concerns, access issues overlap with educational gaps, and cultural preferences influence how people perceive and interact with digital services. Addressing any single barrier in isolation may not be sufficient to promote adoption."*

This finding brings to the fore the need for a holistic approach in addressing the barriers to digital banking adoption. As Participant 1 (Male, 45, Financial Services) suggested:

> *"Banks need to understand that different customer segments face different combinations of these barriers. A one-size-fits-all approach to addressing these*

challenges won't work. We need targeted strategies that consider the specific barriers faced by different customer groups."

4.9 CHAPTER SUMMARY

This research has presented complete findings from a qualitative research study exploring the factors inhibiting the adoption of digital banking services among banking customers in South Africa. Semi-structured, in-depth interviews with 20 participants from different demographic and socioeconomic backgrounds resulted in several key themes related to barriers to the adoption of digital banking. These findings are framed within the Technology Acceptance Model and the Diffusion of Innovations Theory, setting a theoretical framework for the interplay between technological, psychological, and socio-economic factors in shaping digital banking adoption (Davis 1989; Rogers 2003).

Three interrelated key barriers emerged from the analysis: technological literacy challenges, trust and security concerns, and socio-economic constraints. These three barriers are related to this study's research objectives.

This analysis shows that these barriers are closely interlinked, with the technical challenges increasing trust issues and socio-economic constraints frequently overlapping with access limitations. These findings indicate that the barriers to the adoption of digital banking can be addressed through comprehensiveness and a holistic approach that acknowledges the interrelatedness of such challenges.

CHAPTER 5: DISCUSSION

5.1 INTRODUCTION

This chapter discusses the findings of research into the factors that hinder South African customers from using digital banking. This research unravelled linkages that connect technological literacy to trust and security considerations, and socio-economic factors, which act to alter the pattern of adoption. Further explores critical barriers to adoption, particularly among older and less technologically savvy users. It then follows with the section on trust and security concerns regarding digital banking, emphasizing that robust security with effective communication has to be undertaken for customer confidence to be developed. Lastly, reviews socio-economic barriers, which predominantly affect low-income and rural populations, indicating a need for focused interventions in bridging the gap.

5.2 TECHNOLOGICAL LITERACY AND DIGITAL BANKING ADOPTION

The analysis of how technological literacy influences the adoption of digital banking revealed striking patterns in how digital competency shapes customer banking behavior in South Africa. The findings underline how technological literacy is a major determinant of digital banking adoption, especially in this current era when digital transformation is sweeping across the sector.

5.2.1 DIGITAL SKILLS GAP ANALYSIS

The results of this research revealed sharp contrasts in digital competency levels across different user segments. As evidenced in the findings, participants demonstrated varying levels of comfort with digital technologies, with a notable skills gap emerging particularly among older users and those with limited technological exposure. This observation aligns with Raman and Don's (2013) assertion about the relationship between digital literacy and technology adoption. They argued that perceived overconfidence in digital literacy often masks significant knowledge gaps, particularly in navigating complex digital systems. This was evident in this study,

where participants who reported moderate to high confidence in their digital skills often struggled with advanced features such as security settings and multi-factor authentication. This is evident among users who are savvy with technology. However, such users may encounter challenges when trying to implement certain more complex security features and advanced banking functions, which may indicate that a digital skills gap is probably tiered.

This again confirms the assertion by Laukkanen, (2016), that whereas for simple transactions, basic digital literacy could be sufficient; more advanced-order functionalities do indeed require a higher level of technical skill than most customers presently possess.

5.2.2 IMPACT OF PROFESSIONAL TECHNOLOGY EXPOSURE

The professional exposure to technology emerged as a key driver in determining the nature of digital banking adoption. These findings confirm the observation made by Martins, Oliveira, and Popović (2014) that frequent use of technology at work significantly engenders confidence in the use of digital banking platforms. People working in technology-intensive fields like telecommunications and financial services showed much higher comfort levels with features of digital banking and were more likely to try advanced functions. This would, therefore, mean that workplace exposure to digital tools implicitly acts as a form of training in itself, building skills and confidence that can easily be transferred into effective navigation through digital banking systems.

However, this study also revealed that among professionally exposed users, certain challenges persisted. For instance, technologically literate users persist in challenges related to trust and security. It further reiterates the fact that banks need to clearly provide guidance regarding security features, as cited by Raman and Don (2013).

.

5.2.3 AGE-RELATED TECHNOLOGY ADOPTION PATTERNS

The age variable emerged as the significant determinant of digital banking adoption, with clear generational patterns in the data. Younger participants, normally referred to as "digital natives," demonstrated an easy affinity for digital platforms, while older users faced significant challenges in adapting to digital banking systems.

Older users encounter significant learning curves and may require additional support to gain confidence in using these digital platforms. This reflects the broader challenges faced by older adults, who typically feel less confident and capable when navigating digital banking systems, according to Laukkanen (2016). However, it has also been shown that older users can successfully transition to digital banking if they are provided with the necessary assistance.

5.2.4 EFFECTIVENESS OF EDUCATIONAL SUPPORT AND TRAINING

This study identified significant gaps between the available educational resources and user needs. Most participants appeared dissatisfied with the training provided by banks, especially during the transition from traditional banking to digital banking as not sufficient.

The finding confirms Ramavhona and Mokwena's (2016) assertion that effective customer education regarding all aspects will facilitate the adoption of digital banking. These findings indicate that the nature of the training needed for customers is rather practical, with hands-on experience than mere theoretical training.

5.2.5 IMPLICATIONS ON TECHNOLOGY ACCEPTANCE MODEL - TAM

These results support basic notions of Davis's 1989 Technology Acceptance Model but extend these to suggest significant moderation of the basic relationships between perceived usefulness, ease of use, and adoption by the levels of technological literacy. The results here show clearly that technical competence is a critical enabler for positive perceptions regarding both usefulness and ease of use, thus showing relationships that may be more complex than those in the original formulation of TAM.

For example, highly technologically literate subjects are more likely to find digital banking useful and easy to use, while less technologically literate subjects often view the platforms as intimidating and challenging to use. This again falls in line with the extension to TAM provided by Venkatesh et al. (2003), where "facilitating conditions" became a determinant of technology adoption. From this perspective, the facilitating condition driving users' perceptions toward digital banking platforms can be defined as technological literacy

5.3 PERCEPTION OF TRUST AND SECURITY

The analysis of trust and security perceptions showed a complex inter-relationship between user confidence, security measures, and digital banking adoption patterns. This section confirms how these perceptions affect the adoption decisions and usage patterns of South African banking customers. These findings underline the critical role that trust and security play in shaping users' willingness to adopt and engage in digital banking platforms, especially within an increasingly threatened environment by cybersecurity incidents.

5.3.1 EVOLUTION OF SECURITY CONCERNS

The results under this section reflect that the level of security concern has shifted; participants in this study showed better awareness of cybersecurity threats.

Trust and security concerns according to Tarhini (2015) and Sathye (1999) are among the reasons for the non-adoption of digital banking. Based on these results, the study was able to answer the question that most participants have issues of security concern with digital banking platforms. Lack of digital literacy and security concerns do contribute to the adoption of digital banking.

This is supported by the observations of Suh and Han (2002) and recent research from PwC (2019), demonstrating that cybersecurity concerns continue to be one of the key drivers in users' digital banking behaviors. It is further observed that these are usually followed by conservative usage behavior, such as avoiding high-value

transactions. Most respondents preferred to perform large transactions in branches due to their lack of confidence in the security of digital platforms. This finding resonates with Laukkanen's (2016) observation that perceived risk is a significant barrier to digital banking adoption, particularly among users who are less familiar with digital security measures.

5.3.2 THE INFLUENCE OF PERSONAL FRAUD EXPERIENCES

Personal experience of fraud was one of the leading factors that defined perceptions of trust. The experiences of participants indicate how direct fraud incidents may fundamentally alter the confidence of users in the use of digital banking systems. These findings confirm that security incident handling is instrumental in perpetuating users' confidence, as established by Martins et al. (2014). Accordingly, fraud experience increases the likelihood of precautionary measure adoption, such as avoidance of public Wi-Fi and using additional authentication layers.

5.3.3 AUTHENTICATION PREFERENCES AND USER EXPERIENCE

The results under this section showed mixed attitudes toward authentication methods, pointing out the tension between security and convenience.

The diverging perspectives illustrate the greater debate over the trade-offs in security and convenience between various forms of authentication in digital banking. While biometric authentication is touted for its ease of use, concerns over its possible vulnerabilities raise scepticism, especially among users who place a premium on control over their personal data. This result supports the arguments of Suh and Han (2002) that user preference for one form of authentication over another is guided by perceived control and security.

5.3.4 BANK REPUTATION AND TRUST BUILDING

Bank reputation emerged as a crucial factor in building trust where the established relationships between customers and banks facilitate the acceptance of the service in some new digital way. The results showed that participants were more likely to trust digital platforms from banks with long-standing relationships, thus showing that the institution's reputation is a key factor in alleviating perceived risks.

5.3.5 EFFECTIVENESS OF COMMUNICATION REGARDING SECURITY ISSUES

This study highlights the various levels of effectiveness within bank security communications. The study found that participants placed a high value on clear and transparent communication of security measures taken by the banks, especially in cases where there was suspicious activity. However, many participants reported dissatisfaction with current strategies employed by banks, adding that most of the time, they were left in the dark concerning potential security threats.

The analysis finds that one of the major drivers in the adoption of digital banking is the perception of trust and security, which is related to personal experience, authentication preference, and the institution's reputation. These results imply that effective security measures must balance user convenience and transparency regarding security concerns.

5.4 SOCIO-ECONOMIC BARRIERS AND FINANCIAL INCLUSION

Analysis of the socio-economic barriers has indicated that marked access and adoption disparities exist in digital banking across various demographic segments of South African society. This section analyzes such barriers to financial inclusion and patterns of digital banking adoption. These findings bring to the fore complex interactions between economic constraints, infrastructure limitations, and demographic factors while shaping digital banking adoption, particularly within a country characterized by striking socio-economic inequalities.

5.4.1 URBAN-RURAL DIGITAL DIVIDE

This study revealed sharp contrasts in the experience of digital banking adoption between urban and rural settings.

This study found that rural areas face many disadvantages, as a significant lack of reliable internet connectivity and digital infrastructure hinders the adoption of digital banking. This observation supports the findings by Mlitwa and Koranteng (2013) on the disparities in infrastructure between urban and rural areas. This is further supported by the World Bank (2020), which indicated that the digital divide in South Africa has been persistent over time, especially within rural and underserved areas. In these areas, the absence of reliable internet access and digital devices is a major hindrance to the adoption of digital banking, further exacerbating inequalities in financial inclusion.

5.4.2 INCOME-RELATED ACCESS BARRIERS

Income appeared to be an important determinant for accessing digital banking services. Low-income earners often face major obstacles in digital banking adoption, such as the cost of smartphones, data plans, and other digital resources. This finding is supported by the research of Olatokun and Igbinedion (2009) on the impact of economic constraints on the adoption of digital banking, highlighting how income levels affect access to technology and, in turn, the likelihood of engaging in digital banking. This further aligns with Ozili's (2018) argument that income and education levels are key drivers of digital financial inclusion, with lower-income groups being disproportionately excluded from digital banking services.

5.4.3 INFRASTRUCTURE CHALLENGES

Infrastructure limitations were a major obstacle, especially concerning service reliability. Geography can play an important role in the accessibility of digital banking. This is corroborated by the fact that during this study, the rural participants revealed that poor and erratic network coverage with intermittent power supplies hampered their efficient use of digital banking platforms. These challenges are particularly

profound in rural and underserved areas, where reliable electricity and internet access remain out of reach. This corroborates the observation made by the World Bank (2020) on infrastructure inequalities in South Africa.

5.4.4 COST IMPLICATIONS OF DIGITAL BANKING

This research revealed several complex relationships that exist between the costs of banking and digital adoption, especially for the low-income segment of the population. While digital banking may be cheap in terms of transaction fees, the cost of setting up and maintaining the requisite digital infrastructure is quite prohibitive for many users. This corroborates the argument of Mlitwa and Koranteng (2013) that economic constraints, such as the cost of digital devices and internet access, are among the main barriers to the adoption of digital banking among low-income and rural populations. The literature review supports the results of Rees (2021), who suggests that the bank branch closure can be attributed to the growth in digital banking as the main driver toward operational and other cost drivers. This study was able to answer the effectiveness of educational support and training. The researcher, however, accepts the above result with confidence due to personal experience during the digital adoption drive.

5.4.5 DEMOGRAPHIC GROUP VARIATIONS

The results showed that the level of digital banking adoption differed significantly within demographic categories. There were noticeable differences across age groups, income levels, and geographic areas. This research supports previous findings of Ozili (2018) about the relationship between demographic factors and digital financial inclusion; however, it also focuses on those issues that have been problematic in South Africa. For example, older participants and those from rural areas were less likely to adopt digital banking due to technological literacy gaps, infrastructure limitations, and economic constraints. Younger, urban, and higher-income participants showed greater levels of digital banking adoption, reflecting their greater access to digital resources and familiarity with digital technologies.

The findings have demonstrated that socio-economic barriers are indeed a key determinant of the pattern of digital banking adoption, thus having implications for financial inclusion efforts in South Africa.

5.5 INTEGRATION OF BANKING CHANNELS

The following section analyses how South African banking customers integrate different banking channels into their financial lives and investigates the interrelationship between traditional and digital banking services. Results indicate that, while there is a significant uptake of digital banking, most customers still opt for a mix of digital and traditional channels in their choice of banking. A more subtle approach balancing convenience, security, and personal preference.

5.5.1 HYBRID USAGE PATTERNS

The study showed clear patterns in the way customers combine digital and traditional banking services. Several of the participants who adopted digital banking for straightforward, regular transactions often reverted to traditional channels for more complex or high-value transactions. This supports Laukkanen's (2016) observations on the emergence of hybrid banking behaviour, where customers choose channels strategically regarding transaction type and perceived risk. This supports a very cautious approach to digital banking, in which users balance the convenience of digital platforms against the perceived security of in-branch services.

5.5.2 BRANCH DEPENDENCY ANALYSIS

Despite high digital adoption rates, certain services still required branch visits. Participants in this study cited visiting a branch for fraud resolution, applying for loans, and large transactions where they wanted personalized support and reassurance. That means, that although it is becoming habitual to conduct all routine transactions using digital banking, branches remain highly relevant to fulfill more sophisticated financial needs.

The selective branch dependency pattern reflects the findings of Suh and Han (2002), who found that customers prefer face-to-face contact in complex or high-risk situations.

5.5.3 DIGITAL FEATURE ADOPTION

The investigation has shown the various ways in which digital features have been adopted. Most participants were not aware of the full extent of the facilities available on the digital platforms, resulting in the underutilization of features that would enhance the banking experience.

This finding underscores the need for increasing feature awareness and education by banks for their customers. This is supported by the argument of Ramavhona and Mokwena (2016) that effective education of customers will enhance utilisation benefits derived from digital banking.

5.5.4 CUSTOMER SERVICE EXPERIENCE

The research revealed different levels of satisfaction with customer support through different channels. However, support was not accessible with good response times, especially over digital channels. Most participants in the study deplored not being able to find immediate support when they were experiencing problems within the digital platform. This necessitates the development of digital support for bank customers so that on-time and efficient support can be provided if there is any kind of problem that people face using it. It confirms the recommendation made by PwC (2019), on responsive customer support that will help engender trust and confidence in Digital Banking.

5.5.5 TRANSACTION TYPE PREFERENCES

Analysis showed clear trends in the banking channels chosen depending on the nature of the transaction. High value-based transactions warranted a visit to the branch while mundane transactions became increasingly digital in nature. Such observations substantiate the fact that most of the routine transactions are shifting toward digital channels, where speed and convenience are more emphasized.

This finding illustrates that successful digital banking adoption is often a question of integrated channel usage, rather than an overall migration to digital services.

5.6 EXTENSIONS TO THE TECHNOLOGY ACCEPTANCE MODEL (TAM)

These results extend Davis's (1989) Technology Acceptance Model in several important ways. While the TAM advances that perceived usefulness and ease of use are the chief determinants of technology adoption, the study shows that in the South African context, these factors bear crucially on the socio-economic conditions.

These research findings indicate that users' perceptions of usefulness and ease of use are highly influenced by their access to digital infrastructure, technological literacy, and economic resources. Additional findings also brought into light the role of trust and security concerns in shaping users' attitudes toward digital banking. Although TAM focuses on perceived usefulness and perceived ease of use, two other critical factors that have come to the fore are trust in digital platforms and perceived security risks that influence adoption decisions.

5.7 CONTRIBUTIONS TO DIFFUSION OF INNOVATIONS THEORY (DIT)

This study also provides an interesting insight into Rogers' (2003) DIT on the adoption process in emerging markets. The results indicate that adoption patterns in South Africa mostly violate the traditional diffusion models because of infrastructure and socio-economic barriers. As found, the adoption of digital banking is not determined by the relative advantage, compatibility, and complexity of the innovation, as proposed

by DIT, but by the availability of support infrastructures and resources as well. This corresponds with the World Bank (2020) findings on the digital divide in South Africa, which showed disparities in access to the internet and ownership of digital devices between rural and urban areas.

The study also stresses the role of social and cultural influences on adoption patterns. For instance, older subjects and those from rural areas often preferred conventional banking methods due to traditional forces and unfamiliarity with the ways of digital technologies. This, therefore, sets a case that DIT should be modified to accommodate the social and cultural processes affecting technology adoption in developing contexts.

5.8. NOVEL THEORETICAL CONTRIBUTIONS TO DIGITAL BANKING ADOPTION

This research adds new theoretical insights into the adoption of digital banking with a particular focus on how the interrelated aspects of trust, technological literacy, and socio-economic factors relate to one another. Results propose a hierarchical model of adoption prerequisites, in which basic infrastructure and technological literacy make up the ground, followed by trust and security issues, before users consider questions of usefulness and ease of use. This goes beyond existing theory in stressing that requirements of adoption are sequential.

For instance, without access to efficient digital devices and reliable internet service, individuals, even with a greater awareness of the usefulness and perceived ease of use, cannot effectively engage with digital banking platforms. Equally, individuals who doubt their skills in handling digital devices or question cybersecurity are less likely to adopt digital banking, even when they find the platforms useful and easy to use. This hierarchical model provides a better insight into the factors that influence the adoption of digital banking, especially in contexts where access to technology and digital literacy are limited.

This further confirms the importance of targeted interventions designed to promote digital banking uptake. For example, participants who received practical training were more likely to adopt digital banking, suggesting that educational programs could be crucial in helping them overcome various barriers to its adoption. This also agrees with Ramavhona and Mokwena's (2016) argument that effective customer education is crucial in promoting digital banking adoption.

5.9 SOUTH AFRICAN CONTEXT SPECIFICS

This research contributes to an understanding of how contextual factors specific to South Africa influence the adoption of digital banking.

This underlines the fact that the theoretical models for technology adoption must be adapted to local economic conditions, infrastructure limitation, and social dynamics particular to developing economies, such as in South Africa. The high price of digital gadgets and access, coupled with general infrastructural limitations in rural villages, contributes toward major barriers to the adoption of digital banking. This is in agreement with Olatokun and Igbinedion's (2009) research on the influence of economic constraints on technology adoption in developing contexts.

This research also emphasizes that other cultural and generational factors further impact the level of adoption. For example, older respondents often favoured traditional banking methods due to cultural influences or a lack of familiarity with digital technologies. This suggests a potential need to expand theoretical models of technology adoption to include cultural and generational factors as key determinants, especially in contexts where traditional practices are deeply rooted.

These theoretical contributions deepen our understanding of the adoption of digital banking in developing contexts and indicate that any such phenomenon needs to be theoretically framed within a nuanced theoretical framework that accounts for the complex interplay between technological, social, and economic factors that influence adoption patterns. Thus, building on existing theory and adding fresh insights, the study lays a foundation for further research on digital banking adoption in developing

economies. Results also revealed that targeted interventions in infrastructure development, digital literacy programs, and appropriate measures of security would raise the adoption of digital banking in South Africa, hence improving financial inclusion in the country's markets.

5.10 CHAPTER SUMMARY

The findings analyze what constitutes barriers to the diffusion of digital banking adoption among South Africa's banking customers through discussions, synthesis with prior theoretical postulates, and related literature.

Professional exposure to technology greatly influenced the adoption patterns; participants who are regularly exposed to digital tools in their workplaces reported higher levels of comfort with the digital banking platform. However, age-related differences indicated generational gaps in digital banking comfort levels, with the majority of the older users struggling hard to adjust to the digital platforms.

Trust and security issues were identified as very significant in the adoption decisions. The participants' personal fraud experiences showed that security incidents have long-term implications on confidence in digital banking. The participants were also found to hold different attitudes toward authentication methods; some prefer biometric authentication for convenience, while others favour traditional PINs and passwords due to perceived control over their security. Therefore, these findings underscore the need for banks to implement robust security measures while maintaining user-friendly interfaces.

Socio-economic barriers to adoption became significant, especially the urban-rural digital divide, as identified by Mlitwa and Koranteng (2013). In fact, infrastructure limitations, income-related barriers to access, and cost implications together caused compound difficulties for some groups of people in accessing digital banking services. These findings are supported by the World Bank 2020 report on the digital divide in South Africa, targeting interventions to bridge these gaps.

The research contributes to the theoretical frameworks and, in particular, extends the Technology Acceptance Model and Diffusion of Innovations Theory for a better reflection of the complexities of adopting digital banking in developing markets. These results, therefore, suggest that the nature of socioeconomic factors, infrastructure limitations, and issues related to trust and security determine the adoption pattern. Thus, it should be reflected in existing theory.

Based on the primary research results, an increase in confidence to use mobile applications may lead to an increase in the use of digital banking. This analysis forms the foundation for the concluding chapter, which will provide specific recommendations on overcoming the identified barriers to more inclusive digital banking adoption in South Africa. This is supported by the findings, underlining the need for a holistic approach against the interface between technological, psychological, and socio-economic factors.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This last chapter summarized this research, focusing on the findings, suggestions, and recommendations. The discussion focuses on the implications of these conclusions for banks and customers. It also offers evidence-based policy recommendations and identifies strategic areas for further studies to enhance digital banking adoption and financial access in South Africa. Based on these implications, recommendations are made for parties interested in this field of study.

6.2 CONCLUSION

The purpose of this research was to identify the barriers to digital banking adoption among South African customers by assessing the impact of age, technological literacy, infrastructure, security concerns, socioeconomic status, and geographical location as key elements. The study aimed to fulfill all the objectives outlined in Chapter 1 and present a comprehensive overview of the barriers to digital banking adoption faced by South African banking customers.

This study confirms that banking institutions in South Africa have provided diversified digital financial services, creating options for clients to access banking products and services through various digital channels. The study also confirmed that banks have encouraged customers to utilize digital platforms for an effective, efficient, convenient, and cost-effective banking experience. The findings demonstrate that successful digital banking adoption goes beyond just having the technology available; user ability, trust dynamics, and economic accessibility within the unique context of South Africa fundamentally influence it. Digital banking offers mutual benefits for customers and their banks by enhancing efficiencies, providing access to banking, and creating a better experience for customers while improving service quality.

Technological literacy was a primary driver of adoption, with vast differences between socio-demographic segments. There was an inverse relationship between age and

digital banking confidence, particularly across lower socio-economic segments. This builds on Raman and Don (2013) studies on perceived digital capability by indicating the specific South African contextual determinants that contribute to this gap between perception and capability. It also confirmed an extremely high positive correlation between experience in professional technology and digital banking adoption, adopting Martins et al.'s (2014) research through evidence of how workers' digital exposure specifically shapes finance technology adoption trends in developing markets.

Banks generally are of the perception that technology leads to improved customer satisfaction. However, customer experience responses indicated that there is no significant relationship between digital banking adoption and satisfaction; the use of digital banking does not improve satisfaction. Some customers are satisfied even when banks do not meet their expectations. Previous studies found that although the use of technology can improve service quality which is known to have a positive impact on satisfaction (Kakeeto-Aelen et al., 2014), customer resistance to technology can reduce overall levels of satisfaction (Makarem, Mudambi, & Podoshen, 2009). It was also found that there is no significant relationship between digital banking adoption and customer loyalty. The analysis indicates that the use of digital banking does not breed loyalty, as most of the participants had more than one bank account with different banking institutions. The findings of this study highlight that the drivers of customer satisfaction for digital services are not well understood.

Security concerns represented a critical barrier; cybersecurity and fraud threats were dominating adoption decisions. Most of the participants corroborated on concerns relating to cybersecurity and fraud in digital banking, with some having experienced fraud through digital channels and now finding it safe to go to the branch for high-value transactions. Laukkanen's (2016) findings on the vulnerability of trust in online banking were reaffirmed and contextualized within South Africa's cyber landscape, where instances of fraud have caused permanent trust deficits in potential adopters. The ability to do performance banking transactions without visiting a branch was expected to help customers reduce costs and enhance efficiency. However, the prevalence of cybercrime and fraud hampers digital adoption.

The socio-economic dimension revealed structural limitations like infrastructure limitations in digital, unaffordable data fees, and device accessibility challenges, particularly for rural populations. This study highlights that South Africa's income inequality and socio-economic challenges are part of the determining factors that could derail the use of digital banking channels. This study confirmed that price value, which according to (Venkatesh *et al*., 2012: 157-178) is the consumers' cognitive trade-off between the perceived benefits of using electronic banking services and the monetary cost of using it, is a key factor to use electronic banking. It was evident in some of the responses that the costs of data and technology devices have a significant impact on accessing online services. Multiple factors like a persons' professional association or standing, economic means, levels of education, and geographical location are total enabling factors to active economic participation, thus leading to technology access. Based on the research of Olatokun and Igbinedion (2009) on economic disparities, this study quantifies the tangible impact of such limitations in the banking sector in South Africa. The findings align with World Bank (2020) data but provide in-depth evidence of how infrastructure shortcomings specifically affect digital banking adoption in South Africa.

This research proves that digital banking users can accept this technology well, especially regarding its features and functions that can be used flexibly. This means it is necessary to foster innovativeness from users through literacy and dissemination of digital banking features and demonstrations so that users can have an attitude to try digital banking. Security is essential in increasing user perceptions, especially regarding the benefits of digital banking and the desire to use it continuously.

This research concludes that South African digital banking adoption trends follow overall socio-economic inequalities. It also revealed that electronic banking channels benefit both customers and financial institutions. This study concludes that price value is an influential determinant that affects the use of electronic banking channels. The adoption of digital banking is very much dependent on structured support systems beyond just the introduction of features and educational awareness. The findings emphasize the necessity of collective interventions through technological,

educational, and economic domains to bring about effective financial inclusion through digital banking services.

6.3 POLICY RECOMMENDATIONS

To encourage quicker uptake of digital banking in South Africa, the policymakers, banks, and the regulator must implement specially targeted measures to increase digital adoption. Based on the findings, the following policy recommendations are made to enhance the adoption of digital banking channels:

- The Banking Association of South Africa (BASA) has already introduced several digital literacy programs, but these need to be regulated, expanded, and standardized across the industry. Learning from the experience of initiatives like the Fundisa for Change program, government must implement comprehensive digital literacy programs in schools and community centers, especially in disadvantaged communities identified by the National Financial Inclusion Strategy (2020-2025).
- Regulatory bodies should improve and oversee cybersecurity frameworks, especially in light of South Africa's Cybercrimes Act 19 of 2020 and the Protection of Personal Information Act 4 of 2013 (POPIA).
- The South African Reserve Bank (SARB) should enforce stricter levels of cybersecurity compliance through the enforcement of the Financial Intelligence Centre Amendment Act (FICA) and establish enforcing the Financial Intelligence Centre Amendment Act (FICA) and establishing financial compensation arrangements for victims of cyber fraud. The Guidance Note 7/2018 by the Prudential Authority addresses explicitly the risks of cybersecurity to financial institutions such that banks need to have effective incident response capabilities and security checks must be done on a regular basis.
- Government must regulate the extension of digital infrastructure, particularly in underserved areas, on the platform established by the South African Connect Policy (2013) and the Electronic Communications Act of 2005.

- The Department of Communications and Digital Technologies' Digital Economy Masterplan 2023, which is built around universal access to digital services, must be fast-tracked to ensure it meets the objective of deploying nationwide digital infrastructure programs, such as discounted mobile data bundles and the deployment of public Wi-Fi hotspots.
- The South African Banking Risk Information Centre (SABRIC) recommendation that a specialist cyber forensic unit be established in the financial sector must be fast-tracked and regulated.

The recommendations presented outline a strategy for addressing these challenges, emphasizing multi-stakeholder coordination among government agencies, banks, and technology providers.

6.4 RECOMMENDATIONS FOR BANKING INSTITUTIONS

Banks may reconsider their digital strategy to focus on factors that affect the customers' use of digital banking channels. These research findings suggest several areas that banking institutions need to consider.

- Banks should incorporate effective consumer education throughout the customer journey to help consumers understand the risks and benefits of digital banking activities, as well as how these products and services function.
- Banks should offer clear and accessible information about how customer data will be used, including the terms and conditions, and keep customers updated on the ongoing use of their data.
- Banks should be transparent with customers about the data collected on them, how it is used, and whether it is shared with third parties. A liability framework should be established in collaboration with other financial institutions, not limited to banks only, to ensure accountability for data leakage and breaches.
- Banks should enhance digital awareness education to ensure customers are well-informed about using digital platforms and fraud prevention measures. Customers should not accept or access links sent by impersonating criminals.

- Enticing incentives associated with the use of digital platforms need enhancement to maximize benefits and promote digital adoption.
- Additionally, banks must enhance their security communication strategies so customers can clearly understand the associated risks and protective measures. Effectively conveying security features and protocols will help instill trust and confidence among users.
- Lastly, banks must ensure that all staff involved in developing and servicing digital banking platforms have a sound understanding of financial management principles.

All these recommendations align with South Africa's National Development Plan 2030 and the Financial Sector Regulation Act 9 of 2017, which emphasizes financial inclusion and the technology revolution in banking.

6.5 RECOMMENDATIONS FOR FURTHER RESEARCH

While this study has been enlightening about South Africa's hindrances to digital banking uptake, several avenues require further investigation to enhance understanding and policy and strategic interventions. These lines of research are critical priority areas for forthcoming scholarly work. The recommendations for further research are as follows.

- Digital banking is an exceptionally highly dynamic topic because it relies on technological and legislation changes. Studies tracking the adoption trend over some years would provide information on shifting consumer attitudes, technical awareness, and security pattern perception over years. Further research should investigate how South Africa's evolving regulatory environment impacts long-term digital banking adoption patterns.
- Fintech solutions such as digital wallets, blockchain banking, and decentralized finance (DeFi) platforms are increasingly being incorporated into the financial landscape. Future research must investigate the impact of such innovations on consumer confidence, financial inclusion, and bank accessibility, particularly in

the context of South Africa's Intergovernmental Fintech Working Group (IFWG) initiatives.

- Artificial intelligence and big data analytics are increasingly being leveraged to enhance user experience and detect fraudulent activities in online banking. Future research must explore the effectiveness of AI-driven customer support chatbots, fraud detection algorithms, and personalized financial planning tools within the ambit of South Africa's Protection of Personal Information Act (POPIA) and other relevant laws.

As South Africa continues its digitalization journey, the findings and recommendations in this study offer valuable insights for policymakers, financial institutions, and researchers aiming to promote greater financial inclusion and the use of digital banking. The success of these efforts will depend on a sustained commitment to implementing evidence-based policies that are sensitive to the unique needs and challenges of South Africa's diverse population.

.

REFERENCES

1. Achieng, M.S. and Malatji, M., 2022. 'Digital transformation of small and medium enterprises in sub-Saharan Africa: A scoping review. *The Journal for Transdisciplinary Research in Southern Africa,* 18(1), doi: 10.4102/td.v18il.1157.
2. Alkhowaiter, W.A. (2020). 'Digital payment and banking adoption research in gulf countries: A systematic literature review'. *International Journal of Information Management.* 53(1): 100-102
3. Ananda, S., Devesh, S. and Lawati, A.M., 2020. 'What factors drive the adoption of digital banking? An empirical study from the perspective of Omani retail banking. *Journal of Financial Services Marketing,* 25(1), pp. 14-24.
4. Armstrong, C., De Klerk, A., & Mostert, J. (2016). Regulation of the South African banking sector. *South African Reserve Bank*.
5. Arnaboldi, F., & Claeys, P. (2008). Internet banking in Europe: A comparative analysis. *Research in International Business and Finance*, 22(2), 160-175.
6. Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of fintech: A new post-crisis paradigm? Georgetown Journal of International Law, 47, 1271-1319.
7. Bernstein, J., Brits, M., Ketley, R., Mela, M and Mogadime, K. (2018). 'The impact of the 4th industrial revolution on the South African financial services market'. *Centre of Excellence in Financial Services*.2(1), 94-180
8. Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40.
9. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
10. Bryman, A. (2016). *Social Research Methods*. Oxford University Press.
11. Brynjolfsson, E., & McAfee, A. (2017). Machine, platform, crowd: Harnessing our digital future. W. W. Norton & Company.
12. Charmaz, K. (2014). *Constructing Grounded Theory*. Sage Publications.
13. Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.

14. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
15. Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE Handbook of Qualitative Research*. Sage Publications.
16. Do, T. D., Pham, H. A. T., Thalassinos, E. I., & Le, H. A. (2022). The Impact of Digital Transformation on Performance: Evidence from Vietnamese Commercial Banks. Journal of Risk and Financial Management, 15(1). https://doi.org/10.3390/jrfm15010021
17. Donner, J., & Tellez, C. A. (2008). Mobile banking and economic development: Linking adoption, impact, and use. *Asian Journal of Communication*, 18(4), 318-332.
18. European Commission. (2020). Revised Payment Services Directive (PSD2).
19. Flaming, Mark, and Ivo Jeník. 2020. “How Does Tech Make a Difference in Digital Banking?” CGAP blog post, 11 November.
20. Geertz, C. (1973). *The Interpretation of Cultures: Selected Essays*. Basic Books.
21. Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. MIS Quarterly, 27(1), 51-90.
22. Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. Field Methods, 18(1), 59-82.
23. Hoehle, H., Scornavacca, E., & Huff, S. (2012). Three decades of research on consumer adoption and utilisation of electronic banking channels: A literature analysis. Decision Support Systems, 54(1), 122 - 132.
24. Jack, W., & Suri, T. (2016). The long-run poverty and gender impacts of mobile money. Science, 354(6317), 1288-1292.
25. Jeník, Ivo, and Peter Zetterli. 2020. “Digital Banks: How Can They Deepen Financial Inclusion?” Slide deck. Washington, D.C.: CGAP.
26. Jeník, Ivo, Mark Flaming, and Arisha Salman. 2020. “Inclusive Digital Banking: Emerging Markets Case Studies.” Working Paper. Washington, D.C.: CGAP.
27. Kakeeto-Aelen, T. N., Dalen, J. C., Van den Herrik, J., & van de Walle, B. (2014, March 31). Building customer loyalty among SMEs in Uganda: The role

of customer satisfaction, trust and commitment. 1-32. The Netherlands: Maastricht school of management.

28. Klein, M. W., & Mayer, T. (2011). Mobile banking and financial inclusion: The regulatory lessons. *World Bank Policy Research Working Paper*.
29. Kotler, P., & Keller, K. L. (2012). Marketing Management , 14th Edition. Boston: Prentice Hall.
30. Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the Craft of Qualitative Research Interviewing*. Sage Publications.
31. Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking. *Journal of Business Research*, 69(7), 2432-2439.
32. Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking. Journal of Business Research, 69(7), 2432-2439.
33. Lee, M. K. O., & Turban, E. (2001). A trust model for consumer internet shopping. *International Journal of Electronic Commerce*, 6(1), 75-91.
34. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Sage Publications.
35. Louw, C. & Nieuwenhuizen, C., (2019), 'Online, community-driven E-commerce platforms and the rise of lifestyle commerce: A conceptual study', Seventh annual winter global business conference, 28 January - 1 February 2019, Tignes. ISSN: 2584-6302
36. Louw, C. & Von Solms, B., (2018), 'Smartphone usage and security maturity: A South African student evaluation', in A. Jøsang (ed.), ECCWS 2018, 17th European conference on cyber warfare and security, 28-29 June 2018, pp. 268-277, Oslo.
37. Makarem, S. C., Mudambi, S. M., & Podoshen, J. S. (2009). Satisfaction in technology-enabled service encounters. Journal of services marketing, 23(3), 134-144.
38. Martins, C., Oliveira, T., & Popovič, A. (2014). Understanding the internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, 34(1), 1-13.

39. Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative Research: A Guide to Design and Implementation*. John Wiley & Sons.
40. Mlitwa, N., & Koranteng, K. (2013). E-learning and digital divide in South Africa: A qualitative approach. *South African Journal of Libraries and Information Science*, 79(2), 54-66.
41. Morgan, D. L. (1997). *Focus Groups as Qualitative Research*. Sage Publications.
42. Moser, K. (2015). Digital banking services. *Journal of Digital Banking*, 1(1), 32-44.
43. Olatokun, W., & Igbinedion, L. (2009). The adoption of automatic teller machines in Nigeria: An application of the theory of diffusion of innovation. *Issues in Informing Science and Information Technology*, 6, 373-393.
44. Oliver, R. L. (1999). Whence consumer loyalty. Journal of Marketing, 63, 33 - 44.
45. Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329-340.
46. Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. Administration and Policy in Mental Health and Mental Health Services Research, 42(5), 533-544.
47. Pallant, J., Sands, S. & Karpen, I., 2020, 'Product customization: A profile of consumer demand', *Journal of Retailing and Consumer Services* 54(2020), 102030. https://doi.org/10.1016/j.jretconser.2019.102030
48. Patton, M. Q. (2015). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*. Sage Publications.
49. Paul Calvey, Sandra Villars, and Pierre Romagny, 2024. “10 Banking trends to watch in South Africa in 2024”
50. Puschmann, T. (2017). Fintech. *Business & Information Systems Engineering*, 59(1), 69-76.
51. PwC. (2019). Cybersecurity and digital banking: Balancing security and user experience. PwC Global Banking Report.

52. Ramavhona, T., & Mokwena, S. (2016). Factors influencing Internet banking adoption in South Africa. Journal of Financial Services Marketing, 21(2), 116-128.
53. Ramavhona, T.C. and Mokwena, S. (2016). 'Factors influencing Internet banking adoption in South African rural areas', *South African Journal of Information Management, 18(2), 1-8.*
54. Reserve Bank of India. (2021). Pradhan Mantri Jan Dhan Yojana (PMJDY) progress report.
55. Sayago, S., & Blat, J. (2011). About the relevance of accessibility barriers in the everyday interactions of older people with the Web. Interacting with Computers, 23(6), 502-512.
56. Slazus, B. J. and Bick, G., 2022. Factors that Influence FinTech Adoption in South Africa: A Study of Consumer Behaviour towards Branchless Mobile Banking. *Athens Journal of Business & Economics*, *8(1) pp. 43-64. doi: 10.30958/ajbe.8-1-3.*
57. Suh, B., & Han, I. (2002). Effect of trust on customer acceptance of Internet banking. Electronic Commerce Research and Applications, 1(3-4), 247-263.
58. Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36(1), 157-178.
59. World Bank. (2020). Digital financial inclusion in emerging markets.

APPENDIX A

APPENDIX X