The use of digital banking platforms and its impact on customer satisfaction: an emperical study in the South African banking sector context

By

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Abstract

Digital Banking Platforms are always evolving and there's new products, services and features that are introduced to the market. Digital banking and digital banking platforms have become part of the norm for accessing banking services to many. South African banks are closing physical bank branches and moving services to digital banking platforms thus creating convenience for customers while simultaneously cutting operational costs. While there's a clear migration to digital banking platforms, there's still a significant number of customers who use physical bank branches and this may be attributed to numerous factors. Many necessary factors have been highlighted by various models developed by academia and industry, however there aren't many that accurately explain how digital banking platform usage in the banking sector occurs. This study aims to identify the factors that affect digital banking platform usage and the degree to which customer satisfaction affects digital banking platform usage. Therefore, this exploratory quantitative study examines the applicability of the factors to the banking sector in South Africa.

Three hundred and ninety digital banking platform users were sent surveys electronically on Linked-In. There were two hundred and twenty-one responses to which two hundred and two were adequately completed to be used for the analysis. The findings were analysed using the Principal Components Analysis (CPA) to ensure that the data is convergent and distinct. Descriptive analysis and structural equation modelling were used to determine the impact of the various factors on the use of digital baking platforms and the impact on customer satisfaction. A structural fit model was used to determine the model fit.

The results to the study indicated that factors influencing the use of digital banking platforms include performance expectancy, effort expectancy, facilitating conditions, behavioural use, trust and security, service quality and customer satisfaction. The study revealed that a factor with the least influence on the use of digital banking platforms is social influence. The development and testing of the expanded Unified Theory of Acceptance and Use of Technology (UTAUT) model for the use of digital banking platforms and its impact on customer satisfaction in the South African context, constitutes one of the many theoretical contributions. The model takes to account

factors such as trust and security, service quality and customer satisfaction. The contextual contribution of this study assists the South African banking sector by directing the sector towards the efficient use of digital banking platforms and providing a practical contribution to focus its resources on raising consumer awareness of digital banking platforms, offering features and products that are easy to use. Thus, creating an atmosphere that encourages the usage of digital banking platforms.

KEYWORDS: Digital banking platforms, performance expectancy**,** effort expectancy**,** social influence**,** facilitating conditions**,** behavioural use**,** trust and security**,** service quality, customer satisfaction

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Declaration

I, Palesa Sekabate, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Palesa Sekabate Signature: 

Signed at Randburg

On the 28th of February 2025

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List of Acronyms

Acronym	Meaning
AMOS	Analysis of Moment Structures
ATM	Automated teller machine
AVE	Average Variance Extracted
BU	Behavioural Use
CFA	Confirmatory Factor Analysis
CR	Composite Reliability
CS	Customer Satisfaction
DF	Degrees of freedom
EE	Effort Expectancy
EFA	Exploratory Factor Analysis
FC	Facilitating Conditions
GFI	Goodness-of-Fit
IFI	Incremental fit index
4IR	Fourth Industrial Revolution
KMO	Kaiser-Meyer-Olkin
NFI	Normed fit index
PE	Performance Expectancy
PCA	Principal Components Analysis
RFI	Relative Fit Index
RMSEA	Root mean square error of approximation
RO	Research Objective
SA	South Africa
SEM	Structural Equation Model
SI	Social Influence
SPSS	Statistical Package for the Social Sciences
SQ	Service Quality
TLI	Tucker-Lewis Index
TS	Trust and Security
UTAUT	Unified Theory of Acceptance and Use of Technology

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

The key objective of the study is to investigate factors that influence the behavioural use and customer satisfaction with the use of digital banking platforms. Digital banking is the digitisation of traditional banking services to deliver financial services to customers through digital banking platforms (Hair, 2010; Mothibi & Rahulani, 2021). The services offered include customer onboarding, marketing, service channels and products such as bill payments, savings and deposits and loan management. This is achieved through the utilisation of ecosystem partnerships and open application programming interface (APIs) (Mothibi & Rahulani, 2021). The research aims to understand consumer perceptions on the use of digital banking platforms in South Africa.

The conceptual framework for the study is adopted through the extension of the Unified Theory of Acceptance and Use of Technology Theory (UTAUT) (Huang, 2023). The theory uses factors such as performance expectancy, effort expectancy, social influence and facilitating conditions. The framework however presents certain limitations; it does not account for other user interactions that impact on behavioural use and customer satisfaction. To address the limitations the study extends the UTAUT model by including factors that will deepen the understanding of engagement with customers through evaluating customer trust and security and the impact of service quality within the varied ecosystem of services provided by digital banking.

The UTAUT model exhibits certain limitations as it fails to account for diverse user interactions that address the impact on self-service and customer satisfaction. The shortcomings become evident when considering the customer trust and security and rationale for the extension of the model to address the trust and security and the service quality and customer satisfaction offered by digital banking platforms (Sari Dewi, 2024).

The UTAUT (Huang, 2023) model has been successfully utilized as a theoretical basis for behavioural usage in the context of digital banking platforms, there are theoretical attributes that should be added for robustness when individual usage is applied when explaining the usage of digital banking platforms. The UTAUT model does not include other attributes that influence consumer behavioural use such as trust and security and service quality, the additional variables have a significant impact on the use of digital banking platforms by individuals (Sari Dewi, 2024). The rise of digital technologies has increased accessibility to the internet and the growth of digital banking has become an integral part of banking. As digital banking continues to expand, understanding how consumer perceptions and awareness of digital banking and the impact on customer satisfaction is important.

As the global landscape of banking undergoes, a transformative shift towards digital banking, it emerges a pivotal force in elevating and shaping transactions within digital banking platforms (Kasowaki & Faris, 2024). Banks have embraced e-commerce over the years through the advancement in technology-based service innovations such as automated teller machines ATMs, internet banking and mobile banking (Ncube & Kabanda, 2022). Customers now enjoy easy access, efficiency from traditional banking services due to the integration of digital banking applications in the banking sector (Kumar Gupta et al., 2024). This study explores factors that influence the behavioural use of digital banking and how this influences customer satisfaction. Positive customer experience includes platform user experience, transaction efficiency, guaranteed security and privacy, adequate features and services and responsive customer support which improve customer perceptions, behavioural use and customer satisfaction (Syahfitri et al., 2024).

The study will contribute to an understanding of consumer behaviour, interactions and the resulting behavioural traits behind utilising digital banking platforms. Additionally, the study will analyse the role of consumer behaviour as a guide to informed consumer decision making that leads to customer satisfaction

The UTAUT model has been extensively tested at explaining factors influencing individual-level use and customer satisfaction, however, the focus has been on digital banking environment where customers are migrating from traditional banking channels to digital banking. The UTAUT model may also be relevant in the digital

banking context in which individual customers represent the community of users of digital banking (A & Syed, 2024).

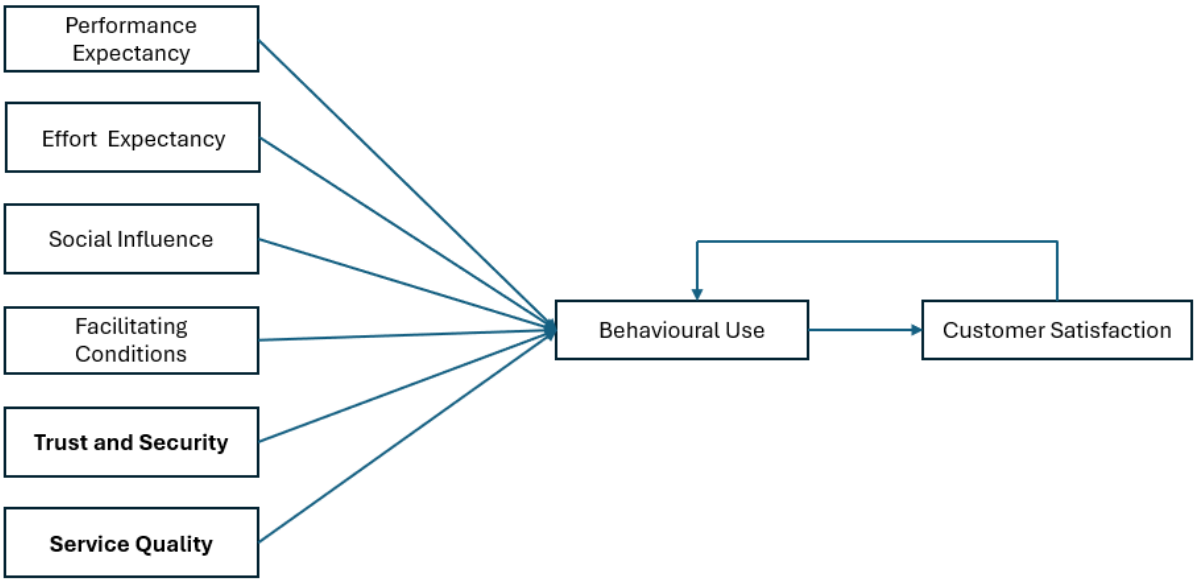


Figure 1:Proposed framework to assess consumer behaviour and the use of digital channels

***Source: Adopted from UTAUT,** (Huang, 2023).*

Previous research in the field of digital banking has examined factors that influence consumer behaviour however there is a limited number of studies on factors that include trust and security and service quality, the completeness of features offered by digital banking and the varied ecosystem of services offered and the impact on consumer behaviour and customer satisfaction.

1.2 Background of the study

South Africa's financial landscape has undergone a significant transformation in recent decades, with the advent of digital banking emerging as a driving force that has reshaped the way individuals and businesses engage with financial services (Mpofu & Mhlanga, 2022). The expansion of digital financial services, facilitated by the widespread adoption of technologies such as internet banking, mobile-phone-enabled solutions, and digital payment platforms, has revolutionized the delivery of traditional banking services (Gertze & Petersen, 2024). The growing demand for digital financial services in South Africa is a reflection of the country's rapidly evolving technological

landscape. The widespread adoption of smartphones and the expansion of high-speed internet connectivity have been key drivers in this digital banking revolution, enabling South Africans to access a wider range of financial services at their fingertips (Cele & Gumede, 2024). Over the past few decades, there have been numerous opportunities for business digitalization and the development of new digital business models due to the expansion and growing use of the Internet and online technologies. The Fourth Industrial Revolution (4IR) is therefore causing businesses all over the world to be reimagined and reorganized, and banks are not an exception. (Louw & Nieuwenhuizen, 2020).

The South African banking industry has been at the forefront of this digital revolution, with both traditional and digital-only banks actively pursuing strategies to integrate cutting-edge technologies into their service offerings (Chauhan et al., 2022). The growing demand for digital financial services in South Africa reflects the country's rapidly evolving technological landscape. The widespread adoption of smartphones and the expansion of high-speed internet connectivity have been key drivers in this digital banking revolution, enabling South Africans to access a wider range of financial services at their fingertips (Melnyk, 2024). Digital transformation has not only enhanced the convenience and accessibility of banking services, but it has also opened up new opportunities for financial inclusion and the provision of services to previously underbanked populations (Melnyk, 2024). With this in mind, it is important to highlight the benefits and some challenges that are presented by digital banking. The paper highlights challenges faced by consumers that include cybersecurity threats, data breaches, service quality and delivery.

Based on the theoretical conceptual framework, the challenges affect the additional factors that are proposed by the study which are consumer trust and security, service quality and customer satisfaction. According to Ali et al., (2017), customers that use digital banking platforms fear that their financial data will be compromised. As cyber threats evolve, they influence how customers interact with and perceive digital banking services. There are several behavioural and usage factors that may be affected by cyber threats, these include: (i) Trust erosion – security breaches can erode trust in digital banking services, which may lead to customers doubting the security measures of their bank, questioning the safety of their personal and financial information and a

decline in customer trust and customer satisfaction (Ali et al., 2017). (ii) Increased caution and hesitation – This may lead to customers becoming more cautions and hesitant to use digital banking platforms if their perception of cyber threats is that of high risk. This may lead to reduced usage of digital banking platforms (Akinbowale et al., 2024). (iii) Changes in transaction behaviour – customers may limit the types of transactions they conduct online and opt to use traditional banking methods. This may affect the overall use of banking services (Akinbowale et al., 2024). Security threats significantly impact customer behaviour in digital banking, influencing consumer usage behaviour, trust levels and security practices. This study will add customer trust and security to UTAUT factors to provide better understanding on the unique nature of how the consumer behaviour is affected when using digital banking platforms.

Service quality plays a crucial role in the shaping the experience and behaviour of digital banking customers (Aldaarmi, 2024). High service quality can lead to increased customer satisfaction, positive engagement and customer loyalty with digital banking platforms (Cele & Kwenda, 2024). Therefore, poor service quality can result in dissatisfaction, attrition and negative customer perceptions which will impact on behavioural use and customer satisfaction (Aldaarmi, 2024). The study will provide a detailed look on how service quality impacts digital banking customers by looking at how factors such as problem resolution, support experience, reliability and assurance are crucial quality dimensions that should be offered by digital banking platforms to ensure customer retention and customer satisfaction (Aldaarmi, 2024).

The adapted conceptual framework for this study includes customer satisfaction as an integral part of the factors that influence consumer behavioural usage. Customer satisfaction affects retention and loyalty; high customer satisfaction is strongly linked to customer retention and loyalty. Satisfied customers are more likely to continue using the bank's digital services and remain with the bank long-term (Ngubelanga & Duffett, 2021). Customer satisfaction contributes to a positive brand image and reputation where a digital banking platform will trust and perceived as a reliable service provider (Ngubelanga & Duffett, 2021). Digital banking platforms were implemented with the aim of improving customer satisfaction, however this may not be the case as some customers are still continuing using other traditional channels such as physical bank branches to obtain services that they can get from digital banking platforms (Aldaarmi,

2024). Alongside these advances is the role that digital banking platforms play in redefining consumer satisfaction and experiences, hence driving or inhibiting the behavioural intents of customers to continue to use the service (Aldaarmi, 2024).

Prior studies from (Beck et al., 2013; Meskus & Tikka, 2024; Mpofu & Mhlanga, 2022) have been performed measuring customer satisfaction using digital banking platforms, the studies revealed that customer satisfaction was a contributing factor on use of digital banking platforms. Other reviewed studies (Chauhan et al., 2022; Golafshani, 2003; Olaolu, 2022) evaluated digital banking platforms use through customer satisfaction, they identify customer satisfaction does not lead to digital banking platform use. Therefore, the mixed results identify a research gap, and this study seeks to identify factors that hinder or propel use of digital banking platforms.

Previous studies from (Ogonji & Muluka, 2022; Meskus & Tikka2024) have used the UTAUT model to understand factors that may influence the use of digital banking platforms. The UTAUT model explains use phenomena through factors that influence the intention to use technology and the subsequent usage behaviour with usage behaviour as the dependent variable (Huang, 2023). The models employs four main factors: (i) performance expectancy, which measures how much a person believes that utilising a technology could improve their ability to execute their job, (ii) effort expectation describes how simple a system is to operate and how user-friendly the technology is (Anakpo et al., 2023) (iii) social influence is the factor that supports a person's use of a new service or system because it is influenced by the positive reinforcement of the people and environment around them (Gertze & Petersen, 2024), (iv) facilitating conditions refers to a person's perception of the availability of the organisational and technological infrastructures needed to use the planned system is referred to as their perception of the facilitating conditions (Ghalandari, 2012).The model was popularised by its ability to include the demographics like age, gender and experience as control variables (Huang, 2023).The control variables enabled researchers to particularly identify the relationship between independent and dependent factors (Chauhan et al., 2022). Sari Dewi, (2024), argues that the UTAUT attributes may not be sufficient or applicable to all contexts and some of the relationships that are important may be omitted. Therefore, the amendment of the UTAUT model is important in understanding factors that influence the use of digital

banking platforms. The UTAUT model falls short in evaluating trust and security and service quality. Trust and security are the measure of the desirable characteristics of a digital banking platform (Bhuvaneswari & Maruthamuthu, 2024). Service quality defines system quality as a measure for perceived response time, system flexibility and system reliability (Bhuvaneswari & Maruthamuthu, 2024). In this study, service quality refers to system availability time, and whether the digital banking platform is always working, or it has downtime. The digital banking platform delivers instant gratification; users of digital banking platforms expect immediate results when performing a transaction. A digital banking platform that has high downtime may have an impact on the individual users and this may lead to users of the platform using other banking service channels (Cele & Gumede, 2024). The business may lose an opportunity of making sales, lose productivity, erode customer confidence and may damage the reputation of an organisation (Ngubelanga & Duffett, 2021). Therefore, an evaluation that includes service quality is important in identifying factors that influence the use of digital banking platforms.

The importance of evaluating user attitude towards new technology and measuring response time and reliability is crucial, therefore this research extends the UTAUT model by adding the three new independent factors – trust and security, service quality and customer satisfaction. Both trust and security and service quality may help to explain customer attitude towards the usage of digital banking platforms.

1.3 Research Problem

The first research problem is to understand factors that influence the use of digital banking platforms in the South African banking industry. The Unified Theory of Technology Acceptance and use of technology is a comprehensive model for measuring technology acceptability and utilisation, the model's robustness, significant theoretical and methodological shortcomings remain unaddressed (Huang, 2023). UTAUT received criticism for failing to explain behavioural intention in a variety of contexts (Wewege et al., 2020). The study suggests that including trust and security and service quality may aid in understanding the impact on digital banking technology utilization and further explain customer satisfaction. The focus in his study is on

literature review, furthermore it is suggested that this variable be evaluated to justify the model's inclusion using empirical data.

Security threats impact on the usage of digital banking platforms and customer trust and security, the second research problem address how security threats impact the use of digital banking platforms where security threats and associated risks affects the widespread usage of digital banking platforms (Cele & Kwenda, 2024). The primary purpose of security in digital banking is to protect the customers financial assets and personal information.

The availability and use of digital banking platforms have increased significantly in South Africa. According to a survey conducted in South Africa, a median of 42.31% of the South African population uses mobile devices for digital banking yet 92% of South Africans own a mobile device or have access to digital banking platforms (Simatele, 2024). According to Aldaarmi, (2024), despite the number of individuals worldwide who utilize digital banking platforms, many individuals, particularly those in developing countries, have low usage of digital banking platforms. Furthermore, there is currently a scarcity of research on customer satisfaction and the usage of digital banking platforms, particularly in developing-countries (Simatele, 2024). While many studies have focused on advanced nations, more studies in developing nations such as South Africa are needed to see whether the consequences are the same (Simatele, 2024). Digital banking is a competitive industry (Mothibi & Rahulani, 2021), therefore, customer satisfaction is important for a digital bank to ensure prosperity for the digital banking market (Chauhan et al., 2022). Studies reveal that customer satisfaction leads to the use of digital banking platforms, consequently if customer satisfaction is achieved when utilizing digital banking platforms organisations flourish in the market (Ngubelanga & Duffett, 2021).

The literature is inconsistent on customer satisfaction as a factor that influences the use of digital banking platforms. The implications of the inconsistency in literature on customer satisfaction could misdirect and mislead the effort for organisations and further complicate decisions on the investment in digital banking platforms (Kasowaki & Faris, 2024). This could mean that organisations could potentially lose on the benefits of the increased reach of customers on the market, providing reliable service to their customers and subsequently lose out on the benefits of the reduced cost of

operations (Lolemo & Pandya, 2024). The study aims to solve this research problem by providing clarity to the inconsistency that has been found.

1.4 Research Objectives

The key objectives of the study are mentioned below:

- Research objective 1 (RO1) – To identify and examine the factors influencing consumer behaviour on digital banking platforms.
- Research objective 2 (RO2) – To identify the impact of digital banking platform usage and the influence it has on customer satisfaction.

1.5 Rationale

The aim of the study is to make a meaningful contribution in three ways, namely empirical, contextual and practical.

First, an empirical contribution is made by integrating the following factors to the theoretical framework; trust and security and service quality into the UTAUT model as a basis for exploring digital banking platform user perceptions. The study further focuses on impact on customer satisfaction therefore customer satisfaction is added in the dependent elements of the study.

Second, a contextual contribution is made by examining customer perception factors that affect the use of digital banking in the South African context. Within the South African context there is limited academic research conducted around the customer satisfaction of digital banking platforms. Research into digital banking occurs in the context of acceptance of the usage of digital banking platforms and very little research on behavioural use and customer satisfaction. For example, (Gertze & Petersen, 2024) explores digital banking acceptance based on individual characteristics and motivational factors on usage from the South African perspective.

Huang, (2023) explores the significant drivers of customer satisfaction in digital banking platforms are performance expectancy, effort expectancy, social influence and facilitating conditions are found to be significant drivers of customer satisfaction. Within

the South African context, there is a clear need to determine which factors are most important for digital banking platform usage in the banking industry. Currently, there are limited studies that have been undertaken in the digital baking industry in South Africa.

Third, this study aims to make a practical contribution by providing useful insights in the South African digital banking industry and obtaining a clear view on the factors influencing digital banking platform use that could enable appropriate interventions. The digital banking industry will need to determine the inhibitors within customers and facilitating conditions. Additionally, this research may assist in formulating strategies using existing and new technologies which could impact the industry positively. The study proposes a revised conceptual model that will contribute to the research gap by scrutinising the factors influencing the use of digital banking platforms to serve customers in the South African banking sector. This will be achieved by using the proposed model which allows the assessment of the variables considered (Fig, 1).

1.6 Delimitations of the study

- The study tests the conceptual framework on consumers who use digital banking platforms for banking.
- The study is limited to the South African context for consumers based in South Africa.
- The study uses a qualitative research method which will provide more depth to the topic.
- The study adds Trust and Security and Service Quality and Customer Satisfaction to the Unified Theory of Acceptance and Use of Technology (UTAUT) framework.

1.7 Definitions of terms

E-commerce: The exchange of goods and services and the transmission of data and funds over the internet, e-commerce relies on digital platform technology that include mobile apps, websites and social media to make buying and selling possible. It seamlessly blends into different economic sectors and fosters global e-commerce as a driver of economic growth (Lazić et al., 2024).

Digital Channel: The communication paths and platforms that promote, sell or market products and services, ideas, brands and electronic services, done through transmission channels (Le Ruyet & Pischella, 2015). These include third-party digital messaging applications and platforms generally made available by a cloud service for use in connecting end users to contact centre agents.

Digital Banking: Provides instructions for AI technology to think and react to data in intuitive ways to process information, with the aim to crate computers that process information and make decisions without humans providing instructions. AI-Algorithms represent instructions needed to respond to the machine (Muluka et al., 2015).

UTAUT: Model is the Unified Theory of Acceptance and Use Technology model (Huang, 2023). It provides a theoretical basis for examining user perception and behavioural factors which are performance expectancy, effort expectancy, social influence and facilitating conditions, to explain consumer behaviour.

Customer Satisfaction (CS): The perceived value or quality that customers experience when using a service (Sari Dewi, 2024). When a service performance surpasses the expected level, the perceived quality exceeds the satisfaction.

Effort Expectancy (EE): An additional factor of the UTAUT model that measures how user-friendly an information technology (Venkatesh et al., 2003)

Facilitating Conditions (FC): A factor in UTATU where the degree to which a person believes that the organizational and technical infrastructures needed to operate the intended system (Ghalandari, 2012).

Service Quality (SQ): Encompasses the spectrum of what customers expect and how they perceive the service provided (Sari Dewi, 2024).

Social Influence (SI): The Unified Theory of Acceptance and Use of Technology (UTAUT) include social influence. It indicates that an individual believes it is critical that others believe he or she should adopt a new system (Venkatesh et al., 2003)**.**

1.8 Assumptions

- It is assumed that respondents use banking apps and online banking
- It is assumed that survey respondents are clear on responses and their decisions for using digital banking platforms
- It is assumed that the respondents have a basic understanding of algorithms on e-commerce platforms.
- The sample size represents a significant distribution of customer opinions on digital platform usage.

1.9 Chapter Outline

The presented research work has six chapters:

Chapter 1 – Introduction

This chapter provides context, background, the definition, purpose, the rationale and the framework for the research topic, to add to the body of knowledge for the use of digital banking and the impact it has on consumer behaviour and customer satisfaction. The objectives of the research determine the factors that influence the use of digital banking platforms.

Chapter 2 – Literature Review

This chapter will focus on the theoretical background of the research, where findings from local and international studies, covering the impact of digital banking and consumer behaviour. Factors that will be covered in the literature will include, the use of on digital banking platforms, the history and background, trust and security, performance expectancy, perceived enjoyment, social influence, service quality, brand perception, completeness of features and the varied ecosystems of services and the impact on consumer behaviour and the limitations of academic studies on the impact of on digital banking platforms and customer satisfaction.

Chapter 3 – Research Methodology

The research design and methodology will be presented in chapter 3. The chapter will elaborate on the research method used, data collection and the questionnaire that is used to analyse the conceptual framework.

Chapter 4 – Presentation of results

The chapter will present the results of the survey data that was collected.

Chapter 5 – Discussion of results

This chapter will provide a thorough analysis of the findings from the outcomes of the study. It will evaluate and link the results to the factors that influence consumer behaviour when using digital banking platforms.

Chapter 6 – Conclusion and recommendations

The last chapter provides a broad overview of the research giving context to the research objectives, findings and valuable insights gathered from conducting the study. It will address the limitations of the research and recommendations for future research. The chapter will summarize the report and consolidate the key findings.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The first chapter of the study introduces the research topic, the problem statement and the rationale of the study. This section of the study focuses on providing context for the study through the collection, reviewing and analysing the existing literature that will aid in explaining the concept of the use of digital banking and its impact on customer satisfaction. The characteristics and benefits of digital banking will be discussed in depth and the impact it has on behavioural use and customer satisfaction. The literature review focuses on the UTAUT conceptual framework and the limitations of the existing model in relation to digital banking usage. The chapter further investigates the role of digital banking and the behavioural use and the effects on customer satisfaction.

The literature review is based on the analysis of different perspectives from scholars who provide different views about digital banking platform usage from customers. The chapter provides views from previously published research with information on digital banking platforms and the impact on behavioural usage and customer satisfaction.

2.2 Digital Banking

Digital banking entails the digitisation of traditional banking services to deliver financial services to customers, this includes customer onboarding, service channels, processes, marketing and the products and features such as deposits, savings, loan management and bill payments (Mothibi & Rahulani, 2021). The key technologies that are powering digital banks include Cloud Computing, Big Data and Artificial Intelligence, Biometric/ Digital ID, open API's, intelligent Automation/ RPA and Chatbots/Robo advisory. The fusion of digital banking and e-commerce incorporates the union between finance and technology, and ushers in a new era of unprecedented connectivity and convenience (Kasowaki & Faris, 2024).

This study evaluates major factors that impact on the behavioural use and customer satisfaction which are trust and security and service quality affecting customer satisfaction when using digital banking platforms.

2.3 Behavioural Use and Customer Satisfaction

In marketing, the key to building a lasting and loyal relationship with consumers is through defining consumer behaviour and understanding mental and emotional processes of people who use banking products. They strive to find the consumers who want and need products, the people range from brand loyal customers to occasional or repeat users (Rightford, 2020). They consider understanding the consumer holistically through purchasing patterns, pricing factors and other buying influences which requires an insightful look at why consumers buy or not buy a product and what conditions influence a change in their behaviour (Rightford, 2020). The below figure shows factors that consumers are driven by, which are a complex set of internal and external factors which influence purchasing behaviour. Marketers looked at the five factors that affect consumer behaviour, namely personal factors, social factors, psychological factors, situational factors and marketing mix factors which are utilised in understanding consumer behaviour and purchase decisions (Rightford, 2020).

Digital banking is a transformative force that reshapes the way businesses connect with consumers, made a positive change in gathering information on consumer behaviour, it changed the way in which businesses connect with consumers (Raji et al., 2024). Personalised content has changed and increased the likelihood of users discovering products that align with their preferences which leads to higher conversion rates. Customers benefit from the convenience of a streamlined decision-making process, finding items tailored to their needs and preferences, and the reduced effort in navigating vast online catalogues (Donmezer et al., 2023).

2.4 UTAUT Model

Unified Theory of Acceptance and Use of Technology (UTAUT). The model utilises four major constructs which are (a) performance expectancy, which refers to the degree to which individual perceives the usage of a system that will assist in the system

performance (Syahfitri et al., 2024),(b) effort expectancy, is the degree in which ease is associated with the use of a system, the ease of use of the technology, (Bhuvaneswari & Maruthamuthu, 2024), (c) social influence, is the influence or encouragement of consumers from social platforms or through marketing campaigns on various media platforms to use certain products or services (Sari Dewi, 2024) and lastly (d) facilitating conditions, which refer to the enabling system conditions, that is the technical infrastructure required to use the system is available to facilitate digital transactions, (Febriyanti et al., 2024).

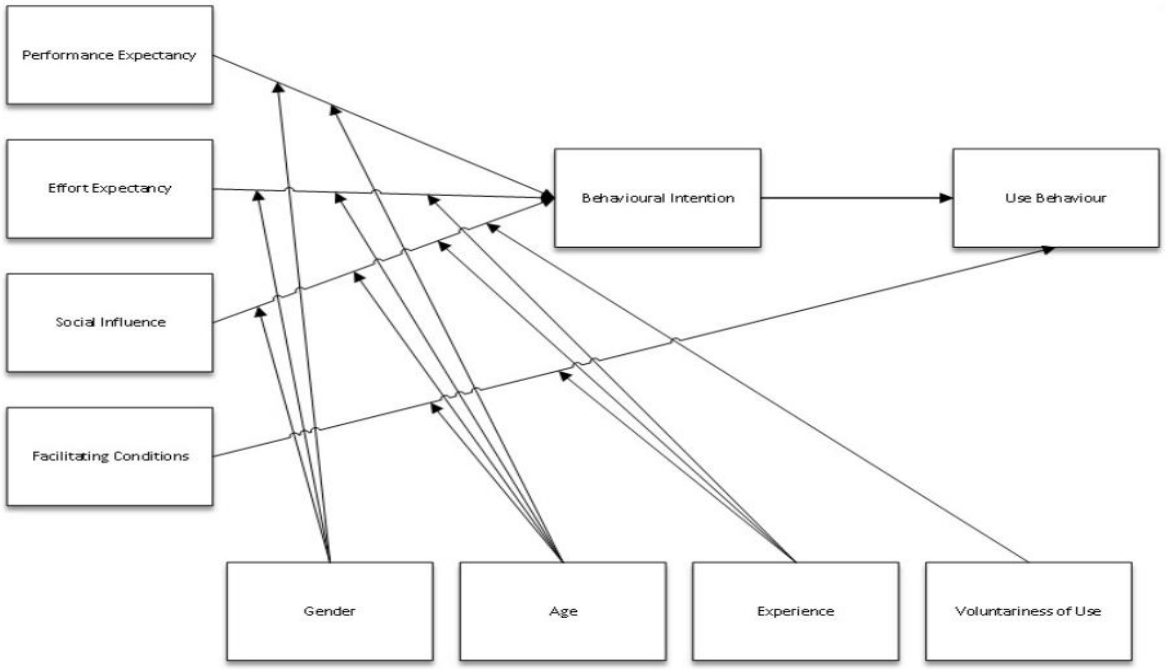


Figure 2: UTAUT Theoretical Framework

Source: *(Huang, 2023).*

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a frequently used research framework (Syahfitri et al., 2024). UTAUT has also been criticized for being excessively simplified approach and for adopting a narrow perspective that focuses solely on individual adopters' ideas, perceptions, and usage intentions (Syahfitri et al., 2024;Sari Dewi, (2024). States that although the original UTAUT model explained a considerable amount of variation in usage and behavioural intention. The model excluded some constructs that might be crucial for understanding acceptance

and usage, suggested some relationships that might not be applicable in all situations, and left out some potentially significant relationships.

In order to advance theory and provide research direction the original UTAUT model has been modified with additional factors namely trust and security, service quality, and customer satisfaction. This will enable the research to critically analyse factors that impact use of digital banking platforms in the South African context.

2.5 Factors that Influence Use in Digital Banking

2.5.1 Conceptual Framework

This research studies the factors of customer perceptions regarding the usage of digital banking platforms in South Africa. In this study, we say that the Unified Theory of Acceptance and Use of Technology explain how people use digital banking platforms. It is suggested that the fit between behavioural use and customer or user satisfaction may drive use decisions, thus UTAUT was most suited to evaluate factors that drive digital banking platform usage.

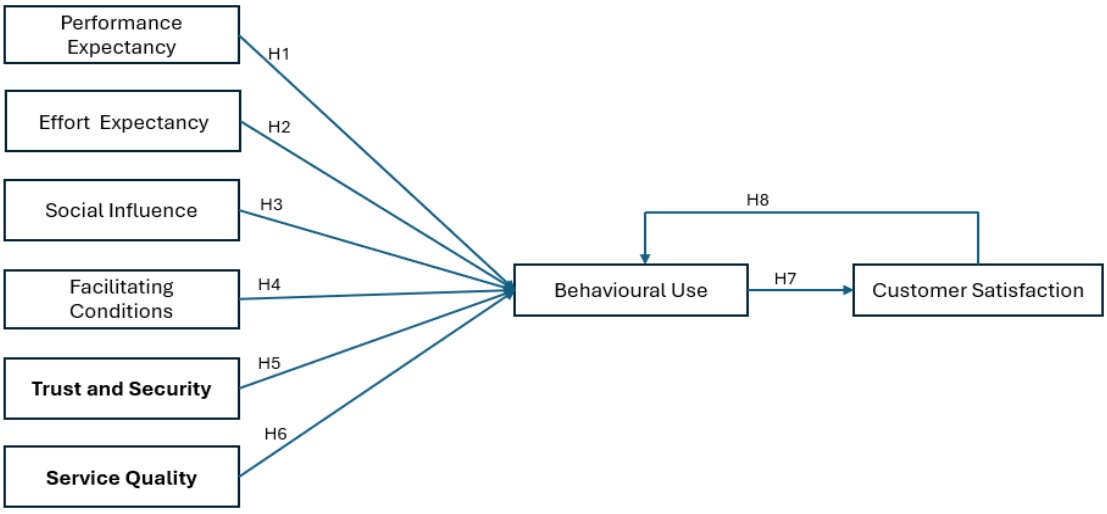


Figure 3: Updated UATUT model

2.5.2 Performance Expectancy

Performance expectations is the degree in which an individual believes that using a system will help attain gains in job performance (Elok & Hidayati, 2021). Platform performance enhances efficiency and effectiveness in managing the customers financial activities and plays a crucial factor in customer satisfaction and continued use of the digital banking platform (Kashyap et al., 2024). In the context of using digital banking platforms users have an enhanced perception of value when the service is convenient, saves time and the products are cheaper (A & Syed, 2024). The factors affecting performance expectancy include platform functionality, reliability, ease of use, speed and integration with other financial tools and services (Elok & Hidayati, 2021). The customer's view of the benefits of using the digital banking has a direct impact in repeat use and can drive behavioural use and customer satisfaction (Chauhan et al., 2022).

2.5.3 Effort Expectancy

Effort expectancy is the degree of ease associated with the use of a platform (Elok & Hidayati, 2021), it refers to the ability to achieve the most output when using a platform, while using the least amount of input. Effort expectancy encompasses various aspects of user experience and functionality of the platform which includes speed and responsiveness, streamlined processes, user interface design and seamless integration with other financial tools (Elok & Hidayati, 2021). Effort expectancy contributes to customer satisfaction and overall positive experience with the platform (Febriyanti et al., 2024). Customers tend to be satisfied and loyal to digital banking platform services when their needs are met effectively (Gupta et al., 2024). Efficiency is also an important factor in maintaining customer loyalty and ensuring customer satisfaction. When their maximum demands are met with efficiency, users tend to become happy and loyal to digital bank platform.

2.5.4 Social Influence

Social influence refers to how other people's opinions, perceptions, and behaviours affect an individual's decisions and actions (Huu Trani et al., 2024). It refers to how much users feel that significant people in their lives that believe they should adopt a specific digital product or service (Huang, 2023). It works by shaping users' belief systems and prompting reactions to social pressures. In the realm of digital banking platforms, social influence significantly impacts user behaviour, adoption rates, and overall engagement with the platform (Sheila Elok & Hidayati, 2021). Additionally, customers' usage of digital banking platforms is strongly influenced by their social networks (Wewege et al., 2020). Social influence drives customers to use digital banking platforms for various activities such as making payments, money transfers, accessing banking products such as credit facilities, checking balances, and handling queries. Digital banking platform usage may be influenced by the user's social circles such as colleagues' friends and family and social media content from advertisement campaigns or from influencers (Mogaji & Nguyen, 2024).

2.5.5 Facilitating Conditions

Facilitating conditions are defined as the resources that users have in their possession to support their use of technology, this reflects users' belief that the relevant organizations have the facilities and technological infrastructure available to help them effectively use the platforms (Huang, 2023). This includes platform accessibility, ease of use or a user-friendly interface, (Chauhan et al., 2022). In digital banking platforms, facilitating conditions encompass factors such as the ability to download the digital banking applications, access to a reliable network, digital tools such as smartphones and other relevant gadgets, and customer support (Kashyap et al., 2024). To use the digital banking platforms, users need a compatible device, internet access, and the ability to download and install a banking application, as well as knowledge of digital banking and security.

Given the significant impact of facilitating conditions, it is essential to provide adequate human support and infrastructure to ensure a smooth and user-friendly experience with digital banking platforms, which is linked to higher customer satisfaction (Syahfitri et al., 2024). Thus, users are more likely to adopt and engage with digital banking platforms if they have a positive perception of facilitating conditions, such as readily available help and support (Gertze & Petersen, 2024).

2.5.6 Trust and Security

The convenience of digital banking comes with significant security concerns, which are vital for maintaining financial security. This can be understood as the degree of stability in a nation's banking institutions, enabling the efficient functioning of the banking system and protection against both internal and external threats (A & Syed, 2024). Currently, online banking systems use multi-layered security models composed of various solutions and procedures designed to protect user data and applications through proper authorization, authentication, and identification (Bhuvaneswari & Maruthamuthu, 2024).

Banks that use dedicated Internet connections face greater security risks compared to those using dial-up modems due to increased susceptibility to unauthorized access from external sources. Despite advancements in electronic banking, users remain at risk of security breaches, particularly unauthorized access to their accounts (Anakpo et al., 2023). To address this, implementing non-repudiation measures is essential. This involves verifying the identities of both senders and receivers through trusted third parties with appropriate identity certificates. Non-repudiation is a crucial defence against fraud, offering a reliable mechanism to validate transaction authenticity and hold parties accountable (Ngubelanga & Duffett, 2021). By adopting stringent security protocols and leveraging trusted third-party verification, organizations can enhance the integrity and reliability of their electronic banking systems, thus increasing user confidence and trust. Implementing non-repudiation measures represents a proactive strategy to mitigate security risks and protect the confidentiality and integrity of sensitive financial data (Olaolu, 2022).

2.5.7 Service Quality

Digital banking optimally integrates all banking activities through information technology (Febriyanti et al., 2024). It allows customers to perform online transactions anytime and from anywhere, including accessing accounts, managing finances, paying bills, and utilizing various other banking services (Febriyanti et al., 2024) by focusing on technological advancements and process improvements, digital banks enhance service standards and streamline customer interactions (Sari Dewi, 2024). These systems significantly contribute to the improvement of a company's information infrastructure, offering customers greater convenience, comfort, and satisfaction, while boosting the operational efficiency of modern information systems (Febriyanti et al., 2024).

Service quality is defined by the gap between customer expectations and perceptions of the service provided. When the performance exceeds expectations, perceived quality improves, leading to increased customer satisfaction (Sari Dewi, 2024). High-quality service enhances customer retention, fosters long-term business growth, and creates opportunities for positive referrals. Customers who trust the safety and credibility of their bank are more likely to feel satisfied and confident in their banking experience (Syahfitri et al., 2024).

2.5.8 Customer Satisfaction

Customer satisfaction, according to (Schiffman, 2014) is the customer's assessment of the experience in relation to their expectations. In the highly competitive banking sector, customer satisfaction is a critical determinant that can impact market share and brand perception (Meena, 2022). Customers must be happy with the service in order for a digital banking platform to succeed in the market (Hagenbuch & Mgrdichian, 2020). If they are not, they may move to another banking provider or use a different digital banking platform, which would cost the bank money and customers. The following metrics can be used to gauge customer satisfaction with the digital banking platform: (i) security: do users believe the platform is secure enough to conduct transactions? (ii) ease of use: is the platform design user-friendly enough for users to comprehend their interactive process? (Kashyap et al., 2024). In the context of digital banking

platforms, trust entails that users feel comfortable with their money, personal information, balances, and other non-monetary features available on the digital banking platform (Chopdar & Balakrishnan, 2020).

2.6 Conclusion of Literature Review

This chapter present the theoretical foundation for this study's structure. The chapter begins with a literature review concerning, digital banking platforms, and the Theory of Acceptance and Use of Technology Theory (UTAUT) Model. It details the reviewed literature; theories of individual use were presented and their applicability to this investigation was discussed. Elements of the conceptual research framework were contextualized for digital banking platform use to conclude the chapter.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

The research models of the study, and the hypotheses were introduced in chapter 1 and 2, this chapter specifies the collection of data and the analysis of methodologies that are utilised to assess the research models and to ensure that research objectives are met. This chapter details the research methodology by considering the research approach focus, the strategy for conducting the survey, the data collection methodology, research instruments, ethical considerations and the considerations for validity, reliability and threats. The purpose of the study is to investigate the factors that influence the behavioural use and customer satisfaction of customers who use digital banking platforms. The investigation looks at additional factors to the theoretical framework that include trust and security and service quality in addition to the UTAUT theoretical framework which shapes the research methodology for the study. This chapter looks at the steps that are followed during the research by evaluating the framework and the adopted methodology. It further provides an explanation on how the data is gathered and includes the method of data analysis and interpretation, and

the tools that are used for the research and the applied sampling techniques. Lastly, the chapter also considers the ethical standards that are adhered to in the research process.

3.2 Research Approach and Design

The research design for this study serves as a framework for an investigation, that is grounded in a positivist research perspective. This approach assumes that causal relationships are objective, and that the collected data is reliable and consistent (Abutabenjeh & Jaradat, 2018). The goal is to develop an empirical theory that facilitates generalizations based on the study's results (Abutabenjeh & Jaradat, 2018).

The positivist research philosophy aims to identify aspects of reality that align with the researcher's goal of understanding societal phenomena (Tobi & Kampen, 2018). Researchers must specify the type of reality addressed by positivist principles, suggesting that social realities should be studied as they naturally occur (Rahi, 2017). To apply these principles, researchers need to define a specific reality to generalize findings to a broader population and use statistical methods on data collected mainly through surveys (Abutabenjeh & Jaradat, 2018).

In this study, positivist principles are applied through deductive reasoning to test theoretical frameworks using empirical observations and to establish causal relationships (Tobi & Kampen, 2018). Deductive research assists in developing theoretical and conceptual frameworks that can be empirically tested (Rahi, 2017). Integrating literature into the theoretical framework aids in hypothesis formation, underscoring the importance of the deductive approach (Rahi, 2017). Data collection follows a fundamental hypothesis, which progressed from theory to data to validate the research framework (Tobi & Kampen, 2018).

The study also highlights the role of qualitative research in supporting the methodology. Although the primary approach is quantitative, involving statistical analysis of data, this aligns with the positivist perspective. Quantitative methods, characterized by hypothesis testing, objective measurement, causality, and

reproducibility, will be used to analyse numerical data and gain insights into the studied phenomenon (Abutabenjeh & Jaradat, 2018).

Additionally, the study explores the impact of trust, security, and service quality on digital banking platform usage. It aims to identify relationships between these variables, classifying it as "explanatory research" (Meskus & Tikka, 2024). This research type measures causal relationships and examines how one variable may influence another (Meskus & Tikka, 2024). Before data collection, the study defines measures, instruments, and sampling methods, and outlines the approach for analysis (Golafshani, 2003). An initial exploratory, qualitative study will be conducted to refine and understand the concept of digital banking platform usage. Exploratory research aims to clarify problems, gather insights, and formulate hypotheses (Golafshani, 2003). Despite the exploratory phase, the study primarily employs deductive, quantitative, and explanatory methods.

3.2 Data Collection Methods

A quantitative approach is utilised for data collection, focusing on gathering new data from the population. This study utilizes a structured survey questionnaire, which is well-suited for collecting data due to its ability to measure unobservable variables through individual unit analysis (Rahi, 2017). The survey helps with measuring these variables and provide insights to address the study’s objectives.

The survey uses a sample, with data collected from a sample that represents the population (Abutabenjeh & Jaradat, 2018). Participants are selected using probability sampling, which enables each member of the population has an equal chance of being chosen through random selection (Abutabenjeh & Jaradat, 2018). In contrast, nonprobability sampling involves selecting samples based on personal judgment rather than random methods (Meskus & Tikka, 2024).

The survey method was chosen for its effectiveness and cost-efficiency in data collection (Cohen et al., 2007). This method is capable of handling large sample sizes and producing valuable results when conducted with well-structured procedures (Collis, 2007).

The primary data collection tool is a structured survey that utilizes a quantitative approach, which facilitates the numerical data collection for statistical analysis and to identify of patterns or relationships among various factors. The survey is aimed to collect data on digital banking platform usage and performance metrics within the surveyed individuals, allowing for objective and accurate measurements that could be generalized to a larger population (Abutabenjeh & Jaradat, 2018).

The survey included both closed-ended and open-ended questions. Closed-ended questions, which will use Likert scales, multiple-choice options, and ranking systems, which provide numerical data suitable for coding and analysis (Tobi & Kampen, 2018). Open-ended questions, on the other hand, offer qualitative insights, adding context and depth to the quantitative data collected (Tobi & Kampen, 2018).

The survey was distributed digitally to LinkedIn users, ensuring broad geographic reach, convenience, and cost-effectiveness. Participants are professionals from various backgrounds at different stages of digital banking platform usage, ensuring a representative sample. After data collection, the data was coded and entered into statistical a software SPSS for analysis, with careful attention given to data cleaning to address any missing or inconsistent data, outliers, or anomalies (Rahi, 2017).

While there are potential drawbacks, such as oversimplification and response bias transparency in the research process and encouraging honest responses can help mitigate these issues. Additionally, integrating qualitative insights with quantitative data will enable a comprehensive understanding of the phenomena for the study (Tobi & Kampen, 2018).

Throughout the data collection process, strict measures were put in place to ensure data privacy and confidentiality, respecting the privacy of participating organizations. Despite potential limitations, careful survey design, administration, and analysis yielded robust and generalizable insights into digital banking platform usage and customer satisfaction.

3.3 Population and Sample

3.3.1 Population

For this study, the population is defined as any individual in South Africa who has access to digital banking platforms and uses them for banking services. To accomplish research goals on the impact of using digital banking platforms on consumer behavioural use and customer satisfaction, data on usage, trust and security and service quality is needed to have a balanced view of the factors that are required. The researcher has 2500 connections/followers on LinkedIn, of which a substantial amount utilizes digital banking platforms in of South Africa. This serves as the population size of the study.

This strategy was justified for the following reasons:

1. **Representativeness and Diversity:** Previous studies recommended a sample size of approximately 10-20% of the population for surveys and studies (Kashyap et al., 2024). In this case, the sample is 10% of the population, allowing for 250 individuals to form part of the population size. The sample is 250 individuals, who responded in their personal capacity. The 250-sample size consists of 250 individuals who use digital banking platforms.

2. **Resource Allocation:** Traditional banks have been moving more products and services to their digital banking platforms and improving the service offering and have more resources to invest in technology and innovation (Mothibi & Rahulani, 2021). The economic and market changes brought by Covid 19 forced businesses to pivot to e-commerce therefore, more customers adopted digital banking platform usage, making them relevant to the study (Huu Trani et al., 2024).
3. **Manageable Scope:** While capturing the experiences of a larger number of digital banking customers would theoretically provide a broader perspective, practical limitations like time and resources make a smaller sample size more feasible (Tobi & Kampen, 2018).

The choice to focus on individuals in South Africa provides a diverse but manageable sample size for the research. First, these individuals presumably represent a significant portion of the population who utilize digital banking platforms. Individuals in the sector offered a substantive sample (n=250) that will allow for a full investigation, and therefore, their experiences with digital banking platforms may offer substantial insights into how it is being used across the sector.

Finally, focusing on individuals in the general public of South Africa based on their different banking needs ensures that the sample includes individuals with significant resources to utilize digital banking platforms. The organisations were more likely to have the technological capabilities to use digital banking platforms efficiently. Their experiences, therefore, have offered valuable insights into how digital banking platforms with significant resources ensure behavioural usage and customer satisfaction its impact on their operations.

3.3.2 Sample and Sampling Method

The study uses a probability sampling technique, which guarantees every individual an equal opportunity of being selected in the population. This method ensures fair representation across the population (Rahman, 2016). The main objective of this sampling approach is to draw general conclusions about the population group, utilizing mathematical principles to assess the likelihood of specific outcomes based on the sample data (Rahman, 2016).

By using this sampling strategy, the study aims to gather a diverse range of experiences and perspectives. This approach provides a more comprehensive understanding of how digital banking impacts customer usage and satisfaction (Tobi & Kampen, 2018).

The decision to use the selected methods is due to the method's capacity to offer a thorough understanding of the research issue, to minimize bias, and align with the data type. Using both primary and secondary data sources enhances the comprehension of the research subject (Meskus & Tikka, 2024). The combination of random and purposeful sampling techniques enriches the breadth and depth of

insights. Multiple regression analysis is known for its effectiveness in handling various variables and is well-suited to this research context (Palinkas et al., 2015).

3.4 The Research Instrument

The research utilizes a questionnaire as its primary instrument, designed to gather data aligned with the study's objectives from participants. A Likert-type scale survey was utilised to assess the attitudes and perceptions of the respondents' regarding digital banking platforms. This scale is chosen for its clarity and effectiveness in capturing respondents' opinions (Rahi, 2017). The questionnaire includes eight key constructs: performance expectancy, effort expectancy, social influence, facilitating conditions, trust and security, service quality, and customer satisfaction. Each construct is evaluated using multi-item Likert scales ranging from “1 = strongly disagree” to “7 = strongly agree.” The design of the research instrument is based on the UTAUT model (Huang, 2023).

3.5 Procedure for Data Collection

An online survey was used to gather data, distributed via a digital platform, LinkedIn to users of digital banking services. The survey utilized a Likert scale-based questionnaire, which was developed following a review of relevant literature. Data collected from the survey was analysed using Principal Component Analysis (PCA) with SPSS 30. The analysis revealed that factors such as Perceived Value, Brand Perception, Ease of Use, Convenience, Problem Handling through customer support or chatbot services, Security/Assurance, and Responsiveness significantly influence customer satisfaction in digital banking.

3.6 DATA Analysis Strategies and Interpretation

The data from the questionnaires will be exported from an SPSS spreadsheet for further analysis through the following steps.

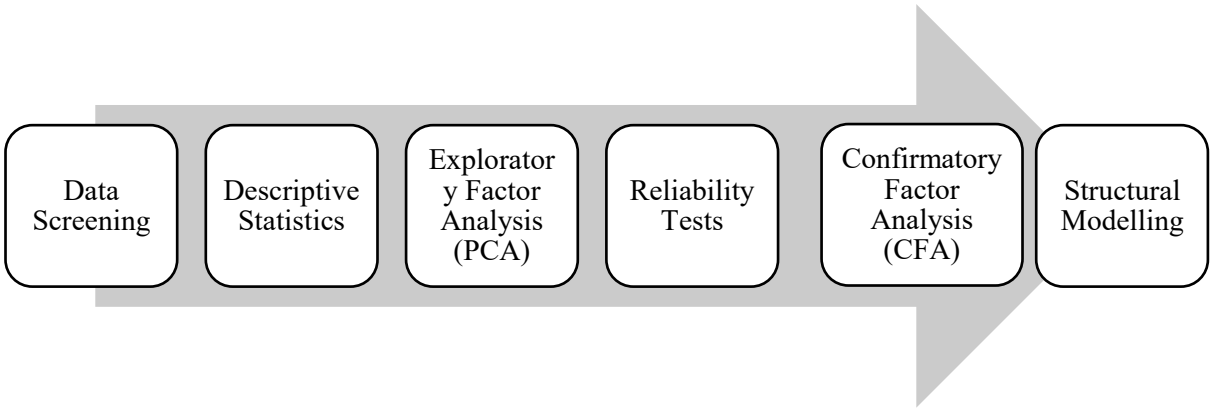


Figure 4: Data analysis and interpretation process

The study involves data screening to detect and correct errors prior to further analysis (Palinkas et al., 2015). Descriptive statistics, that include means, standard deviations, skewness, and kurtosis of scale items, are used to characterize the sample profile and distribution of the data (Palinkas et al., 2015). Sample profiles were further detailed using frequency counts and percentages. Exploratory Factor Analysis (EFA) was utilized to reveal the underlying structure of a broad set of variables (Rahi, 2017). Reliability tests were conducted to ensure that measurements are accurate and reliable (Rahi, 2017). A Confirmatory Factor Analysis (CFA) was performed to verify that the selected measures align with the proposed theories or models, thus assessing the hypothesized model (Rahi, 2017). Structural Equation Modelling (SEM) was used to analyse the data using SPSS. SEM is used as a test of the structural model and a confirmatory test of the measurement model.

3.7 Possible Limitations and Challenges of the Study

Although this research study examines factors that affect the use of digital banking platforms for self-service, a limitation is that the broad definition used does not permit feedback on specific digital banking platforms, such as individual mobile apps or chatbots. This creates a potential avenue for further research to apply the proposed model to obtain feedback on digital banking platforms. Additionally, the focus of the study is solely on the ‘use’ of digital banking platforms, leaving the aspect of ‘adoption’ of these digital banking platforms unaddressed.

3.8 Quality Assurance

Quality assurance and assessment are crucial for digital banking platform providers to gauge the effectiveness of their services and customer reception. Quality assurance involves ensuring that a product or service meets organizational standards through a systematic evaluation process, focusing on aspects such as design, durability, responsiveness, validity, reliability, and efficiency (Palinkas et al., 2015). It involves designing services based on collected data, validating plans and processes, documenting functions, ensuring quality, and providing improvement strategies (Tobi & Kampen, 2018). Among these aspects, validity and reliability are particularly significant as they are central to the development of research design and the methodological planning of quantitative research models (Golafshani, 2003).

Validity and reliability are essential for obtaining robust results for the study. Reliability refers to the precision and consistency of the measurement process, while validity ensures that the study accurately assesses what it intends to measure, leading to dependable results (Golafshani, 2003). In assessment contexts, validity measures how well a product or service reflects real-world scenarios, while reliability evaluates the service's appropriateness, practicality, and usefulness (Abutabenjeh & Jaradat, 2018). In quantitative research, ensuring validity means that results are applicable to real-life situations (Tobi & Kampen, 2018). Analysing these two features helps in understanding the consistency and effectiveness of digital banking platforms in serving customers in the banking industry. By examining contemporary works and findings, we can better assess the sophistication and utility of advanced digital channels used in this sector (Rahi, 2017).

3.8.1 Validity

Validity is a crucial aspect of research quality, serving as a fundamental measure of how well the research achieves its intended outcomes. It is essential to determine whether the research can claim to be valid, as validity assesses the accuracy and precision of the findings (Golafshani, 2003). According to Meskus & Tikka, (2024), when the research includes the correct variables for measurement, it leads to valid and verifiable results. Validity helps in ensuring that all relevant factors are measured accurately and how well these factors relate to the assessment process (Golafshani,

2003). The effectiveness of validity relies on using appropriate tools, methods, and processes. Palinkas et al., (2015) suggest that validity is understood when researchers consider whether they are measuring all the necessary aspects. Developing targeted questions based on the research concept is crucial for achieving validity, as emphasized by (Golafshani, 2003). Validity is pivotal in assessing how accurately and effectively digital channels serve customers in the banking industry.

There are several types of validity, including face validity, construct validity, and criterion-related validity (Golafshani, 2003). Face validity evaluates the apparent value of the research, while construct validity is assessed through expert panels and analysis of external factors. Criterion-related validity is determined by comparing findings with existing research and practices (Golafshani, 2003).

For this study, the focus is on external and internal validity. Both types are briefly described below.

3.8.2 Internal validity

Internal validity is a key type of validity focused on the accuracy and effectiveness of the internal components of research, including data collection, analysis tools, processing procedures, and other methodologies. It ensures the precision of the research design and requires careful attention from the researcher, as any flaws in the design can lead to inaccurate and inefficient results (Palinkas et al., 2015). This type of validity is concerned with the causal relationship between independent and dependent variables, meaning that accurate measurement of these variables is crucial since even minor changes can significantly impact the research outcomes (Abutabenjeh & Jaradat, 2018). To establish internal validity, it is essential to demonstrate the cause-and-effect relationships necessary for validating these connections (Golafshani, 2003). Factor analysis was used to enhance validity by examining whether items measuring negative effects correlate more strongly with each other than with items measuring somatic indicators (Melnyk, 2024). Research by Golafshani, (2003), underscores the importance of assessing validity in understanding the relationship between variables, insights from such studies are valuable for informing the research design.

3.8.3 External Validity

External validity refers to the degree to which research findings can be generalized beyond the specific experimental settings to other groups, environments, and contexts (Rahi, 2017). This study utilizes randomized probability sampling rather than focusing on a particular group with unique characteristics, thereby enhancing the generalizability of the results and improving external validity (Golafshani, 2003). In essence, external validity represents the ability to apply the research outcomes to a broader audience. According to (Tobi & Kampen, 2018) conducting experiments in varied and natural settings can significantly enhance external validity. One major advantage of external validity is its capacity to encompass a diverse range of participants, thus enriching the research method (Golafshani, 2003). External validity extends across different populations and contexts, making it crucial for understanding broader perspectives, such as those on banking services (Rahi, 2017). Therefore, external validity is essential for ensuring that the findings of the theories are relevant and applicable to a wider audience.

3.8.4 Reliability

Reliability refers to the dependability of the results obtained from the data measurements (Collis, 2007). It is crucial for assessing the internal consistency of the data, ensuring that results are stable and accurately reflect the entire population. A research study is considered reliable if the results are consistent over time and can be replicated using the same methodology (Golafshani, 2003). This concept of reliability is demonstrated when responses to questionnaire items are consistent or when individual scores remain relatively stable across different testing periods, as assessed by the test-retest method. Reliability encompasses several distinct constructs, each representing a different aspect of measurement accuracy. The main types are Test-retest reliability, Inter-rater reliability, Parallel form's reliability, and Internal consistency reliability (Abutabenjeh & Jaradat, 2018). Test-retest reliability involves assessing the stability of measurements over time at regular intervals. Parallel forms of reliability are evaluated by comparing the results of two different, but equivalent forms of an experiment conducted simultaneously to ensure consistency (Rahi, 2017). Inter-rater reliability refers to the consistency of results when multiple researchers or evaluators assess the same data. Internal consistency reliability, the final type, assesses whether

different items intended to measure the same construct produce consistent results, often using Cronbach's alpha with a common threshold of 0.7 (Golafshani, 2003). This method is crucial in research to ensure reliability; lower alpha values may indicate excessive measurement error.

3.9 Ethical Considerations

Ethical application was be submitted with the proposal submission and obtained from the university's ethics committee, please appendix C.

The study will follow the following ethical guidelines and principles by (Light et al., 2024) which acknowledge considerations of ethics in digital technologies.

- Respect for persons – this principle will be applied to honour autonomy and the right to self-determination of the respondents. This will be achieved through attaining voluntary informed consent from prospective respondents for the research, who are deemed to be competent to provide consent and protect the rights for those who are not able to do so.
- Full disclosure – the participants will be informed of who is conducting the study, why the study is being conducted, how the results will be utilised for the study allowing the participants to proceed or withdraw from the study.
- Confidentiality and Privacy – the dignity and rights of prospective survey respondents will be respected, through empowering the respondents with the opportunity to make informed decisions about how their data will be used, shared, reused and disposed of.
- Beneficence – requires the researcher to identify and balance the risks and potential benefits of the proposed research. The researcher is obliged to report the findings of the study as they are without modification to avoid dishonesty on the outcomes of the study.
- Individual privacy will be protected through anonymising or deidentifying personal identifiers or auxiliary information that may permit re-identification. Therefor the identities of the participants will not be revealed.

3.10 Conclusion

This chapter demonstrated the research methodology utilised in the presented study. The research method adopted for this study is a quantitative method that utilises a 7-point Likert scale from survey results. The study will use data to analyse the use and impact of digital banking usage and the impact on behavioural usage and customer satisfaction; survey will be conducted among users of digital banking platforms in South Africa. The data will be collected through a survey will be analysed using the Structural Equation Modelling (SEM).

Chapter 4. Presentation of Results/Findings

4.1 Empirical Results

The research methodology was developed in chapter 3. The analysis of the data gathered from the empirical study was the focus on this chapter. Research Objective 1 (RO1), *"To identify and examine the factors influencing behaviour on digital banking platforms."* Concurrently, Research Objective 2 (RO2), *"To identify the impact of digital banking platform usage and the influence on customer satisfaction,"* which were thoroughly explored and empirically evaluated.

Questionnaires were distributed as part of a survey to gather feedback from people on LinkedIn who use digital banking platforms. The hypothesised model of how the use of digital banking platforms affects customer satisfaction was tested using data gathered from individuals on LinkedIn in South Africa. The sample size, respondent demographics, the screening of data and identification of sample outliers were covered in the first sections. Descriptive statistics, a test for normality and the adequacy of sample examined empirical data are also presented in the following sections. In addition, prior to analysing the model results, the Principal Component Analysis (PCA), validity, reliability, and the correlation matrix are conducted. The model's results, discussion, and conclusion are shown.

4.2 Sample characteristics and demographic profiles

The questionnaire in this study was sent to 390 participants via LinkedIn, WhatsApp, and email. From the distributed questionnaires, a total of 221 were returned by the respondents. The received 221 questionnaires were analysed and cleaned. Missing values were identified and rectified. During the data cleaning process, it was observed that 5 of the responses did not have any data recorded, these occurrences were randomly distributed across the survey. 14 of the responses had less than 10% of missing data. The problem of missing data was addressed by using the “median of nearby points method”.

4.2.1 Demographic Profile

The purpose of descriptive statistics is to give a summary of the sample being studied. Table 2 displays the demographic profile of the respondents, where the demographic data is supplied by the 202 usable respondents.

Table 1: Demographics

Age	**Frequency**	**Percentage**
18 - 24	12	5,9
25 - 34	44	21,8
35 - 44	92	45,5
45 - 54	32	15,8
55 - 64	18	8,9
65 and over	4	2
Gender	**Frequency**	**Percentage**
Male	69	34,2
Female	133	65,8
Non-Binary	0	0
Prefer not to say	0	0
Highest Qualification	**Frequency**	**Percentage**
Grade 12 or Matric	23	11,4
National Diploma	37	18,3
Bachelor’s Degree	47	23,3
Honors	34	16,8
Masters	41	20,3
PhD	10	5,0
Other	10	5,0
Do you use banking apps or online banking	**Frequency**	**Percentage**
Yes	199	98,5
No	3	1.5
Which bank do you use?	**Frequency**	**Percentage**

ABSA	28	13,9
Capitec	42	20,8
FNB	57	28,2
Standard bank	45	22,3
Nedbank	20	9,9
Other	10	5,0
Which device do you use when using digital banking platforms	**Frequency**	**Percentage**
Cell phone	144	71,3
Laptop	2	1,0
Both	54	26,7
Other	2	1,0
How long have you been with your bank?	**Frequency**	**Percentage**
0 – 2 years	9	4,5
2 – 4 years	18	8,9
4 – 6 years	33	16,3
6 years and more	142	70,3
How would you describe your knowledge of digital banking platforms	**Frequency**	**Percentage**
Very Poor	0	0
Poor	0	0
Average	42	20,8
Good	50	24,8
Very Good	110	54,5

The demographics section of the questionnaire was to gather general data about the respondents, with an emphasis on things like their age, educational background, the bank they use, and how long they've been using their bank. The devices used for digital banking and how well their knowledge of digital banking is. The sample distribution on age range shows a diverse representation of participants as shown in figure 5. The highest participation in the age range is between the ages of 35 – 44 with a percentage of (45,5%), the second highest age range was between 25 – 34 which accounted for (21,8%) of the sample followed by the 44 – 54 age group with (15,8%) of the sample. The last three age groups were below 10% with the age group between 55 – 64 being (8,9%) followed by 18-24 at (5,9%) and the smallest group of respondents where in the age group between 65 and over at (2%).

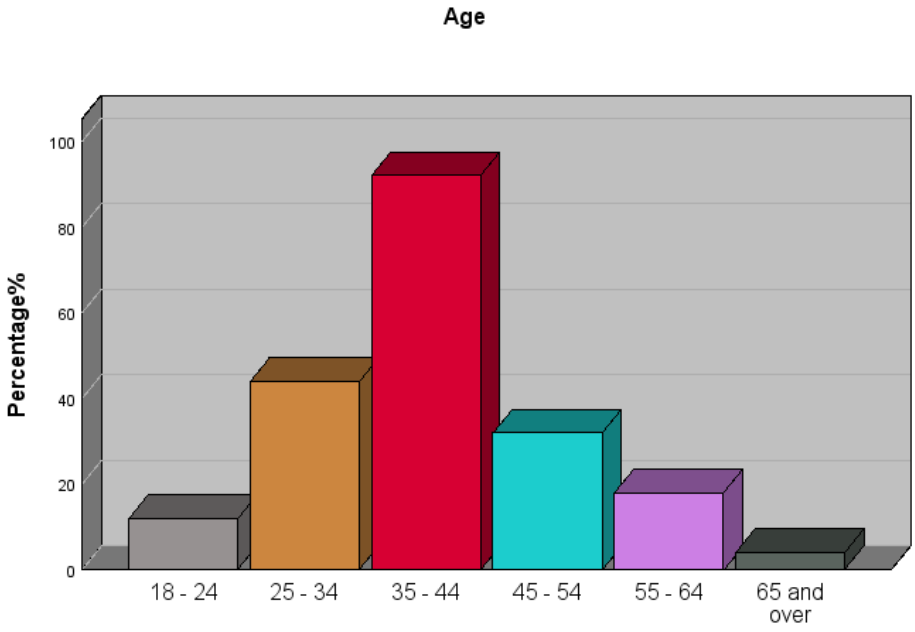


Figure 5: Age group

Figure 6: Respondents' qualifications

The sample distribution on education qualifications indicates a diverse representation of participants as shown in figure 6. The highest qualification attained by respondents is a bachelor's degree with (23,3%) followed by a master's degree with (20,3%). Further participants with a national diploma were (18,3%) of the sample and grade 12/matric with (11,4%). Lastly participants with a PhD and those who selected other were both (5%) each, thus the educational diversity represents a comprehensive sample of the study.

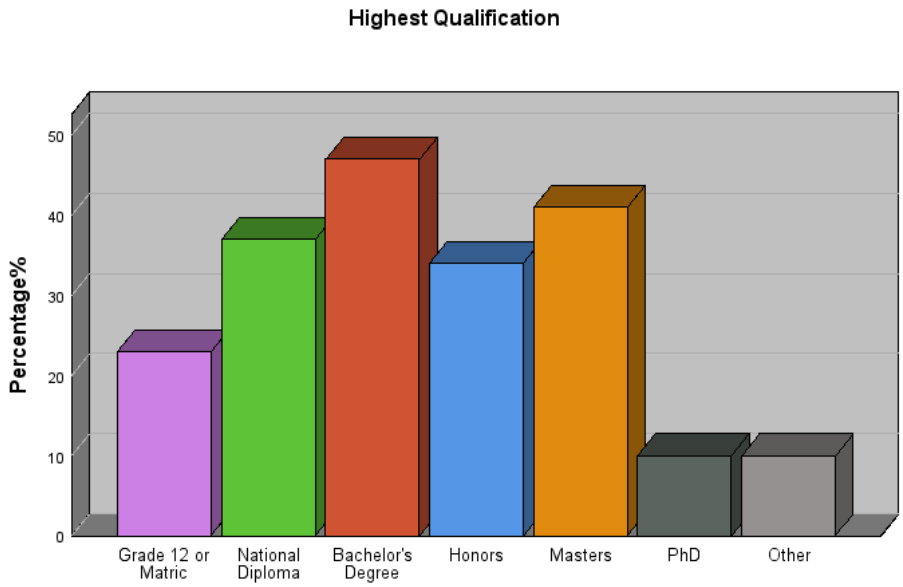


Figure 6: Highest Qualification

Cross tabulations for usage of digital banking platforms from respondents

Part of the demographic data collected was the respondents' knowledge of digital banking platforms, their usage, the length of time they have been using them and the banks they use for their banking services. Figure 7 indicates the usage and length of time that respondents have been using digital banking platforms. From the sample (1,5%) of respondents did not use digital banking platforms and (98,5%) of respondents use digital banking platforms. The respondents with 0 – 2 years of using digital banking platforms were the smallest group at (4,5%), followed by the 2 – 4 years of usage which were (8,9%) of the sample. The 4 – 6 years usage period were (16,3%) and lastly the group who have been using digital banking platforms for longer than 6 years were (70,3%) making them the largest group in terms of usage.

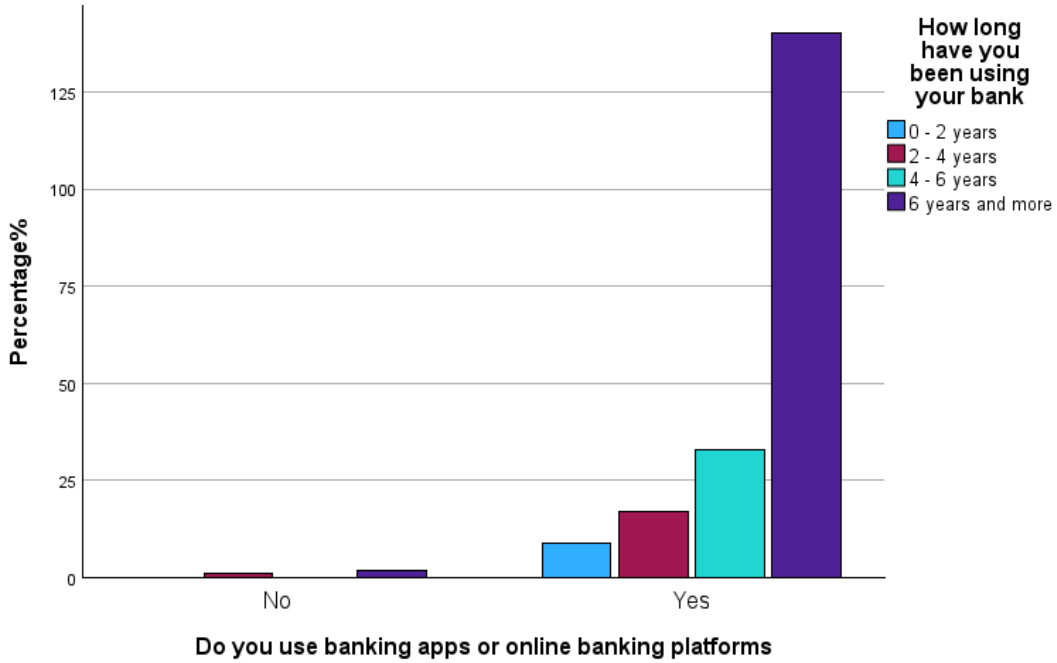


Figure 7: Length of time and Usage of digital banking platforms

The respondent's knowledge of digital banking platforms and the devices they use was paired to indicate the percentages in figure 8 below. The knowledge, understanding and usage and an indication of the devices used for digital banking platforms is important as it provides comprehensiveness and representativeness of the study. For knowledge of digital banking platforms respondents with average knowledge were (20,8%) which was the lowest score. Respondents with a good knowledge of digital banking platforms were (24,8%) of the sample and the highest percentage was for respondents with very good knowledge which consisted of (54,5%) of the sample. This was paired with the devices that respondents use for their digital banking transactions, respondents who use their cell phones were the highest percentage at (71,3%) followed by those who use both their cell phones and laptops being (26,7%) of the respondents. For laptop only usage and other that was (1%) respectively.

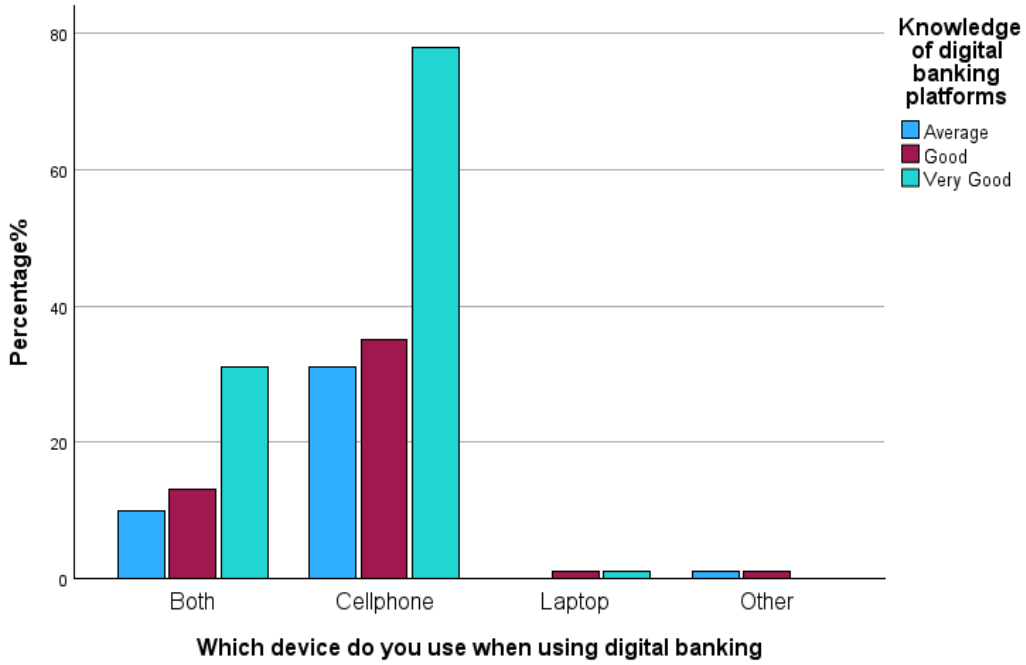


Figure 8: Device used and Knowledge of digital banking platforms

The sample distribution shown in figure 9, indicates the bank that respondents' use and how long they have been using their respective banks. The study consisted of professionals on LinkedIn and the banks they use. The respondents as indicated by figure 9, the banks they use and how long they've been a customer to their bank. The figure indicates that (13,9%) of the sample banks with ABSA bank, while (20,8%) banks with Capitec. (28,2%) of the respondents' bank with FNB and it has the largest number of respondents followed by Standard bank at (22,3%). (9,9%) of the respondents' bank with Nedbank and 5% of the respondents in the study bank with other banks.

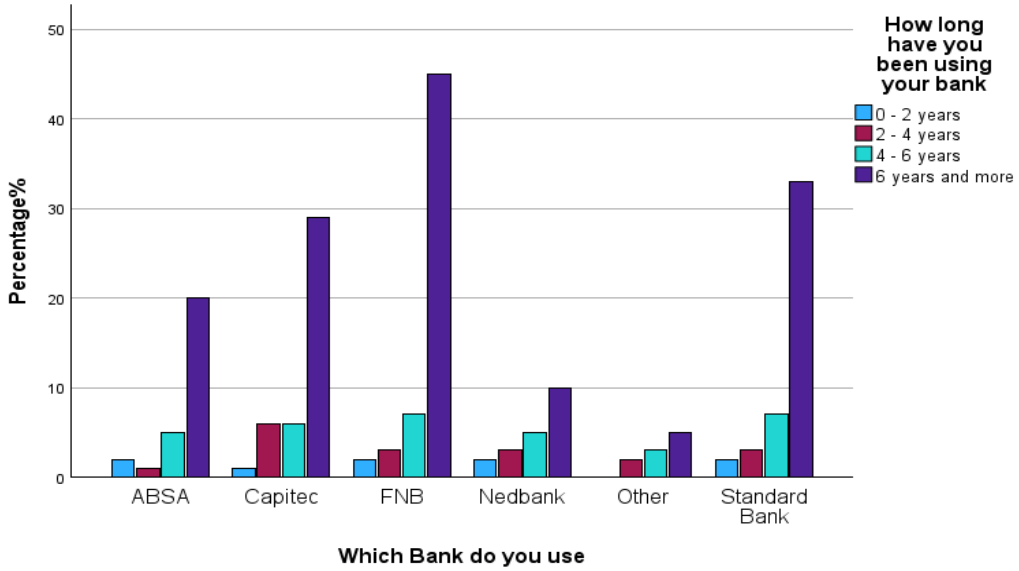


Figure 9: Bank used and number of years

4.2.2 Data Screening

For data screening SPSS was utilised for the analysis of the data collected. A comprehensive screening procedure to find missing data was the first step. Five responses were blank with no responses, these were eliminated. A further twenty-one responses are eliminated as they had missing data or not completed. In order to preserve the reliability and integrity of the data the removal was required. The missing data was distributed randomly throughout the survey responses. Another reason for the missing data could be that respondents stopped selecting responses when reaching a certain point and went to the end of the survey.

Table 2: Responses with Missing Data

Item	**Number of missing Responses**
Facilitating Conditions (FC)	1
Behavioural Use (BU)	1
Trust and Security (TS)	1
Service Quality (SQ)	1
Customer Satisfaction (CS)	1

4.2.3 Sample Outliers

Data points that differ substantially from other observations are known as outliers (Ghosh & Vogt, 2021). To find possible outliers, responses with abnormally high or low values were filtered (Adeli et al., 2019). Responses that are too extreme could indicate that the respondents are not from the same demographic. According to (Adeli et al., 2019) extreme values are usually responses that are more than three standard deviations from the mean. The number of standard deviations from the mean is reflected in an item's standard score. Every respondent's standardized scores on every questionnaire item were analysed, and no outliers were found, considering that every item on the questionnaire was completed using the same scale, this is unexpected.

4.3 Descriptive statistics

Table 3:Summary of Descriptive statistics per Construct

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Performance Expectancy (PE)	202	6	1	7	5,814	1,6298	-1,2161	1,2482
Effort Expectancy (EE)	202	6	1	7	5,641	1,5626	-1,6346	2,4962
Social Influence (SC)	202	6	1	7	4,546	1,6828	-1,2264	1,3946
Facilitating Conditions (FC)	202	6	1	7	5,478	1,5372	-1,2264	1,3946
Behavioural Use (BU)	202	6	1	7	5,931	1,5346	-1,8454	3,2114
Trust and Security (TS)	202	6	1	7	5,342	1,6091	-1,1384	1,1068
Service Quality (SQ)	202	6	1	7	5,222	1,6111	-1,0032	0,7014
Customer Satisfaction (CS)	202	6	1	7	5,642	1,5626	-1,2232	1,5974

* Composite scores for each construct calculated as the arithmetic average of its original scale items weighted equally

Table 4:Statistical results of Performance Expectancy (PE) items

Variable	OBS	Min	Max	Mean	Std.Dev.
PE1	202	1	7	5,79	1,582
PE2	202	1	7	5,76	1,592
PE3	202	1	7	6,01	1,685
PE4	202	1	7	6,00	1,659
PE5	202	1	7	5,51	1,631

Performance Expectations: As indicated in Table 4, PE has an overall mean of 5.8 with a standard deviation of, 1.62, indicating that most responses agreed that PE has a significant impact. The five items that were measured using a 7-point Likert scale were taken from earlier research on the characteristics of digital banking platforms. According to Table 4, the items mean ranges from 5.51 (1.631) to 6.01 (1.685), indicating a propensity to concur with statements that highlight performance expectancy.

Table 5:Statistical results of Effort Expectancy (EE) items

Variable	OBS	Min	Max	Mean	Std.Dev.
EE1	202	1	7	5,63	1,560
EE2	202	1	7	5,54	1,546
EE3	202	1	7	5,58	1,610
EE4	202	1	7	5,89	1,581
EE5	202	1	7	5,56	1,516

The purpose of Effort Expectancy is to gather data on the perceptions of respondents of the usability of digital banking platforms, their use of the platforms and their proficiency with them. Table 6 indicates that the overall standard deviation and mean is 1.56 and 5.64 respectively. This indicates that most responses concur that digital banking platforms are easy to use and don't require any particular expertise. The five items that were measured using a 7-point Lickert scale, the item's mean falls between 5.54 (1.546) and 5.89 (1.581) as indicated in Table 6. This implies that statements expressing effort expectations in the use of digital banking platforms are generally accepted by respondents.

Table 6:Statistical results of Social Influence (SI) items

Variable	OBS	Min	Max	Mean	Std.Dev.
SI1	202	1	7	5,37	1,563
SI2	202	1	7	5,43	1,564
SI3	202	1	7	4,00	1,736
SI4	202	1	7	3,76	1,749
SI5	202	1	7	4,17	1,802

The purpose of gathering data on social influence, of the opinions of digital banking platform users who feel that their using these platforms raises their social standing among their peers. The overall mean is 4.55 and the standard deviation is 1.6 as indicated in Table 7. This shows that the majority of respondents are neutral about the usage of digital banking platforms improving their social standing. The five items that were measured using a 7-point Lickert scale, the mean falls between 3.76 (1.749) and 5.43 (1.564), as indicated in Table 7. This suggests that many of the respondents support the social influence that comes with using digital banking platforms.

Table 7:Statistical results of Facilitating Conditions (FC) items

Variable	OBS	Min	Max	Mean	Std.Dev.
FC1	202	1	7	5,81	1,485
FC2	202	1	7	5,69	1,541
FC3	202	1	7	5,58	1,501
FC4	202	1	7	5,14	1,600
FC5	202	1	7	5,17	1,559

The purpose of Facilitating Conditions is to gather data on digital banking platform users' perceptions of the availability of tools and infrastructure required to facilitate the use of digital banking platforms. The overall mean is 5.5 and the standard deviation is 1.5 as indicated on the table. This suggests the majority of the respondents agree that the current infrastructure supports digital banking platforms. Five items that were measured using a 7-point Likert scale, the items mean falls between 5.14 (1.600) and 5.81 (1.485) which suggest that facilitating conditions that are common in digital banking platforms are agreed with by the respondents.

Table 8:Statistical results of Behavioural Use (BU) items

Variable	OBS	Min	Max	Mean	Std.Dev.
BU1	202	1	7	5,99	1,594
BU2	202	1	7	6,13	1,507
BU3	202	1	7	6,05	1,497
BU4	202	1	7	5,68	1,564
BU5	202	1	7	5,80	1,511

Data on Behavioural Use of digital banking platforms was gathered to assess the opinions of about the preferred use of digital banking platforms. Table 9 shows the standard deviation is 1.53 and the overall mean is 5.93. This implies that most respondents concur that their preferred means of banking is through digital banking platforms. The 5 items that were measured using a 7-point Likert scale to analyse the characteristics of digital banking platforms behavioural use. The items' means falls between 5.68 (1.564) and 6.13 (1.507). This suggests that the respondents mostly agree that digital banking platforms are the preferred method for banking services.

Table 9: Statistical results of Trust and Security (TS) items

Variable	OBS	Min	Max	Mean	Std.Dev.
TS1	202	1	7	5,48	1,640
TS2	202	1	7	5,13	1,635
TS3	202	1	7	5,24	1,530
TS4	202	1	7	5,89	1,611
TS5	202	1	7	4,96	1,629

Consumer confidence is a prerequisite for customer trust, it shows indicates confidence in a company's commitment to honouring its promises and operating in the clients' best interests. Tabe 10 shows that the total mean is 5.34 with a standard deviation of 1.6. This indicates that respondents trust digital banking platforms and have faith in their security. 5 items were measured using the 7-point Lickert Scale to analyse consumer trust and security on the use of digital baking platforms. The average mean falls between 4.96 (1.629) and 5.89 (1.611) which suggests that most respondents have confidence and trust the security of digital banking platforms.

Table 10: Statistical results of Service Quality (SQ) items

Variable	OBS	Min	Max	Mean	Std.Dev.
SQ1	202	1	7	5,53	1,578
SQ2	202	1	7	5,32	1,512
SQ3	202	1	7	5,15	1,689
SQ4	202	1	7	5,39	1,574
SQ5	202	1	7	4,72	1,679

The development of digital banking platforms has drastically changed the banking services market by providing consumers with efficiency, accessibility and convenience (A & Syed, 2024). Table 11, indicates that the overall standard deviation is 1.6 and the mean is 5.2. This indicates' that respondents agree that the service quality of digital banking platforms is good. A 5 item 7- point Lickert Scale to analyse data on service quality on digital banking platforms. The average mean falls between 4.72 (1.679) and 5.53 (1.578) which suggests that most respondents have confidence in the service quality of digital banking platforms.

Table 11:Statistical results of Customer Satisfaction (CS) items

Variable	OBS	Min	Max	Mean	Std.Dev.
CS1	202	1	7	5,63	1,560
CS2	202	1	7	5,54	1,546
CS3	202	1	7	5,58	1,610
CS4	202	1	7	5,89	1,581
CS5	202	1	7	5,56	1,516

The purpose of including data on Customer Satisfaction is meant to extract information on user beliefs and how happy they are to reuse digital banking platforms and how the platforms satisfy customer expectations. As shown on Table 12, the overall mean is 5.64 and the standard deviation is 1.6. This indicates that the majority of respondents are satisfied with the use of digital banking platforms. The five items that were measured using a 7-point Lickert Scale to measure the characteristics of customer satisfaction on digital banking platform use. According to Table 12, the item's mean fall

between 5.54 (1.546) and 5.89 (1.581). This suggests that respondents agree and are satisfied that with using digital banking platforms.

4.4 Assessment of Normality

The Descriptive Statistics depicted in Table 4 shows the “Skewness and Kurtosis coefficient” for each construct. These coefficients are critical for assessing the normalcy of the dataset. According to (George, 2010), skewness and kurtosis values that lie within the range of -2 to +2 often suggest a normal distribution in data. The majority of the Kurtosis and skewness coefficients according to the examination of these values, fall within this recognised range, indicating that the data is normal.

4.5 Sample Adequacy

Sample adequacy must be determined before performing a “principal component analysis (PCA)” to verify the validity of the multi-item scales. Kaiser and Rice created the Kaiser-Meyer-Olkin (KMO) test, which is used to assess the “adequacy of the sample”. According to (Field, 2013).KMO is the “ration of the squared correlation between variables to the squared partial correlation between variables”. The range of correlation patterns is 0 to 1, and correlations should yield trustworthy factors if their values are near to 1 (Field, 2013). Poor is defined as value between 0.5 and 0.7, good as value between 0.7 and 0.8, excellent as value between 0.8 and 0.9, and excellent as value between 0.9 (George, 2010). The study’s conclusion is shown in Table 13, where the KMO value is. Therefore, the sampling adequacy falls within an acceptable range, according to KMO results.

This suggests that the sample size sufficient to generate reliable factors.

Table 12:KMO and Bartlett's Test

KMO and Bartlett’s Test		
Kaiser-Meyer-Olkin Measure of the sampling adequacy		0.967
Bartlett’s Test of Sphericity	Approx. Chi-Square	10672.078
	Df	780
	Sig.	,001

This test shows how strongly the variables are related to one another. The results of this investigation indicate that the Chi-square value is 10672.078, with a significance level below 0.001. This suggests that PCA can be used to analyse the data effectively.

4.6 Principal Components Analysis (PCA)

To perform the factor analysis (principal component) the Orthogonal (Varimax) was utilized. According to (Hair, 2010)the method chosen captures the components with high eigenvalues, and it is organised by order of importance. The foundation of factor analysis is the idea the observed and quantifiable variance can be filtered down to a small number of latent variables with similar variance (Hair, 2010). The reduction of dimensionality is the term for this. Although they cannot be measured directly, the unobserved factor is crucial in a theoretical model. Thus, the scale construction begins with exploratory factor analysis (EFA) (Hair, 2010). In the development of the scales, EFA is thought to be a useful first step before any before any Confirmatory Factor Analysis (CFA). To create a theory or model from latent factors that are represented by sets if items, EFA enables a researcher to examine the primary dimension (Sangthong, 2020).

A construct must have a minimum of three variables (i.e. scale items) for it to be classified as a factor (Hair, 2010), though this can also rely on the study's design. Whether a variable has a relationship with more than one factor determines how many factors are generated (Murray, 2013). To maximize high item loadings and minimize low item loadings, a rotation matrix is employed. This results in a more understandable and simplified solution. The Varimax, quartimax, equamax, direct oblimin and promax are the five methods that SPSS offers for rotating data (Sangthong, 2020).The varimax rotation was used in this study to maximize high item loadings.

Table 13: Rotated Component Matrix

Rotated Component Matrix					
	Component				
Item	**1**	**2**	**3**	**4**	**5**
PE1	,843				
PE2	,799				
PE3	,851				
PE4	,835				
PE5	,812				
EE1	,886				
EE2	,890				
EE3	,817				
EE4	,899				
EE5	,857				
SI1	,788				
SI2	,683				
SI3		,689			
SI4		,791			
SI5		,609			
FC1	,835				
FC2	,835				
FC3	,856				
FC4	,849				
FC5	,774				
BU1	,696				
BU2	,765				
BU3	,829				
BU4	,841				
BU5	,830				
TS1	,898				
TS2	,858				
TS3	,790				
TS4	,888				
TS5	,704				
SQ1	,875				
SQ2	,861				
SQ3	,772				
SQ4	,818				
SQ5	,707				
CS1	,915				
CS2	,923				
CS3	,892				
CS4	,893				
CS5	,740				
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation					
a. Rotation converged in 10 iterations.					
Total Variance Explained 75%					

The factor loadings in Table 13, are significantly higher than the 0.40 cutoff. The weighting scale did not lose any items. Every factor loading is significant. Based on the findings of the exploratory factor analysis, each item was linked to a component.

To evaluate Performance Expectancy (PE) a total of five items were assessed. Without loading more than 0.40 onto other factors, where the five items in Table 14 loaded onto the same factor. Consequently, there were no performance expectancy items that needed to be removed.

A total of five items were used to assess Effort Expectancy (EE). Without loading more than 0.40 onto other factors, five items in Table 14 loaded onto the same factor. Consequently, there were no Effort Expectancy items that needed to be removed.

There were five factors used to evaluate Social Influence (SI). Five items in Table 14 were loaded on the same factor with below 0.40 on all other factors. Therefore, there was no need to remove any Social Influence items.

The Facilitating Conditions (FC) factor was assessed using five factors. Table 14: Five items that are non-cross-loaded above 0.40 onto other factors and highly loaded onto the same factor are displayed on the table. As a result, everything was kept.

To evaluate Behavioural Use (BU), 5 Factors were used. Table 14 shows that 5 items loaded above 0.40 highly on the same factor. Therefore, it was not necessary to remove any behavioural use items.

Five components were used to measure Trust and Security (TS). The Five items that were non-cross-loaded above 0.40 onto other factors and highly loaded onto the same factor are displayed in Table 14. Therefore, every item was kept.

For Service Quality (SQ) five components were used to measure the construct. The five items that are non-cross-loaded above 0.40 onto other factors and highly loaded on to the same factor are displayed in table 15. Consequently, every item was kept.

Customer satisfaction (CS) was evaluated using five items. Five items in Table 14 loaded highly on the same factor but below 0.40 on all other factors. As a result, nothing from customer satisfaction needed to be removed.

The model has nine constructs, which are confirmed by the PCA's underlying factor structure. Therefore, the analysis could proceed to analyse the reliability of the scales.

4.6.1 Reliability and Validity

Cronbach's alpha was used in the reliability assessment to assess internal consistency in this study. According to (Hair, 2010), reliability is the capacity of a scale to yield the same results when used under the same conditions with the same objectives. The Cronbach's alpha was calculated for nine distinct measurement scales, which were essential to the study's conceptual framework. The scales include, Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Behavioural Use (BU), Trust and Security (TS), Service Quality (SQ), and Customer Satisfaction (CS). Table 13 lists the requirements for a trustworthy scale. The Cronbach alpha results, both before and after adjustment, are then shown in Table 14 to show whether any items were removed from the original scales in order to increase the scale's reliability.

All scales demonstrated appropriate levels of internal consistency according to the reliability results in Table 13. All factors that composite reliability values that are greater than 0.8, which denotes a strong internal consistency.

The degree of correlation between distinct measures of the same construct is assessed by convergent validity (Field, 2013). To assess the convergent validity of this study, the Average Variance Extracted (AVE) was essential. The AVE is calculated by dividing the sum of the variances of the measurement errors by the average of the squared loadings of each indicator on its respective latent factor (Field, 2013). The range of AVE values is 0 to 1. A better convergent validity is indicated by higher AVE values. According to a widely accepted guideline, good convergent validity is indicated by an AVE value larger than 0.5 (Field, 2013). Convergent validity is suggested by the fact that all nine factors' AVE values are greater than 0.5 as indicated in Table 13.

Cronbach's alpha, "average variance extracted (AVE)," and "composite reliability (CR)" results are shown in Table 13. Reliability was measured using the 'Cronbach' alpha. If the "Cronbach' alpha" is at least 0.70, the scale is considered reliable (Hair, 2010). According to Table 13, the "Cronbach's alpha" is higher that the suggested value of 0,70 ranging from 0.779 to 0.973. The CR is above the 0.70 threshold, ranging from 0.624 to 0.935. Furthermore, each construct's AVE was computed. The AVE's minimum value of 0.58 is higher than the suggested cutoff of 0.50.

Table 14: Results of Reliability and Validity

Scale	Original number items	Final number of items	Cronbach Alpha after adjustment	"Average variance extracted (AVE)"	Composite reliability (CR)"	Mean	Standard deviation
Performance Expectancy	5	5	0.956	0.8998	0.9500	5.81	1.629
Effort Expectancy	5	5	0.965	0.9645	0.9610	5.64	1.562
Social Influence	5	5	0.808	0.8757	0.9457	4.54	1.682
Facilitating Conditions	5	5	0.933	0. 9120	0.9059	5.47	1.537
Behavioural Use	5	5	0.953	0.9324	0.9134	5.93	1.534
Trust and Security	5	5	0.933	0.9112	0.9565	5.34	1.609
Service Quality	5	5	0.930	0.9213	0.9124	5.22	1.611
Customer Satisfaction	5	5	0.959	0.9458	0.9613	5.43	1.562

4.6.2 Correlation Matrix of Composite Scores

As suggested by (Sangthong, 2020), construct validity is a crucial component of research methodology that is demonstrated by utilising convergent and discriminant validity. After calculating, the intercorrelation is shown in the table. As explained by (Hair, 2010), this procedure entails assessing the extent to which measures of a construct correlate with one another more strongly than with measures of other constructs. Examining the inter-correlations amongst constructs and constructing them with the Average Variance Extracted (AVE) or the square roots of AVE for each construct is how this principle is evaluated in practice. This confirms the constructs' convergent and discriminant validity by ensuring that they share more variance with items beside other constructs in the model.

The relationship between different constructs, such as PE, EE, SI, FC, BU, TS, SQ and CS are explained through a correlation analysis using the Pearson's correlation matrix in (Table 15) and AVE. Therefore, by making sure that the correlation between any two constructs is less than the square root of the AVE for each construct, in accordance with Fornell-Larcker criterion, this step evaluates discriminant validity. The correlation coefficients between the factors between the factors are compared to the

square roots of the AVE for each factor, which are shown in Table 16's descending diagonal. With all inter-construct correlations being less than the square root of the AVE for each individual construct, the results validate discriminant validity and permit the model to move on to the following testing phase.

Table 15: Pearson Correlation Matrix

	PE	EE	SI	FC	BU	TS	SQ	CS
PE	**0.829**							
EE	0.777**	**0.923**						
SI	0.755**	0.716**	**0.700**					
FC	0.730**	0.710**	0.693**	**0.858**				
BU	0.596**	0.664**	0.523**	0.616**	**0.872**			
TS	0.689**	0.710**	0.609**	0.704**	0.661**	**0.750**		
SQ	0.720**	0.744**	0.639**	0.711**	0.632**	0.764**	**0.842**	
CS	0.761**	0.782**	0.660**	0.780**	0.651**	0.823**	0.0918**	**0.912**

4.7 Results of Model Testing

To assess the measurement and structural models that were outlined in the study, this part of the research assesses the data that was gathered. It is recommended that a Confirmatory Factor Analysis (CFA) is done as a final assessment of the measurement model prior to the empirical evaluation of the suggested structural model. To determine whether every item is optimally loaded onto the model's hypothesized constructs, this step is essential. The goal of using CFA is to examine the hypothesis regarding the sources of the variance that explains the total variance amongst a ground of observed variables. 40 items that measure the principal variables were kept after the exploratory factor analysis (PCA) phase are the focus on this analysis, which consists of 8 measurement items (8 factors that influence the use of digital banking platforms). Therefore, the CFA confirmed that the suggested factor structure was appropriate for the data that was collected.

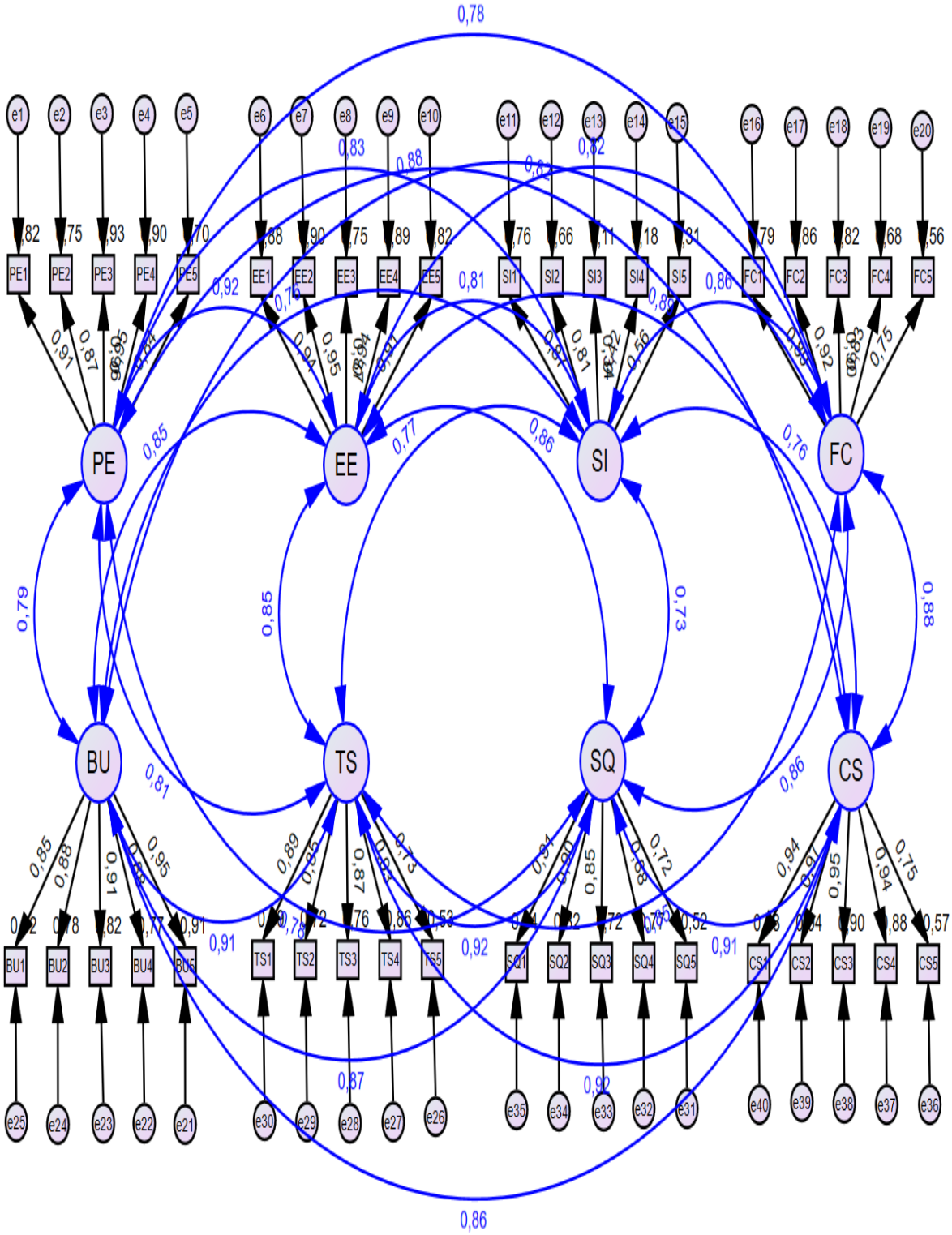
The second step involved testing the hypotheses reflected in the structural model, or the relationship between independent and dependent variables, using "Structural Equation Modelling (SEM)" model. AMOS version 30 was utilised to run the SEM

model. Compared to other software like LISREL and STATA. AMOS is simpler to use because of its simplified path diagrams (Sangthong, 2020)

4.8 Confirmatory Factor Analysis (CFA)

The relationship between the observed variables and their underlying latent variables was examined using CFA. The Exploratory Factor Analysis (EFA) was used to create the first model, and it was essential to assess the hypothesised measurement model's suitability. AMOS V30 was used for CFA to verify the measurement requirements. The steps used to analyse the CFA process include Model identification, specification, estimation, modification and output analysis (Field, 2013). The original model was created using EFA, the model that needed to be validated through CFA was defined using the pattern matrix that was derived from the EFA output in SPSS. Eight variables with Five manifest variables each were each found using EFA. Model identification consists of evaluating the model's performance. The program's initial tasks included fixing each path from latent to observable variables and estimating all variables. The full CFA, which supports an eight-factor structural measurement model, is graphically represented in figure 5. The covariance between the two factors is shown in this diagram by the double-headed arrows.

Figure 10: CFA Model



4.9 Goodness of Fit Indices

All analyses were conducted on covariance matrices, and the model parameters were estimated using the "maximum likelihood" approach. When analysing the model-fit indices must be considered. The first step to evaluate the tested model's a Chi-square (X2). The high X2 and the high ratio of X/DF = 10 is greater than the suggested value which is 3. However, given that even small discrepancies between the observed model and the excellent model fit could be substantial, this test might unnecessarily reject the hypothesis (Hair, 2010) because even small variations between the excellent model fit and the observed model could have a big impact. The following were the fit indices, Table 18: [GFI= 0.659; NFI= 0.837; CFI= 0.891; IFI=0.892; RMSEA=0.090; DF=; TLI=0.881 and RFI=0.821]. The CFA model's validity suggests that certain model-fit indices were unsatisfactory. However, ensuring that every item on the scale was loading into the model was the primary goal of the CFA model. The construct and factor loadings were validated using the CFA test (Serrano Archimi, 2018). Testing the hypothesis among the constructs was not its intended purpose. According to the findings, every item is loading correctly and consistent with the theory. This model's factor loadings fall above the recommended cutoff of 0.50, ranging from 0.659 to 0.891. The hypothesised model was put to the test in the next section.

Table 16: Goodness of Fit Indices

Fit Index	Recommended Value	CFA Results	Original Structural Model	Final Structural Model
Goodness-of-fit (GFI)	Less than 0.80 (No fit) Between [0.80-0.90] (acceptable) Above 0.90 (Perfect fit)	0.659	0.843	0.963
Normed fit index (NFI)	Less than 0.80 (poor) Between [0.80 -0.90] (acceptable) Above 0.90 (good)	0.837	0.864	0.978
Comparative fit index (CFI)	Less than 0.90 (poor) Above 0.90 (good)	0.891	0.902	0.934
Incremental fit index (IFI)	Less than 0.90 (poor) Above 0.90 (good)	0.892	0.923	0.958
Root mean square error of	Less than 0.50 (good) Between [0.06-1] (acceptable)	0.090	0.05	0.0394

approximation (RMSEA)	Above 1 (poor)			
Chi-square (χ2 /DF)	Less than 3 (good) Between [3-5] (acceptable) Above 5 (poor)	10.672	4.567	2.93
Tucker-Lewis Index (TLI)	Less than 0.80 (poor) Between [0.80-0.90] (acceptable) Above 0.90 (good)	0.881	0.932	0.944
Relative Fit Index (RFI)	Less than 0.80 (poor) Between [0.80-0.90] (acceptable) Above 0.90 (good)	0.821	0.934	0.957

4.10 Original Model Testing

The findings in Table 13 confirm the thorough evaluation and support of the reliability, convergent validity, and discriminant validity constructs using EFA and CFA methodologies. Following this validation procedure, as shown in Figure 10, the study looked at the hypothesized relationship between exogenous and endogenous latent variables. The structural model, which carefully defines the dynamics between dependant and independent variables, was analysed to conduct this investigation. The unidirectional arrows symbolize the casual relationship between these variables, while bidirectional arrows show the covariance among independent variables. When comparing the predetermined pathways observed in previous literature, this study uses an approach of unfixed pathways for speculating causal relationships among variables (Mudau, 2021).

The assessment of the first hypothesised model, as shown in Figure 10, indicates a less-than-ideal fit to the model, necessitating improvements to accuracy of the causal relationships between variables.

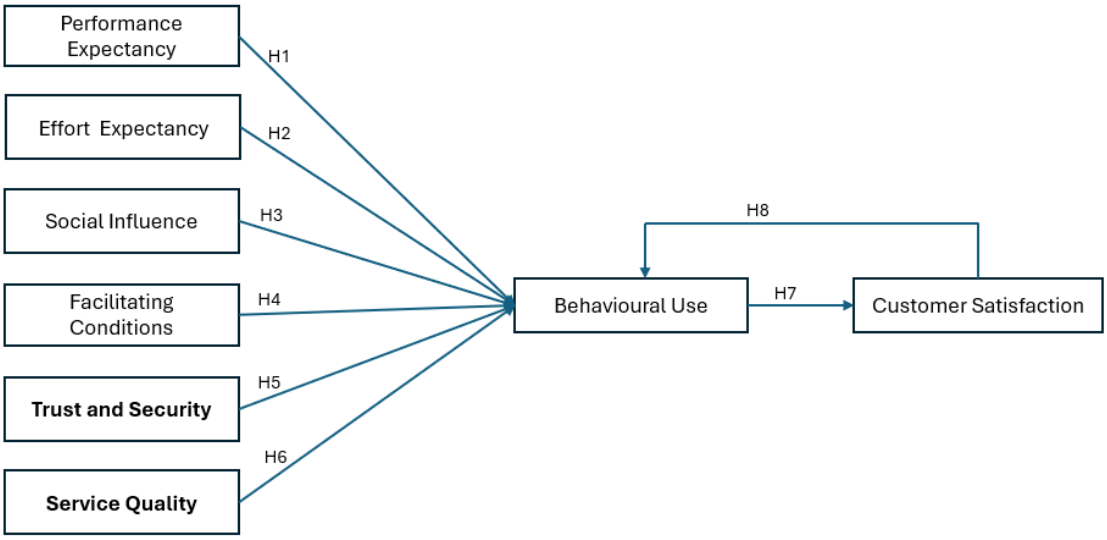


Figure 11:Original Model

The recommended threshold range of 3 to 5 is exceeded by the degrees of freedom ratio (X2/ DF) is 10. According to Table 15, the fit indices include the following measurements: Tucker-Lewis index (TLI) at 0.881, relative fit index (RFI) at 0.821, root mean square error of approximation (RMSEA) 0.090, incremental fit (IFI) at 0.892, comparative fit index (CFI) at 0.891, normal metric fit index (NFI) at 0.837 and goodness-of-fit index (GFI) at 0.659. Although there are concerns about the CFI and IFI measures, these indices generally indicate acceptable fit level.

It was essential to re-evaluate and possibly alter the initial model in order to enhance it and attain a better fit. This involved removing specific constructs from the model in question by setting their constraints to zero. To improve the model fit, error covariance estimates were also modified. These methodological improvements were essential to guaranteeing the model's validity and robustness, which allowed for a more precise interpretation of the causal relationship between the variables being examined. These approaches refer to foundational works in the field, such as "Principles and Practice of Structural Equation Modelling" (Kline, 2011). For structural model testing and "Multivariate Data Analysis" (Hair, 2010) for EFA and CFA techniques, which offer thorough frameworks and best practices for carrying out such analyses.

4.11 Final model testing

4.11.1 Model improvement steps taken

To enhance the model's fit, the following adjustments were made. The AMOS output was examined to determine these improvements. According to Table 16, if the high covariance modification indices do not jeopardize the tested theoretical model, they may be combined (Fan & Sivo, 2005). It was confirmed that that altering the indices below improved the model's fit. The model fit summary for both the initial and final SEMs displayed in Table 17. Table 17 illustrates how poorly the original model fit, with multiple fit indices falling below acceptable bounds. To increase the model's fit, modifications were made to the original model. This was guided by modification indices. Lastly, Table 16 lists the high covariance modification indices that can be combined if doing so does not jeopardize the tested theoretical model (Fan & Sivo, 2005). It was verified that altering the indices below improved the model's fit.

One-header arrows indicate the significant paths and dotted one-header arrows indicate the non-significant paths. According to the final indices, it was acceptable to examine the hypothesized relationships within the model. The path coefficients of the "hypothesis relationships within the proposed research model" are shown in Table 18.

In this step, the relationship between the latent and observed variables in the suggested model were examined. The AMOS software made it easier to evaluate the measurement and structural elements of the model, enabling a thorough comprehension of the intricate interactions between variables. By offering answers to the hypothesis put forth in this study, the study sought to validate the hypothesized structural model. The model fit summary for both the initial and final SEMs is displayed in Table 16. The original model had a poor fit because several fit indices were below acceptable limits, as Table 16 illustrates. To increase the model's fit, modifications were made to the original model. This was guided by modification indices. The final model's GFI showed a good fit (GFI=0.984), exceeding the suggested cutoff for a perfect fit. An adequate fit was suggested by the NFI, which was within the acceptable range (0.918). A good fit for the model was indicated by the CFI (0.987) and IFI (0.933). A good fit was shown by the RMSEA (0.090) which was significantly below the suggested cutoff. The TLI demonstrated a satisfactory fit, and the Chi-Square (X2/ DF)

suggested a good fit. The RFI (0.821) indicated a good fit because it was within the permissible range. The final SEM appears to have a reasonably good fit overall, according to the fit indices, which emphasizes how well it captures the relationship between the study's observed and latent variables. Table 17, which displays the relationships between the constructs as hypothesized in the study, reports the SEM parameter estimates.

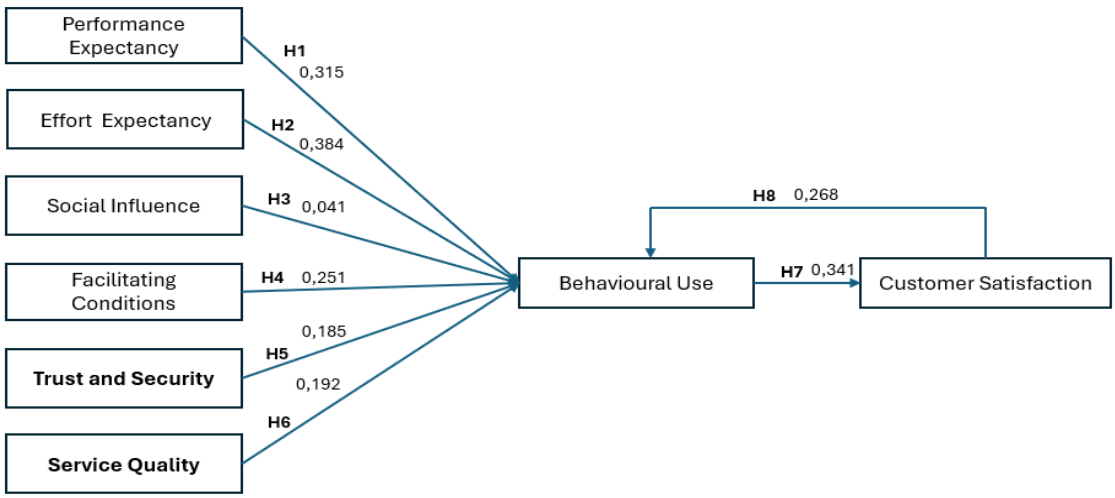


Figure 12: Final Model

Table 17: SEM parameter estimates

Hypothesis	Independent Variable		Dependent Variable	Estimate	S.E.	C.R.	P	Comment	P
H1	PE	.-->	BU	0.315	0.065	4.432	***	Supported	P<0.001
H2	EE	.-->	BU	0.384	0.052	6.239	***	Supported	P<0.001
H3	SI	.-->	BU	0.041	0.065	0.592	0.554	Not supported	P>0.05
H4	FC	.-->	BU	0.251	0.086	2.727	0.013	Supported	P<0.05
H5	BU	.-->	CS	0.185	0.054	3.585	***	Supported	P<0.001
H6	TS	.-->	BU	0.192	0.068	2.787	0.009	Supported	P<0.50
H7	SQ	.-->	BU	0.341	0.070	4.775	***	Supported	P<0.001
H8	CS	.-->	BU	0.268	0.077	3.432	***	Supported	P<0.001
PE=Performance Expectancy, EE= Effort Expectancy, SI= Social Influence, FC=Facilitating Conditions, BU= Behavioural Use, TS= Trust and Security, SQ= Service Quality, CS= Customer Satisfaction									

Table 18: R-squared Results

Variance	Estimate
BU	0.323
CS	0.214
EE	0.342

Seven of the eight hypotheses were directly supported by the model under test, as shown in Table 17. The use of digital banking platforms and its impact on customer satisfaction were found to be significantly correlated with performance expectancy, effort expectancy and service quality factors, according to the results of the SEM analysis. Specifically, performance expectancy (PE) (β= 0.315, p <0.001), indicating that digital banking can be enhanced by performance expectancy. This suggests that effective performance management of the digital banking platform can improve digital banking platform usage. Therefore, Hypothesis 1 was supported. Additionally, Effort Expectancy (EE) significantly and positively impacts digital banking platforms (β= 0.384, p <0.001), highlighting the critical role that effort expectancy plays a role in influencing digital banking platform usage. The depth of understanding establishing influence in digital banking linked to its significance. Hypothesis 2 was thus validated. Furthermore, it was discovered that Social Influence had no significant impact on the behavioural use of digital banking platforms (β= 0.041, p>0.50). Therefor Ha3 was rejected. Digital banking platform usage was found to be positively and significantly influenced by facilitating conditions (β=0.251, p < 0.05). Hypothesis 3 is supported by the fact that the importance of available infrastructure that is dependable and available for usage is determined by its foundational influence, broad application, and contribution to the advancement of digital banking platforms. Behavioural Use has an impact on digital banking platform usage, as evidenced by the positive and significant relationship that it had (BU) (β = 0.185, p < 0.001). Therefore, hypothesis 4 was validated. The fundamental influence in digital banking platforms can be used to gauge the significance of contribution, the impact of public perceptions. The findings indicate that Trust and Security have a positive impact on the use of digital banking platforms (β=0,192, p<0.050). A digital banking platform that provides good security for the user is trusted which influences the usage of digital banking platforms. Thus Hypothesis 6 was validated. A digital banking platforms' Service Quality has a significant impact on

the usage of the platform (β=0.341, p < 0.001). Service quality influences users to use the platform or not, thus playing a huge role on customer satisfaction and the usage of digital banking platforms. Hypothesis 7 is thus validated. Customer satisfaction has a positive and a significant impact on the usage of digital banking platforms, meeting customer expectations and ensuring that access to services is maintained plays an important role in the usage (β = 0.268, p<0.001). Therefore, hypothesis 8 is validated.

An in-depth interpretation and discussion will be conducted in the next chapter. The final path diagram of the projected model is shown in Figure 11.

4.12 Chapter Summary

Results on the use of digital banking platforms and the impact on customer satisfaction were presented in this chapter. An examination of the sample's characteristics, which disclosed its demographic makeup, kicked off the discussion. The validity and reliability of the measurement models were then evaluated using confirmatory factor analysis to validate the measurement model, exploratory factor analysis to reveal underlying variable structures, and Cronbach's alpha for reliability. Then structural equation modelling was used, and the hypotheses were tested. The findings showed that while social influence did not significantly influence digital banking platform usage, however performance expectancy, effort expectancy, facilitating conditions, behavioural use, trust and security, service quality and customer satisfaction did. The upcoming chapter discusses these findings.

Chapter 5. DISCUSSION OF THE RESULTS OR FINDINGS

5.1 Introduction

Understanding the elements that affect the use of digital banking platforms and the impact of the use on customer satisfaction were the goals of the chapter. A survey was conducted to gather the opinions of South African digital banking platform users. To address (RO1) *which is to identify and examine the factors influencing consumer behaviour on digital banking platforms*. This study has identified and empirically evaluated the seven factors that contribute to the use of digital banking platforms which are (performance expectancy, effort expectancy, facilitating conditions, behavioural use, trust and security, service quality and customer satisfaction) contributing to the variance in digital banking platform use. In pursuit of (RO2) – *To identify the impact of digital banking platform usage and the influence on customer satisfaction.* To make this analysis easier, a model that outlines the success factors of using digital banking platforms was created and empirically validated.

The research model for this study, which employed a modified a UTAUT model which is the most effective framework for analysing technological adoption is the foundation for the results summary that follow, performance expectancy, effort expectancy, social influence, facilitating conditions, behavioural intention and usage behaviour are the six main variables of the UTAUT model (Chao, 2019).This framework, integrates theories of human behaviour and enables the examination of the respondents' perceptions in relation to a more comprehensive notion of innovation, has been employed to assess user expectations concerning digital innovations (Grace Marcelo et al., 2021). In executing the study, to understand the effect of digital banking platform usage and its impact on customer satisfaction, the UTAUT model was extended: the integrated comprehensive and expanded model which is grounded in the UTAUT theory (Grace Marcelo et al., 2021). This extension included crucial variables such as user trust and security, service quality and customer satisfaction, laying the foundation for the model's development. Individual users who are Linked-In users in South Africa provided the data, through a thorough survey which made it possible to conceptualize digital banking platforms in a more comprehensive way, taking to account users'

perspectives on the use of digital banking platforms and the impact on customer satisfaction. The study had a theoretical basis which was attributed to the application of the UTAUT theory. The research modified the original UTAUT to incorporate trust and security, service quality and customer satisfaction. The original UTAUT model focused on human behaviour, user expectations and the technology environment and infrastructure (Ghalandari, 2012).These extended factors close the research gap by further examining user perceptions and technology performance in the adoption of new technology, specifically digital banking platforms (Yi, 2006), thereby filling the research gap.

Consumers can use digital banking platforms for several banking needs such as checking balances, paying bills, saving and investing, insurance services, various credit products, buy airtime and electricity and log queries to name a few. Digital banking platforms offer several benefits to users, such as (i) convenience because they are easily accessible on smartphones, laptops, tablets or desktops. (ii) customized goods and services; banks can produce customized goods and services thanks to the rich data that digital banking platforms offer. (iii) Users are instantly delighted when using digital banking platforms because they provide instant gratification during transactions (Chopdar & Balakrishnan, 2020). Banks that provide digital banking platform services benefit from the following: (i) useful consumer insights, which banks can measure using digital data factors that impact the use of digital banking platforms (Tarute, 2017). This means that banks can change their product range if customers don’t use a product or do use it, as high performance can lead to product growth (Ghalandari, 2012). (ii) greater customer satisfaction, the capacity of the banks to satisfy customers by meeting their expectations, and when the customer is happy, it can result in positive word of mouth (Hohenberg, 2021). Loyal users of digital banking platforms can bring significant amounts of revenue and lower costs to banks, by using digital banking platforms which can be a cost cutting tool for banks (Nzabirinda, 2019). Therefore, the bank may gain a competitive edge by utilizing a digital banking platform (Stocchi, 2021)

5.2 Factors influencing the use of digital banking platforms

Performance Expectancy (H1) is a factor that influences the use of digital banking platforms. Respondents to this study overwhelmingly concur that their use of digital banking platforms is significantly influenced by features and products that cater to their

needs. According to (Wu, 2021), the significance of these findings motivates the digital banking platform sector to invest its resources that ensure that digital banking platforms are useful to users, including task-fit and offering the necessary features. Digital banking platforms would be more widely adopted and used if they have user-relevant features and products (Chao, 2019).

According to the study's respondents, using digital banking platforms is beneficial because they cut down on the amount of time spent when banking and makes banking simpler. These results concur with those of (Ogonji & Muluka, 2015), who found a positive correlation between performance expectancy and the use of digital banking platforms. One of the main benefits of this capability is the convenience of being able to do transactions whenever it is convenient for the user, which is a big improvement over having to go to a physical bank branch to do the same kinds of transactions. According to earlier research (Liu, 2021), user behaviour when using or adopting digital banking platforms is not significantly impacted by performance expectations. However, other researchers found a connection between behavioural use of digital banking platforms and performance expectancy (Liébana-Cabanillas et al., 2017). The results of this study demonstrate a positive relationship between performance expectations and digital banking platform use.

Effort Expectancy (H2) is found to be one of the factors that encourages the use of digital banking platforms. Respondents to the study are adamant that user-friendly digital banking platforms that have search capabilities and up-to-date information about their service provider have a positive impact on digital banking platform use. Customers are therefore more likely to use digital banking platforms if they can search products and services in the banking platform and easily pick up new information. When developing digital banking platforms, banking service providers must make sure that the information is simple to comprehend, that products and services are easy to use, that information is easy to search, and that digital banking platforms are simple to learn (Dobre et al., 2021). The study's conclusions demonstrate that effort expectancy positively affects the use of digital banking platforms.

Social Influence (H4) was rejected since it was discovered to be one of the factors that has no influence on the use of digital banking platforms. The study's respondents are adamantly opposed to using digital banking platforms to elevate one's status among

peers. Accordingly, users of digital banking platforms in South Africa do not enjoy a higher social status than their peers. According to the study's findings, the social standing of digital banking platforms users should not be as important to the banking sector.

The views and opinions of the user's family and friends, as well as their expectations regarding the use of digital banking platforms and whether doing so elevates the user's status in society, are all examples of social influence.

Social influence as a factor influencing the use of digital banking platforms has been the subject of numerous studies. According to (Min Tun, 2020), social influence is a crucial component of digital banking use. For instance, young people are more aware of social influence and more sensitive to the opinions of others when it comes to new technology (Venkatesh et al., 2003). According to earlier research, social influence significantly affects behavioural intention to use digital banking platforms (Mansour, 2016). Due to the conflicting findings of earlier research, this study aimed to ascertain whether social influence influences the use of digital banking platforms.

The results of this study show that the use of digital banking platforms is not significantly impacted by social influence. users of digital banking platforms do not enjoy a higher status in their communities because of their commonality, and study participants do not experience a higher status in their communities when using digital banking platforms.

Facilitating Conditions (H4) is another factor that influences the use of digital banking platforms. These findings have ramifications for the banking sector, which includes the need to keep developing networks that support digital banking platforms, to safeguard user support systems, and maintain the free nature of digital banking platforms (Liébana-Cabanillas et al., 2017). The availability of devices that facilitate digital banking platforms, a telecommunications network that facilitates their use, and the presence of data-free platforms are all factors that strongly support the use of digital banking platforms, according to the research's respondents.

The results of this study show that the use of digital banking platforms is influenced by facilitating conditions. This indicates that the availability of devices that support digital banking platforms and the ease with which users can seek assistance. Lack of help, delayed support, and scarce resources like internet connectivity, phone types, and

data connectivity costs can all prevent people from embracing and using digital banking platforms (Liu, 2021). According to this study, users have support systems in place, network infrastructure that makes it possible to use digital banking platforms, relevant skills, and relevant assistance available when difficulties arise (Nzabirinda, 2019).

Trust and Security (H6) perceived trust and security positively impact consumer trust when doing digital banking transactions (Wong and Mo, 2019). Perceived trust in digital transactions is raised by improved platforms and technological security. However, according to (Mansour, 2016), privacy is a crucial issue that has a strong correlation with and a significant impact on users' willingness to trust digital banking transactions and systems (Min Tun, 2020). Consequently, the following hypotheses were formulated: There is a positive relationship between trust and user satisfaction in digital banking platforms (Chang, 2024).

Service quality (H7) is also very important to customers who use digital banking platforms. Customers place a high value on service quality when selecting digital banking platforms (A & Syed, 2024). There is a significant positive correlation between customer use and service quality, because service quality affects customer satisfaction and loyalty. It has a positive impact on customer use in the digital banking sector. Customers are more likely to stick with a digital banking service provider and refer others to it when they are pleased with the level of service they receive.

Customer satisfaction (H8) was found to be significantly improved by using digital banking platforms. The result of this study demonstrates that satisfied customers are more likely to use digital banking platforms and recommend them to their peers. Additionally, most respondents concur that one important factor influencing the use of digital banking platforms is customer satisfaction. It is crucial that the digital banking service provider keeps up its efforts to make sure that its features and products are easy to use. Where users of digital banking platforms understand that the platform is safe and secure, and that their information is secure.

Although a study from (Fuchs, 2022), has looked at customer satisfaction with varying degrees of success, they all agree that customer satisfaction affects the use of digital banking platforms and that satisfied users are more inclined to use them again.

5.4 Chapter Summary

The analysis of digital banking platforms within organisations and the impact on customer satisfaction identified seven key factors (performance expectancy, effort expectancy, facilitating conditions, behavioural use, trust and security, service quality and customer satisfaction) that contribute a significant role in the use of digital banking platforms. To fully realise the potential advantages of digital banking platforms in increasing customer satisfaction, a deeper understanding of these factors is necessary. The study done by (Cao Minh & Nguyen Thi Quynh, 2024), provides a thorough perspective that indicates how crucial supportive factors maximize the usage of digital banking platforms.

The chapter resolves the key research objectives which are (RO1) *To identify and examine the factors influencing consumer behaviour on digital banking platforms* and (RO2) *To identify the impact of digital banking platform usage and the influence on* customer satisfaction.

The research findings were examined and compared with previous works of literature in this chapter. Every hypothesis was covered in detail, prior research was reviewed to determine how it connected to the study's findings, and then potential applications of the results were explored. It was discovered that behavioural use was significantly correlated with performance expectancy, effort expectancy, facilitating conditions, trust and security, service quality, and customer satisfaction. Furthermore, behavioural use was not significantly impacted by social influence. The study's goals, contributions, limitations, suggestions, and future research are covered in the last chapter.

Chapter 6: Conclusions & recommendations

6.1 Introduction

The study concludes with this chapter. First, the research is summarized, and then its contributions to the literature are discussed. The limitations of the study are then examined. Recommendations for future research and practice are provided. Finally, the investigation is concluded.

6.2 Summary of the research

In Chapter 1, the study presented research issues and the rationale behind the investigation. Two research objectives were examined in the study. The first challenge was examining the factors influencing consumer behaviour on digital banking platforms. Further investigation was conducted to assess the impact of digital banking platform usage and the influence on customer satisfaction. Nonetheless, some earlier research has found that the use of digital banking platforms is influenced by customer satisfaction, while other studies have found the opposite.

The study presented digital banking platforms, their components in the banking sector, and their advantages in chapter 2 through the literature review. The advantages were further discussed, as well as the difficulties and drawbacks. Customer satisfaction and the advantages of digital banking platforms were further discussed in the literature review. Social influence and Trust and Security were lacking in earlier research, according to the literature review, which emphasized earlier studies. The UTAUT model was determined to be the most appropriate model for this study. The limitations of inconclusive studies on customer satisfaction in digital banking platforms were brought to light by the literature review. The study's conclusions made it even more significant and will assist digital banking service providers in defending their resource allocation and investment in digital banking platforms within the sector.

The research approach used to evaluate how consumers use digital banking platforms in South Africa's banking sector is explained in Chapter 3. The research tool utilized was an online survey. The survey was shared to three hundred South Africans who are Linked-In users, and it was distributed to those aged eighteen and up. Linked-In-Members, Family members, friends, and acquaintances made up the research's anonymized participants. After accepting the terms and conditions, participants were permitted to take part. This quantitative study utilized descriptive statistics. Multi-item

scales that underwent validity and reliability tests were used to measure every component of the research models. The models were tested using SEM techniques. The data was analysed using the statistical program SPSS AMOS version 30.

In Chapter 4, data was utilised to test the model developed to better understand factors that influence the use of digital banking platforms and the impact they have on customer satisfaction in the South African context.

This chapter offered a thorough interpretation of the main conclusions of the structural model regarding the use of digital banking platforms to respond to RO1 and RO2. Through response analysis, the chapter discovered that performance expectancy, effort expectancy, facilitating conditions, behavioural use, trust and security, service quality and customer satisfaction are the factors that influence the use of digital banking platforms. According to the study's findings, social influence has no effect on the use of digital banking platforms. It was found that users of digital banking platforms are not motivated to use or adopt them by social approval. In the chapter, it was also shown that customer satisfaction is a driving force behind the use of digital banking platforms. Furthermore, the chapter effectively expanded the UTAUT model by introducing trust and security, service quality, and customer satisfaction while accounting for the diverse needs of users of digital banking platforms. The most contributing factor influencing the use of digital banking platforms was effort expectancy, which further demonstrated that the platforms should be simple to use and that doing so will encourage users.

Lastly, chapter 5 offered a thorough analysis of the main conclusions of the structural model, hypothesising on how using digital banking platforms may affect RO1 and RO2. According to this study, "performance expectancy, effort expectancy, trust and security, service quality and customer satisfaction" influence the use of digital banking platforms. Based on the study's findings, using digital banking platforms effectively depends on user satisfaction. The inconsistency of customer satisfaction as a factor in the use of digital banking platforms is resolved by this study. This study demonstrates that consumers can use digital banking platforms to communicate with the banking service providers and that platforms in the banking industry can be seen as a tool for customer engagement. Participants in the study identified ease of use,

convenience and effort expectation as the primary factors influencing the use of digital banking platforms.

6.3 Contributions of the study

This study adds to the body of knowledge regarding the use of digital banking platforms in ways that are pertinent to users, potential users, digital banking platforms developers, and digital banking service providers. Consequently, the report has contributed in theoretical, contextual, methodological, and practical ways.

6.3.1 Empirical Contributions

To develop a digital banking platform success model that emphasizes performance expectancy, effort expectancy, facilitating conditions, behavioural use, trust and security, service quality, customer satisfaction, the UTAUT model was first extended empirically. According to the original UTAUT model, the only factors influencing the use and adoption of digital banking are performance expectancy, effort expectancy, facilitation conditions, and social influence. In this study, behavioural use, trust and security, service quality and customer satisfaction, were added as new attributes to the UTAUT model. Additionally, because of the focus on digital banking platform users, their most frequent transactions are making payments, money transfers, checking their bank statements and confirmation of banking details from their banking service provider. They also benefit from having the information available around-the-clock and getting value for their money by buying products at a discount through the banks partner affiliated stores and rewards programs. Due to digital banking platforms offering comparable services to those found in physical bank branches, their unique features encourage users to use them instead of visiting physical branches.

Second, there is disagreement in the literature regarding customer satisfaction as a determinant of digital banking usage. Inconsistencies in the literature have the potential to complicate investment decisions in digital banking platforms and misdirect the banks efforts (Bhuvaneswari & Maruthamuthu, 2024). According to the following studies (Barjaktarovic Rakocevic et al., 2025; Harb et al., 2022), customer satisfaction does not lead to the use of digital banking platforms. This could cause banks to lose the advantages of lower operating costs, increased customer and market reach, and always-on 24/7 service for their customers (Fuchs, 2022). However, according to other previous studies (Muluka et al., 2015; Rompho, 2014) customer satisfaction drives the

use of digital banking platforms; as a result, banks prosper in the market if customer satisfaction is attained through digital banking (Chu & Zhan, 2024).Therefore, it is crucial to commission research that aims to understand user satisfaction in digital banking platforms as a factor of use and adoption.

6.3.2 Contextual Contributions

The contextual contribution of this research provides guidance to South African digital banking service providers to effectively use digital banking platforms. The results of this study demonstrate that when creating digital banking platforms for South African banks, effort expectancy is a far more useful consideration. Furthermore, this study found that the use of digital banking platforms is motivated by customer satisfaction. These observations affect focus, investment, and resources in the field of digital banking.

It has been indicated that social influence has little influence on how digital banking platforms are used and adopted there could be a number of reasons for the least influence from social influence which may include (i) survey questions may have not been interpreted correctly by the respondent (ii) social media marketing may be a more accurate influence compered to peer influence, (iii) continued usage of digital banking platforms may be affected by the other mentioned factors in the model and not necessarily social influence. Digital banking platform service providers in South Africa can now benefit from this research's recommendations regarding the elements affecting digital banking platform adoption and usage.

6.3.3 Methodological Contributions

In the context of digital banking platforms, the study also contributed to the validation of the unified theory of acceptance and use of technology (UTAUT). This study added variables of trust and security, service quality, and customer satisfaction to the unified theory of acceptance and use of technology (UTAUT), which has been modified by numerous researchers with different variables. Additionally, the study tested the effects of customer satisfaction, service quality, trust and security, on the use of digital banking platforms.

6.3.4 Practical Contributions

The study's findings show how important it is to have digital banking platforms development from a comprehensive business standpoint. Infrastructure, design

standards, user awareness, and constant system availability are all steps in the process of using a digital banking platform.

For a digital banking platform to be successful, its users are essential. According to the study's findings, banks must continuously promote and encourage the use of digital banking platform since both users and non-users need to understand the advantages of doing so. Promotions aimed at raising awareness of digital banking platforms and specialized products which are available through social media marketing and other channels could achieve this.

Digital banking platform users must identify their issues and expectations for platform features to contribute to the creation of new features. The design of the platform could be guided by the consumer's rational interpretation of information, improving the design standard, and these focus groups could shape feature availability based on customer requirements. The study's conclusions show that more focus should be placed on creating products and features that are easy to use, error-free, and understandable. The banking sector could concentrate on creating digital banking platforms that require little effort and have high performance expectations.

The study's conclusions demonstrate how crucial customer satisfaction is to guarantee the use of digital banking platforms. In the banking sector, metrics like Net Promoter Score (NPS), which surveys customers after they use a digital banking platform, could be used to gauge customer satisfaction. This tool can assess how enjoyable the experience was using a digital banking platform. Teams in charge of digital banking platforms may have NPS as a common objective within the bank, because unhappy customers do not come back, customer satisfaction is essential for the use of digital banking platforms (Hardianto & Wijaya, 2023).

6.4 Limitations and suggestions for further research

6.4.1 Limitations

One of the study's drawbacks was its small sample size. Adults between the ages of 35-44 made up most responders on Linked-In which consists of respondents who are in a similar age group as the researcher, and they might act differently than people of other ages when it comes to digital platform usage compared to other age groups. Additionally, because the study only included quantitative data, it's possible that significant qualitative findings that could have been discovered through qualitative research were overlooked.

Since this study was cross-sectional, it cannot demonstrate how research participants' attitudes have changed over time (Gertze & Petersen, 2024). Additionally, only South Africans were included in the study; most of the respondents were from Gauteng, and their responses and behaviours might not be the same as those of people in other provinces or, worse, outside of South Africa. South Africans may react and behave differently than people in other countries when it comes to the acceptance of digital banking platform usage. As a result, it is not possible to extrapolate from this study the usage and adoption of digital banking platform by all South Africans or people from developing nations.

The unified theory of technology acceptance and use (UTAUT) was expanded by the researcher to include trust and security (TS), service quality (SQ) and customer satisfaction (CS). Gender and user voluntariness, two UTAUT moderating factors, were not included in the study's modified version of the UTAUT model. The current study does not, however, examine the effects of the moderating factors on the adapted UTAUT factors that were measured in the study because user voluntariness and UTAUT gender were excluded as moderating factors.

6.4.2 Suggestions for further research

The study was cross-sectional, and cross-sectional studies don't reveal how research participants' attitudes change over time, according to (Gertze & Petersen, 2024). In the future, longitudinal research on South Africans' use of digital banking platforms may be undertaken. Although South Africans were the focus of this study, it could be extended to other countries.

The modified UTAUT model examined in this study did not include the moderating factors of gender or voluntariness of use. The researcher recommends that these moderating factors be included in future research. This study will contribute to a better understanding of how these moderating factors affect South African consumers' use of digital banking platforms.

To better understand the qualitative dynamics of customer use of digital banking platforms in South Africa, more qualitative research could be conducted. And future research may incorporate additional variables like risk factors. The UTAUT model was expanded to include trust and security, service quality, and customer satisfaction.

6.4.3 Recommendations for practice

The results of this study show that the biggest influence on South African consumers' use of digital banking platforms is effort expectancy. This emphasizes how crucial it is for banking service providers to make sure their digital banking platforms are easy to use, offer the best value, and require little user effort. The platforms should be easy to use and don't require any specialized knowledge of technology. Customers should see the benefits of using digital banking platforms, and it should be easy for them to choose them over traditional bank branches for information, day-to-day banking, or queries.

Social influence was found to have no discernible impact on the use of digital banking platforms in South Africa. According to these results, individual attention is necessary when creating digital banking platforms to guarantee that each customer's needs are met.

Customers' use of digital banking platform in South Africa was found to be significantly improved by behavioural use. Behavioural use in digital banking platforms is determined by the users' attitude toward the platform. Enhancing the customer's

relationship with the digital banking platform provider is a necessary step in improving the customer experience on an individual basis.

Customers' use of digital banking platforms was found to be significantly positively impacted by service quality in South Africa. Service quality includes the following: timeliness (the information is always current), usefulness (the information can be used in different contexts), availability (the digital banking platform is always available to carry out its functions), and understandability (the information presented is clear and concise). Customers and potential users may be persuaded to use a digital banking platform by these features.

Customer satisfaction of digital banking platforms was found to be significantly positively impacted in South Africa. According to (Chu & Zhan, 2024), customer satisfaction is a mindset that is formed after a purchase of a product or service by mentally comparing the products on the market. Digital banking platform users need to be happy with the technology.

6.5 Conclusion

The results of a study on South African consumers' use of digital banking platforms showed that effort expectancy was a crucial component of platform use. According to the study, the use of digital banking platforms was significantly impacted by service quality, performance expectancy, effort expectancy, trust and security, customer satisfaction, and facilitating conditions. (Venkatesh et al., 2003), suggested the unified theory of acceptance and use of technology (UTAUT) as a pertinent theoretical lens to investigate individual acceptance of technology, despite their differing findings on social influence. The use and uptake of digital banking platforms was found to be significantly influenced by customer satisfaction. The findings of (Venkatesh et al., 2003), found that these factors significantly impacted the acceptance of digital banking platforms, were in line with the results of performance expectancy, facilitating conditions, effort expectancy, trust and security, service quality and behavioural use.

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Appendix A

Research Instrument

The Survey is divided into two sections:

Section A: Demographic information

Section B: Digital Banking Platform Use

Section A:

Participant Details

Age:

18-24	
25-34	
35-44	
45-54	
55-64	
65 and over	

Gender:

Male	**Female**	**Non-Binary**	**Prefer not to say**

Highest Qualification:

Grade 12 or Matric	
National Diploma	
Bachelor's Degree	
Honours	
Masters	
PhD	
Other (Specify)	

Do you use banking apps or online banking platforms?

Yes ☐ No ☐

Which Bank do you use?

ABSA ☐ Capitec ☐ Nedbank ☐ Standard Bank ☐ FNB ☐ Other ☐

Which device do you use when using digital banking?

Cell phone ☐ Laptop ☐ Desktop ☐ Other ☐

How long have you been using your bank?

0 – 2 years	
2 – 4 years	

4 – 6 years	
6 years and more	

How would you describe your knowledge of digital banking platforms?

Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good ☐

Sections B: This part captures the respondents' general awareness and attitude, perceived usefulness, effort expectancy, social influence, facilitating conditions, behavioural use, trust and security, service quality and customer satisfaction for using digital banking platforms.

Please indicate the extent in which you agree with each of the following statements related to digital banking platforms that you use when banking, please indicate whether you (1): Strongly Disagree; (2) Disagree, (3) Mostly; Disagree (4) Neutral; (5) Agree; (6) Mostly Agree; (7) Strongly Agree

B1	General Awareness, Attitude towards digital banking platforms	1	2	3	4	5	6	7
GA 1	Digital banking platforms simplify my banking transactions							
GA 2	Using digital banking platforms provides value when I am transacting							
GA 3	It's easier to log queries to my bank when using digital banking platforms							
GA 4	I trust the information provided when using digital banking platforms							
GA 5	I feel comfortable using digital banking platforms							
B2	Performance Expectancy	1	2	3	4	5	6	7
PE 1	Digital banking platforms are useful for my banking needs							
PE 2	Digital banking platforms enable me (the user) to complete queries and transaction quicker							
PE 3	I save more time by using digital banking platforms to transact							
PE 4	Digital banking platforms improve my life and save time I spend going to a branch or ATM to transact							
PE 5	Digital banking platforms give me access to more banking services							
B3	Effort Expectancy	1	2	3	4	5	6	7
EE 1	My interaction with digital banking platforms is easy, clear and understandable							

EE 2	Digital banking platforms are easy to understand and use							
EE 3	I have the technical skills required and confidence to use digital banking platforms							
EE 4	Using digital banking platforms makes my banking easy							
EE 5	It's easy to learn how to use digital banking platforms							
B4	Social Influence	1	2	3	4	5	6	7
SI 1	My friends, colleagues and family support the use of digital banking platforms							
SI 2	In my network of friends, there is an expectation that one should use digital banking platforms when conducting banking transactions							
SI 3	Advertisements on social media platforms influence my use of digital banking platforms							
SI 4	Using digital banking platforms gives me a higher status amongst my friends, colleagues and family							
SI 5	People who influence my behaviour think that I should be using digital banking platforms							
B5	Facilitating Conditions	1	2	3	4	5	6	7
FC 1	My bank has the necessary resources to support the use of digital banking platforms							
FC 2	My bank service provider takes effective measures to ensure the use of digital banking platforms is easy							
FC 3	I have the necessary skills needed to use digital banking platforms							
FC 4	I have access to the necessary assistance if I run into issues when utilizing digital banking platforms							
FC 5	In South Africa, there is suitable infrastructure (e.g. network, power) that supports the use of digital banking platforms							
B6	Behavioural Use	1	2	3	4	5	6	7
BU 1	I prefer using digital banking platforms over using physical bank branches							
BU 2	I intend to continue using digital banking platforms in the next months.							

BU 3	I enjoy using digital banking platforms more than physical bank branches							
BU 4	I am satisfied with the products and services offered on digital banking platforms							
BU 5	I am satisfied with the use of digital banking platforms							
B 7	Trust and Security	1	2	3	4	5	6	7
TS 1	I trust the quality of services offered by my bank on digital banking platforms							
TS 2	I trust that my personal details are secure when using digital banking platforms							
TS 3	I trust that my money is secure when transacting using digital banking platforms							
TS 4	I would use digital banking platforms to transact more than a physical branch							
TS 5	Digital banking platforms are more safe than physical bank branches							
B8	Service Quality	1	2	3	4	5	6	7
SQ 1	Digital banking platform services are always available for me to use							
SQ 2	Digital banking platform information is always accurate							
SQ 3	The digital banking platform is always working on my devices							
SQ 4	Digital Banking platform is always fast when transacting							
SQ 5	Customer Care is quick and reliable when experiencing challenges while using digital baking platforms							
B9	Customer Satisfaction	1	2	3	4	5	6	7
CS 1	I am satisfied with the functionality of Digital banking platforms							
CS 2	Digital banking platforms meet my banking needs							
CS 3	The features offered by digital banking platforms are valuable to me							
CS 4	Digital Banking platforms meet my banking service expectations when transacting							
CS 5	My queries are always resolved when logging through digital banking platforms							

Appendix B

Dear Sir/Madam

My name is Palesa Sekabate. I am a master's student 777757 in Digital Business at the University of Witwatersrand, Johannesburg. My supervisor is Dr Thanyani Mudau. I am conducting a research study about digital banking platforms. The study title is 'The use of digital banking platforms and its impact on customer satisfaction: an empirical study in the South African banking sector context'.

I am inviting you to take part in answering a questionnaire for my study. If you decide to take part, your participation in this research study will last about 10 minutes. The questionnaire will take place in an online survey.

With your permission, I would like to send you the link to the survey. The collected data will be sorted using SPSS for a period of one year and will be deleted after one year once the examiners are satisfied with the research outcomes. Only the researcher (Palesa Sekabate) will have access to the data.

During the research activity, I will ask for some personal information about you, including (demographic information, age and education background, employment status and digital banking platform usage).

The questionnaire will be confidential and anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

The risks for this research study are no longer what happens in everyday life, should some of the questions asked make you feel sad or upset, you may stop the questionnaire.

This research study will be written as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor Dr Thanyani Mudau on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,

Palesa Sekabate

Researcher:
Palesa Sekabate, 777757@students.wits.ac.za 073 300 9434

Supervisor:
Dr Thanyani Mudau. Thanyani.mudau@wits.ac.za

Appendix C

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB777757/654
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	The use of digital banking platforms and its impact on customer satisfaction: an empirical study in the South African banking sector context
Investigator / Researcher	Ms Palesa Sekabate
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	04/11/2024
Expiry date	Date of submission of the project / research report
Chairperson	Dr Ayanda Magida ☎ +27 11 717 3953 ✉ ayanda.magida@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

04 November 2024
Date: