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FACULTY OF COMMERCE
DEPARTMENT OF INFORMATION SYSTEMS

**ANTECEDENTS OF MOBILE BANKING APPLICATIONS ACCEPTANCE AND USAGE AND ITS
CONSEQUENCE ON FINANCIAL BEHAVIOR IN NAMIBIA**

By

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for the degree of

Master of Commerce in Information Systems

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Declaration

I hereby declare that this thesis entitled “Antecedents of Mobile Banking Acceptance and Usage and its Consequence on Financial Behavior in Namibia” is my own work and all sources have been acknowledged through referencing. Some of the work in this thesis is contained in my Research Proposal submitted to the Department of Information Systems, University of Cape Town, South Africa.

Signature:

Anna Nambahu Panduleni Nuunyango

Dedication

This thesis is dedicated to God, and everyone fighting Depression and Cancer.

Acknowledgements

To the almighty God in heaven, your love and mercy never failed me. This journey has been one with so many obstacles, but you have seen me to the end. To God be the glory.

To my daughter, Kaunapawa, you are my biggest blessing. Thank you for being a light in my life.

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Abstract

Banking is no longer limited to the physical location of a branch. Nowadays, consumers can do banking from the comfort of their own places, anywhere and anytime. Mobile banking applications offer mobility, 24/7 availability, broad reach, convenience, and ease of use unlike traditional banking. Regardless of the numerous advantages that mobile banking applications offer, the adoption rate has not met expectations or reached the level of mobile phone penetration adoption rate in many Lower and Middle Income Countries (LMICs).

The use of digital financial services such as mobile banking applications changes consumers' financial behavior. Poor financial habits can cause debt, stress, health issues, and strained relationships. Thus, it is important to understand the impact of using mobile banking applications on consumers' financial behavior, as well as the factors that influence the acceptance and use of mobile banking applications.

The study employed the unified theory of acceptance and use of technology and extended it with concepts of financial literacy, branch distance, trust, perceived risk, and financial behavior. The research model that was constructed informed data collection, using an online survey of Namibian banking consumers. 254 useable responses were received and the model was empirically tested. Structural equation modeling (SEM) analysis revealed that effort expectancy, habit, and trust positively influence consumer intention to accept mobile banking applications and trust negatively influences perceived risk, while habit and behavioral intention positively influence the use of mobile banking applications. Additionally, results show that mobile banking application use positively influences financial behavior in Namibia, implying that their use can lead to more responsible financial behavior.

Keywords: Mobile banking, mobile money, electronic money, financial behaviour, UTAUT2, financial literacy, Namibia

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List of Abbreviations

BoN – Bank of Namibia

DOI -Diffusion Innovation Theory

HTMT - Heterotrait-monotrait ratio

FLI - Financial Literacy Initiative

ICT - Information and Communications Technology

IS - Information Systems

LMICs - Lower and Middle Income Countries

MGA -Multigroup Analysis

MNO – Mobile Network Operator

NAMFISA - Namibia Financial Institutions Supervisory Authority

SMS – Short Message Service

TAM – Technology Acceptance Model

TPB – Theory of Planned Behavior

TRA – Theory of Resonated Action

TTF - Task Technology Fit

USSD – Unstructured Supplementary Service Data

UTAUT – Unified Theory of Acceptance and Use of Technology

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Chapter1: Introduction

This chapter starts with a background to the research, then presents the problem statement, research questions, research objectives, and highlights the empirical context of the research study. In addition, it outlines the relevance of the research.

1.1. Contextual Background

The rise of digital innovations has resulted in a significant rise in the dependence of mobile users on their devices (Elhajjar & Ouaida, 2019). Since the inception of mobile phones, the services they offer have been changing and advancing with each decade; from being a simple voice communication channel to the most recent, mobile banking channel. The financial industry has leveraged mobile phones and turned them into a banking channel, that can provide banking services to consumers even in remote areas, that were hard to reach previously due to high infrastructure costs.

The first transaction conducted on a mobile device happened in 1997 (Dahlberg et al., 2015), resulting in numerous banks being eager on broadening their market via mobile offerings (Vuong et al., 2020). The function of a financial system serves to deliver a smooth payment mechanism for transactions within an economy, and historically, banks have been the main provider but with the development of technologies of mobile money and blockchain, this has changed the notion of banks being the main provider of exchange services (Matthews et al., 2023). As a result, telecommunications companies have joined the world of banking, providing financial services to consumers. For instance, mobile financial services in Kenya are dominated by a mobile telecommunication company Safaricom (Parlasca et al., 2022). Similarly, in South Africa, retailers such as Shoprite allow users to send mobile money using mobile telecommunication companies (Chigada & Hirschfelder, 2017).

Mobile banking is a modern and widely used banking system that allow individuals to conveniently perform banking activities using mobile devices, especially mobile phones (Chawla & Joshi, 2021; KA & Subramanian, 2024). Providing banking services on the go, anytime, anywhere, and eliminating the need to physically go to the bank. Moreover, the service provides great convenience and speed for consumers resulting in cost savings (Vuong et al., 2020). Mobile banking, mobile money or mobile (digital) financial services refer to the use of a mobile phone or a device to carry out financial tasks (Etim, 2014). The widely accepted smartphones have significantly intensified the popularity of digital payments (Koskelainen et al., 2023). In Africa, mobile banking begun in the early 2000s (Siano et al., 2020).

Regardless of the numerous advantages of mobile banking, it is yet to reach substantial adoption, particularly in developing countries (Etim, 2014; Vuong et al., 2020). Banks in developing countries are faced with challenges in convincing consumers to accept mobile banking (Abdennebi, 2023). The World Bank classifies countries by income level into four categories: low, lower-middle, upper-middle, and high-income economies, based on Gross National Income (GNI) per capita (The World Bank, 2024). Most publications refer to low, lower-middle, and upper-middle-income countries (LMICs) as developing countries, while high-income economies are typically referred to as developed countries. However, there have been several arguments against using the terms "developing" and "developed" to describe countries (Daniel et al., 2024). Hence this dissertation refers to LMIC rather than developing country.

Information and Communication Technology (ICT) advancements in Namibia are facing challenges in reaching widespread adoption, compared to other countries in Africa (Ndahiro, 2022). Namibia's mobile financial service industry is still in its early stages, but progress is visible. KA and Subramanian (2024) noted that mobile banking studies in LMICs are insufficient - there remains a need for comparative mobile banking acceptance studies in LMICs, which may reveal differences in organizational structures, cultural contexts, and population characteristics, such as income levels, education, and access to technology (Saxena et al., 2023). For example, both Namibia and South Africa are classified as LMICs; however, South Africa is considered to be economically stronger than Namibia (Biermann, 2024; World Bank Group, 2022). Moreover, the South African fintech market continues to hold a strong presence in Namibia providing standardized solutions, posing challenges for fully customized solutions to address Namibia's specific needs (Ndahiro, 2022).

Digitization of financial services provides numerous advantages to customers, but it also presents challenges because of the whirlwind evolution of the financial ecosystem (Carlsson et al., 2017; Koskelainen et al., 2023; Vives, 2019). Mobile phones have removed the constraints of time and distance between the consumers and financial services. Therefore, mobile banking applications have improved consumers' financial capability. Kamdjoug et al. (2021) stated that using mobile money has become an important daily habit for millions of people across several African countries. However, according to the World Bank (2024), Sub-Saharan Africa continues to face major digital challenges, including weak infrastructure, high internet costs, and low levels of digital skills. While internet and digital service usage has increased in recent years, this progress remains limited when viewed against the region's overall population and long-term potential. Using digital financial services might influence consumers' financial behavior positively or negatively (Mahdzan et al., 2022). Koskelainen et al. (2023) stated that it is vital for

consumers to be considerate of their actions when using digital payment platforms and how they can potentially impact their financial behavior. Noteworthy, using electronic commerce applications can lead to unfavourable consequences that can threaten consumers' financial well-being by encouraging on-the-spot purchase behavior (Mahdzan et al., 2022). Therefore, it is important for consumers to have the ability to learn and adapt, and importantly be able to make informed financial choices, specifically, in relation to financial decision-making, and adapting to changing conditions of the financial market due to digitization (Siano et al., 2020).

Namibia has a significant deficiency in digital skills and financial knowledge. According to the Financial Literacy Initiative (FLI) web page, studies have shown that Namibians have limited financial knowledge, understanding, and control, leaving individuals with steady jobs and income struggling with poverty due to insufficient financial skills (Financial Literacy Initiative, 2023b). Additionally, Namibia is currently lacking laws regarding data privacy, protection, and cyber security, posing a vulnerability in the legal and regulatory framework for digital services in the country (Ndahiro, 2022). Therefore, the absence of a data protection bill poses threats to consumers and financial institutions. Additionally, consumers are at the risk of cyberattacks that can result in financial losses and identity theft.

1.2. Problem Statement

Mobile banking adoption and acceptance in Africa has been widely studied (Abdennebi, 2023; Chigada & Hirschfelder, 2017; Odoyo et al., 2019; Siano et al., 2020; Slazus & Bick, 2022), but there is insufficient mobile banking acceptance studies in some countries, such as Namibia that have not experienced mobile banking acceptance achievement at the same level as M-Pesa in Kenya. M-Pesa is a mobile money service that offers banking services even to those that do not have bank accounts and uses agents to provide financial services using mobile devices (Parlasca et al., 2022). Despite the progress made in digital payment methods and the increase in transactions through digital channels, many people in Namibia still rely heavily on cash for their transactions (NamClear, 2023; Kasuto, 2022). 84% of Namibians prefer cash as a payment method (Editor, 2024). Moreover, during Covid-19 pandemic the country saw an increase in cash demand, and the demand for cash continued throughout the years, with the central bank recording the highest cash demand in 2023, a record breaker for the bank (Editor, 2024). This shows that cash continues to hold its dominance in the country, despite, the availability of digital channels like internet banking, mobile banking applications, and cellphone banking among others. Mobile banking acceptance in the country is still in its early stages and only became popular in recent years, and this was increased by the COVID-19 epidemic (Bank of Namibia,

2023). Furthermore, the World Bank noted that despite Namibia having a well-developed telecommunications market, the country falls behind its peer countries such as Botswana, South Africa, and Ghana when it comes to digital technologies adoption (Biermann, 2024; World Bank Group, 2022).

Emerging products and services, including innovative digital payment methods can have an increasingly significant impact on people's day-to-day financial habits (Koskelainen et al., 2023). Digital evolution is rapidly changing the financial sector and the traditional financial literacy skills are insufficient to equip individuals with the right skills to understand security threats, fraud, scammers, and challenges that comes with digital channels to effectively manage their finances (Koskelainen et al., 2023). This poses threats to consumers that use mobile banking with inadequate financial literacy and lack of cybersecurity knowledge. Mobile commerce applications have the potential to alter consumers' usage behavior since they are embedded in people's day-to-day lives through mobile phones that have become popular in the world. There is a shortage of studies on the impact mobile banking has on financial behavior and financial health (Mahdzan et al., 2022).

This study addresses the above-mentioned gaps by investigating the factors that affect mobile banking acceptance and use in Namibia, and the consequences the use of mobile banking applications have on consumer's financial behavior. The study explored the issues from a quantitative approach and was guided by the Unified Theory of Acceptance and Use of Technology 2 (UTATUT2) as a theoretical basis (Venkatesh et al., 2012). The model was extended with five constructs: perceived risk, financial literacy, branch distance, trust, and financial behavior. Data was collected using an online survey, 254 successful responses were obtained.

1.3. Research Questions

1. What factors affect the acceptance and usage of mobile banking applications in Namibia?
2. What impact does the use of mobile banking applications have on consumers' financial behavior in Namibia?

1.4. Research Objectives

1. To investigate the determinants affecting the acceptance and usage of mobile banking applications in Namibia.
2. To evaluate the impact of mobile banking applications usage on consumers' financial behavior in Namibia.

1.5. Empirical context of the study

Namibia is an upper-middle-income country and has a small open economy, with a small population of about 3.02 million people as of September 2023 (Bank of Namibia, 2023; Namibia Statistics Agency, 2024; The World Bank, 2023). Namibia has strong ties to South Africa; however, South Africa has a larger population, a stronger economy, and greater acceptance of digital technologies (Bank of Namibia, 2024; Biermann, 2024; World Bank Group, 2022). Namibia's currency has a one-to-one tie to the South African Rand (Bank of Namibia, 2023). Additionally, a majority of Namibia's leading commercial banks, insurance companies, and wholesale businesses are under the control of South African entities (Biermann, 2024). As a result, the financial developments in South Africa have an impact on the financial developments of Namibia.

The Namibian banking system is made up of eight banking institutions. All banking institutions and non-bank financial institutions offering digital financial services are regulated by Bank of Namibia (BoN) (Bank of Namibia, 2023, 2024; Ndahiro, 2022). Table 1 shows the names of the authorized banking institutions in Namibia. In addition, Namibia Postal Holdings (NamPost) offers banking services in the country (NamPost, 2024). NamPost has 131 branches nationwide, and 53 of them are situated in areas where no commercial banks operate, therefore making NamPost the sole financial services provider in those areas (The Brief, 2023).

Bank Classification	Bank Name
Domestic Systemically Important Banks	Bank Windhoek Limited First National Bank Namibia Limited Nedbank Namibia Limited Standard Bank Namibia Limited
Second tier banks	Bank BIC Namibia Limited Letshego Bank Namibia Trustco Bank Namibia limited (suspended 18 August 2023)
Second tier bank - Foreign banking institution	Banco Atlantico
Second tier bank - Representative office	ABSA

Table 1: Banks in Namibia (Bank of Namibia & Namibia Financial Institutions Supervisory Authority, 2023a, 2023b; Bank of Namibia, 2024)

The country's telecommunication operators and cellular network service providers are Telecom Namibia (TN), Mobile Telecommunications Limited (MTC), MTN Business Solutions Namibia Ltd. and Paratus Namibia Ltd. (Paratus) (CRAN, 2023). The telecommunication industry lacks competition. The industry is mostly dominated by TN and MTC, with MTC being the largest mobile operator in Namibia (Mobile Telecommunications Limited, 2024). These companies are state-owned, owning about 89.4% of the industry assets (Communications Regulatory Authority of Namibia, 2023). Consequently, this makes it difficult for them to compete against each other (Ndjavera, 2023). Under these circumstances, Namibia is currently one of the countries in Africa where data is expensive - as reported in 2022, the average cost of 1GB data was N\$155.50 compared to South Africa where 1GB data cost half of the price in Namibia (Myles, 2022).

Namibia's mobile phone network coverage has grown exceptionally well (National Planning Commission, 2017). As reported in 2022, 75% of Namibia's population had access to 3G network, whereas 39% had access to 4G network (Ndahiro, 2022). By the end of 2023, there were about 2.5 million active Subscriber Identity Module cards (SIM), with 66% of the active SIM cards being used to access internet in Namibia (CRAN, 2024). This shows that more than a quarter of Namibian population have access to mobile phones. However, approximately 69% of adults own mobile phones, revealing a significant gap, with certain people owning multiple devices, while 31% do not have a mobile phone (Ndahiro, 2022). Furthermore, access and availability of telecommunication services is still a challenge in remote areas because of lack of electricity and high set-up costs of ICT infrastructure (National Planning Commission, 2017).

As of January 2023, it is mandatory to register a SIM card before sale or activation of the card (Geneva, 2022). In the past, users could purchase a SIM card without an identity document. The requirement of Mobile Network Operators (MNOs) to register their clients has been found to be a barrier to mobile money adoption in Kenya because it requires consumers to have a national Identification Card (Odoyo et al., 2019). By the end of SIM registration period only about 1.7 million SIM cards were registered, and the number of registered SIM cards failed to reach 90% of active SIM cards (Otto et al., 2024). As a result, unregistered SIM cards were deactivated resulting in some people losing access to cellphone banking services, especially the most popular electronic wallets (Otto et al., 2024). Thus, having a national identification document in Namibia has now become a requirement to utilize mobile banking applications.

Namibian mobile banking was first introduced via Unstructured Supplementary Service Data (USSD) (Staff Writer, 2007). This type of mobile banking is well known in the country as cellphone banking, and it is accessible by dialing a short code. Mobile banking apps can also be downloaded from Google store or App store. While cellphone banking can be accessed via all types of mobile phones, mobile banking apps only work on smartphones. For this reason, cellphone banking allows consumers regardless of the type of device they use to access banking services, especially people living in rural areas with no internet coverage, or unable to afford smartphones. Two of the major banks in Namibia both claim to have been the first to launch cellphone banking in the country. According to Capricorn group in their annual report of 2022, the group noted that Bank Windhoek was the first to introduce cellphone banking in the country in 2009 (Capricorn Group, 2022). However, FNB Namibia Holdings Ltd., now known as FirstRand Group in their 2007 annual report indicated that they launched cellphone banking that year (FNB Namibia Holdings, 2007). Therefore, it can be deduced that cellphone banking was launched in 2007 in Namibia by FNB, then Bank Windhoek in 2009. Later in 2013, First National Bank launched mobile banking app (Economist, 2013). Most of the commercial banks in the country offer mobile banking services.

Electronic wallets are the most popular innovation of mobile banking in Namibia because they cater to both banked and unbanked citizens. Moreover, they are the preferred digital channel for sending money in Namibia, with the highest level of popularity (The Namibian, 2021). It is worth noting that electronic money schemes in Namibia are currently closed loop, i.e., they operate in the same banking institution (Bank of Namibia, 2023). Most of the commercial banks in the country have launched them under different product names, e.g. Standard Bank has BlueWallet which allows users to receive money on their mobile numbers and withdraw money at any Standard Bank ATM (Staff Reporter, 2016; The Namibian, 2017). Similarly, Letshego has an electronic wallet product (Letshego Holdings (Namibia) Limited, 2023). Likewise, First National Bank has eWallet and Bank Windhoek has EasyWallet. Uniquely, Nedbank has MobiMoney that allows both Nedbank clients and non-clients access, provided they have a mobile phone (Nedbank). MobiMoney requires an individuals' identity document or passport number to register for the service. Although electronic money is currently dominated by commercial banks, the giant MNO, MTC through its subsidiary Windhoek General Administrators (Pty) Ltd has obtained its provisional electronic money issuer approval from BoN and aims at launching mobile financial services to cater to neglected and financially excluded communities (Chamwe, 2023; The Brief, 2023). The non-bank sector has not yet seen successful players in the market, owing to factors

like the high cost of entry, market size, infrastructure access, and the suitability of business models (Ndahiro, 2022).

Digital banking services in Namibia are evolving, especially mobile banking services. Notably, FNB in 2022 introduced the first of its kind - a full digital account known as DigiPlus that lets all consumers open a digital account with no monthly fees by dialing a USSD code (First National Bank, 2022). Additionally, FNB introduced CashPlus Agents, which is also a new component in mobile banking payments in the country. The CashPlus agents act as bank's branches. It could be argued that DigiPlus is similar to M-Pesa in Kenya. Cellphone banking uptake in Namibia has not reached the same success rate as M-Pesa in Kenya. In 2017, most Namibians were not aware of mobile money or bank wallet money (Namibia Statistics Agency, 2018).

Challenges in accessing financial information and digital financial services continue in Namibia, particularly due to limited financial literacy (Financial Literacy Initiative, 2022, 2023b). Less than 20% of individuals found it at least easy to manage their day-to-day finances, while about 40.2% of Namibians struggle with keeping up with their financial commitments until the next salary (Namibia Statistics Agency, 2018). The government of Namibia in 2012 established the Financial Literacy Initiative (FLI) in collaboration with other stakeholders to combat the divide between consumers and financial institutions, by providing financial education and consumer protection initiatives to small and medium-sized businesses and Namibian citizens (Financial Literacy Initiative, 2023a; Namibia Statistics Agency, 2018). The initiative aims at spreading knowledge of financial products and services.

The present condition of Namibian digital financial services or fintech market mirrors the characteristic features of an emerging fintech sector (Ndahiro, 2022). Namibia's score on the affordability of mobile devices and services is lower than that of countries such as Malaysia, South Africa, Zambia, Tunisia, and Botswana (Ndahiro, 2022). According to BoN improvements are needed to ensure that people residing in rural regions and working in informal sectors can access essential and reasonably prized financial services in Namibia (NamClear, 2023), as most Namibians (about 62.5 percent) receive their salaries as hard cash (Namibia Statistics Agency, 2018). According to NamClear (2023) there is a substantial population residing in rural areas, and those that work in informal sectors that heavily depend on physical cash as their primary means of transacting. However, progress is visible in the increase of digital channel transactions such as Electronic Fund Transfer (EFT) and electronic money (Bank of Namibia, 2023).

1.6. Relevance of the study

The study aimed at identifying factors that affect the acceptance and use of mobile banking applications, to create awareness for service providers to address these issues, and improve the acceptance and use these services in Namibia, especially to the unbanked and those that work in informal industries. Therefore, it aims to promote the advancement of the country's financial inclusion rate. Additionally, the study aimed to contribute to the literature on the effect of technology acceptance on consumers' financial behavior. Furthermore, it aims to create awareness about the importance of having the necessary skills required for a specific application other than digital literacy in order to use a certain technology; this study aimed to highlight the importance of being financially literate when using mobile banking applications. The study took into account all types of mobile banking thus, it did not make a distinction between mobile money and mobile banking.

1.7. Dissertation Outline

The outline of the research dissertation is as below.

Chapter 1: Introduction

The chapter begins by providing an introduction and outlining the motivation behind the research. It addresses the problem statement, research questions, research objectives, and the empirical context of the study.

Chapter 2: Literature Review

This chapter examines the relevant past studies related to mobile banking adoption, use, and financial behavior.

Chapter 3: Theoretical Basis

The chapter presents the research model, along with the study's hypotheses.

Chapter 4: Methodology

The chapter presents the methodology followed by the study as well as the research design. Additionally, the philosophical assumptions of the researcher are presented.

Chapter 5: Presentation of Findings

The chapter presents the outcome of the data analysis.

Chapter 6: Discussions

This chapter presents the outcome of the research.

Chapter 7: Conclusion

This chapter concludes the study with limitations of the study and recommendations for future research.

Chapter 2: Literature Review

This chapter will explore the different literature: past, current, and relevant selected from different sources related to the acceptance and use of mobile banking. Additionally, the literature explored the consequences of financial behavior.

2.1. Introduction

Mobile banking enables consumers to easily perform financial transactions, for instance, bill payments, fund transfers, purchase of electricity, purchase of airtime and data bundles, balance inquiries, and ticket booking at anytime and anywhere without utilizing traditional banking channels, i.e. visiting a branch, an ATM, through telephone or electronic banking (Dhingra & Gupta, 2020; Giovanis et al., 2019; Merhi et al., 2021). Nowadays, mobile banking is an alternative financial channel when people are unable to access traditional banking services (Hasan et al., 2021).

2.2. Mobile banking acceptance and use in Africa

Acceptance of mobile banking includes installing a mobile banking application or activating SMS banking services, among other services (KA & Subramanian, 2024). Mobile banking in Africa, outside of South Africa (Brown et al., 2003), first began in Kenya, with the launch of M-Pesa in 2007 (Parlasca et al., 2022). The absence of traditional banking infrastructure is accelerating the acceptance of online financial solutions in LMICs (Omotosho, 2021). However, mobile banking in much of Africa has not reached as high an acceptance rate as expected, despite the high mobile phone penetration and internet services availability (Owusu et al., 2021).

Some LMICs have experienced high mobile phone penetration, but a low acceptance rate of mobile banking services. In Malaysia, in low-income households, the majority own a smartphone but not all of them have digital financial services applications or use them (Mahdzan et al., 2022). Likewise, in Zimbabwe the acceptance of mobile banking has been low (Tsokota et al., 2020), although increasing more recently. Similarly in Tunisia mobile banking acceptance remains a challenge (Abdennebi, 2023). In addition, most Ghanaians can access internet through their phones due to cheap data costs, and widespread mobile phone usage, but the mobile banking acceptance rate remains relatively low (Owusu et al., 2021).

The acceptance of mobile banking in Africa differs from country to country. Several countries have recorded a high rate of mobile money acceptance. For example, in Nigeria, the acceptance of mobile banking is notably great because of the fact that the country has a broad

telecommunication infrastructure (Siano et al., 2020). Likewise, Kenya has one of the most successful mobile banking solutions in Africa, although mobile money had a higher usage rate than mobile banking. The acceptance rate of mobile banking remained relatively low in 2021 (Parlasca et al., 2022). Similarly, South Africa has a matured mobile money system, but the acceptance rate of mobile banking services has fallen short of expectations (Chigada & Hirschfelder, 2017; Thusi & Maduku, 2020).

In other African countries, mobile banking acceptance has ranged from moderate to low. In 2018 in Mozambique there was a notable increase in the usage of mobile financial solutions (Fernandes et al., 2021). Likewise, a few years ago, Rwanda's mobile money acceptance was still in its infancy (Uwamariya et al., 2021). Therefore, a conclusion can be made that even though there has been a recent rise in the acceptance and use of mobile banking in Africa, in many countries the acceptance rate has not lived up to expectations, and cannot be compared to the widespread use of mobile phones for other purposes.

2.3. Factors affecting mobile banking adoption in Africa

This section explores the main themes identified in the literature concerning the factors that influence mobile banking adoption across Africa.

2.3.1. Remittances and Rural Inclusion

Historically many people in rural households depended on unsafe methods to receive and send money, such as public transportation, relying on friends, and family acting as couriers, to transport their money to its destination (Uwamariya et al., 2021). Mobile banking has made it easier for people to send remittances to their families that live in different countries and regions. For example, South Africa has a high number of illegal immigrants who send remittances to their home countries using mobile banking, because it does not require official documents, such as valid passport or visa, which are required by banks to open a bank account (Chigada & Hirschfelder, 2017). Similarly, urbanization in Ghana created a need for individuals to adopt mobile money, as many households' rely on remittances from family members in cities and outside the country (Kwateng et al., 2018). Mobile money increased the number of remittances individuals sent to their families in rural areas, and consequently, reduced the occurrence of hunger episodes in families living in rural areas, because users no longer incurred transportation costs, associated with long-distance transfers (Shaikh et al., 2022).

2.3.2. Financial Inclusion

Technological developments, such as mobile banking, have provided financial access to non-bank users, especially in Sub-Saharan African nations where a huge number of the households

population does not utilize formal banking institutions (Naito et al., 2021). Digital financial services have played a big part in facilitating financial accessibility over the past decade, especially to the marginalized communities, specifically women and youth that tend to make up the majority of the marginalized communities (Chamboko, 2022). For instance, mobile banking in South Africa closed the gap between financial institutions and low-income groups by providing financial services such as investments, savings, and money transfers (Chigada & Hirschfelder, 2017). Notably, in Mozambique, the usage of digital financial services has increased financial inclusion. The country has seen an increase in e-money accounts, as well as e-money agents compared to bank accounts and bank branches (Fernandes et al., 2021). Similarly, Kenya, Tanzania, and Zimbabwe reportedly have a high percentage of adults that own mobile money accounts compared to bank accounts (Naito et al., 2021). Therefore, mobile banking has contributed to financial inclusion in some countries to an extent.

2.3.3. Perceived Usefulness

Early acceptance of mobile banking is normally assessed by factors like decision to use, actual usage, and users' perceptions of mobile banking (KA & Subramanian, 2024). Relative advantage was identified as having a positively significant relationship on Ghanaian youth in accepting mobile banking when consumers perceive mobile banking to be more beneficial than any other banking channels, it will increase consumers' decision to use it (Owusu et al., 2021). Similarly, perceived usefulness had the greatest positive influence on the intention of Tunisian consumers in accepting mobile banking, with perceived ease of use following closely, suggesting that the way consumers view the usefulness and ease of mobile banking positively affects their desires to embrace the technology (Abdennebi, 2023). Similarly, in Nigeria, anticipation of mobile banking apps to fulfil users' financial transactional needs positively affected mobile banking apps use (Omotosho, 2021). A perceived lack of usefulness in mobile banking, is an obstacle to the acceptance of mobile banking (Abdennebi, 2023).

2.3.4. Infrastructure and Device Constraints

Phone quality is another factor that creates challenges to the acceptance of mobile banking. Users in Zimbabwe noted that mobile banking apps like CBZ Touch, is exclusive to smartphones, which leaves out consumers that do not own smartphones (Tsokota et al., 2020). Similarly, in Kenya, consumers claim that the majority of services offered by mobile money are only accessible on smartphones, which are too costly, and can only be afforded by high income earners (Odoyo et al., 2019). Mori and Mlambiti (2020) noted that phone ownership, is a requirement for using mobile banking, and this has limited women from using mobile banking in Tanzania, as women were previously prohibited from owning smartphones, to a degree.

Additionally, charging of mobile phones is a challenge in using mobile money services, because of a lack of electricity in some parts of Rwanda (Uwamariya et al., 2021).

2.3.5. Income and Distance

Income and distance are hindering mobile banking acceptance in LMICs, i.e., in Kenya, individuals that do not use mobile money noted that they perceive the service to be for individuals with higher income in their communities (Odoyo et al., 2019). In addition, income was found to affect mobile banking use in Tanzania where people with less or no income were less likely to accept mobile banking (Mori & Mlambiti, 2020). Additionally, network infrastructures have been noted to affect mobile banking acceptance and use in LMICs. Poor network issues prevent consumers from performing mobile banking transactions everywhere (Dhingra & Gupta, 2020). For example, the use of mobile money decreased by 15 percent when a household was located 10 kilometres or more from areas with multiple mobile networks in Tanzania (Naito et al., 2021).

2.3.6. Cultural and Gender Norms

Social norms have also been noted to negatively affect the use of mobile banking applications. People are concerned with perceptions and attitudes about the interruption of their old routines should they accept a technology (Dhingra & Gupta, 2020). Chamboko, (2022) noted that social norms and traditions impose restrictions on women in LMICs, which hinder women from accessing digital financial services. Mori and Mlambiti (2020) also noted that in Tanzania women are less prone to use mobile banking, due to cultural traditions and norms in the society. In contrast, social influence positively affected mobile banking users in Zimbabwe, as consumers noted that their work managers affected their decision in utilizing mobile banking apps (Tsokota et al., 2020).

2.3.7. Trust

Trust is a crucial factor that determines the long-term relationship between a financial institution and a consumer (Dhingra & Gupta, 2020). Individuals still have security concerns regarding privacy and use of mobile phones in accessing banking products and services (Kamdjou et al., 2021). However, the level of trust in mobile banking appears to be a subject of diverse views. Tsokota et al. (2020) found that Zimbabwean consumers do not observe the security threats linked to mobile banking app as realistic or potentially devastating. Likewise, in Nigeria, users positively expressed joy and trust in mobile banking apps (Omosho, 2021). On the other hand, in Cameroon, privacy concerns negatively impacted behavioral intention of consumers to accept mobile banking (Kamdjou et al., 2021).

2.3.8. Financial Literacy and Digital Literacy

Financial literacy and digital literacy are factors that affect the acceptance of mobile banking. In LMICs, financial literacy levels are below those of upper income countries (Cossa et al., 2022; Lahiri & Biswas, 2022). Additionally, technical skills are required in using mobile banking, as it is a digital banking channel that utilizes technology (Singh & Srivastava, 2020). In Kenya, financial literacy was found to be a barrier to mobile money acceptance, where individuals in rural communities perceived the service to be for educated people that can fully utilize it (Odooyo et al., 2019). Moreover, consumers found the methods and procedures involved in mobile payment transactions difficult and felt that a certain degree of education is needed.

2.4. Mobile banking in other LMICs

Many studies have been conducted in LMICs on mobile banking acceptance and use (Vuong et al., 2020). LMICs have witnessed the most rapid growth in digital financial services in the past decade, compared to high income countries (Chamboko, 2022). Mobile banking, being a new technology faces several obstacles in achieving widespread acceptance especially in LMICs (Abdennebi, 2023). India has a very low acceptance rate of mobile banking despite the high demand of mobile phones (Dhingra & Gupta, 2020). In Brazil, the uptake of mobile banking has been rising over the years, but there is still potential for it to reach new heights, especially in the agricultural sector (Malaquias & Silva, 2020). Similarly, mobile banking developments and uptake in rural China has not met the expectations compared to the uptake and penetration rates in urban areas (Migliore et al., 2022; Zhu et al., 2021).

There are several factors that affect mobile banking acceptance in LMICs. For instance, among farmers in rural Brazil, price value was not a factor that affected the acceptance of mobile banking, as farmers were unaware of the direct and indirect costs involved in mobile banking services (Malaquias & Silva, 2020). However, Owusu et al., (2021) noted that in a service that requires internet access to operate, users or potential users will incur expenses directly or indirectly. Other factors that were found to affect mobile banking acceptance are social influence, mobile perceived capability, perceived user-friendliness, and perceived safety, among others in rural China and India (Singh & Srivastava, 2020; Zhu et al., 2021).

2.5. Mobile banking in middle income and upper income countries

Mobile banking adoption in middle income and upper income countries varies from country to country just like in LMICs. In Poland, mobile banking started in 2000, but it wasn't until 2014 that mobile banking acceptance began to soar (Borowski-Beszta & Kiermas, 2019). Similarly, in Thailand and United States of America (USA), both countries have a higher usage rate of mobile

banking, but their cultural contexts differ (Lonkani et al., 2020). On the other hand, in Vietnam and Taiwan in 2020, mobile banking was not very much popular (Ho et al., 2020). Similarly, in Italy, the usage of cash is still high, while mobile payment transactions are low (Migliore et al., 2022).

Similar to some LMICs, there are some factors that were discovered to negatively impact mobile banking acceptance. Customers in Thailand and USA reportedly are fearful of identity theft or possible data breaches, that poses a threat to mobile banking acceptance (Lonkani et al., 2020). In addition, in Indonesia, failures that occasionally occur in the mobile banking application can potentially reduce habitual use of mobile banking of consumers (Marpaung et al., 2021). Similarly, the unavailability of physical interaction between customers and online businesses often leads to consumers perceiving online transactions riskier and more uncertain in Thailand and USA (Lonkani et al., 2020). Other factors that influence mobile banking acceptance are perceived benefits, user-friendliness, confidence in one's abilities, and supportive conditions and resources, compatibility, effort expectancy, trialability, perceived behavioral control, and perceived risk, which significantly affect consumers accepting mobile banking in Taiwan, Vietnam, and Indonesia (Ho et al., 2020; Marpaung et al., 2021; Vuong et al., 2020).

2.6. Financial behavior and mobile banking

Individuals' financial decisions impact their life outcomes, such as health outcomes, economic well-being, transfer of wealth between generations and, many more (Lahiri & Biswas, 2022). To actively participate in financial transactions in a rapidly evolving digital landscape, individuals need to possess current financial knowledge and skills, and it involves understanding the emerging risks linked to impulsive online consumer behavior, such as the intangibility of goods, spontaneous shopping tendencies, and the ease of accessing loans and investments (Koskelainen et al., 2023). Using financial products without enough information may negatively affect consumers' financial health (Morgan & Long, 2020). Digital financial use was found to have a negative impact on the relation between financial behavior and economic welfare of low-income families in Malaysia - consumers that utilize digital financial services are associated with irresponsible financial behavior (Mahdzan et al., 2022). Furthermore, the availability of financial access through digital financial services can alter consumers' engagement habits in financial transactions. For example, in Greece during the Covid-19 pandemic, internet banking changed consumers' financial behavior, as using internet banking increased their financial activities (Bechlioulis & Karamanis, 2023). The change in the use behavior of consumers can lead to unfavorable financial behavior. Destructive financial behavior affects consumers' well-being, leading to their personal lives ruined, and risky indebtedness behavior can lead to having anxiety

towards money (Abrantes-Braga & Veludo-de-Oliveira, 2020). Individuals with high levels of money anxiety are susceptible to engaging in impulsive behavior (Abrantes-Braga & Veludo-de-Oliveira, 2020). People with financial issues incur debt, that are unable to repay, have no social security, and no pension programs in place, bad financial behavior can negatively affect individuals' relationships with family, friends, and acquaintances (Herawati et al., 2018).

Financial behavior positively affected financial well-being of Malaysian low-income households - households that exercised responsible financial behavior, such as keeping records of spending list, saving money, and having long-term financial goals seemed to have higher financial well-being (Mahdzan et al., 2022). In Tanzania, in the event of negative shock, mobile money users' livelihood does not decrease compared to non-users, as mobile money users are able to receive remittances and save through mobile money accounts (Naito et al., 2021). Mobile banking intensified both the probability of informal and formal savings in West Africa (Loaba, 2022). Similarly, mobile money in Tanzania resulted in the reduction of household savings in less liquid savings mechanisms, such as using livestock, communities, or churches (Naito et al., 2021). In rural areas of Mozambique, formal and informal savings did not change significantly with mobile money (Shaikh et al., 2022). Similarly, farmers in rural Rwanda reportedly rarely used mobile money for savings (Uwamariya et al., 2021).

2.7. Gaps in Literature

The review of literature revealed that factors affecting acceptance and use of mobile banking differ from country to country regardless of their economic status. Numerous studies have been conducted in African countries looking at mobile banking acceptance (Abdennebi, 2023; KA & Subramanian, 2024; Souiden et al., 2021). For example, Chaouali, Ladhari and Souiden (2021) found that Africa was the third region with the most studies after Middle East and Asia. African countries that made the list included Zimbabwe, Ghana, and Tunisia. Additionally, in a literature analysis of mobile banking studies from 2001 -2019 in top journals, African countries that made the list were Ghana, Mozambique, Nigeria, Tunisia, and Zimbabwe (KA & Subramanian, 2024). This shows that there is a need for mobile banking acceptance studies in countries like Namibia. Additionally, based on literature countries such as Kenya, Uganda, Tanzania, South Africa, Nigeria etc. have matured mobile banking/money services (Loaba, 2022; Parlasca et al., 2022; Siano et al., 2020; Thusi & Maduku, 2020). Namibian mobile banking acceptance it is still in early stages. In Sub-Saharan Africa as a whole, mobile banking has not reached widespread acceptance as yet (Loaba, 2022; Mori & Mlambiti, 2020). Moreover, most of the countries have competitive telecommunication industries and financial industries (Abdennebi, 2023; Loaba, 2022; Siano et

al., 2020; Thusi & Maduku, 2020) unlike Namibia. The Namibian financial and telecommunication industries lack competition and are mostly dominated by one or the same institutions for many years (Bank of Namibia, 2023; Bank of Namibia & Namibia Financial Institutions Supervisory Authority, 2023; Communications Regulatory Authority of Namibia, 2023; James, 2023). Additionally, the well-accepted mobile banking in Nigeria was attributed to the large population of the country which is over 150 million inhabitants (Siano et al., 2020). Namibia has a small population of about 3.02 million people (Namibia Statistics Agency, 2024).

Even though mobile banking has been widely studied, there are a few studies that have not measured the actual use behavior (Dhingra & Gupta, 2020; Hanif & Lallie, 2021; Merhi et al., 2019; Saxena et al., 2023). In a meta-analysis, behavioral intention was the most frequently studied endogenous construct followed by use behavior (Tamilmani et al., 2021a). Similarly, a systematic review revealed that studies assessing the impact of mobile banking on consumers' acceptance and use mainly focused on consequences, such as satisfaction, attitude, intention, and use behavior (Souiden et al., 2021). Future researchers were encouraged to investigate consumer's behavioral intention to accept mobile banking by comparing it with their next behavior (Giovanis et al., 2019). Values related to mobile banking outcome, for example, experience of service, replacement of existing services, financial advantages, impact of consumption behavior, among others have not been investigated in studies and therefore, encourages future research to focus on those perceived values (Souiden et al., 2021). This study aimed at addressing the gaps identified by investigating antecedents of mobile banking acceptance and use behaviour in Namibia, as well as the impact the use has on financial behavior.

In conclusion, the acceptance of mobile banking varies significantly across different economies, influenced by a complicated dynamic of socio-economic, technological, and cultural factors as shown in Table 2 below. In African countries, acceptance levels range from low to high, heavily influenced by factors such as financial and digital literacy, infrastructure quality, smartphone ownership, income levels, trust, and gender norms. Countries like Kenya and Nigeria show high acceptance, benefiting from mature mobile money systems and high population rate, while others like Namibia still face barriers. In other LMICs, acceptance is similarly mixed. Moderate acceptance of mobile banking in some countries benefits from high mobile penetration and favourable user perceptions. In some regions like India and rural China lower uptake is due to infrastructural and social limitations.

For middle and upper income countries, mobile banking acceptance is generally higher, but challenges remain. In countries like Italy and Taiwan, low acceptance is often due to privacy,

security concerns, and perceived complexity. In contrast, countries like the USA and Thailand have high acceptance rates, due to strong infrastructure and consumers' confidence in their digital skills and abilities. Overall, mobile banking acceptance is affected by technological readiness, socio-cultural norms, economic factors, and perceived value and trust. Within each region demographics play a major role in the drivers and barriers.

The use of mobile banking to conduct banking services can affect consumers' financial behavior due to its availability and convenience, leading to both favorable outcomes, such as improved financial management, increased savings, and better access to financial service, and unfavorable consequences, including impulsive spending, over-reliance on credit, and potential exposure to fraud or security risks. For example, the use of digital financial services has caused changes in use behavior of consumers in Malaysian low-income households, as well as in Greece by increasing their financial activities. Additionally, it has caused consumers in Tanzania to save their money in secure accounts. In some countries such as Mozambique, it did not change formal or informal savings behavior.

Mobile banking acceptance has been studied by many scholars, however, there is need for more studies in countries like Namibia, which are yet to experience high levels of acceptance and are still in the early stages of acceptance. Literature shows that some countries with high acceptance rate have competitive telecommunications and financial industries, which is not the case for Namibia. Additionally, Namibia has a low population, which may affect the acceptance trends. Furthermore, most studies on mobile banking have primarily focused on behavioral intention with limited exploration of actual usage, as well as post-acceptance behavior, such as financial behavior. Therefore, this study aimed to address the gaps above within the Namibian context. Although, digital literacy has been identified as a factor affecting mobile banking acceptance, it was not explored in this study. Future research can address this area.

Economy Type	Example Countries	Adoption Level	Key Factors Affecting Adoption
African countries	Namibia	Low	Financial literacy, digital literacy, perceived usefulness, good or poor infrastructures, high or low population rate, mature or immature mobile money system, costs, remittances, financial inclusion, income, smartphone ownerships, electricity, gender and cultural norms, distance, trust, security, privacy concerns, high or low mobile phone penetration, and ruralization.
	Zimbabwe, Tunisia, Ghana, Rwanda	Low	
	South Africa, Mozambique	Moderate	
	Kenya, Nigeria	High	
Other Lower and Middle Income countries	Brazil	Moderate	High mobile phone penetration, internet access, social norms, mobile perceived capability, perceived user-friendliness, and perceived safety.
	India	low	
	China (rural)	low	
Middle and Upper Income countries	Italy, Vietnam, Taiwan	low	Privacy and security concerns, perceived benefits, user-friendliness, confidence in one's abilities, and supportive conditions and resources, compatibility, effort expectancy, trialability, perceived behavioral control, and perceived risk.
	Poland, Indonesia	Moderate	
	USA, Thailand	High	

Table 2: Literature Review Summary

2.8. Summary

This chapter looked at past studies on the acceptance and use of mobile banking. In addition, it explored the consequences on financial behavior. Factors identified are income, phone qualities, awareness, price, performance expectancy, social influence, ease of use, trust, digital skills, distance, perceived risk, infrastructures, and financial literacy, among others that affect the acceptance and use of mobile banking.

Chapter 3: Theoretical Basis

3.1. Introduction

This chapter looks at the theoretical framework that guided the study in detail. Further, the chapter outlines the hypotheses used in the study.

3.2. Consumer Behavior and Technology Adoption Frameworks

There are many theoretical frameworks that can be used to study the factors affecting the acceptance and use of technology. Previous studies of mobile banking acceptance have mostly used the following theories, in no particular order (Giovanis et al., 2019; Pankomera & van Greunen, 2019). Firstly, Technology Acceptance Model (TAM) theory remains highly favored in research conducted in LMICs (Abdennebi, 2023). TAM posits that perceived usefulness and perceived ease of use affect consumer acceptance of a new technology (Pankomera & van Greunen, 2019). Secondly, the Theory of reasoned action (TRA) theory explains an individual's behavioral intention, and that an individual's behavioral intention mainly depends on an individual's attitude towards the behavior and subjective norms (Marpaung et al., 2021). Further, an individual's behavior is explained by an individual's attitude and subjective norm effect through behavioral intention (Al-Suqri & Al-Kharusi, 2015).

Thirdly, Theory of Planned Behavior (TPB) posits that attitude, subjective norms, and perceived behavioral control affect an individual's behavioral intention to accept or reject a new technology (Giovanis et al., 2019). Fourthly, Task Technology Fit (TTF) theory posits that the adoption of new technology mainly depends on task characteristics fulfilment. It consists of four dimensions: task characteristics, task technology, technology fit, and use (Abbas et al., 2018). Fifthly, Diffusion of Innovation Theory (DOI) posits that individuals are likely to adopt a technology if it has these characteristics: trialability, less complexity, relative advantage, compatibility, and observability (Ho et al., 2020). Other theories that have been used are domestication theory, protection motivation theory, theory of reasoned actions, decomposed theory of planned behavior, the elaboration likelihood model, initial trust model, innovation resistance theory, information system success model, and stimulus-organism-response framework (Kamdjoug et al., 2021; Migliore et al., 2022; Souiden et al., 2021; Uwamariya et al., 2021).

3.3. Unified theory of acceptance and use of technology 2

The extended unified theory of acceptance and use of technology (UTAUT2) is a theory used to investigate the acceptance and use of technology in a user setting rather than an organisational setting, as was the original UTAUT (Venkatesh et al., 2012). The UTAUT2 model, is a popular model

in Information Systems (IS) that has been verified in different studies to predict a system acceptance and usage behavior (Isaac et al., 2019). UTAUT2 is an extension of the unified theory of acceptance and use of technology (UTAUT) model, which is a consolidation of eight models: decomposed theory of planned behavior (DTPB), diffusion of innovation theory (DOI), theory of reasoned action (TRA), technology acceptance model (TAM), motivational model (MM), social cognitive theory (SCT), PC utilization model (MPCU), and integrated model of technology acceptance and planned behavior (TAM-TPB) (Kwateng et al., 2018; Merhi et al., 2019; Venkatesh et al., 2012). The rapid growth in technology innovations and their integration in users' daily lives resulted in the development of UTAUT2, to account for the exclusion of the consumer context in the original UTAUT model; that was used in investigating the acceptance and use of technology in the organizational context (Venkatesh et al., 2012).

UTAUT2 postulates that performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit affect the behavioral intention of using a technology (Loaba, 2022; Venkatesh et al., 2012, 2016). Further, it claims that the use of a technology is influenced by behavioral intention, habit, and facilitating conditions. Additionally, it has gender, age, and experience as moderating variables (Venkatesh et al., 2012). UTAUT2 exhibits greater predictive ability and is widely used in many disciplines including IS, with over 6000 citations in Google Scholar by the year 2020. This demonstrates the importance of using it as a theoretical framework to unpack technology acceptance related issues in different environments by employing it as: standalone (UTAUT2 application), or combining it with other theories (UTAUT2 integration), or by extending it with other variables (UTAUT2 extension) (Tamilmani et al., 2021b).

Researchers have employed UTAUT2 to study mobile banking acceptance issues and use in different settings as recommended by Venkatesh et al. (2012). For example, Merhi et al. (2019), extended UTAUT2 with security, privacy, and trust in Lebanon and Britain. Similarly, in Ghana it was extended with trust and education as a moderator (Kwateng et al., 2018). Likewise, in Jordan, UTAUT2 was extended with trust and mass media (Gharaibeh & Arshad, 2018). Additionally, Thusi and Maduku (2020) applied it to South African millennials. Similarly, it was used in a study in Indonesia (Marpaung et al., 2021). Moreover, a systematic review found that UTAUT/UTAUT2 were the second most used frameworks in mobile banking studies (Souiden et al., 2021). Additionally, a systematic review revealed that UTAUT2 extensions showed an optimistic future (Tamilmani et al., 2021b). Several researchers, including Venkatesh et al. (2012) have highlighted the significance of applying UTAUT2 to study various technologies acceptance in different settings and groups that are different from the one in the initial study (Merhi et al., 2019). Additionally, to

enhance the UTAUT2 applicability across different users' technology use settings, future studies could discover relevant factors that can be incorporated into the model (Venkatesh et al., 2012). To gain a deeper understanding of mobile banking acceptance and its impact on financial behavior in Namibia, this study added key behavioral factors; financial literacy, trust, perceived risk, and distance to the UTAUT2 model.

3.4. Extending UTAUT2

Extension of UTAUT/UTAUT2 model is done by using part or the entire UTAUT/UTAUT2 theoretical framework and extending it with any of the four categories of extension: new endogenous mechanisms, new exogenous mechanisms, new outcome mechanisms and new moderation mechanisms (Venkatesh et al., 2016). The new exogenous mechanisms represent the factors that affect the four exogenous variables in the original UTAUT model; new endogenous mechanisms are factors that influence behavioural intention and technology use; new moderation mechanisms are new moderators added to the model that can include moderation of new relationships, while the new outcome mechanisms are results of behavioral intent and technology use that can be incorporated to the model (Venkatesh et al., 2016). In this study, we applied the above definition to UTAUT2 model. In a literature review of studies that have employed UTAUT as a theoretical framework, new outcome mechanisms was the least used extension of UTAUT followed by new exogenous mechanisms, while most extensions of UTAUT mainly focused on new endogenous mechanisms or new moderation mechanisms (Venkatesh et al., 2016). This finding years later is supported by a systematic review that found that consequences in mobile banking adoption studies is the least investigated area (Souiden et al., 2021). Furthermore, a systematic review in 2021 also revealed that new endogenous mechanism was the most widespread UTAUT2 extension, followed by new moderation mechanism, new exogenous mechanism was the third most widespread and lastly, new outcome mechanisms (Tamilmani et al., 2021).

UTAUT/UTAUT2 extensions have a great potential to contribute significantly to theory in IS research (Venkatesh et al., 2016). One recommendation by Venkatesh et al. (2016) for future research directions is to visualize technology use within specific features and connect it to personal consequences. In addition, they noted that there are several studies that have investigated the technology use at feature level however, there is an absence of studies focusing on consequences of feature level use on various personal results. "Our framework suggests that UTAUT/UTAUT2 can serve as a baseline model for future research to examine the determinants of

feature-level use and the link between feature-level use and different individual outcomes” (Venkatesh et al., 2016, p.348).

This study answered this call by extending UTAUT2 model with financial behavior as a key outcome to a Namibian context to address this gap in literature. Namibia is a LMIC with a small population, a lack of competition in telecommunication and financial industries, low financial literacy, and is still in the early stages of mobile banking acceptance. By focusing on Namibia and exploring the impact mobile banking applications have on consumers’ financial behavior, this study helps to address the gap in literature of low-resource settings and different challenges, contributing significantly to theory in the technology acceptance and use field as stated by Venkatesh et al. (2016).

3.5. Hypothesis development

This section presents the hypotheses used in the study based on the theoretical framework.

3.6. UTAUT2 constructs hypotheses

This section highlights the hypotheses for the UTAUT2 constructs.

3.6.1. Performance Expectancy

Performance expectancy reflects consumers perception of improvements that they will gain by making use of a technology (Venkatesh et al., 2016). What makes M-Pesa successful in Kenya is that it enabled people to use their phones to send money safely and quickly to other people (Etim, 2014). Additionally, mobile money offers the convenience of paying utility bills while avoiding the loss of valuable work hours spent at the bank (Etim, 2014). In Namibia, many people travel long distance to banks for financial services that are mainly located in urban areas (Biermann, 2024; Financial Literacy Initiative, 2023). Therefore, if consumers believe that mobile banking will improve their financial activities, particularly by saving time, and reduce transport costs to physical branches they are more likely to accept mobile banking applications. Several studies found performance expectancy strongly and positively affects acceptance of mobile banking in countries like South Africa, India, Brazil, and Indonesia (de Sena Abrahão et al., 2016; Malaquias & Silva, 2020; Marpaung et al., 2021; Saxena et al., 2023; Thusi & Maduku, 2020). However, in Ghana performance expectancy was not significant (Kwateng et al., 2019). Therefore, the following estimation is made.

H2: Performance expectancy will positively affect behavioral intention to accept mobile banking applications.

3.6.2. Effort Expectancy

Effort expectancy is the extent to which a consumer finds the technology easier to use and it is expected to positively affect the behavioral intention to use a technology (Venkatesh et al., 2016). In LMICs, the acceptance of mobile banking is often challenging due to internal and external barriers, such as lack of skills, limited internet connectivity, and unreliable technology infrastructure (Abdennebi, 2023). Many people, especially those living in rural communities, still struggle to access digital services, and 3G network deployment has been limited to urban areas in Namibia (World Bank, 2024). These challenges make mobile banking seem harder to use, which can reduce acceptance rates. Studies in Nigeria revealed that effort expectancy is a major factor that affects the behavioral intention to accept mobile banking (Siano et al., 2020). Likewise, effort expectancy was found to positively affect Indian consumers behavioral intention (Saxena et al., 2023). Therefore, the following assumption is made.

H2: Effort expectancy will positively affect behavioral intention to accept mobile banking applications.

3.6.3. Social Influence

Social Influence is the effect of social aspects like the views of friends, family, and authority figures on a consumer's behavior (Zhou et al., 2010). Shaikh and Karjalouto (2015) found social influence to have the least significance on intention to use mobile banking. Likewise, social influence did not affect mobile banking use among farmers in rural areas of Brazil (Malaquias & Silva, 2020). In Nigeria and Kenya, social influence was found to positively affect the acceptance of mobile banking (Odoyo et al., 2019; Siano et al., 2020). In Kenyan culture, consumers are likely to be influenced by favorable word-of-mouth shared by peers they trust or look up to - this is the same for countries with the same settings (Kiranga & Chotiyaputta, 2021). Namibia is a culturally rich country (Ejikeme, 2011). Therefore, the following estimation is made.

H3: Social Influence will positively affect consumers behavioral intention to accept mobile banking applications.

3.6.4. Facilitating Conditions

Facilitating conditions refer to the enablers that affect the use of technology, which are the resources and support available to consumers (Venkatesh et al., 2012). For consumers to use or accept mobile banking, availability of suitable resources, technology infrastructure, uninterrupted internet services, knowledge, and secure applications need to be available (Dhingra & Gupta, 2020; Savić & Pešterac, 2019). Namibia was an early adopter of 3G and 4G/LTE networks and currently enjoys robust network coverage (World Bank Group, 2022), suggesting

that facilitating conditions are likely to significantly affect consumers' acceptance of mobile banking. Thusi and Maduku (2020) found the availability of facilitating conditions positively affects the use of mobile banking apps by millennials. Thus, the following assumptions are made.

H4a: Facilitating conditions will positively affect consumers behavioral intention to accept mobile banking applications.

H4b: Facilitating conditions will positively affect the use of mobile banking applications.

3.6.5. Hedonic Motivation

Hedonic Motivation refers to the satisfaction or delight the user gets from utilizing the technology (Venkatesh et al., 2016). In Jordan, hedonic motivation had a strong association with the acceptance of mobile banking (Alalwan et al., 2016; Gharaibeh & Arshad, 2018). In contrast, hedonic motivation was non-significant in Ghana (Kwateng et al., 2019). Therefore, the following assumption is made.

H5: Hedonic motivation will positively affect behavioral intention to accept mobile banking applications.

3.6.6. Price Value

Price value indicates the gains of utilizing a technology will outweigh the monetary value of the technology (Venkatesh et al., 2016). In many African countries, market competition is limited to a few players, allowing them to set high fees, which keeps transaction costs high and encourages the use of informal transfer methods (Rouse & Verhoef, 2016). In Namibia, consumers are complaining of high banking fees (Editor, 2024; Matthys, 2023). Among rural farmers in Rwanda, costs associated with mobile money were a challenge that prevented the uptake of the service (Uwamariya et al., 2021). In contrast, in Brazil price value did not significantly influence the uptake and use of mobile banking among Brazilian farmers (Malaquias, Rodrigo Fernandes & Silva, 2020). Therefore, the following assumption is made.

H6: Price value will positively affect behavioral intention to accept mobile banking applications.

3.6.7. Habit

Habit is the automatic continued utilization of the technology derived from past behavior (Venkatesh et al., 2012). Habit had a direct relationship to the use of mobile internet (Venkatesh et al., 2012). Similarly, In India, habit affected behavioral intention due to a lack of time to go to the bank physically (Dhingra & Gupta, 2020). In Indonesia habit showed no significant effect (Marpaung et al., 2021). Thus, the following estimations are made.

H7a: *Habit will positively affect behavioral intention of consumers to accept mobile banking applications.*

H7b: *Habit will positively affect the use of mobile banking applications.*

3.6.8. Behavioral Intention

Behavioral intention is an individual choice about performing a behavior which finally establish whether or not a user will accept the technology (Al-Suqri & Al-Kharusi, 2015). Behavioral intention was found to affect the use of mobile banking (Thusi & Maduku, 2020; Win et al., 2021). Thus, the following assumption is made.

H8: *Behavioral intention will positively affect consumers use of mobile banking applications.*

3.6.9. Moderating variables

Moderating variables are catalysts between the relationship of two variables, they affect the interaction between two variables (Venkatesh et al., 2012). The direction or strength of a relationship between two variables depends relies on the moderator (Hair et al., 2022).

3.6.9.1 Age

Among farmers in rural areas of Brazil, age was found not to influence mobile banking use (Malaquias, Rodrigo Fernandes & Silva, 2020). Age did not moderate the interaction of facilitating conditions and behavioral intention to accept mobile banking services in India (Saxena et al., 2023). The following assumptions are made for Namibia.

H9a: *The effect of facilitating conditions on behavioral intention is moderated by age.*

H9b: *The effect of hedonic motivation on behavioral intention is moderated by age.*

H9c: *The effect of habit on behavioral intention is moderated by age.*

H9d: *The effect of price value on behavioral intention is moderated by age.*

H9e: *The effect of habit on use behavior is moderated by age.*

3.6.9.2 Gender

In Vietnam, male users had a stronger intention to accept mobile banking than female users (Vuong et al., 2020). Gender was not found to have an impact in India (Dhingra & Gupta, 2020). However, in China women were found to have a greater likelihood of accepting mobile banking in remote areas (Zhu et al., 2021). In contrast, Tanzanian male consumers are more prone to accept mobile banking compared to women (Mori & Mlambiti, 2020). Namibia has unequal access to

mobile phones between men and women which makes it harder for many women to use mobile money services (World Bank Group, 2022).

Thus, we make the following assumptions.

H10a: *The effect of facilitating conditions on behavioral intention is moderated by gender.*

H10b: *The effect of hedonic motivation on behavioral intention is moderated by gender.*

H10c: *The effect of habit on behavioral intention is moderated by gender.*

H10d: *The effect of price value on behavioral intention is moderated by gender.*

H10e: *The effect of habit on use behavior is moderated by gender.*

3.6.9.3 Experience

Jordan consumers found mobile banking applications easy to install and the registration process easy, even to users without high-level skills of using the internet (Gharaibeh et al., 2018). Venkatesh et al. (2012) discovered that behavioral intention in the consumer context of technology use is influenced by experience.

Thus, we make the following assumptions.

H11a: *The effect of facilitating conditions on behavioral intention is moderated by experience.*

H11b: *The effect of hedonic motivation on behavioral intention is moderated by experience.*

H11c: *The effect of habit on behavioral intention is moderated by experience.*

H11d: *The effect of habit on use behavior is moderated by experience.*

H11e: *The effect of behavioral intention on use behavior is moderated by experience.*

3.7. Extension of UTAUT2 hypotheses

This section highlights the hypotheses of the constructs the study added to the UTAUT2 model.

3.7.1. Trust

Trust has been found to significantly affect mobile banking application acceptance and utilization by several researchers (Shaikh & Karjaluoto, 2015). Trust positively affected behavioral intention in mobile banking acceptance among farmers in Brazil's rural areas (Malaquias & Silva, 2020). Moreover, a lack of trust in mobile banking results from perceived risks linked to mobile banking, such as security threats and fraud that can occur when using mobile banking (Pankomera & Van Greunen, 2018; Shaikh & Karjaluoto, 2015). Therefore, the following assumptions are made.

H12: *Trust will positively affect the behavioral intention to use mobile banking applications.*

H13: *Trust will negatively affect perceived risk in mobile banking applications.*

3.7.2. Perceived Risk

Perceived risk is consumers' anticipation of incurring a financial loss when using mobile banking (Karjaluoto et al., 2019). Thusi and Maduku (2020) noted that millennials that are victims of fraud use mobile banking apps less. World Bank Financial System Stability Assessment report reported that Namibia is among the top countries in Africa and in the world that is at the risk of cybercrimes, which is the biggest risks to banks (Bank of Namibia, 2020). Thus, the following estimation is made.

H14: *Perceived risk will negatively affect the behavioral intention to use mobile banking applications.*

3.7.3. Financial Literacy

Financial literacy is a key role factor in financial decisions (Lahiri & Biswas, 2022). "Financial literacy is education of money management, skills, and ability to use financial resources to make well informed financial decisions" (Morgan & Long, 2020). Individuals that possess a strong grasp of financial skills are largely susceptible to making well informed decisions about their retirement, avoiding credit with high interest rates, and are more likely to be interested in stock market investments, and portfolio diversification plans (Cossa et al., 2022). Thus, the following assumption is made.

H15: *Financial literacy will positively affect the behavioral intention to use mobile banking applications.*

3.7.4. Distance

In West Africa, commercial banks are situated in overpopulated cities, and banks neglect rural areas. The distance between the consumer and the bank discourages consumers to visit the bank. Mobile banking provides the possibility and access to financial services anytime and anywhere eliminating the distance constraint (Loaba, 2021). Zhu et al. (2021) noted that when banks are situated in urban areas their primary customers are urban residents rather than those residing in rural areas and this often-discourages consumers to take up financial products. The reduction in distance to access the account increased the number of withdrawals and the change in net savings increased with the reduction in travel distance to the bank (Bachas et al., 2018). In Namibia, 34.3% of the population spend between 30 to 60 minutes traveling to a bank,

while over 4.2%, estimated at 61,086 individuals, travel for more than 3 hours for financial services (Namibia Statistics Agency, 2018). Thus, the following assumption is made.

H16: Distance will positively affect the behavioral intention to use mobile banking applications, such that people who stay near their bank branch are more prone to accept mobile banking applications compared to people who stay far from their bank branch.

3.7.5. Mobile banking use influence on financial behavior

The use of mobile banking applications to conduct banking activities can change how people manage their money. If consumers do not make informed financial decisions, this can lead to unintended financial consequences that can negatively affect consumers' well-being. Usage can be defined as the consistency, frequency, and time span of use (Siano et al., 2020). In Poland, users that have mobile banking reportedly use it a few times a week (Borowski-Beszta & Kiermas, 2019). In West African countries people with access to mobile banking are likely to increase their formal and informal savings (Loaba, 2021). Likewise, in Kenya, Malawi, Zambia, and Uganda, the use of mobile banking services encouraged savings practices among people and largely affected the amount saved (Ouma et al., 2017). Therefore, the following assumption is made.

H17: The use of mobile banking applications will positively affect consumers' financial behavior.

3.8. Research Model

Venkatesh et al. (2016) suggested an abstract extension of UTAUT2, introducing additional external factors, Internal factors, moderation factors, and outcome factors. Numerous studies have employed the extension of UTAUT2 to investigate new technologies (Abbas et al., 2018; Chauhan et al., 2022; Farzin et al., 2021; Kilani et al., 2023; Nguyen et al., 2020; Purwanto & Loisa, 2020; Rachmawati et al., 2020). The research model was drawn from UTAUT2 and extended with key behavioral factors, i.e. financial literacy, trust, perceived risk, distance and a key outcome: financial behavior. Financial behavior is an important outcome of using mobile banking applications, as their availability and convenience have the potential to affect consumers' financial activities. Furthermore, the findings of this study can be used to improve financial education and guide policy development in Namibia. The added variables are highlighted in blue-grey colour while the original UTAUT2 variables are in white in *Figure 1*.

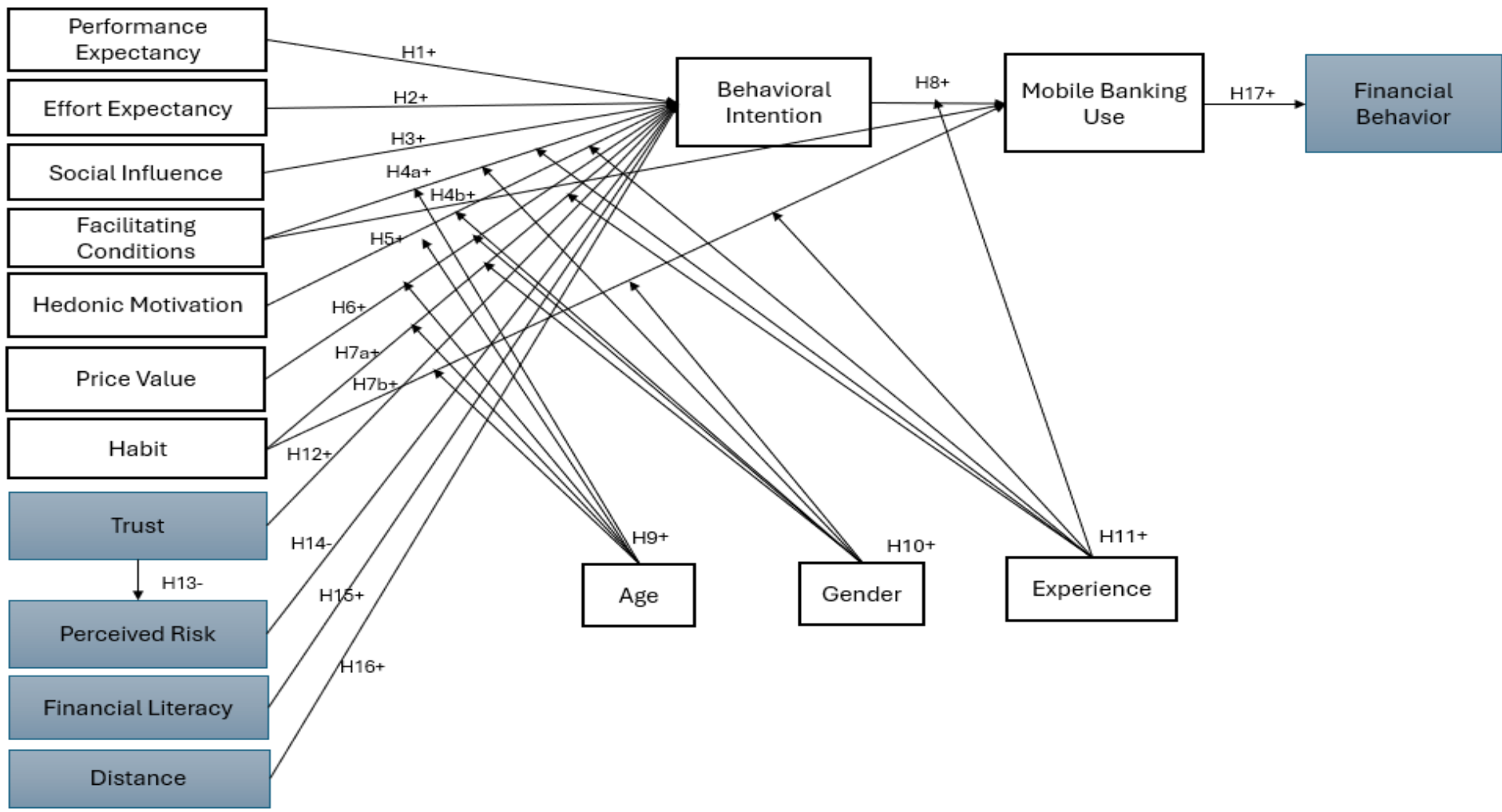


Figure 1: Research Model

3.9. Summary

The chapter presented the research model by extending the UTAUT2 framework with four key behavioral factors: trust, perceived risk, financial literacy, distance, and financial behavior that guided the study.

Chapter 4: Methodology

4.1. Introduction

This chapter presents the research procedure that is followed by the study. It provides a blueprint of the research methods such as strategies, procedures, tools used to gather the data, data analysis procedures, and data interpretation methods employed to answer the research questions and shows how research goals were achieved.

4.2. Research Philosophy

Researching human behavior involves adopting a research paradigm to enhance the study's credibility and generalizability (Kankam, 2019). Further, it establishes the basis of research designs and methodologies employed by the study (Kankam, 2019). Knowledge of philosophical issues in Information Systems (IS) can assist researchers in demonstrating that their work is perceptive and rigorous (Hassan et al., 2018). Therefore, "it provides the mental and thoughtful casement for information research to be carried out" (Kankam, 2019, p. 85). Realists see research as a technique to reveal the current reality and believe that the best way to uncover the truth is to use objective research methods and the researcher should be detached from the research (Sukamolson, 2007). Positivism represents the most extreme version of the realist worldview (Sukamolson, 2007). A positivist approach was employed for the study. The approach claims that knowledge is made up of people's experiences, focuses on facts and reasons for behavior (Chilisa & Kawulich, 2012). Positivists believe that knowledge is made up of hard data, is objective, and the researcher values, interest, and feelings do not influence the study (Chilisa & Kawulich, 2012).

It is essential to align the research philosophies with the research approaches. Research approach can be divided into two categories, deductive and inductive (Al-Ababneh, 2020). The deductive approach is employed when a study is developing a theory and testing hypotheses while, the inductive approach is used when collecting data, analyzing the data and developing a theory based on the findings (Al-Ababneh, 2020). The study used a deductive theory approach. A framework that guided the research was developed and hypotheses were created first before data was collected, as stipulated in chapter 3.

4.3. Research Strategy

In Information Systems (IS) the procedures followed in answering the research questions and testing of hypotheses are of great importance and the application of the procedures is key (Pinsonneault & Kraemer, 1993). The study followed a survey research method. In survey

research, the surveys are conducted to discover new or improve scientific knowledge (Pinsonneault & Kraemer, 1993). Survey research is mostly quantitative in nature necessitating consistent information from the subjects under investigation (Pinsonneault & Kraemer, 1993). Quantitative research mainly focuses on evaluating social reality (Sukamolson, 2007). The topic of interest in a quantitative study is investigated by gathering numerical data and examining the data obtained by applying mathematical formulae and showing the results with numerical figures (Basias & Pollalis, 2018; Muijs, 2010). People's beliefs and attitudes can be expressed in numerical figures thus, making quantitative techniques and tools a suitable method (Muijs, 2010). In addition, quantitative survey research can indicate the direction of the association between variables, and also which variable influences the other one as guided by the theoretical model (Pinsonneault & Kraemer, 1993). In mobile banking studies, the quantitative approach has been widely used in LMICs (Shaikh & Karjaluoto, 2015).

A mobile application is a unified object, comprising different components, for example user acceptance, safety measures, and features that can be assessed individually, and to evaluate these components it is necessary to use objective tools like survey questionnaires (Tsokota et al., 2020). Therefore, the survey research was deemed a suitable research strategy to provide answers to the research questions and objectives as outlined in chapter 1. Survey research can be conducted for purposes of exploration, description, or explanation (Pinsonneault & Kraemer, 1993). For this study, the survey research is for explanation. Explanatory studies establish connections in a general form and use multivariate methods to evaluate the connections. The data and methods define the connections (Boudreau et al., 2001; Chilisa & Kawulich, 2012). The explanatory survey aims at testing the theory and cause-and-effect relationships. It also assumes directionality of relations (Pinsonneault & Kraemer, 1993). The unit of analysis for the study is an individual who uses mobile banking applications. The unit of analysis is defined as anything that the researcher is interested in investigating, that corresponds with the research questions and hypotheses (Pinsonneault & Kraemer, 1993).

Survey research follows scientific sampling and critical designed questionnaires to statistically and accurately measure population characteristics (Sukamolson, 2007). Sampling has to do with selecting individuals or entities from a population in a manner that allows the results to be generalized to the entire population where the sample was selected from (Pinsonneault & Kraemer, 1993; Sukamolson, 2007). The target population for the study was all Namibian banking consumers. The target population is defined as the entire elements of interest (Muijs, 2010). The target population contains all objects or subjects that share common qualities and characteristics that a researcher is interested in for a study and will enable the researcher to yield

conclusions (Widanengsih, 2021). The sample frame is the critical component of the sampling procedure, and it is the representative subset of the target population from which a sample is derived and should sufficiently reflect the unit of analysis (Pinsonneault & Kraemer, 1993). (Sukamolson, 2007)

Based on the preceding definitions of the target population and sampling frame, the sample frame of the study was all mobile banking applications users in Namibia who use social media platforms: WhatsApp, Facebook, LinkedIn, X (formerly known as Twitter), and Instagram. To the knowledge of the researcher there were no up to date figures of the banking population available at the time of writing. The estimated Namibian banking population in 2017 was about 1.4 million people (Namibia Statistics Agency, 2018). Furthermore, Namibia has about 1.63 million internet users and 703.9 thousand social media users (Kemp, 2024). Additionally, in 2022, Namibia reportedly had above 2,5 million active cellphone banking accounts (Vatileni, 2023). Therefore, we can assume that at least 50 percent of the social media users have or use mobile banking applications.

To draw a representative sample from the target population, probability sampling methods are applied. In probability sampling, it is a requirement that respondents are “randomly” sampled, therefore everyone in the population should have an equal chance of being sampled (Sukamolson, 2007). A non-probability sampling technique was utilized, and snowball sampling was applied. In non-probability not all users have an equal chance of taking part in the study. It does not focus on accurately representing all members of the population but on convenience or other selection criteria that allows easy collection of data (Creswell & Creswell, 2023). In snowball sampling, a few subjects are used to promote other subjects to take part in the study (Taherdoost, 2016). The survey was posted on the researcher’s social media platforms: WhatsApp (status and group chats), Facebook, LinkedIn, X, and Instagram. The researcher’s friends, followers, contacts, and connections were asked to distribute (share, repost) the survey with their followers, contacts, friends, and connections. Additionally, they were also asked to ask their connections, followers, contacts, and friends to share the survey as well, especially with people that they think would be interested in completing the survey.

Once the sampling method is established, the next step involves determining an appropriate sample size. Sample size is important when using statistical techniques and the correct sample size needs to be ensured as this significantly influences the accuracy of the results (Rahi, 2017). For the sample size for the study, the Barlett, Kotrlik and Higgins (2001) formula was applied to determine a sufficiently powered sample size of a study - they noted that for each independent

variable there should be a minimum of about 10 participants to be evaluated. There are 13 independent variables, therefore 130 respondents were required. Therefore, a sample size of 160 was deemed sufficient to ensure that the sample size is sufficiently powered. The total number of respondents that took part in the survey was 254, therefore a sufficiently powered sample size was obtained.

4.4. Data Collection Procedure

Having established the sample size, the study proceeds to describe the data collection procedure used to obtain responses. In survey research, data is collected by asking predefined and structured questions (Pinsonneault & Kraemer, 1993). The study employed a cross-sectional approach, where data on opinions and practices were collected at a single point in time (Rahi, 2017). The data was collected between February 2024 to June 2024 using an online survey. In Namibia a person must be sixteen years and older to be legally eligible to use formal financial products and services (Namibia Statistics Agency, 2018). An online survey designed with Qualtrics was employed to gather data from the Namibian banking consumers that are 18 years and older. Banking consumers that were younger than 18 years of age were not eligible to take part in the survey because of the parental consent that is required, as they are still minors under the Namibian laws. The online survey was distributed on social media platforms: X, LinkedIn, WhatsApp, Facebook, and Instagram. It is acknowledged that this approach may have excluded banking consumers in rural populations or individuals without access to smartphones or personal computers.

4.4.1. Instrument design

Effective data collection depends on the careful design of a research instrument. In positivist deductive, quantitative survey research the researcher often has well defined independent variables and dependent variables, as well as a research model with expected relationships among the variables which are to be confirmed by observing the phenomenon (Pinsonneault & Kraemer, 1993). “Variables are any characteristics of the unit we are interested in and want to collect (e.g. gender, age, self-esteem)” (Sukamolson, 2007). Multi-item scales of independent and dependent variables were adopted from past studies for all the constructs: 13 constructs are used in the study. Table 3 below shows the construct with their number of items and sources from which they were adapted. From Fernandes et al. (2014) for financial literacy, five questions were used in the study, to ensure the length of the questionnaire was not too long and secondly, to match the five-point Likert scale that was used. Financial behavior items were made up of

savings and investment, cash management, and credit management questions. The items per construct are in Appendix C.

Items were measured using a five-point Likert scale, ranging from: 1 - strongly disagree, 2 - somewhat disagree, 3 - neither agree nor disagree, 4 – somewhat agree to 5 - strongly agree and for use frequency, the scale range from: 1 - never, 2 - rarely, 3 - sometimes, 4 - often to 5 - always. Gender, age groups, salary (net income), education, employment, and other banking or mobile banking related questions were measured using nominal and ordinal categorical scales to cater for questions that were not compatible with the Likert scale.

Construct	Number of items	Source
Performance Expectancy	4	Oliveira et al. (2014)
Effort Expectancy	4	Venkatesh et al. (2012)
Facilitating Conditions	4	Venkatesh et al. (2012)
Social Influence	4	Oliveira et al. (2014)
Hedonic Motivation	3	Venkatesh et al. (2012)
Habit	4	Venkatesh et al. (2012)
Price Value	3	Venkatesh et al. (2012)
Behavioral Intention	3	Venkatesh et al. (2012)
Use Behavior	20 items. Items reflecting the Namibian mobile banking applications functionalities.	Logic adapted from Venkatesh et al. (2012)
Trust	3	Malaquias et al. (2019)
Perceived Risk	5	Alalwan et al. (2016)
Financial Literacy	5	Fernandes et al. (2014)
Financial Behavior	12	Dew and Xiao (2011)

Table 3: Instrument design: items and sources

4.4.2. Pilot Study

Before the main data collection, a pilot study was conducted to test the clarity of the instrument items above. A pilot study is a preliminary test conducted to evaluate the research tool before completing the project’s requirements and specifications, and before the final survey is rolled out (Boudreau et al., 2001; Van Teijlingen & Hundley, 2001). Adjustments were made based on the feedback provided by the respondents of the pilot study with the guidance of the research supervisor. Initially, the survey was designed using Microsoft Forms. The pilot study showed that due to the limitation of the number of statements that a Likert statement can take, Microsoft

Forms was not the most suitable platform to conduct this survey. Therefore, the survey was redesigned using Qualtrics which resulted in a better look and feel.

4.5. Data Analysis

Following the completion of data collection, data checks and cleaning were done to ensure anomalies and inconsistencies in answers were corrected or excluded from the study. No anomalies were picked up. All questions were required to be answered before participants could submit. Descriptive and inferential statistics were utilized to analyze and report the findings in chapter 5. Descriptive statistics explain and consolidate the information collected in an insightful manner, and inferential statistics show a broad view results of a sample to a larger population (Creswell & Creswell, 2023). Partial least squares- structural equation modeling (PLS-SEM) was used to assess the research model for the study using Smart PLS 4 software. SEM is a powerful analysis technique even though, it has been criticized for statistical assumptions and sample sizes needed to gain confidence in the findings, and most importantly issues concerning casual interpretation (Hox & Bechger, 1998). In a systematic review of mobile banking acceptance, SEM was the most used method of data analysis, employed by 55 studies out of 76 studies used in the review (Souiden et al., 2021). Thus, showing the relevance of using SME as a method of analyzing data.

4.5.1. Validity and Reliability tests

Data was first tested for reliability and validity, before continuing with the assessment of the inner model. Reliability is the extent to which the instrument generates stable and consistent results or results with no errors (Boudreau et al., 2001). A measure is deemed to have reliability when it consistently generates consistent results each time it is used (Venkatesh et al., 2013).

Validity is the degree to which an operationalization assesses the concepts that it supposes to assess (Boudreau et al., 2001). Validity in research relates to the credibility of the findings, specifically in their ability to accurately reflect the truth in reality (Venkatesh et al., 2013). A study that uses a measuring instrument that lacks either or both reliability and validity will likely produce invalid results (Sürücü & Maslakçı, 2020). In addition, to the validity and reliability tests, different tests that are required and performed in PLS-SEM are shown in the table below for each type of model: measurement model, formative model, and structural model. They are further explained in chapter 5.

Model	Test Type	Test Performed
Measurement Model	Indicator reliability	Outer loadings
	Internal consistency reliability	Compositive reliability Cronbach's alpha
	Convergent validity	Average Variance Extracted (AVE)
	Discriminant validity	Fornell-Larcker criterion Cross-loadings Heterotrait-monotrait ratio (HTMT)
Formative Model	Indicator collinearity	Variance Inflation Factor (VIF)
	Significance and relevance of indicator weights	Bootstrapping
Structural Model	Collinearity assessment	Variance Inflation Factor
	Explanatory power	Pearson's Coefficient (R ²)
	Size Effect	F-square (F ²)
	Predictive power	PLSpredict Procedure Standardized Root Mean Square Residual (SRMR)
	Significance and relevance of path coefficients	Bootstrapping

Table 4: Tests performed

4.6. Ethical Issues

In Information Systems (IS) ethical issues are mostly concerned with potential effects on human participants that are involved in the research process (Mingers & Walsham, 2010). Bryne and Alexander (2006) noted that traditional social science research is governed by four principles within the code of ethics: informed consent, elimination of deception, privacy, confidentiality, and accuracy. Traditional research that involves human participants requires participants to give informed consent and should be made aware that they are being studied (Fiesler & Proferes, 2018).

During the course of data collection respect for persons was guaranteed, a survey disclaimer (survey consent) was displayed, see Appendix B. The terms and conditions highlighting the purpose of the research, protection of answers, and anonymity of identity were displayed. Participants were also made aware that they could withdraw from participating at any time in the survey. Upon withdrawal, the participant's answers were not saved or submitted. Ethical issues to avoid in data and collection analysis, among others are falsifying results, data, ownership, and conclusions, plagiarizing, disclosing harmful participants' information, data security, and privacy (Creswell & Creswell, 2023; Fiesler & Proferes, 2018). No personal details such as name and cellphone number were required. Participants' answers are reported truthfully and are not

altered. Prior to conducting a research study, obtaining local permission from a location and participants is required (Creswell & Creswell, 2023). Approval from National Commission of Research, Science and Technology in Namibia and University of Cape Town were obtained, see [Appendix A](#).

4.7. Summary

This chapter presented the research methodology that was employed in the study. The study employed a survey research approach utilizing an online questionnaire. The instrument of the study was designed using Qualtrics with measurement items adopted from previous studies. Data collection happened between February 2024 and June 2024, and 254 responses were obtained.

Chapter 5: Presentation of Findings

5.1. Introduction

This chapter will present the outcome of the data analysis techniques. PLS-SEM SmartPLS 4 software was employed to analyze the data.

5.2. Demographic Profile

This section will present the respondents' demographic characteristics that took part in the study.

5.2.1. Gender

Figure 2 below shows the gender breakdown of the survey participants. Female respondents account for the majority of the survey respondents, making up 58.27% of the participants. Male respondents represent 41.34% of the participants and 1 respondent indicated that they preferred not to answer.

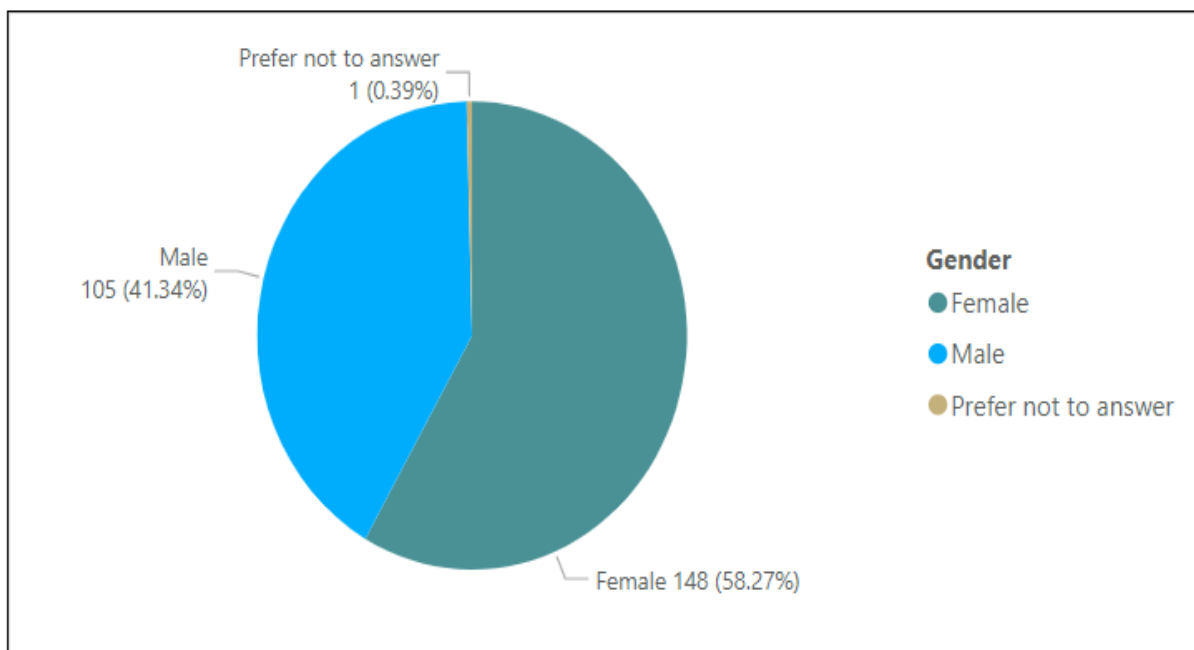


Figure 2: Gender distribution of respondents

5.2.2. Age

Figure 3 displays the age distribution of the survey respondents. Most of the respondents (135) fall within the 30 – 39 years age group. The second highest age group is 20 – 29 years, with 95 respondents. 16 respondents are aged between 40 and 49 years. 6 respondents are between 50 and 59 years of age. 2 of the respondents are either 18 or 19 years of age.

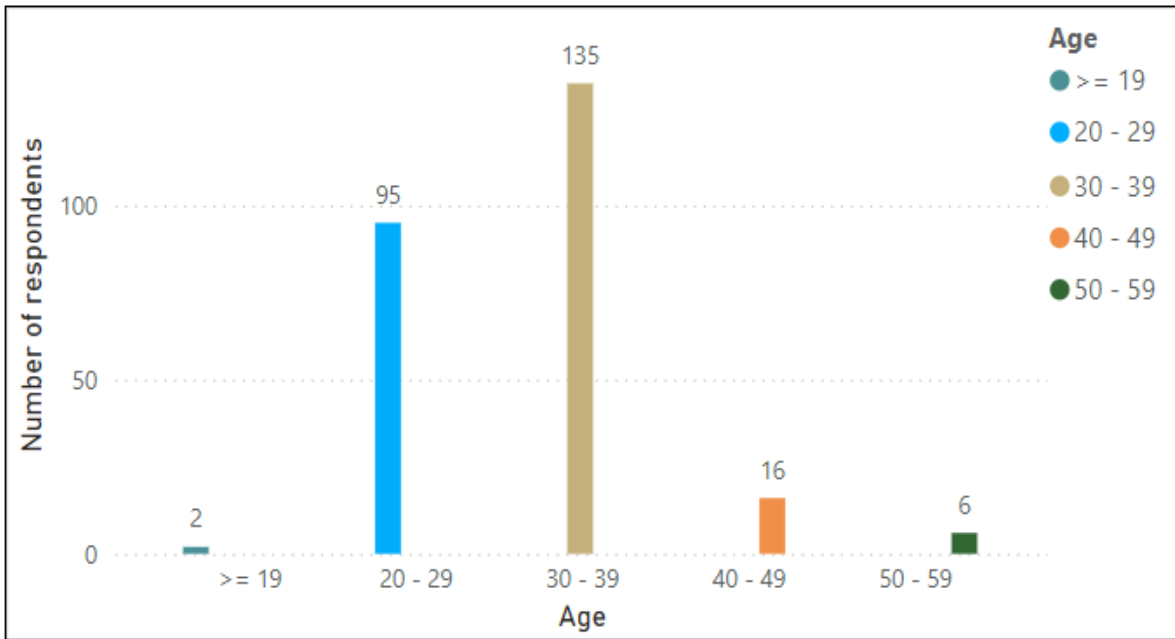


Figure 3: Age distribution of respondents

5.2.3. Education

Figure 4 displays the respondents' education levels. Most of the respondents (83) have an Honours or Postgraduate Diploma. Followed by 63 respondents who have a Bachelor's Degree. 47 respondents have a Masters or Doctor of Philosophy degree. 28 respondents have a Secondary Education level, while 19 respondents hold an Undergraduate Diploma. 13 respondents indicated that they have a Technical, Vocational or College Certificate. Additionally, 1 respondent indicated they never attended school.

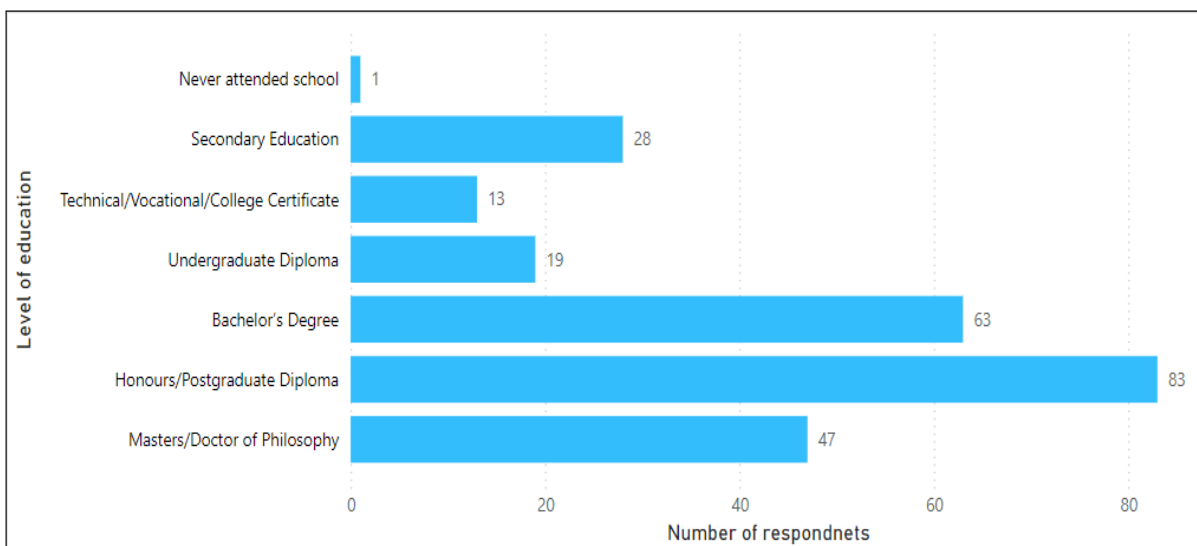


Figure 4: Education distribution of respondents

5.2.4. Income

Figure 5 illustrates the respondents' monthly net income of after all deductions. 78 respondents, who make up the bulk of the respondents earn a net income in the range of N\$ 10,001.00 and N\$ 30,000.00. 60 respondents earn a net income ranging from N\$ 0.00 to N\$ 5,000.00. 59 respondents earn a net income ranging from N\$ 30,000.00 to N\$ 50,000.00, while 20 respondents earn a net income between N\$ 5,000.00 to N\$ 10,000.00. There are 37 respondents with a net income of N\$50,00.00 and above.

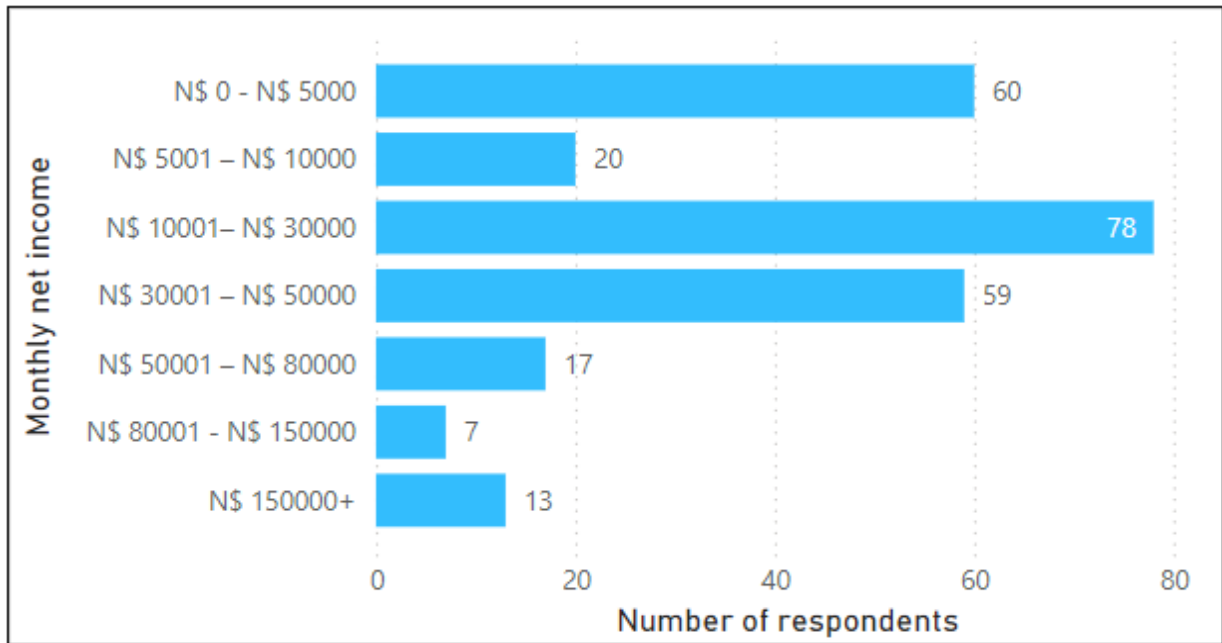


Figure 5: Monthly net income of respondents

5.2.5. Working Status

Figure 6 displays the working status of the respondents. 72.05% are formally employed. Subsequently, 12.99% are students. Unemployed respondents are 7.87%, while self-employed constitute 5.51% of respondents. Informally employed and homemakers represented 1.18% and 0.39% of respondents, respectively.

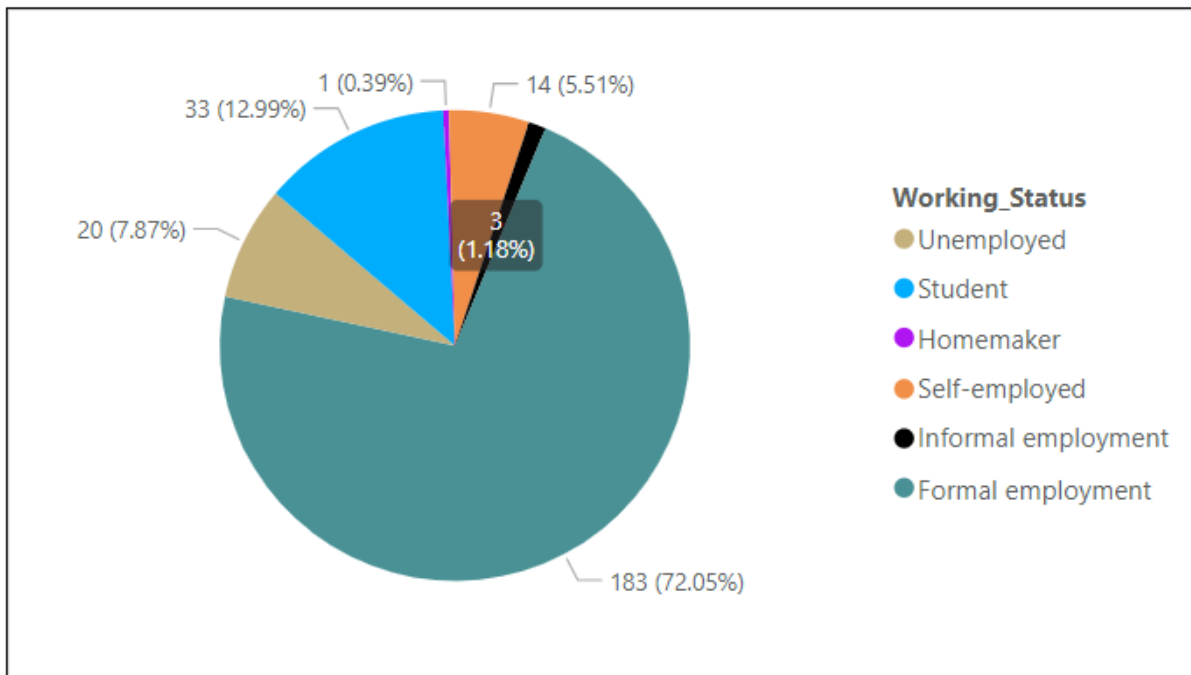


Figure 6: Working status of the respondents

5.2.6. Cellphone ownership

Figure 7 displays cellphone ownership of the respondents. 99.61% of the respondents own cellphones, while 1 respondent indicated that they do not own a cellphone.

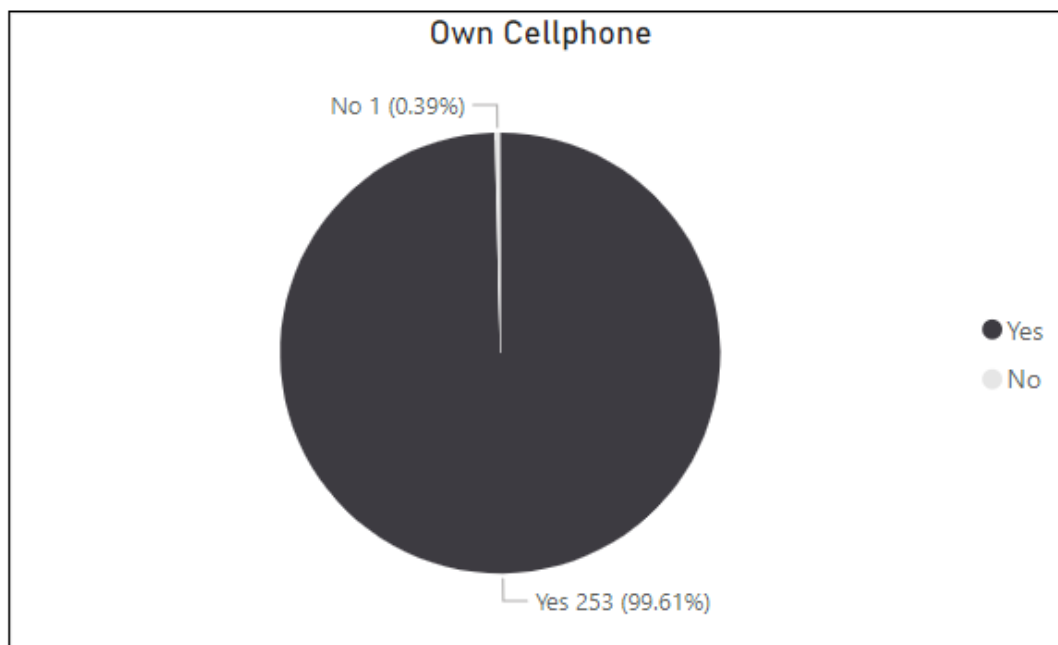


Figure 7: Cellphone ownership of respondents

5.2.7. Experience

Table 5 displays respondents' user experience in using mobile banking applications grouped by employment status. Most respondents (48.82%) have made use of mobile banking applications for 6 years and more, with the majority being formally employed. This is followed by those that have made use of mobile banking applications for 3 to 5 years, with the majority also being formally employed. 10.63% respondents have been using mobile banking applications for 1 to 2 years, with formally employed and students being the majority. Additionally, 7.09% of respondents have used mobile banking applications for less than a year. Moreover, 1.97% of the respondents have never used mobile banking applications, mostly students.

Duration of use	Employment Status	Number of respondents	Percentage %
Never		5	1.97
	Informal employment	1	
	Self-employed	1	
	Student	2	
	Unemployed	1	
Less than a year		18	7.09
	Formal employment	9	
	Student	5	
	Unemployed	4	
1-2 years		27	10.63
	Formal employment	10	
	Homemaker	1	
	Self-employed	1	
	Student	9	
	Unemployed	6	
3-5 years		80	31.5
	Formal employment	56	
	Informal employment	1	
	Self-employed	6	
	Student	13	
	Unemployed	4	
6+ years		124	48.82
	Formal employment	108	
	Informal employment	1	
	Self-employed	6	

Student	4	
Unemployed	5	
Total	254	100

Table 5: Experience of mobile banking users

5.2.8. Bank branch distance

Figure 8 below shows the distance of respondents' nearest bank branch from their place of residence. Most of the respondents (82) indicated that their bank branch is located between 2 and 5 kilometres. Followed by 71 respondents that indicated that their nearest bank branch is 5 to 10 kilometres away from their residence. Additionally, 49 respondents nearest branch is located between 1 and 2 kilometres from their residence. 27 respondents live less than a kilometre from their bank branch, while 25 respondents reside more than 10 kilometres away from their nearest bank branch.

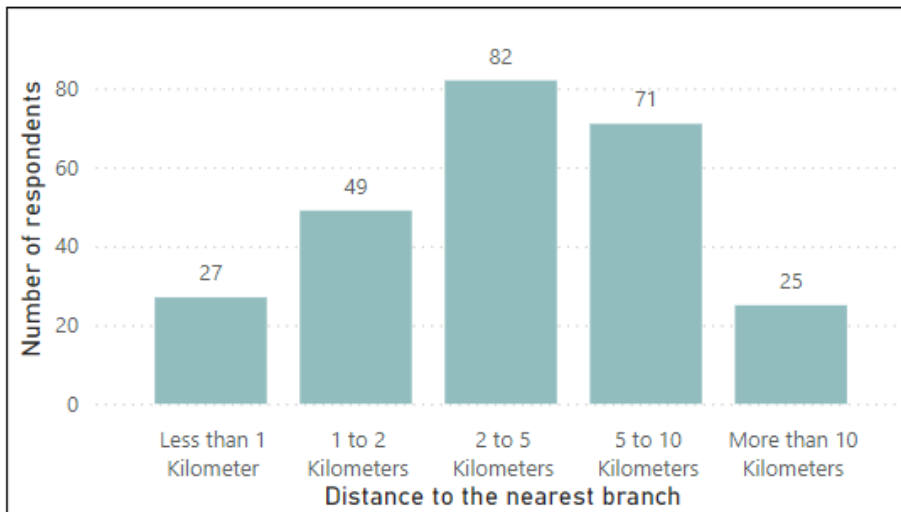


Figure 8: Distance of nearest bank branch

5.2.9. ATM distance

Figure 9 illustrates the distance of the nearest bank ATM to the respondents' residences. A majority of the banks' ATM are located within 5 kilometres of the respondents' residences. 12 respondents indicated that their nearest bank ATM is located 5 to 10 kilometres from their place

of residence, and an equal number reported that their nearest ATM is more than 10 kilometres from their residence.

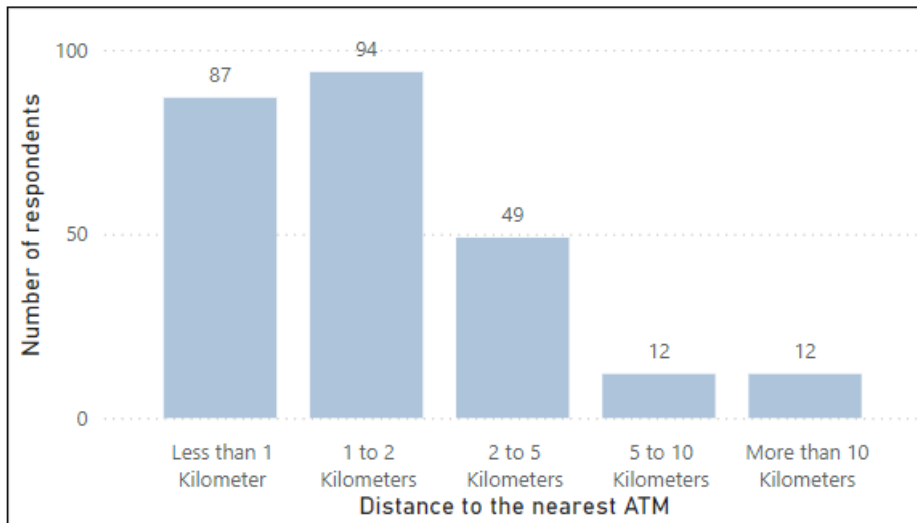


Figure 9: Distance of nearest ATM

5.2.10. Banks

Figure 10 below shows the types of banks used by the respondents. Most participants bank with First National Bank Namibia followed by Bank Windhoek. 47 respondents bank with Standard Bank Namibia and 22 respondents bank with Nedbank Namibia, while 6 respondents bank with Nampost and 3 respondents bank with Letshego Namibia. Two respondents indicated that they bank with other banks.

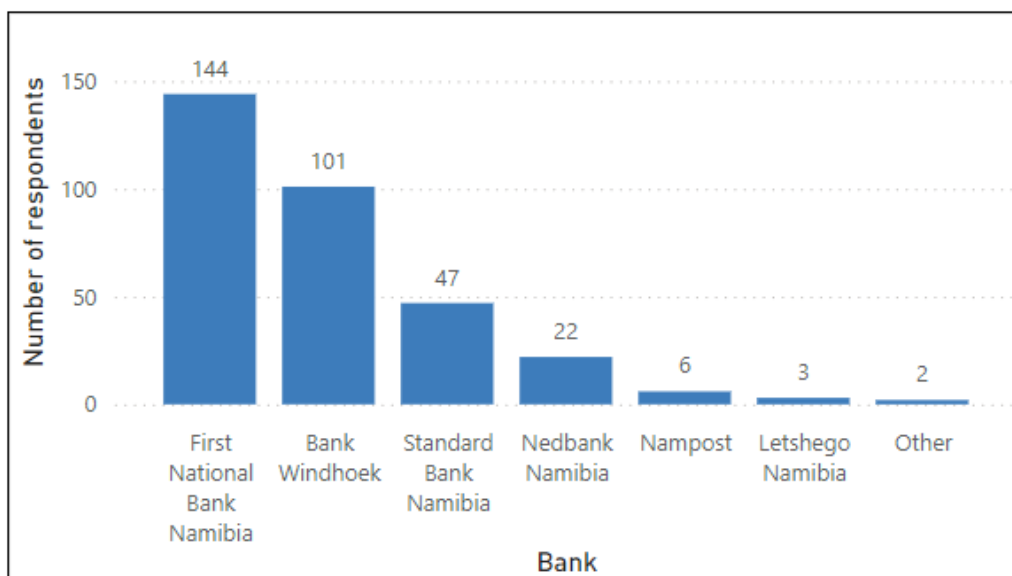


Figure 10: Type of bank

5.2.11. Single vs multiple banks

Figure 11 below shows the number of banks used by the respondents. The majority (80.71%) of respondents bank with a single bank, while 19.29% of the respondents bank with more than one bank.

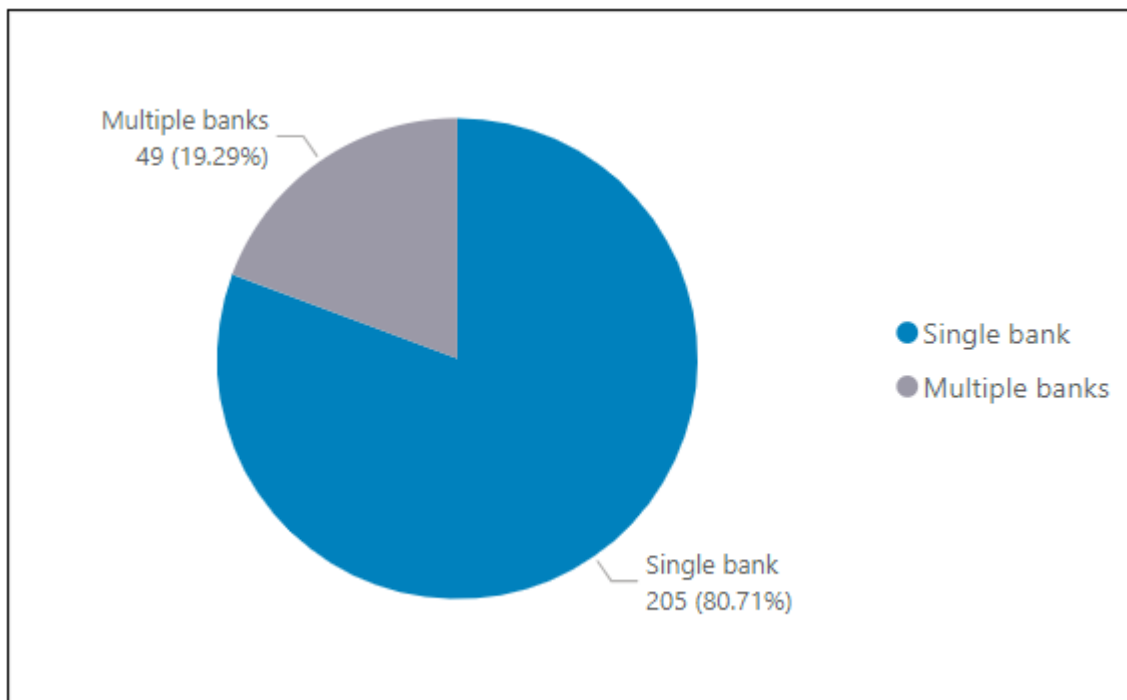


Figure 11: Single vs multiple banks

5.2.12. Financial Literacy

Figure 12 below shows the scores obtained by the respondents in the financial literacy multiple choice questions. Table 6 below shows the financial literacy questions that respondents had to answer. The results revealed that only 17.32% of the respondents answered all the questions correctly, followed by those that answered 4 out of 5 questions correctly accounting for 20.87%. Respondents that answered 3 out of 5 questions correctly account for 24.02%. Respondents who answered two questions correctly make up 20.47%, while 14.57% of the respondents answered one question correctly. Meanwhile, 2.76% of respondents answered all the questions incorrectly.

10. Suppose you had N\$100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you estimate to have in this account?
 More than N\$200 Exactly N\$200 Less than N\$200
11. Do you think that the following statement is true or false? "Bonds are normally riskier than stocks."
 True False Neither true or false
12. When an investor spreads his money among different assets, does the risk of losing a lot of money:

- Increase Decrease Stay the same

13. Normally, which asset described below displays the highest fluctuations over time?

- Savings accounts Stocks Bonds

14. Which of the following statements is correct? If somebody buys a bond of firm B:

- He owns a part of He has lent money to firm B He is liable for firm B's debts
firm B

Table 6: Financial Literacy questions

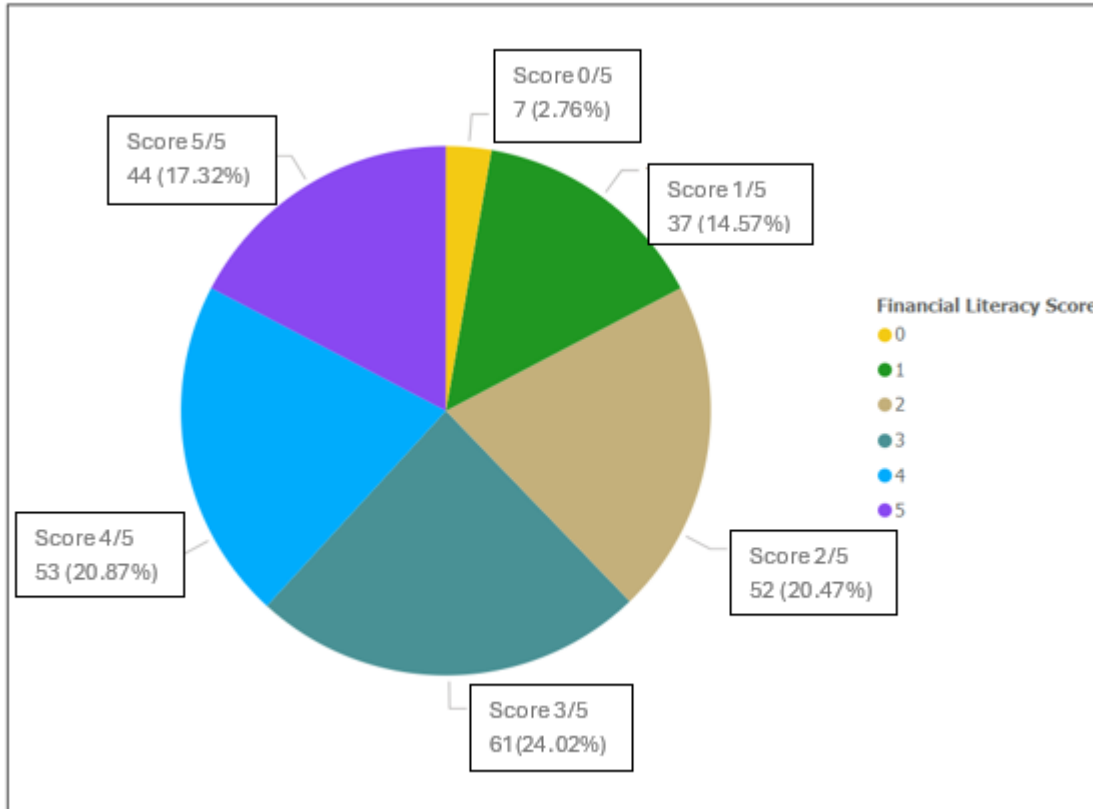


Figure 12: Financial Literacy score

5.2.13. Mobile Banking Use

Table 7 shows the percentage of all the items used to measure mobile banking use. The results revealed that majority of the respondents in the last 6 months always used mobile banking applications to check their account balance (69.7%), bought airtime or data bundles (64.2%), sent electronic wallets (Ewallet, EasyWallet, BlueWallet, Send Money) (63%), transferred money between their bank accounts (57.5%), received electronic wallets (Ewallet, EasyWallet, BlueWallet) (52%), and received money (49.2%). Notably, most of the respondents indicated that they had not applied for account products (42.5%) via mobile banking in the past 6 months, followed by those who had not made international payments (31.5%), or managed debit orders (27.6%).

Item	Never	Rarely	Sometimes	Often	Always
Transfer money between my bank accounts	4.30%	3.90%	11.40%	22.80%	57.50%
Update transaction limits	13.80%	16.10%	22.80%	14.60%	32.70%
Send payment (EFT) to a different local bank	9.40%	8.30%	14.60%	21.70%	46.10%
Manage cards	15.40%	12.20%	20.50%	15.00%	37.00%
Send electronic wallets (Ewallet, EasyWallet, BlueWallet, Send Money)	3.90%	2.80%	8.70%	21.70%	63.00%
Check account balance	2.40%	1.60%	8.30%	18.10%	69.70%
Bill Payments (DSTV, GoTV, Box Office, Municipality)	13.80%	9.80%	15.00%	13.00%	48.40%
Receive money via mobile banking	2.40%	5.50%	17.30%	25.60%	49.20%
Update personal information	18.50%	18.10%	24.40%	12.20%	26.80%
Buy airtime/ data bundles	4.30%	3.50%	9.80%	18.10%	64.20%
Buy electricity	10.60%	6.30%	11.40%	18.10%	53.50%
Receive electronic wallets (Ewallet, EasyWallet, BlueWallet)	2.80%	5.50%	16.90%	22.80%	52.00%
Get proof of payment	9.40%	6.70%	18.10%	19.30%	46.50%
Get account statement	10.20%	12.20%	21.70%	16.90%	39.00%
Cardless cash withdrawal	13.40%	11.40%	23.60%	15.70%	35.80%
Add/Edit/Remove beneficiaries	16.90%	17.30%	20.50%	14.20%	31.10%
Pay beneficiaries	11.80%	7.50%	17.70%	21.70%	41.30%
Manage debit orders	27.60%	17.70%	15.70%	14.20%	24.80%
Make international payments	31.50%	13.40%	20.50%	11.40%	23.20%
Apply for account products	42.50%	19.70%	18.50%	6.30%	13.00%

Table 7: Mobile banking use items percentage

5.2.14. Financial Behavior

Table 8 shows the percentage score of all the items used to measure financial behavior. The financial behavior items used in the study have been classified into the categories of cash management, credit management, and savings and investments. The results revealed that majority of the respondents in the last 6 months always “paid their bills on time” (53.5%), “paid off credit card balance in full each month” (37%), “kept a written or electronic record of your monthly expenses” (28%), or “saved money from every paycheck/salary” (29.1%). While most of the respondents indicated that they sometimes did “a comparison shopped when purchasing a product or service” (28.3%), “stayed within their budget or spending plan” (39.0%), and “began or maintained an emergency savings fund” (25.6%) in the last 6 months. Further, the majority of the respondents did not buy bonds, stocks, or mutual funds (62.2%), “maxed out the limit on one or more credit cards” (48.8%), “made only minimum payments on a loan” (38.6%), “contributed

money to a retirement account” (41.3%) or “saved for a long-term goal such as a car, education, home, etc.” (25.2%) in the last 6 months.

Financial behavior	Item	Never	Rarely	Sometimes	Often	Always
"Cash management"	"Comparison shopped when purchasing a product or service."	7.90%	16.10%	28.30%	25.60%	22.00%
	"Paid all your bills on time."	3.10%	4.70%	14.60%	24.00%	53.50%
	"Kept a written or electronic record of your monthly expenses."	18.10%	21.70%	21.70%	10.60%	28.00%
	"Stayed within your budget or spending plan."	10.60%	22.00%	39.00%	20.90%	7.50%
"Credit management"	"Paid off credit card balance in full each month."	24.80%	11.00%	14.60%	12.60%	37.00%
	"Maxed out the limit on one or more credit cards."	48.80%	18.10%	17.70%	10.20%	5.10%
	"Made only minimum payments on a loan."	38.60%	9.40%	16.50%	20.90%	14.60%
"Savings and investment"	"Began or maintained an emergency savings fund."	23.20%	10.60%	25.60%	16.10%	24.40%
	"Saved money from every paycheck/salary."	16.10%	13.00%	26.40%	15.40%	29.10%
	"Saved for a long-term goal such as a car, education, home, etc."	25.20%	14.60%	22.00%	16.50%	21.70%
	"Contributed money to a retirement account."	41.30%	5.90%	5.90%	7.50%	39.40%
	"Bought bonds, stocks, or mutual funds."	62.20%	11.00%	10.60%	8.30%	7.90%

Table 8: Financial behavior items percentage

5.3. Partial Least Square – Structural Equation Modeling Results

For analysing and evaluating sophisticated path models involving latent variables and their interconnections, PLS-SEM has gained significant traction in social sciences and works well with small sample sizes (Hair et al., 2021a). The evaluation of PLS-SEM is done in two stages: firstly, measurement model then structural model (Ringle et al., 2015).

5.4. Data Distribution

In PLS-SEM data is not required to be normally distributed unlike in other statistical methods however, it is vital to ensure that the data is close to normal, and not extremely far from normal as this causes issues in the assessment of the significant of parameters (Hair et al., 2022). Hair

et al. (2022) recommended skewness and kurtosis to assess data distribution. Skewness is the extent to which a distribution of the variable is symmetrical, and kurtosis assess the narrowness (peak) of the distribution. A normal distribution should have all skewness and kurtosis values close to 0.

Table 9 shows the data distribution. All constructs scored a skewness value in the range of -1.30 to 0.25. For Kurtosis, 4 constructs scored values above the recommended value of positive 2, indicating that the responses for these constructs data distribution is too peaked, in blue in the table below. While for the rest of the constructs the kurtosis falls between -0.02 and -0.94. The table also shows the standard deviation and mean of the data. The mean is a measure of central tendency while, standard deviation shows the extent to which the data is about the mean. The result shows that the data does not largely deviate from the mean.

Table 9: Data Distribution

Construct	Mean	Minimum	Maximum	Standard Deviation	Kurtosis	Skewness
Behavioral Intention	4.16	1	5	0.89	2.31	-1.30
Effort Expectancy	4.41	1	5	0.83	5.26	-0.54
Facilitating Conditions	4.19	1	5	0.91	2.35	-0.63
Financial Behavior	2.89	1	5	1.40	-0.89	0.02
Financial Literacy	2.98	0	5	1.39	-0.94	-0.14
Habit	3.75	1	5	1.12	0.27	-0.77
Hedonic Motivation	3.68	1	5	1.07	-0.02	-0.57
Mobile Banking Use	3.66	1	5	1.31	-0.04	-0.74
Perceived Risk	2.61	1	5	1.13	-0.65	0.25
Performance Expectancy	4.20	1	5	0.99	3.40	-0.42
Price Value	3.56	1	5	1.11	-0.32	-0.48
Social Influence	3.71	1	5	1.04	-0.14	-0.51
Trust	3.73	1	5	0.98	-0.02	-0.49

5.5. Measurement Model

The measurement model, known as the outer model, represents the connections between latent variables and their associated indicators (Sarstedt et al., 2021). Measurement models are classified into two types in PLS-SEM: reflective measurement models, where there are direct connections from the construct to the indicators and formative models, where the set of indicators make up the construct (Sarstedt et al., 2021). This study employed both measurement models. The below Table 10 presents a summary of the results of the measurement model excluding formative variables.

Constructs	Indicator	Outer Loadings	Cronbach's alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
Behavioral Intention	BI1	0.92	0.92	0.92	0.87
	BI2	0.94			
	BI3	0.93			
Effort Expectancy	EE1	0.79	0.88	0.89	0.73
	EE2	0.86			
	EE3	0.88			
	EE4	0.88			
Facilitating Conditions	FC1	0.83	0.77	0.83	0.61
	FC2	0.87			
	FC3	0.86			
	FC4	0.49			
Habit	HB1	0.84	0.81	0.87	0.63
	HB2	0.66			
	HB3	0.77			
	HB4	0.89			
Hedonic Motivation	HM1	0.92	0.89	0.9	0.82
	HM2	0.94			
	HM3	0.85			
Perceived Risk	PR1	0.82	0.85	0.86	0.63
	PR2	0.83			
	PR3	0.85			
	PR4	0.79			
	PR5	0.68			
Performance Expectancy	PE1	0.72	0.67	0.69	0.6
	PE2	0.81			
	PE3	0.79			
Price Value	PV1	0.76	0.84	0.88	0.76
	PV2	0.93			
	PV3	0.91			
Social Influence	SI1	0.73	0.74	0.76	0.56
	SI2	0.79			
	SI3	0.83			
	SI4	0.64			
Trust	TT1	0.87	0.84	0.84	0.76
	TT2	0.89			
	TT3	0.85			

5.5.1. Indicator reliability

Single item reliability is the degree to which a variable or a group of variables consistently and accurately measure the particular concepts they are designed to evaluate (Urbach & Ahlemann, 2010; Vinzi et al., 2010). When loadings exceed 0.708, it shows that the indicator has an adequate level of item reliability (Sarstedt et al., 2021). Appendix D shows the initial outer loadings of the indicators. Items with outer loadings ranging from 0.40 to 0.70 can be considered for exclusion if their removal increases the converged validity or internal consistency (Hair et al., 2022).

Following the guidelines by Hair et al. (2022) as indicated in Figure 13, PE4 (0.373) scored the lowest item reliability and less than 0.40, therefore, it was deleted. Items that scored below the recommended threshold are FC4 (0.487), HB2 (0.663), PR5 (0.680), and SI4 (0.644), they were retained. All items met an acceptable item reliability.

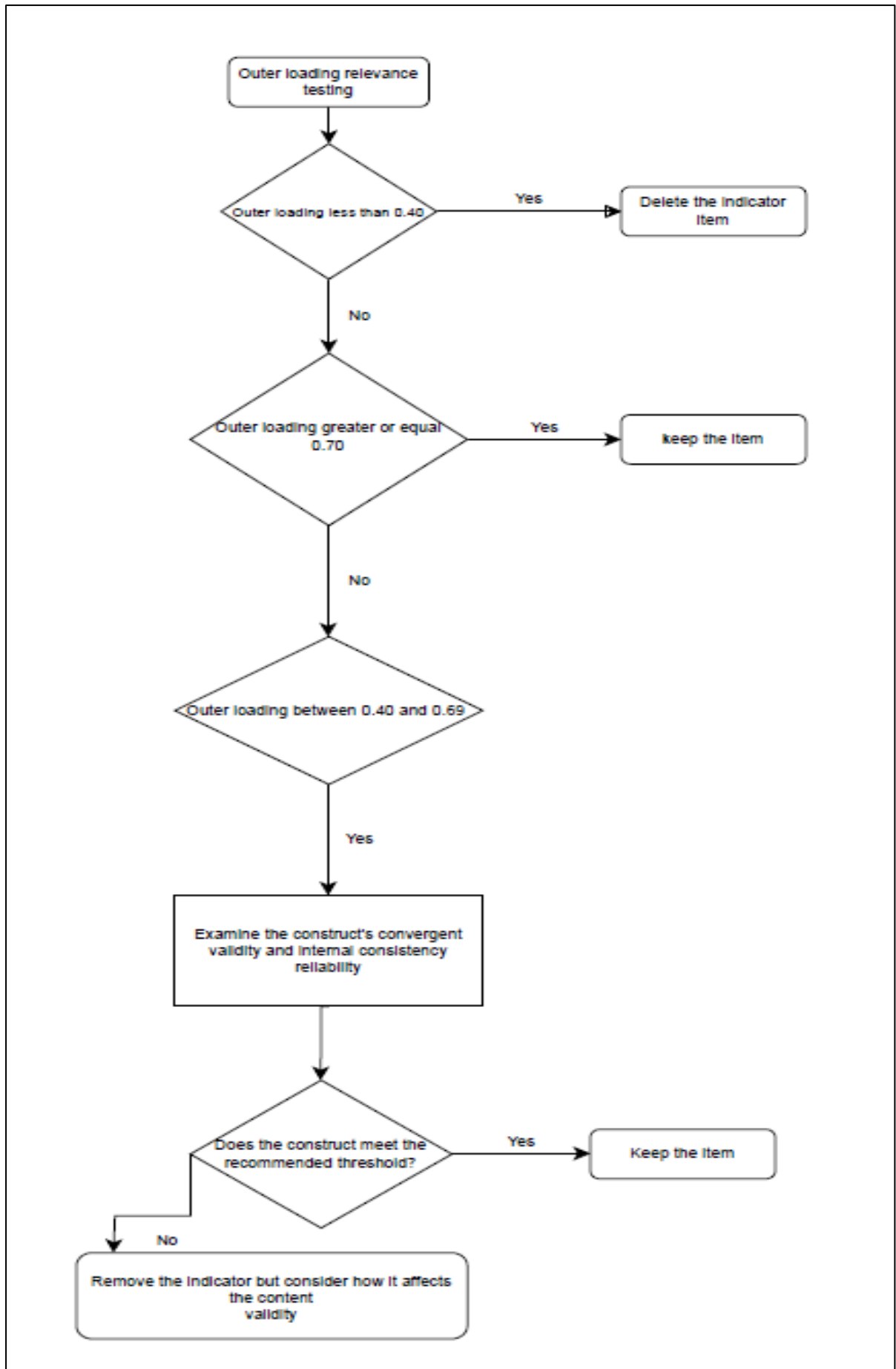


Figure 13: Outer Loading Relevance Testing adopted from (Hair et al., 2022)

5.5.2. Internal consistency reliability

Internal consistency reliability tests how measures are related to all other measures (Hajjar, 2018). Internal consistency reliability in PLS_SEM is assessed by composite reliability and not by Cronbach's alpha (Hair et al., 2019, 2021b, 2022; Sarstedt et al., 2021). Sürücü & Maslakçi (2020) classified the accepted values for Cronbach's alpha as follows; alpha value greater than 0.9 indicates high internal consistency reliability, value ranging from 0.7 and 0.9 indicate internal consistency, value of at least 0.60 but not greater than 0.7 indicates acceptable internal consistency, value of at least 0.5 but less than 0.6 indicates weak internal consistency, while value below 0.5 indicates the absence of internal consistency.

Table 10 presents the Cronbach's alpha and Composite reliability values of the constructs. All constructs internal consistency exceeded the required value of 0.70, apart from performance expectancy a value of 0.69, as stated above values of between 0.60 and 0.70 are acceptable. Therefore, all constructs have obtained an acceptable internal consistency reliability.

5.5.3. Convergent validity

Convergent validity assesses the magnitude of agreement or similarity between different measures that should capture the same underlying construct, when compared with items that measure different constructs (Urbach & Ahlemann, 2010). It is calculated by Average Variance Extracted (AVE) (Sarstedt et al., 2021; Urbach & Ahlemann, 2010). A latent variable with an AVE value of 0.500 indicates that it can account for over half of the variance in its measures (Sarstedt et al., 2021; Urbach & Ahlemann, 2010). AVE is only applicable to reflective constructs and not formative constructs (Vinzi et al., 2010). Table 10 displays the AVE values for the constructs. Every construct obtained an AVE's value of more than 0.50, an acceptable convergent validity.

5.5.4. Discriminant validity

Discriminant validity is the magnitude to which measurements of various variables vary from each other (Urbach & Ahlemann, 2010; Vinzi et al., 2010). The presence of discriminant validity indicates that the measures of entities are not highly correlated with other measures considered to be measuring different concepts (Hajjar, 2018). In PLS-SEM, discriminant validity is mostly evaluated by Cross-loadings and Fornell-Larcker criterion (Urbach & Ahlemann, 2010), or analyzing heterotrait-monotrait ratio (HTMT) (Sarstedt et al., 2021).

Heterotrait-monotrait ratio (HTMT)

The HTMT criterion is the mean correlation between constructs divided by the average correlations among indicators assessing the same concept (Sarstedt et al., 2021). High values of HTMT over 0.90 implies a discriminant validity issue (Sarstedt et al., 2021). In PLS-SEM, it is regarded as the technique that accurately assesses discriminant validity (Hair et al., 2022).

The Table 11 below displays the results for HTMT correlations. The HTMT values are less than the threshold of 0.90; all constructs have obtained an acceptable level of discriminant validity. Researchers are encouraged to test the significant difference of the HTMT values from the threshold value, evaluating if the HTMT values are significantly less than 1.00 (Hair et al., 2022). The results in Table 12 displays that all indications are significantly less than 1.00, therefore, displaying a higher level of discriminant validity.

Table 11: Heterotrait-monotrait ration (HTMT) values

Measure <- Construct	P Value	Measure <- Construct	P Value
BI1 <- Behavioral Intention	0.000	PE1 <- Performance Expectancy	0.000
BI2 <- Behavioral Intention	0.000	PE2 <- Performance Expectancy	0.000
BI3 <- Behavioral Intention	0.000	PE3 <- Performance Expectancy	0.000
EE1 <- Effort Expectancy	0.000	PR1 <- Perceived Risk	0.000
EE2 <- Effort Expectancy	0.000	PR2 <- Perceived Risk	0.000
EE3 <- Effort Expectancy	0.000	PR3 <- Perceived Risk	0.000
EE4 <- Effort Expectancy	0.000	PR4 <- Perceived Risk	0.000
FC1 <- Facilitating	0.000	PR5 <- Perceived Risk	0.000
FC2 <- Facilitating	0.000	PV1 <- Price Value	0.000
FC3 <- Facilitating	0.000	PV2 <- Price Value	0.000
FC4 <- Facilitating	0.000	PV3 <- Price Value	0.000
HB1 <- Habit	0.000	SI1 <- Social Influence	0.000
HB2 <- Habit	0.000	SI2 <- Social Influence	0.000
HB3 <- Habit	0.000	SI3 <- Social Influence	0.000
HB4 <- Habit	0.000	SI4 <- Social Influence	0.000
HM1 <- Hedonic Motivation	0.000	TT1 <- Trust	0.000
HM2 <- Hedonic Motivation	0.000	TT2 <- Trust	0.000
HM3 <- Hedonic Motivation	0.000	TT3 <- Trust	0.000

Table 12: HTMT Significance values

Cross-loadings

In cross-loadings, the factorial loads of measures must be loading higher on their respective constructs that they intended to measure than on other constructs (Ringle et al., 2015). The result

in Appendix F shows that each specific construct loads supreme with its individual item, excluding FC4 and HB2 that loaded low on their respective constructs. The recommended method in PLS-SEM is HTMT criterion, and it proved that all indicators displayed an acceptable discriminant validity, therefore, indicators that loaded low on their constructs in cross-loadings are retained.

Fornell-Larcker criterion

Using Fornell-Larcker criterion, the AVE squared value of the constructs should be bigger than the correlations among constructs (Ringle et al., 2015). Table 13 shows the Fornell-Larcker criterion results. The squared AVE values of the constructs are all higher than the inter-construct correlations. All constructs as per Fornell-Larcker criterion have discriminant validity.

Construct	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Habit	Hedonic Motivation	Perceived Risk	Performance Expectancy	Price Value	Social Influence	Trust
Behavioral Intention	0.930									
Effort Expectancy	0.594	0.856								
Facilitating Conditions	0.555	0.745	0.778							
Financial Literacy	0.163	0.201	0.220							
Habit	0.720	0.546	0.503	0.793						
Hedonic Motivation	0.503	0.499	0.514	0.613	0.905					
Perceived Risk	-0.194	-0.195	-0.178	-0.194	-0.280	0.796				
Performance Expectancy	0.408	0.587	0.549	0.365	0.346	-0.071	0.776			
Price Value	0.473	0.329	0.361	0.548	0.546	-0.260	0.260	0.874		
Social Influence	0.512	0.568	0.602	0.550	0.625	-0.220	0.361	0.479	0.751	
Trust	0.630	0.400	0.425	0.619	0.538	-0.420	0.252	0.563	0.436	0.873

Table 13: Fornell-Larcker criterion values of constructs

5.6. Formative Model

In formative model, every indicator contributes meaning to the formed construct thus, removing the indicator from the construct is similar to dropping a certain meaning from the construct therefore, changing the meaning of the construct (Garson, 2016). Additionally, internal consistency and homogeneity are not required for formative indicators (Scott, 1995). Moreover, formative indicators form the construct, and they cannot be substituted for one another (Wong, 2013). In this study, two formative measures were used: mobile banking use, adopted from Venkatesh et al. (2012) and applied to financial behavior.

5.6.1. Indicator collinearity

Collinearity is assessed by measuring the variance inflation factor (VIF) (Sarstedt et al., 2021). The VIF shows how much variance of an indicator is described through alternative indicators of an identical concept (Urbach & Ahlemann, 2010). VIF value should be less than 5, indicating collinearity between the formative measurement indicators (Hair et al., 2022). Table 14 shows VIF values of formative indicators. All Financial Behavior (FB) indicators have a VIF value of less than 3 between 1.090 and 1.286. Additionally, Mobile Banking Use (MU) has a VIF value between 1.589 and 3.888.

Indicator	VIF	Indicator	VIF
FB1	1.090	MU5	2.379
FB2	1.419	MU6	2.481
FB3	1.286	MU7	2.466
FB4	1.444	MU8	2.466
FB5	1.270	MU9	1.991
FB6	1.088	MU10	2.491
FB7	1.158	MU11	2.406
FB8	2.039	MU12	2.522
FB9	2.620	MU13	2.840
FB10	2.277	MU14	2.867
FB11	1.390	MU15	1.589
FB12	1.250	MU16	3.888
MU1	3.246	MU17	3.836
MU2	2.477	MU18	2.519
MU3	2.786	MU19	2.072
MU4	2.921	MU20	1.787

Table 14: VIF Values of formative indicators

5.6.2. Significance and relevance of indicator weights

Outer weights in PLS are used to understand the integration of each developing construct, thus showing how each item contributes to the particular construct (Vinzi et al., 2010). The outer weights range from 0 to extremely lower values than 1, and they are influenced by the number of indicators per construct, the more the indicators the lower the average of the outer weights and the lower the maximum outer weights or outer weights being nonsignificant (Garson, 2016; Hair et al., 2022). Table 15 below shows the values of the outer weights. The weights range between -0.302 and 0.451. At a significance level of 5 percent, t-statistics value of 1.96 and above indicate that the path coefficient is significant (Wong, 2013). T-values and p-values that are in red show that the indicators weights are not statistically different from zero, and 7 indicators are statistically significant. When indicators' outer weights are not significant then the significance

of their outer loadings must be checked (Wong, 2013). Table 16 below shows the indicators' outer loadings significant values. The results show that all formative indicators' outer loadings are significant apart from FB4, FB5, and FB6, indicated in red T-values. Sarstedt et al. (2021) noted that researchers should be cautious about removing formative measures derived from the statistical outcomes, although the indicator may not possess a strong contribution in proportion, its contribution can still be significant and substantial. For this reason, all indicators are retained.

Indicator <- Construct	Outer weights	T-Values	P-Values	Significant (P< 0.05)?
FB1 -> financial Behavior	0.286	1.698	0.09	No
FB2 -> financial Behavior	0.202	1.322	0.186	No
FB3 -> financial Behavior	0.146	0.969	0.332	No
FB4 -> financial Behavior	-0.274	1.829	0.068	No
FB5 -> financial Behavior	-0.125	0.851	0.395	No
FB6 -> financial Behavior	0.165	1.159	0.247	No
FB7 -> financial Behavior	0.451	3.361	0.001	Yes
FB8 -> financial Behavior	0.051	0.199	0.842	No
FB9 -> financial Behavior	0.267	1.171	0.242	No
FB10 -> financial Behavior	0.112	0.575	0.565	No
FB11 -> financial Behavior	0.335	2.086	0.037	Yes
FB12 -> financial Behavior	0.103	0.631	0.528	No
MU1 -> Mobile Banking Use	0.354	3.353	0.001	Yes
MU2 -> Mobile Banking Use	0.12	1.13	0.258	No
MU3 -> Mobile Banking Use	0.232	1.69	0.091	No
MU4 -> Mobile Banking Use	-0.076	0.575	0.566	No
MU5 -> Mobile Banking Use	0.125	1.024	0.306	No
MU6 -> Mobile Banking Use	0.165	1.486	0.137	No
MU7 -> Mobile Banking Use	0.076	0.661	0.509	No
MU8 -> Mobile Banking Use	-0.065	0.595	0.552	No
MU9 -> Mobile Banking Use	0.04	0.376	0.707	No
MU10 -> Mobile Banking Use	0.151	1.337	0.181	No
MU11 -> Mobile Banking Use	-0.051	0.466	0.641	No
MU12 -> Mobile Banking Use	-0.076	0.625	0.532	No
MU13 -> Mobile Banking Use	-0.302	2.472	0.013	Yes
MU14 -> Mobile Banking Use	0.221	1.631	0.103	No
MU15 -> Mobile Banking Use	0.165	1.833	0.067	No
MU16 -> Mobile Banking Use	-0.128	0.899	0.369	No
MU17 -> Mobile Banking Use	0.32	2.625	0.009	Yes
MU18 -> Mobile Banking Use	-0.031	0.31	0.757	No
MU19 -> Mobile Banking Use	-0.07	0.639	0.523	No
MU20 -> Mobile Banking Use	0.107	1.095	0.274	No

Table 15: Outer weights and T-Values

Indicator <- Construct	Outer Loadings	T-values	P-values	Significant (P < 0.05)?
FB1 -> Financial Behavior	0.352	2.143	0.032	Yes
FB2 -> Financial Behavior	0.446	3.101	0.002	Yes
FB3 -> Financial Behavior	0.399	2.875	0.004	Yes
FB4 -> Financial Behavior	0.106	0.707	0.48	No
FB5 -> Financial Behavior	0.151	1.019	0.308	No
FB6 -> Financial Behavior	0.196	1.403	0.161	No
FB7 -> Financial Behavior	0.661	5.687	0	Yes
FB8 -> Financial Behavior	0.467	2.952	0.003	Yes
FB9 -> Financial Behavior	0.539	4.174	0	Yes
FB10 -> Financial Behavior	0.502	4.237	0	Yes
FB11 -> Financial Behavior	0.606	4.48	0	Yes
FB12 -> Financial Behavior	0.404	2.924	0.003	Yes
MU1 -> Mobile Banking Use	0.822	14.716	0	Yes
MU2 -> Mobile Banking Use	0.649	10.675	0	Yes
MU3 -> Mobile Banking Use	0.795	14.025	0	Yes
MU4 -> Mobile Banking Use	0.647	9.349	0	Yes
MU5 -> Mobile Banking Use	0.729	9.986	0	Yes
MU6 -> Mobile Banking Use	0.708	8.581	0	Yes
MU7 -> Mobile Banking Use	0.699	11.271	0	Yes
MU8 -> Mobile Banking Use	0.446	4.415	0	Yes
MU9 -> Mobile Banking Use	0.514	6.552	0	Yes
MU10 -> Mobile Banking Use	0.654	6.729	0	Yes
MU11 -> Mobile Banking Use	0.635	8.587	0	Yes
MU12 -> Mobile Banking Use	0.42	3.961	0	Yes
MU13 -> Mobile Banking Use	0.506	6.061	0	Yes
MU14 -> Mobile Banking Use	0.545	6.6	0	Yes
MU15 -> Mobile Banking Use	0.494	5.918	0	Yes
MU16 -> Mobile Banking Use	0.686	11.674	0	Yes
MU17 -> Mobile Banking Use	0.802	15.484	0	Yes
MU18 -> Mobile Banking Use	0.567	8.297	0	Yes
MU19 -> Mobile Banking Use	0.549	8.044	0	Yes
MU20 -> Mobile Banking Use	0.44	5.708	0	Yes

Table 16: Outer loadings and T-Values

The results of the measurement model are sufficient thus; the following step is to assess the structural model.

5.7. Structural Model

The structural model, known as the inner model, indicates the causal-predictive connections between the latent variables (Sarstedt et al., 2021). The analysis of the structural model is to obtain evidence to support the hypotheses in the theoretical framework among the independent variables and dependent variable (Avkiran & Ringle, 2018).

5.7.1. Collinearity assessment

To evaluate the collinearity issues of the structural model, the rule of thumb of VIF values less than 5 is applied as in the formative model above. The Table 17 below shows that all values among constructs are less than 5, ranging between 1.000 and 4.351. Thus, showing the absence of collinearity concerns among constructs.

Construct	VIF	Construct	VIF
Age -> Behavioral Intention	1.500	Social Influence -> Behavioral Intention	2.461
Age -> Mobile Banking Use	1.361	Trust -> Behavioral Intention	3.926
Behavioral Intention -> Mobile Banking Use	2.402	Trust -> Mobile Banking Use	3.021
Branch Distance -> Behavioral Intention	1.200	Trust -> Perceived Risk	1.000
Effort Expectancy -> Behavioral Intention	3.113	Age x Hedonic Motivation -> Behavioral Intention	2.638
Experience -> Behavioral Intention	1.512	Gender x Habit -> Behavioral Intention	4.351
Experience -> Mobile Banking Use	1.296	Experience x Price Value -> Behavioral Intention	3.305
Facilitating Conditions -> Behavioral Intention	3.206	Experience x Behavioral Intention -> Mobile Banking Use	2.091
Financial Literacy -> Behavioral Intention	1.354	Gender x Trust -> Behavioral Intention	3.627
Gender -> Behavioral Intention	1.153	Gender x Trust -> Mobile Banking Use	1.764
Gender -> Mobile Banking Use	1.084	Gender x Hedonic Motivation -> Behavioral Intention	3.460
Habit -> Behavioral Intention	4.154	Age x Habit -> Behavioral Intention	2.736
Hedonic Motivation -> Behavioral Intention	3.826	Experience x Trust -> Behavioral Intention	3.271
Hedonic Motivation -> Mobile Banking Use	1.594	Experience x Trust -> Mobile Banking Use	2.539
Mobile Banking Use -> Financial Behavior	1.000	Age x Trust -> Behavioral Intention	2.903
Perceived Risk -> Behavioral Intention	1.357	Age x Trust -> Mobile Banking Use	1.283
Performance Expectancy -> Behavioral Intention	1.800	Age x Price Value -> Behavioral Intention	2.373
Price Value -> Behavioral Intention	3.999	Experience x Hedonic Motivation -> Behavioral Intention	3.403
Gender x Price Value -> Behavioral Intention	3.425		

Table 17: VIF values of constructs

5.7.2. Explanatory power

The coefficient of determination (R^2) is employed to assess the explanatory power of the structural model by assessing the variance explained in every independent variable (Sarstedt et al., 2021). The R^2 values fall range from 0 to 1, values closer to 1 means the higher the explanatory power (Sarstedt et al., 2021). R^2 values of 0.670 are deemed substantial, values close to 0.333 are moderate and values equal to or below 0.190 are weak (Urbach & Ahlemann, 2010). Table 18 shows the Pearson's coefficient (R^2) of the inner model constructs. The model explains 67% of behavioral intention's variance which is substantial, 26% of financial behavior's variance which is moderate, 52% of mobile banking use's variance which is substantial, and 18% of perceived risk's variance which is weak. For behavioral intention, the results obtained are similar to Ramírez-Correa et al. (2019). The model has a minimum level of explanatory power. Adding predictors to the model tend to increase the value of R^2 and to account for such bias, the adjusted

R² might be used to (Garson, 2016). There is not much difference between R² and adjusted R² as indicated in the table below.

	R-square (R ²)	R-square adjusted (Adjusted R ²)
Behavioral Intention	0.674	0.638
Financial Behavior	0.265	0.262
Mobile Banking Use	0.525	0.506
Perceived Risk	0.177	0.174

Table 18: Coefficient of determination

F-square (f^2) shows the variation in the R² value endogenous constructs when a specific exogenous construct is excluded from the model and can help determine if the excluded construct significantly influences the endogenous constructs (Sarstedt et al., 2021). A value of f^2 0.02 mean a small effect size, 0.15 mean a medium effect size, while 0.35 represent a high effect size (Cohen, 1988). Table 13 below shows the f^2 sizes. Noticeable, high f^2 (0.360) effect sizes is between Mobile Banking Use → Financial Behavior. Medium effect occur between Trust → Perceived Risk (0.215), and small effect sizes occur between Trust → Behavioral Intention (0.092), Habit → Mobile Banking Use (0.083), Experience → Mobile Banking Use (0.086), Habit → Behavioral Intention (0.050), Experience x Habit → Mobile Banking Use (0.042), Behavioral Intention → Mobile Banking Use (0.042), Effort Expectancy → Behavioral Intention (0.040), Age → Mobile Banking Use (0.039), Age x Price Value → Behavioral Intention (0.026). The rest of the effect sizes are weak, below 0.020.

	F-square
Age -> Behavioral Intention	0.026
Age -> Mobile Banking Use	0.039
Behavioral Intention -> Mobile Banking Use	0.042
Branch Distance -> Behavioral Intention	0.006
Effort Expectancy -> Behavioral Intention	0.040
Experience -> Behavioral Intention	0.019
Experience -> Mobile Banking Use	0.086
Facilitating Conditions -> Behavioral Intention	0.020
Facilitating Conditions -> Mobile Banking Use	0.007
Financial Literacy -> Behavioral Intention	0.000
Gender -> Behavioral Intention	0.001
Gender -> Mobile Banking Use	0.018
Habit -> Behavioral Intention	0.050
Habit -> Mobile Banking Use	0.083
Hedonic Motivation -> Behavioral Intention	0.005
Mobile Banking Use -> Financial Behavior	0.360
Perceived Risk -> Behavioral Intention	0.008
Performance Expectancy -> Behavioral Intention	0.004
Price Value -> Behavioral Intention	0.000
Social Influence -> Behavioral Intention	0.004
Trust -> Behavioral Intention	0.092
Trust -> Perceived Risk	0.215
Experience x Habit -> Behavioral Intention	0.000
Experience x Habit -> Mobile Banking Use	0.042
Age x Hedonic Motivation -> Behavioral Intention	0.008
Gender x Habit -> Behavioral Intention	0.005
Gender x Habit -> Mobile Banking Use	0.002
Experience x Behavioral Intention -> Mobile Banking Use	0.013
Gender x Hedonic Motivation -> Behavioral Intention	0.002
Age x Habit -> Behavioral Intention	0.002
Age x Habit -> Mobile Banking Use	0.014
Experience x Facilitating Conditions -> Behavioral Intention	0.002
Age x Facilitating Conditions -> Behavioral Intention	0.009
Age x Price Value -> Behavioral Intention	0.026
Gender x Facilitating Conditions -> Behavioral Intention	0.015
Experience x Hedonic Motivation -> Behavioral Intention	0.005
Gender x Price Value -> Behavioral Intention	0.006

Table 19: F-square effect size

5.7.3. Predictive power

Statistical predictive power of the model assesses if the results can be generalized, thus it is important to assess if the results are not only specific to the current dataset used to evaluate the model but also to a different dataset (Hair et al., 2022). Shmueli et al. (2016) PLS_{predict} procedure measures the model's predictive power (Sarstedt et al., 2021). PLS_{predict} procedure uses the method of dividing the dataset into the holdout and training samples (Hair et al., 2022). A model is considered to have a high predictive power when there is a slight deviation between the actual

and predicted values (Hair et al., 2022). The Mean Absolute Error (MAE) or The Root Mean Square Error (RMSE) are prediction statistics that can assess the model's predictive power. MAE is the mean of the absolute deviation between the estimated values and the actual observations (Hair et al., 2022). "RMSE is the square root of the average of the squared differences between the estimated values and the actual observations" (Hair et al., 2022). Small values of MAE and RMSE show a higher predictive power.

Figure 14 shows the guidelines by Shmueli et al. (2019) that guided the analysis of the PLSpredict.

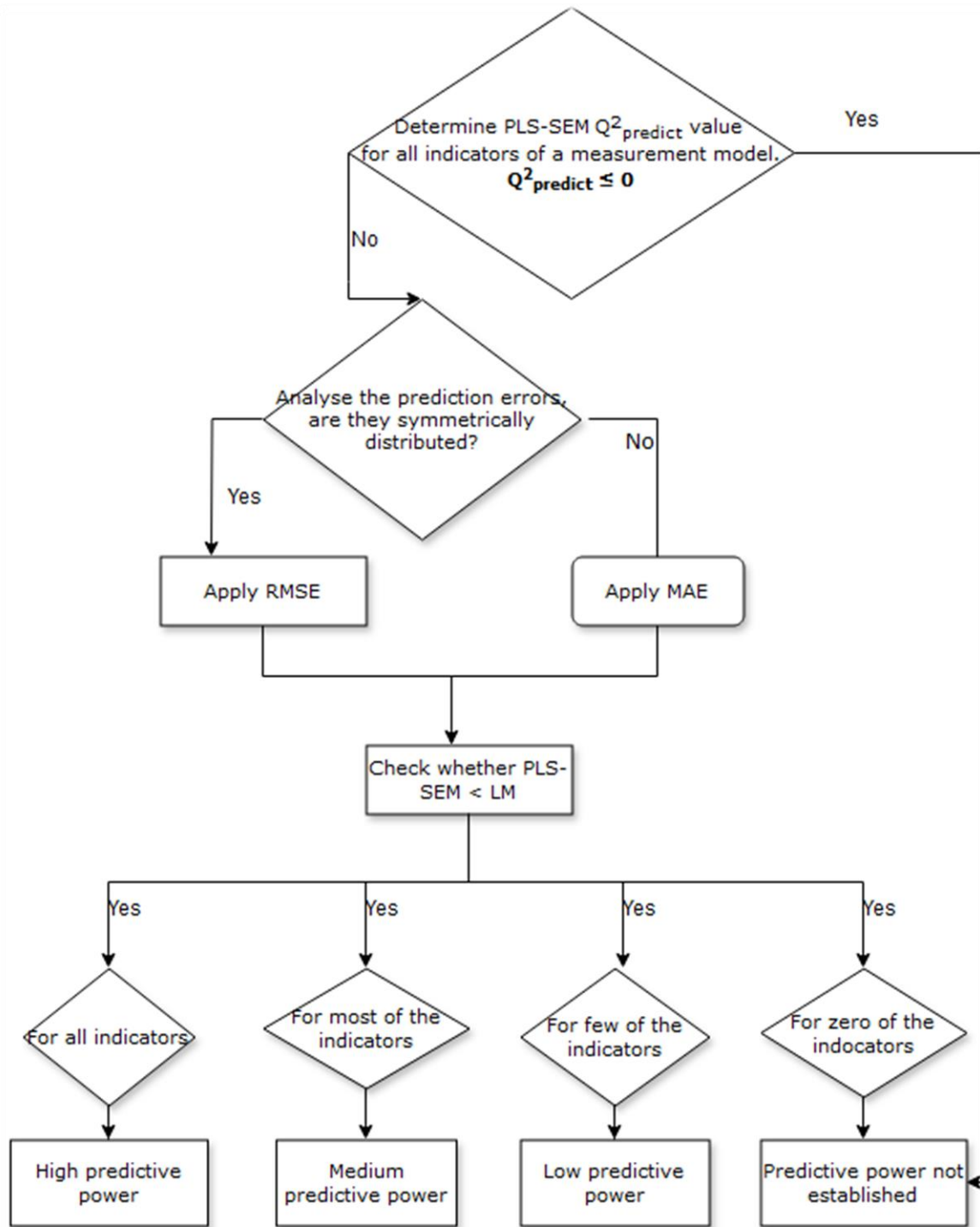


Figure 14: Guidelines for explaining the PLSpredict results adopted from Shmueli et al. (2019)

For the key endogenous construct financial behavior two indicators obtained Q^2_{predict} values smaller than zero, FB1(-0.005) and FB6 (-0.005). All indicators for behavioral intention, mobile banking use, and perceived risk have a Q^2_{predict} value greater than zero. When indicators do not outperform the naïve benchmark, it is suggested to explore potential explanations which might be due to data issues or measurement model issues (Hair et al., 2022). For FB1(-0.005) and FB6

(-0.005), the kurtosis and skewness are close to 0 as indicated in Table 9. The standard deviation for FB1 and FB6 is 1.2, thus, a conclusion can be made that it is not a data issue. Both FB1 (-0.005) and FB6 (-0.005) have values of Q^2_{predict} that does not indicate a very low predictive power. Therefore, the indicators are retained. The histogram of behavioral intention, mobile banking use, financial behavior, and perceived risk are fairly symmetric. The histograms are in [Appendix F](#). Therefore, the suitable approach is RMSE.

Table 20 shows the Q^2_{predict} , PLS-SEM RMSE, LM RMSE results. For the key endogenous variable financial behavior indicators, the RMSE is less than LM RMSE. For behavioral intention and perceived risk all indicators' PLS-SEM are less than LM. However, for mobile banking use, two indicators PLS-SEM are greater than LM - the difference is 0.007 and 0.024 for M10 and MU8 respectively. Financial behavior is the key endogenous construct; thus, the predictive power of the model is derived on its result. Therefore, the model has a high predictive power.

Q ² predict		PLS-SEM RMSE	LM RMSE	PLS-SEM RMSE - LM RMSE	
Behavioral intention	BI1	0.517	0.656	0.671	-0.015
	BI2	0.456	0.664	0.717	-0.053
	BI3	0.457	0.605	0.654	-0.049
Financial behavior	FB1	-0.005	1.221	1.353	-0.132
	FB10	0.033	1.457	1.542	-0.085
	FB11	0.085	1.76	1.877	-0.116
	FB12	0.026	1.311	1.424	-0.112
	FB2	0.025	1.046	1.15	-0.104
	FB3	0.016	1.464	1.63	-0.166
	FB4	0.001	1.075	1.215	-0.14
	FB5	0.007	1.629	1.776	-0.148
	FB6	-0.005	1.247	1.368	-0.121
	FB7	0.034	1.495	1.547	-0.052
	FB8	0.013	1.468	1.539	-0.071
FB9	0.029	1.405	1.555	-0.15	
Mobile banking use	MU1	0.255	0.94	1.012	-0.073
	MU10	0.125	1.009	1.002	0.007
	MU11	0.136	1.272	1.351	-0.079
	MU12	0.048	1.043	1.099	-0.057
	MU13	0.094	1.263	1.36	-0.097
	MU14	0.106	1.299	1.394	-0.095
	MU15	0.063	1.374	1.442	-0.067
	MU16	0.157	1.359	1.375	-0.017
	MU17	0.239	1.202	1.24	-0.038
	MU18	0.123	1.459	1.526	-0.067
	MU19	0.084	1.49	1.602	-0.112
	MU2	0.168	1.306	1.388	-0.082
	MU20	0.036	1.378	1.421	-0.043
	MU3	0.231	1.171	1.233	-0.063
	MU4	0.17	1.342	1.405	-0.063
	MU5	0.212	0.911	0.949	-0.038
	MU6	0.155	0.822	0.856	-0.033
	MU7	0.206	1.323	1.427	-0.104
	MU8	0.078	1.002	0.977	0.024
MU9	0.1	1.381	1.462	-0.081	
Perceived risk	PR1	0.12	1.137	1.24	-0.103
	PR2	0.117	1.055	1.114	-0.059
	PR3	0.133	1.015	1.1	-0.084
	PR4	0.105	1.104	1.173	-0.068
	PR5	0.053	1.024	1.059	-0.034

Table 20: Model's RMSE

Alternatively, predictive power can be assessed by Standardized Root Mean Square Residual (SRMR) value, which indicates the overall fit of the study’s model (Garson, 2016; Ramírez-Correa et al., 2019). The cut-off value for the SRMR is 0.08 (Camacho et al., 2021; Garson, 2016). The model has an SRMR value of 0.075. Therefore, the model has a good fit.

	Saturated model	Estimated model
SRMR	0.069	0.083

Table 21: SRMR Model Fit

5.8. Significance and relevance of path coefficients

In this section the strength of the relationship between constructs is assessed, as well as their statistical significance for hypotheses testing.

5.9. Path coefficients

The significance and strength of path coefficients are assessed in relation to the connection between hypothesized constructs (Sarstedt et al., 2021). The path coefficients have values in the interval of -1 and +1 (Hair et al., 2022). A path coefficient at 5% level is statistically significant of error if the value zero is outside the range of 95% confidence interval (Sarstedt et al., 2021). A path coefficient value shows when an independent variable rises by one standard deviation unit then the dependent variable grows by the same value standard deviation unit given that all other independent variables remain unchanged (Sarstedt et al., 2021).

5.9.1. UTAUT2 Constructs

Figure 15 illustrates the path coefficients of the model in a graphical view and Table 22 shows the path coefficients of relationships sorted from largest to smallest. Factors influencing Behavioral Intention were as follows: Habit (0.349) has the strongest positive effect, followed by Effort Expectancy (0.200). Facilitating Conditions (0.078), Social Influence (0.058), Performance Expectancy (0.051) all have a relatively small positive effect on Behavioral Intention. In contrast, Price Value (-0.012), and Hedonic Motivation (-0.035) negatively affect Behavioral Intention.

Factors affecting Mobile Banking Use are as follows: Habit (0.337) has the strongest effect followed by Behavioral Intention (0.235) while Facilitating Conditions (0.075) has the smallest effect.

5.9.2. Extension of UTAUT2 Constructs

Trust (0.267) has the strongest positive effect on Behavioral Intention, followed by Perceived Risk (0.060), and Financial Literacy (0.001). In contrast, Branch Distance (-0.115) negatively affects Behavioral Intention. Additionally, Trust negatively affects Perceived Risk (-0.421).

The key target construct Financial Behavior is strongly and positively affected by Mobile Banking Use (0.514), this means that when Mobile Banking Use increases by 1 then Financial Behavior increases by 0.514.

5.9.3. Moderating Variables

Experience positively increases the relationship between Habit and Mobile banking Use (0.534). Additionally, it increases the relationship between Hedonic Motivation and Behavioral Intention (0.170). However, it decreases the relationships between Habit and Behavioral Intention (-0.030), Facilitating Conditions and Behavioral Intention (-0.097), and Behavioral Intention and Mobile Banking Use (-0.294).

Age increases the relationship between Habit on Mobile Banking Use (0.092), Hedonic Motivation and Behavioral Intention (0.083), and Facilitating Conditions on Behavioral Intention (0.074). In contrast, Age decreases the effect of Habit on Behavioral Intention (-0.041) and Price Value on Behavioral Intention (-0.121).

Gender increases the effect of Habit on Behavioral Intention (0.129), Price Value and Behavioral Intention (0.120), and Hedonic Motivation and Behavioral Intention (0.087). However, gender decreases the effect of Habit on Mobile Banking Use (-0.071), and between Facilitating Conditions and Behavioral Intention (-0.198).

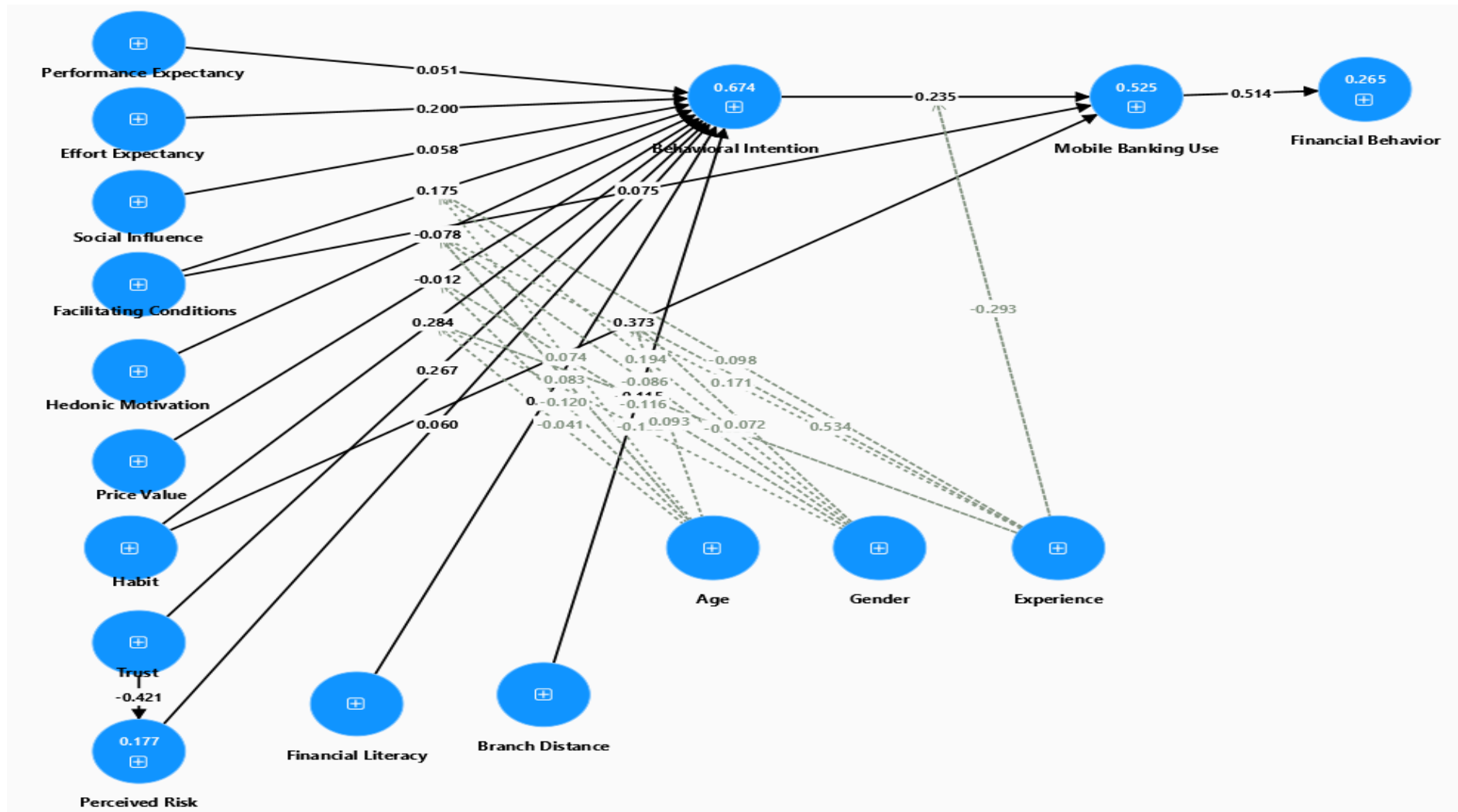


Figure 15: Path coefficients result in a model view.

	Path coefficients
Experience x Habit -> Mobile Banking Use	0.534
Mobile Banking Use -> Financial Behavior	0.514
Habit -> Mobile Banking Use	0.373
Habit -> Behavioral Intention	0.284
Trust -> Behavioral Intention	0.267
Behavioral Intention -> Mobile Banking Use	0.235
Effort Expectancy -> Behavioral Intention	0.200
Gender x Facilitating Conditions -> Behavioral Intention	0.194
Facilitating Conditions -> Behavioral Intention	0.175
Experience x Hedonic Motivation -> Behavioral Intention	0.171
Age x Habit -> Mobile Banking Use	0.093
Age x Hedonic Motivation -> Behavioral Intention	0.083
Facilitating Conditions -> Mobile Banking Use	0.075
Age x Facilitating Conditions -> Behavioral Intention	0.074
Gender x Habit -> Mobile Banking Use	0.072
Perceived Risk -> Behavioral Intention	0.060
Social Influence -> Behavioral Intention	0.058
Performance Expectancy -> Behavioral Intention	0.051
Financial Literacy -> Behavioral Intention	0.001
Price Value -> Behavioral Intention	-0.012
Experience x Habit -> Behavioral Intention	-0.030
Age x Habit -> Behavioral Intention	-0.041
Hedonic Motivation -> Behavioral Intention	-0.078
Gender x Hedonic Motivation -> Behavioral Intention	-0.086
Experience x Facilitating Conditions -> Behavioral Intention	-0.098
Branch Distance -> Behavioral Intention	-0.115
Gender x Price Value -> Behavioral Intention	-0.116
Age x Price Value -> Behavioral Intention	-0.120
Gender x Habit -> Behavioral Intention	-0.132
Experience x Behavioral Intention -> Mobile Banking Use	-0.293
Trust -> Perceived Risk	-0.421

Table 22: Path coefficients

5.10. Hypotheses testing

This section presents the hypotheses test results of the research model. A p-value below 0.05 indicates that the independent variable significantly influences the dependent variable (Marpaung et al., 2021)

	Path coefficient (β)	Standard deviation (SD)	T statistics (T-value)	P values	Significant P < 0.05?	Hypothesis Supported?	MGA Hypothesis Supported?
H1: Performance Expectancy + → Behavioral Intention	0.051	0.055	0.917	0.359	No	No	
H2: Effort Expectancy + → Behavioral Intention	0.200	0.078	2.571	0.010	Yes	Yes	
H3: Social Influence + → Behavioral Intention	0.058	0.066	0.885	0.376	No	No	
H4a: Facilitating Conditions + → Behavioral Intention	0.175	0.109	1.610	0.107	No	No	
H4b: Facilitating Conditions + → Mobile Banking Use	0.075	0.077	0.980	0.327	No	No	
H5: Hedonic Motivation+ → Behavioral Intention	-0.078	0.086	0.913	0.361	No	No	
H6: Price Value + → Behavioral Intention	-0.012	0.087	0.139	0.890	No	No	
H7a: Habit + → Behavioral Intention	0.284	0.105	2.702	0.007	Yes	Yes	
H7b: Habit + → Mobile Banking Use.	0.373	0.117	3.183	0.001	Yes	Yes	
H8: Behavioral Intention + → Mobile Banking Use	0.235	0.112	2.094	0.036	Yes	Yes	
H9a: Age X Facilitating Conditions + → Behavioral Intention	0.074	0.089	0.838	0.402	No	No	No
H9b: Age X Hedonic Motivation + → Behavioral Intention	0.083	0.097	0.855	0.392	No	No	No
H9c: Age X Habit + → Behavioral Intention	-0.041	0.076	0.543	0.587	No	No	No
H9d: Age X Price Value + → Behavioral Intention	-0.120	0.115	1.048	0.295	No	No	No
H9e: Age X Habit + → Mobile Banking Use	0.093	0.085	1.090	0.276	No	No	No
H10a: Gender X Facilitating Conditions + → Behavioral Intention	0.194	0.881	0.220	0.826	No	No	No
H10b: Gender X Hedonic Motivation + → Behavioral Intention	-0.086	0.600	0.144	0.886	No	No	No
H10c: Gender X Habit + → Behavioral Intention	-0.132	0.998	0.132	0.895	No	No	No
H10d: Gender X Price Value + → Behavioral Intention	-0.116	0.533	0.218	0.827	No	No	No
H10e: Gender X Habit + → Mobile Banking Use	0.072	0.289	0.249	0.803	No	No	No
H11a: Experience X Facilitating Conditions + Behavioral Intention	-0.098	0.188	0.521	0.602	No	No	No
H11b: Experience X Hedonic Motivation + → Behavioral Intention	0.171	0.165	1.037	0.300	No	No	No
H11c: Experience X Habit + → Behavioral Intention	-0.030	0.173	0.175	0.861	No	No	No
H11d: Experience X Habit + → Mobile Banking Use	0.534	0.230	2.323	0.020	Yes	Yes	Yes
H11e: Experience X Behavioral Intention + → Mobile Banking Use	-0.293	0.218	1.342	0.180	No	No	Yes
H12: Trust + → Behavioral Intention	0.267	0.071	3.761	0.000	Yes	Yes	
H13: Trust -> Perceived Risk	-0.421	0.062	6.793	0.000	Yes	Yes	
H14: Perceived Risk - → Behavioral Intention	0.060	0.043	1.395	0.163	No	No	
H15: Financial Literacy - → Behavioral Intention	0.001	0.042	0.017	0.986	No	No	
H16: Branch Distance +> Behavioral Intention	-0.115	0.132	0.868	0.385	No	No	No
H17: Mobile Banking Use + → Financial Behavior	0.514	0.054	9.495	0.000	Yes	Yes	

Table 23: Hypothesis Testing result

Note. β = path coefficient, SD = Standard deviation, T = T-values (T statistics), and relationships are significant at $P < 0.05$.

5.10.1. UTAUT2 Constructs

H1 assesses whether performance expectancy positively and significantly affects behavioral intention to accept mobile banking applications. The results shows that performance expectancy positively affects behavioral intention ($\beta = 0.051$, $SD=0.055$, $T= 0.917$, $P= 0.359$), but it insignificant. Therefore, H1 is not supported.

H2 assesses whether effort expectancy positively affects behavioral intention to accept mobile banking applications. The results revealed that effort expectancy positively affect consumers behavioral intention to accept mobile banking applications, and the relationship is significant ($\beta = 0.200$, $SD=0.078$, $T= 2.571$, $P= 0.010$). Therefore, H2 is supported.

H3 assesses whether social Influence positively affects consumers behavioral intention to accept mobile banking applications. The results shows that social influence positively affect consumers behavioral intention, however it is insignificant ($\beta = 0.058$, $SD=0.066$, $T= 0.885$, $P= 0.376$). Thus, H3 is not supported.

H4a assesses whether facilitating conditions positively affects behavioral intention of consumers in accepting mobile banking applications. The results revealed that facilitating conditions positively affects consumers behavioral intention to accept mobile banking. However, it is insignificant ($\beta = 0.175$, $SD=0.109$, $T= 1.610$, $P= 0.107$). Therefore, H4a is not supported.

H4b assesses whether facilitating conditions positively and significantly affects consumers use of mobile banking applications. The results revealed that facilitating conditions positively affects consumers use of mobile banking applications however, it is insignificant ($\beta = 0.075$, $SD=0.077$, $T= 0.980$, $P= 0.327$). Therefore, H4b is not supported.

H5 assesses whether hedonic motivation has a positive impact on behavioral intention to accept mobile banking applications. The results shows that hedonic motivation negatively affects consumers behavioral intention to accept mobile banking applications. However, it is insignificant ($\beta = -0.078$, $SD=0.086$, $T= 0.913$, $P= 0.361$). Therefore, H5 is not supported.

H6 assesses whether price value has a positive effect on consumers behavioral intention to use mobile banking applications. The results revealed that price value negatively affects consumers

behavioral intention to use mobile banking applications. However, it is insignificant ($\beta = -0.012$, $SD=0.087$, $T= 0.139$, $P= 0.890$). Therefore, H6 is not supported.

H7a assesses whether habit positively affects behavioral intention of consumers to use mobile banking applications. The results shows that habit positively and significantly affect consumers behavioral intention to accept mobile banking applications ($\beta = 0.284$, $SD=0.105$, $T= 2.702$, $P= 0.007$). Therefore, H7a is supported.

H7b assesses whether habit positively affects the use of mobile banking applications. The results shows that habit positively and significantly affects the use of mobile banking applications in Namibia ($\beta = 0.373$, $SD=0.117$, $T= 3.183$, $P= 0.001$). Therefore, H7b is supported.

H8 assesses whether behavioral intention positively affects consumers use of mobile banking applications. The results revealed that behavioral intention positively and significantly affect the use of mobile banking applications ($\beta = 0.235$, $SD=0.112$, $T= 2.094$, $P= 0.036$). Therefore, H8 is supported.

5.10.2. Extension of UTAUT2 Constructs

H12 assesses whether trust positively affects behavioral intention to accept mobile banking applications. The results revealed that trust positively and significantly affects consumers behavioral intention to accept mobile banking applications ($\beta = 0.267$, $SD=0.071$, $T= 3.761$, $P= 0.000$). Thus, H12 is supported.

H13 assesses whether trust negatively affects perceived risk in mobile banking acceptance. The results shows that trust negatively and significantly affects perceived risk in mobile banking applications acceptance ($\beta = -0.421$, $SD=0.062$, $T= 6.793$, $P= 0.000$). Therefore, H13 is supported.

H14 assesses whether perceived risk negatively affects behavioral intention of consumers to accept mobile banking applications. The results revealed that perceived risk positively affects the behavioral intention of consumers to accept mobile banking applications. However, it is insignificant ($\beta = 0.060$, $SD=0.043$, $T= 1.395$, $P= 0.163$). Therefore, H14 is not supported.

H15 assesses whether financial literacy positively affects behavioral intention to accept mobile banking applications. The results revealed that financial literacy positively affects the behavioral intention of consumers to accept mobile banking applications. However, it is insignificant ($\beta = 0.001$, $SD=0.042$, $T= 0.017$, $P= 0.986$). Therefore, H15 is not supported.

H16 assesses whether branch distance positively affects behavioral intention to accept mobile banking applications such that people that stay near their branch are more likely to accept mobile

banking applications compared to their counterparts. The results revealed that branch distance negatively affects behavioral intention of consumers to accept mobile banking applications. However, it is insignificant ($\beta = - 0.115$, $SD=0.132$, $T= 0.868$, $P= 0.385$). Therefore, H16 is not supported.

H17 assesses whether the use of mobile banking positively affects consumers' financial behavior. The results revealed that the use of mobile banking applications positively and significantly affects consumers' financial behavior ($\beta = 0.514$, $SD=0.054$, $T= 9.495$, $P= 0.000$). Therefore, 17 is supported.

5.11. Multigroup Analysis

Data collected from different populations result in heterogeneous groups of data and ignoring the differences among the groups can lead to incorrect conclusions (Klesel et al., 2022). Multigroup Analysis (MGA) helps researchers evaluate whether there is a difference across groups among two or more variables (Memon et al., 2019). Using MGA generates a full picture of the effects of the moderators' on the entire model's relationships rather than a specific relationship in the model (Hair et al., 2022). MGA was applied to assess the hypotheses that have moderators and also assess whether factors that affect mobile banking acceptance are different among users that stay near or far from their nearest bank branch.

MGA is made up of two stages; in the first stage the analysis of each subpopulation is done that results in estimates of parameters in each group. In the second stage, the statistical difference evaluation among the groups is assessed (Henseler, 2012). Measurement invariance shows that the measurement model evaluation conducted under different subgroups equivalently represents the same variable (Memon et al., 2019). Bootstrap MGA test was used, and Two-Stage moderation analysis was used to assess the effect of moderators on relationships. In the two-stage approach, stage 1: the main model is estimated excluding the interaction term of the moderator and saved for later analysis, and in stage 2: the latent variable outcome of the external factor and the moderator variable's product is then used to create a single item measure to assess the interaction term (Hair et al., 2022). Figure 16: The MICOM Procedure adopted from Henseler et al. (2016) was followed in the multigroup analysis.

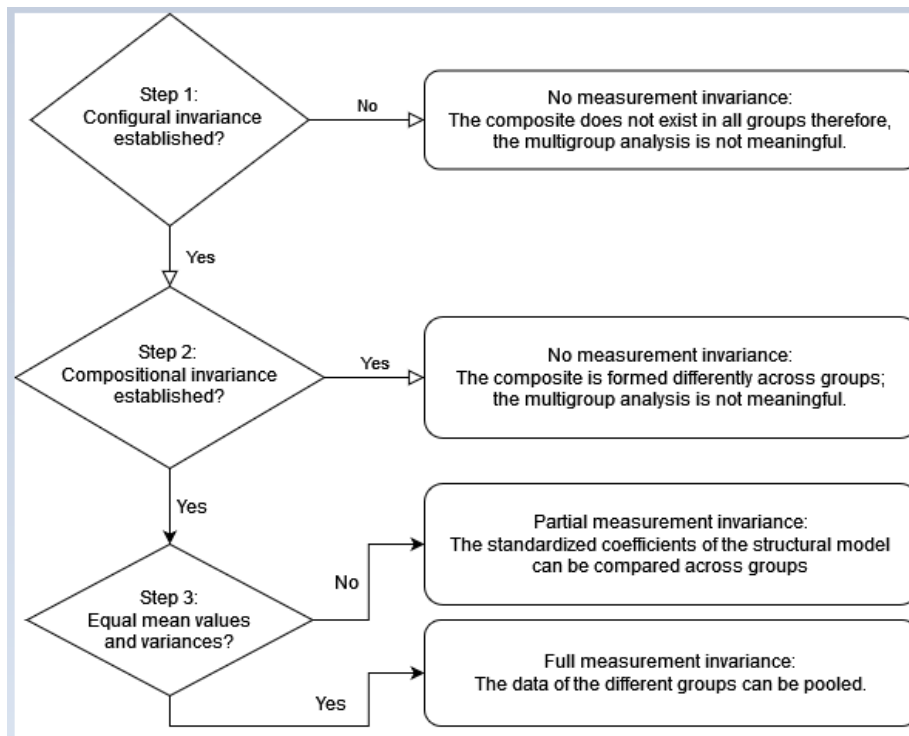


Figure 16: The MICOM Procedure adopted from Henseler et al. (2016)

The groups are divided as follows:

- Gender: Female and Male based on the gender's respondents, only one respondent indicated they preferred not to disclose their gender. The groups consisted of 105 female respondents and 148 male respondents.
- Experience: Less Experienced - users that have never used mobile banking or have used it for about 5 years. More Experienced - users that have used mobile banking for 6 years or more. The groups consisted of 105 Less Experienced users (LE) and 148 More Experienced users (ME).
- Age: Young Adults: - respondents between 19 to 39 years of age, and Middle adults: - respondents between 40 -59 years of age based on the age of the respondents. The age groups consisted of 97 young adults and 157 middle adults.
- Branch Distance: Branch Near - respondents that stay within 5 kilometers of their nearest branch and Branch Far - those that stay more than 5 kilometers from their nearest branch. The groups consisted of 157 respondents Branch Near, and 96 respondents Branch Far.

Appendix H shows the indicator outer loadings, Cronbach alpha (CA), composite reliability (CR), and average variance extracted (AVE) for each group of the respective constructs. The outer

loadings of the indicators are acceptable and indicators loading 0.40 were dropped. All constructs obtained internal consistency, an acceptable value of composite reliability above 0.60. Moreover, AVE for constructs is above 0.50. For discriminant validity, HTMT all correlations between constructs values are below 0.90.

Step 1: “configural invariance” was done - indicators used for the groups are the same for each respective construct. Step 2: “compositional invariance” showed that the mean and variances of the composites are equal for all the groups. Appendix H displays the MICOM results of the groups. Partial measurement invariance is confirmed for all latent variables for each group for their respective constructs. Step 3: “equal composite mean values and variances”, this step ensures that the average values and variances of the composites are equal (Henseler et al., 2016). Full measurement invariance was not established but each group supports partial measurement invariance. Therefore, we proceeded with multigroup analysis.

5.11.1. Moderation analysis

Table 24 shows the multigroup analysis results. The results shows that Age and Gender do not significantly moderate any of the relations hypothesised. Therefore, H9a, b, c, d, e and H10a, b, c, d, e are not supported. Similarly, Experience was not found to moderate the relationship between Facilitating Conditions, Habit, and Hedonic Motivation with Behavioral Intention. Therefore, H11a, b, c are not supported. In contrast, Experience moderates the relationship between Habit and Mobile Banking Use by strengthening it, while it significantly weakens the relationship between Behavioral Intention and Mobile Banking Use. Therefore, H11d and H11e are supported. The results of the multigroup analysis are in Appendix H.

Moderator	Relationship	Path Coefficients (β)	Difference Path Coefficients for groups (β)	Difference		Model without the moderators effect (β)	Model with moderators (β)	Moderator Effect (β)	Relationship effect
				1-tailed P Value	2-tailed P Value				
Age +X	Facilitating Conditions --> Behavioral Intention	YA = 0.114 MA = 0.056	0.058	0.352	0.704	0.072	0.084	0.009	Strengthen
	Habit --> Behavioral Intention	YA= 0.332 MA = 0.440	-0.111	0.764	0.472	0.404	0.409	0.573	Strengthen
	Habit --> Mobile Banking Use	YA= 0.514 MA = 0.255	0.314	0.113	0.226	0.316	0.235	0.004	Strengthen
	Hedonic Motivation --> Behavioral Intention	YA= -0.181 MA = 0.016	-0.196	0.897	0.206	-0.071	-0.055	0.121	Strengthen
	Price Value --> Behavioral Intention	YA= 0.158 MA = -0.064	0.224	0.059	0.118	0.02	0.011	-0.127	weakens
Gender +X	Facilitating Conditions --> Behavioral Intention	F= 0.037 M= 0.174	-0.136	0.833	0.334	0.072	0.095	0.145	Strengthen
	Habit --> Behavioral Intention	F=0.487 M= 0.299	0.188	0.124	0.248	0.404	0.392	-0.140	weakens
	Habit --> Mobile Banking Use	F= 0.028 M= 0.339	-0.311	0.845	0.310	0.316	0.308	0.098	strengthen
	Hedonic Motivation --> Behavioral Intention	F= -0.006 M= -0.154	0.148	0.188	0.377	-0.071	-0.062	-0.088	weakens
	Price Value --> Behavioral Intention	F= 0.078 M= 0.000	0.078	0.285	0.570	0.020	0.024	-0.062	weakens
Experience +X	Facilitating Conditions --> Behavioral Intention	LE =-0.037 ME =0.182	-0.219	0.938	0.124	0.072	0.048	-0.168	weakens
	Habit --> Behavioral Intention	LE = 0.296 ME =0.491	-0.195	0.882	0.237	0.404	0.399	0.039	strengthen
	Habit --> Mobile Banking Use	LE = 0.495 ME =0.136	0.359	0.014	0.029	0.316	0.307	0.559	strengthen
	Hedonic Motivation --> Behavioral Intention	LE = -0.067 ME = -0.056	-0.011	0.536	0.929	-0.071	-0.070	0.084	strengthen
	Behavioral Intention --> Mobile Banking Use	LE = 0.175 ME =0.617	-0.442	0.995	0.010	0.288	0.223	-0.416	weakens

NB: YA = Young adults, MA = Middle adults, F = Female, M= Male, LE = Less Experienced, ME = More experienced.

Table 24: Moderation analysis results

5.11.2. Distance

In Namibia, many people travel long distance to get to their nearest branch (Namibia Statistics Agency, 2018). We explored MGA to determine if there are differences among the factors that affect mobile banking acceptance due to distance. The bar graphs in Figure 17 and Figure 18 displays the path coefficients of the groups. The results show differing effects of factors affecting consumers' behavioral intention across groups. Habit, Trust, and effort expectancy strongly affect consumers' behavioral intention that stay far from their nearest bank branch more so than those that stay near their branch. Facilitating Conditions has a positive effect on Behavioral Intention of consumers who live far from their bank branch, and a negative effect for consumers who live nearby. Similarly, Financial Literacy, and Social Influence had opposite effects on the groups. Trust on Perceived Risk, and Hedonic Motivation on Behavioral are negative on all groups.

Mobile Banking Use effect on Financial Behavior is stronger for users that live far than who live nearby. Behavioral Intention has a stronger effect on Mobile Banking Use for people who live nearby. Habit has a strong effect on use behavior for people residing near the branch than people that reside far. Facilitating Conditions has a strong effect on consumers' Mobile Banking Use that reside far than those who reside nearby. However, the results in Table 25 revealed that none of the differences are statistically significant, the p value for the path coefficients differences of the groups are above 0.05.

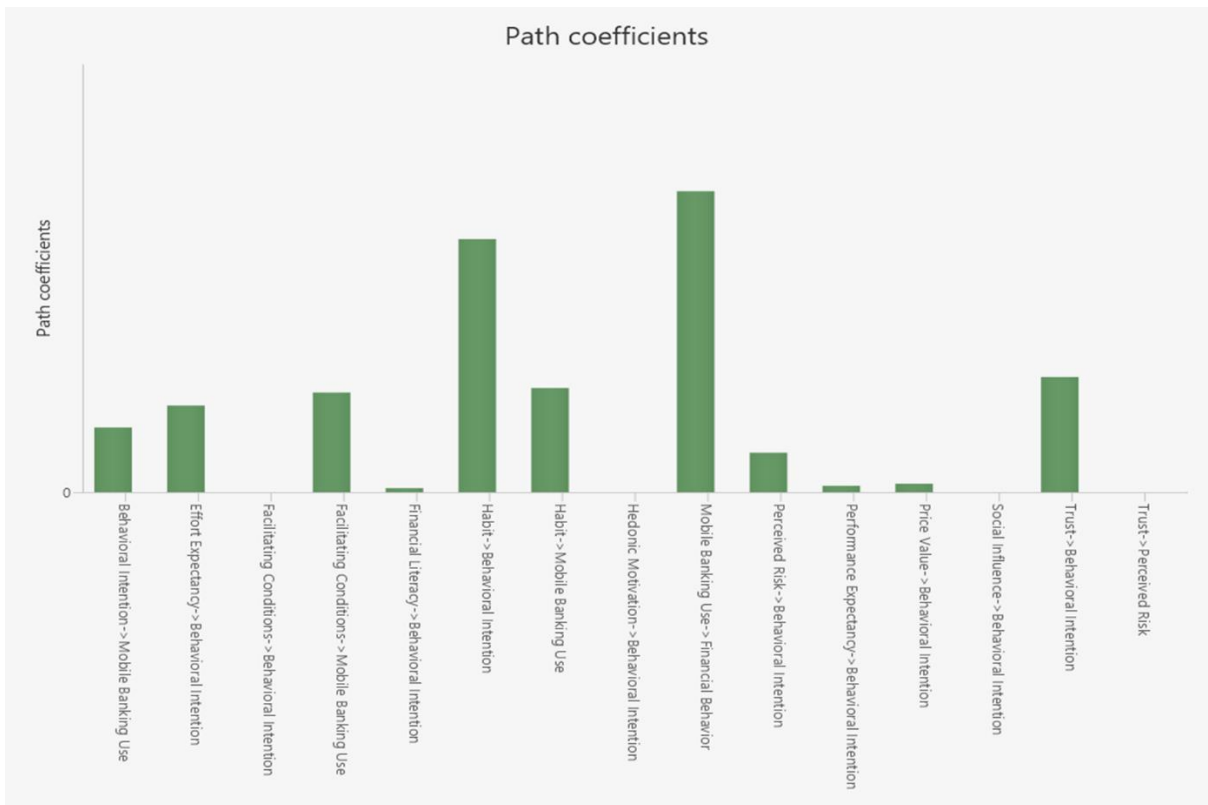


Figure 17: Branch Far path coefficients

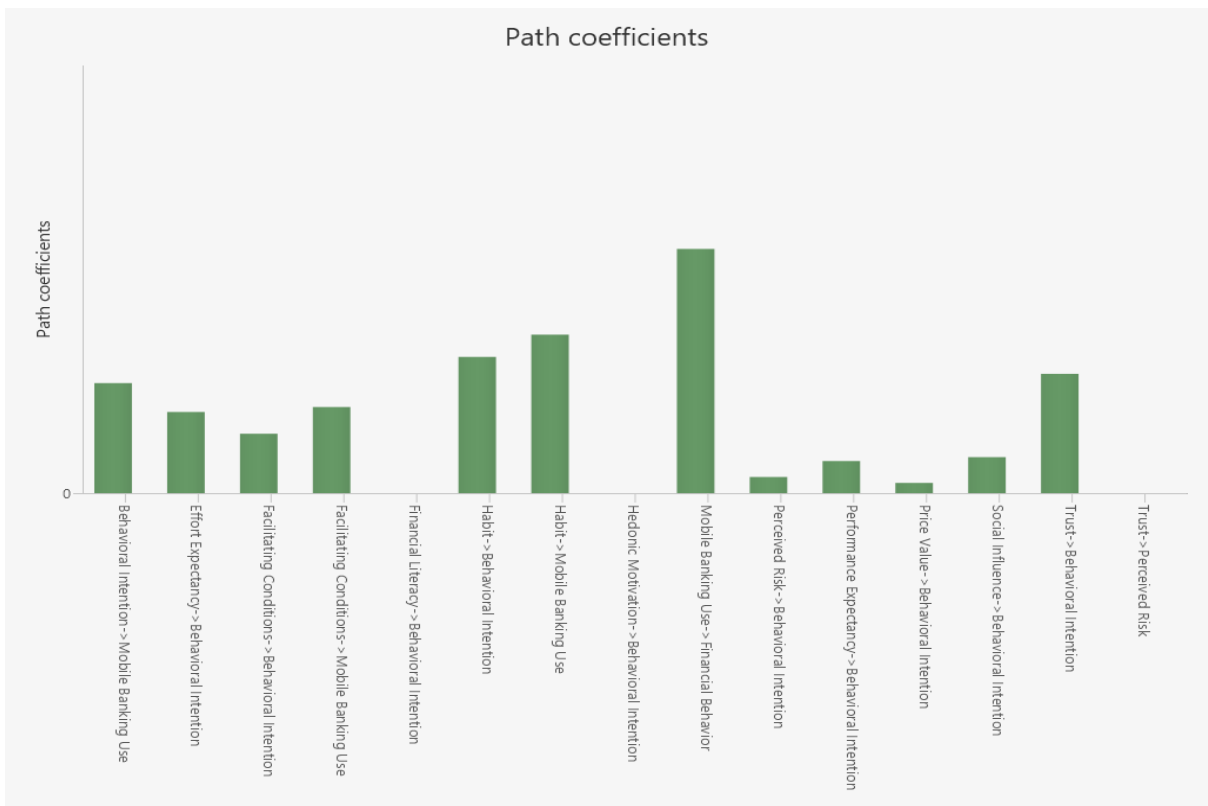
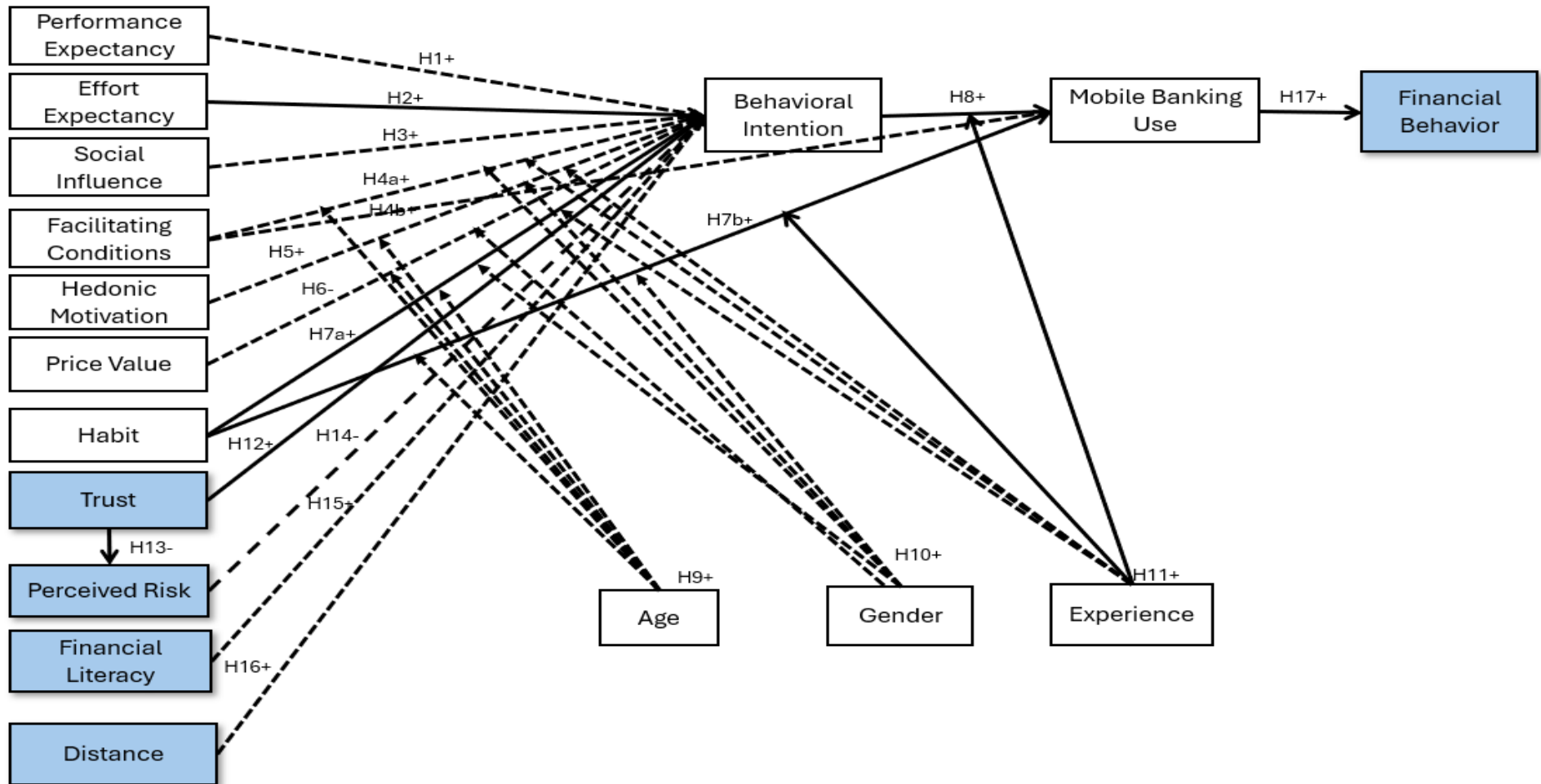


Figure 18: Branch Near path coefficients

	Difference (Branch Near - Branch Far)	1-tailed (Branch Near vs Branch Far) p value	2-tailed (Branch Near vs Branch Far) p value
Behavioral Intention -> Mobile Banking Use	0.136	0.443	0.886
Effort Expectancy -> Behavioral Intention	-0.011	0.526	0.948
Facilitating Conditions -> Behavioral Intention	0.140	0.217	0.435
Facilitating Conditions -> Mobile Banking Use	-0.077	0.603	0.794
Financial Literacy -> Behavioral Intention	-0.020	0.596	0.808
Habit -> Behavioral Intention	-0.277	0.946	0.108
Habit -> Mobile Banking Use	0.133	0.380	0.760
Hedonic Motivation -> Behavioral Intention	0.068	0.313	0.626
Mobile Banking Use -> Financial Behavior	-0.132	0.964	0.072
Perceived Risk -> Behavioral Intention	-0.051	0.706	0.589
Performance Expectancy -> Behavioral Intention	0.063	0.300	0.601
Price Value -> Behavioral Intention	0.008	0.478	0.956
Social Influence -> Behavioral Intention	0.115	0.220	0.439
Trust -> Behavioral Intention	0.011	0.478	0.955
Trust -> Perceived Risk	0.100	0.185	0.370

Table 25: Distance Bootstrapping MGA result

5.12. Research Model



Note: Significant relationships \longrightarrow , Non-significant relationships $-\ - \blacktriangleright$

UTAUT2 constructs are highlighted in white, while UTAUT2 extensions are highlighted in blue.

Figure 19: Research Model: Hypotheses result

Only nine of the seventeen hypotheses are supported, indicated by the solid black line in the model above. The dashed line represents relationships that are not supported. Effort expectancy and habit positively affect behavioral intention, while habit and behavioral intention positively affect mobile banking use. Further, mobile banking positively affects financial behavior. Trust negatively affects perceived risk. For the moderators, experience positively moderates the effect of consumer habit on use of mobile banking applications and behavioral intention. Overall, there are nine significant relationships.

5.13. Summary

The results show that nine hypotheses are supported out of seventeen hypotheses. The study found significant relationships between effort expectancy, habit, trust and behavioral intention. Furthermore, trust affects perceived risk. In addition, behavioral intention and habit significantly affect mobile banking use. Moreover, the use of mobile banking has an effect on financial behavior.

Chapter 6: Discussion

6.1. Introduction

In this chapter discussion of the findings of the study are presented. Discussion of the data analyzed in the previous chapter is done to address the research questions and achieve the objectives.

The study aimed at answering the research questions below:

1. What factors affect the acceptance and usage of mobile banking applications in Namibia?
2. What is the impact of mobile banking applications on consumers' financial behavior in Namibia?

To provide answers to the research questions, a model was developed derived from the UTAUT2 theoretical framework by extending it with financial behavior as an independent variable and four dependent variables: trust, perceived risk, financial literacy, and distance. Additionally, 17 hypotheses were formulated.

The findings will be discussed under the following subheadings:

- Factors affecting behavioral intention in accepting mobile banking applications
- Factors affecting mobile banking applications use
- The impact of mobile banking use on financial behavior

6.2. Summary of the descriptive data

The majority of the respondents are female. Additionally, the majority of the respondents are aged between 30 and 39 (53.15%), followed by the 20 - 29 (37.40%) age group. The rest of the age groups make up 9.45% of the respondents. Most respondents have a secondary level of education or higher, with most respondents having an Honors or Postgraduate Diploma. Furthermore, most of the respondents are formally employed (72.05%), followed by students (12.99%). Additionally, the majority of the respondents earn between N\$ 10,001 and N\$ 30,000 (30.71%), followed by respondents that earn less than or equal to N\$ 5000 (23.62%), and those that earn between N\$ 30001 and N\$ 50000 (23.23%), and the rest of the income groups account for 22.44% of the respondents. Further, most of the respondents have used mobile banking applications for at least six years or more (48.82%), followed by respondents who have been using it for 3 to 5 years (31.50%), and those who have used it for less than a year to 2 years account for 20.5%, while 1.97% reportedly have never used mobile banking applications. On financial literacy multiple choice questions, only 17.32% of

respondents answered all questions correctly and majority of the respondents got 3 out of 5 (24.02%) correctly, meanwhile 2.76% of respondents got 0 out of 5.

6.3. Factors affecting behavioral intention to accept mobile banking applications

In this section the findings of the relationships are discussed.

6.4. UTAUT2 Constructs

This section provides the findings of UTAUT2 constructs.

6.4.1. Performance Expectancy

Performance expectancy has to do with the benefits provided by mobile payments therefore, the benefits are expected to be the driving force in the acceptance of mobile payments because it allows consumers to make financial transactions without restrictions (Migliore et al., 2022; Penney et al., 2021). The results indicate that performance expectancy ($\beta = 0.051$, $P = 0.359$) does not significantly affect consumers' behavioral intention. Therefore, rejecting the hypothesis. The results differ from other mobile banking studies that found performance expectancy to be a predictor of behavioral intention, and in some studies, it was the strongest predictor (Abdennebi, 2023; Chauhan et al., 2022; de Sena Abrahão et al., 2016; Kiranga & Chotiyaputta, 2021; Malaquias & Silva, 2020; Marpaung et al., 2021; Migliore et al., 2022; Nguyen et al., 2020; Penney et al., 2021; Saxena et al., 2023; Thusi & Maduku, 2020). However, the results are in line with earlier mobile and digital adoption studies (Dhingra & Gupta, 2020; Kwateng et al., 2018; Widyanto et al., 2020).

The average score of performance expectancy is 4.20 and standard deviation is 0.99. It shows a strong positive view regarding performance expectancy. The low standard deviation shows that most respondents have the same positive views regarding performance expectancy with less variation in the responses. However, the insignificant effect of performance expectancy may be explained by the fact that younger, urban users find it less important, while older consumers may rely on it more due to their higher expectations and needs from mobile banking. (Merhi et al., 2021). This is in line with the results as most respondents are young (most of the respondents are between 20 and 39 years of age) and reside within 10 kilometres of their nearest bank branch. Implying that they are in urban areas, as most bank branches are located in urban towns in LMICs, a pattern that also holds true for Namibia (World Bank Group, 2022; Zhu et al., 2021). Additionally, the insignificant link between performance expectancy and behavioral intention can potentially mean the absence of all banking services on mobile banking, as consumers are still required to travel to bank branches for other financial services, like applying for a loan and opening an

account etc. (Dhingra & Gupta, 2020). On mobile banking use, consumers indicated that they rarely applied for account products (42.5%), made international payments (31.5%), or managed debit orders (27.6%). Implying the potential unavailability of these functionalities on all mobile banking platforms. Additionally, many banks in Africa operate under heavy regulations that constrain their activities and the rapid growth of mobile banking in many African countries was driven by minimal regulatory restrictions or the late introduction of formal regulations, allowing greater flexibility for innovation (Rouse, 2017). In Namibia, banks are regulated by Bank of Namibia (Bank of Namibia, 2023; Bank of Namibia & Namibia Financial Institutions Supervisory Authority, 2024). Therefore, the features available on mobile banking applications may be restricted by regulatory limitations. Tamilmani et al. (2021a) noted that performance expectancy and behavioral intention non-significant result can be observed in some contexts.

6.4.2. Effort Expectancy

Consumers will use mobile banking if they feel that it is easier to use, and hope that it will meet their expectations, and the transaction will be conducted without any difficulties (Purwanto & Loisa, 2020). The results indicate that effort expectancy positively and significantly affects behavioral intention of consumers in accepting mobile banking applications ($\beta = 0.200$, $P = 0.010$). The result agrees with other studies for example: digital services in Vietnam (Nguyen et al., 2020), mobile banking in Brazil, Kenya and Tunisia (Abdennebi, 2023; Malaquias & Silva, 2020; Kiranga & Chotiyaputta, 2021), electronic banking in India (Chauhan et al., 2022), mobile money in Ghana (Penney et al., 2021), mobile banking in Nigeria (Marpaung et al., 2021; Siano et al., 2020), mobile banking in South Africa (Masinge, 2010), and Ewallet services in Namibia (Sheya, 2019). The study results differ from the results of Migliore et al. (2022) and Hanif & Lallie, 2021. Similarly, in South Africa it negatively influences millennial's behavioral intention (Thusi & Maduku, 2020).

The findings indicate the applications are easy to use. This is expected since most respondents are between the age of 20 and 39, and most of them have a secondary education level or higher. Furthermore, most of the respondents have used mobile banking for at least six years or more, which might suggest that respondents are used to mobile banking applications by now and are equipped with skills to find them easy to use, which affects acceptance.

6.4.3. Social Influence

In social settings customers tend to influence each other towards using mobile banking services (Saxena et al., 2023). Contrary to what was estimated, the result shows that social influence insignificantly affects behavioral intention of consumers ($\beta = 0.058$, $P = 0.376$). The findings

contradict the findings of some countries where it was found to affect consumers behavioral intention - in Ghana, Italy, Brazil, South Africa, Kenya, and India (de Sena Abrahão et al., 2016; Kiranga & Chotiyaputta, 2021; Migliore et al., 2022; Penney et al., 2021; Saxena et al., 2023; Singh & Srivastava, 2020; Slazus & Bick, 2022). The results are similar to the findings of other studies (Nguyen et al., 2020; Purwanto & Loisa, 2020; Rachmawati et al., 2020; Thusi & Maduku, 2020) . Further, social influence had insignificant effect in China (Migliore et al., 2022).

The results show that the average score for social influence is 3.71 and standard deviation is 1.04, indicating a good positive view. Despite the positive sentiments on social influence, the standard deviation shows that there is diversity in the respondents' responses. In the context of mobile banking used to perform financial transactions consumers are not affected by others due to the ability of assessing the usefulness of the applications for themselves therefore, their use is self-driven and not influenced by social environment (Purwanto & Loisa, 2020). This is supported by the data, as most respondents are employed, have many years of experience of using mobile banking applications, and have an undergraduate diploma or higher level of education, indicating that they have the ability to assess and feel the usefulness of mobile banking applications for themselves. Additionally, millennials, people between 28 and 43 years, are known to be a generation that is more independent and full of individuality, a shift from what is expected culturally unlike the older generation (Purwanto & Loisa, 2020). Most of the respondents are millennials and gen Z between the age of 20 and 39 therefore, it can be concluded that they are independent in making their own choices and mostly not easily influenced by other people's opinions and views, especially on financial matters. Moreover, it has been noted that social influence tends to be insignificant in voluntary settings compared to a mandatory setting (Venkatesh et al., 2003). Moreover, the impact of social influence on the decision to accept a technology is complex and affected by different factors (Venkatesh et al., 2003).

6.4.4. Facilitating Conditions

The results indicate a non-significant small positive relationship between facilitating conditions and behavioral intention ($\beta = 0.075$, $P = 0.327$). The findings contradict the findings of mobile and digital banking studies that found a significant relationship between facilitating conditions and behavioral intention (Chauhan et al., 2022; Farzin et al., 2021; Migliore et al., 2022; Kiranga & Chotiyaputta, 2021; Rachmawati et al., 2020; Saxena et al., 2023; Slazus & Bick, 2022). However, the findings are similar to other mobile banking studies (Nguyen et al., 2020; Penney et al., 2021). Similarly, facilitating conditions was found not to affect behavioral intention in Italy and Pakistan (Farah et al., 2018; Migliore et al., 2022).

This implies that supporting resources are not of great importance in predicting users intention in using a technology (Widyanto et al., 2020). The mean average score for facilitating conditions is 4.19, indicating a strong positive view. Consumers feel that there is availability of necessary resources, support, and infrastructures. Moreover, the standard deviation is 0.91, indicating a low level of dispersion with few consumers having different opinions. However, limited availability of resources and support lead to some consumers reducing their use of mobile banking services (Marpaung et al., 2021). Namibia has a low mobile broadband and smartphone penetration, 36% and 53% respectively (CRAN, 2023; World Bank Group, 2022). Therefore, this may affect the acceptance of mobile banking services. Moreover, Namibia is ranked as one of the most unequal countries in the world in terms of economic opportunities and access to services (World Bank, 2024) suggesting that not all people may have access to mobile banking. Additionally, the down time of mobile banking services due to banks fixing systems malfunctions and frequent system errors results in less usage by consumers (Marpaung et al., 2021). Therefore, it has an impact on consumers' decision to accept and use mobile banking applications. Additionally, facilitating conditions were found to have a strong effect on acceptance of older consumers compared to younger consumers, as younger consumers are more intuitive in their use of technologies, such as mobile banking compared to older consumers (Merhi et al., 2021). Most of the respondents are young individuals therefore, the availability of facilitating conditions might not influence their decisions to accept mobile banking applications. Furthermore, only 6 respondents are aged 50 and above, hence older consumers that took part in the study are few in order to test the above claim. Additionally, the presence of effort expectancy can affect the insignificance of facilitating conditions on behavioral intention (Venkatesh et al., 2003). Effort expectancy is significant in this study; this might have affected the non-significant effect of facilitating conditions.

6.4.5. Hedonic motivation

The results firstly show that there is an insignificant relationship between hedonic motivation and behavioral intention. Secondly, unexpectedly, hedonic motivation negatively affects behavioral intention ($\beta = -0.078$, $P = 0.361$). Several studies have shown a positive and significant relationship (Chauhan et al., 2022; Kamdjoug et al., 2021; Nguyen et al., 2020). The negative relationship of hedonic motivation on behavioral intention is supported by Slazus and Bick (2022) who found a negative relationship in South Africa in FinTech adoption. Several studies support the non-significant relationship between hedonic motivation and behavioral intention (Migliore et al., 2022; Penney et al., 2021; Thusi & Maduku, 2020).

The mean average score of hedonic motivation is 3.68 and standard deviation is 1.07, indicating a relative positive view. However, there is a moderate level of dispersion in responses. The

findings show that while some Namibian consumers find mobile banking applications enjoyable, fun or attractive, others feel differently. However, a lack of statistical significance shows that the data does not support these claims and is not shared across all respondents. Consumers learn to link their mobile phones with pleasure and when they associate technologies as a source of enjoyable drive, they are likely to adopt them (Farzin et al., 2021). Given that mobile banking applications are meant to allow consumers to perform financial transactions that are not fun or entertaining in nature, the results might be justified.

6.4.6. Habit

The results show a positive significant relationship between habit and consumers behavioral intention ($\beta = 0.284$, $P = 0.007$). Additionally, habit is the strongest factor influencing behavioral intention. This is consistent with other mobile and digital banking adoption studies (Chauhan et al., 2022; Dhingra & Gupta, 2020; Kamdjoug et al., 2021; Merhi et al., 2019; Nguyen et al., 2020; Penney et al., 2021). Bank of Namibia noted that there is an increase in the digital transactions including mobile money payments, and they have been increasing over the past five years (Bank of Namibia, 2023; Bank of Namibia & Namibia Financial Institutions Supervisory Authority, 2023; Bank of Namibia, 2024; Bank of Namibia & Namibia Financial Institutions Supervisory Authority, 2024). This suggests that consumers in Namibia have incorporated digital channels into their regular habits.

When users' daily tasks are part of the measurement scale of the use variable then the predictive strength of habit might rise in comparison to behavioral intention, as daily routines increase habitual behavior (Venkatesh et al., 2012). Consumers often form habits for a certain technology or product following prolonged use, particularly during the growth stages of the product life cycle (Tamilmani et al., 2019). This is supported as most of the respondents have used mobile banking applications for six or more years. Older consumers with many years of experience are most likely to rely on their habits (Kwateng et al., 2018). The majority of the respondents are 30 years and above. Another possible reason might be due to the integration of mobile phones in consumers' daily lives, which provides access to mobile banking applications, which might lead to frequency of use, and ultimately lead to the formation of a habit.

6.4.7. Price Value

The findings indicate that the relationship between price value and behavioral intention is non-significant ($\beta = -0.012$, $P = 0.890$). Unexpectedly, the results showed that price value negatively affects behavioral intention. Therefore, rejecting the hypothesis. Other studies have found a positive and significant relationship between price value and behavioral intention (Chauhan et

al., 2022; Migliore et al., 2022; Penney et al., 2021). However, the findings are in line with other previous studies that found a non-significant relationship between price value and behavioral intention (Dhingra & Gupta, 2020; Nguyen et al., 2020).

A non-significant analysis of price value on behavioral intention occurs when consumers view the product/services under investigation as free of charge (Tamilmani et al., 2021a). Younger consumers are more concerned about high price values for mobile banking (Merhi et al., 2021). The mean average score of price value is 3.56 and standard deviation is 1.11, indicating a positive view. However, the standard deviation shows users diverse opinions on the value provided, some responses falling at the extremes of the scale, ranging from strong disagreement to strong agreement. The negative effect between price value and behavioral intention might be due to high fees and charges in the country. A substantial number of Namibian consumers are unhappy and discontent with high payment and product fees and charges charged by financial institutions (Editor, 2024). Another possible reason might be due to the fact that data prices in Namibia are high compared to the neighboring country, South Africa and it is among the countries in Africa with the highest data prices (Myles, 2022). However, the cost associated with a particular application might not show how much value consumers place on a specific application (Venkatesh et al., 2012). Consumers might associate mobile devices services free of charge, limited costs leading to no effect on usage (Merhi et al., 2019). This might be because most of the respondents are formally employed and have an income, thus, price value is not a strong factor that affects their behavioral intention. Another possible explanation is that compared to other banking channels, electronic banking fees are cheaper.

6.5. Factors influencing mobile banking applications use

In this section the findings of the constructs that were estimated to affect consumers use behavior of mobile banking applications are discussed.

6.5.1. Facilitating Conditions

The results revealed that facilitating conditions positively affect consumers use of mobile banking applications however, the relationship is insignificant ($\beta = 0.075$, $P = 0.327$). Therefore, the hypothesis is rejected. The findings are not in line with previous findings that found a positive and significant effect of facilitating conditions on mobile banking use (Nguyen et al., 2020; Rachmawati et al., 2020). For people with one or two years of experience the effect of facilitating conditions towards use behavior is positive (Kwateng et al., 2018). Most of the respondents have been using mobile banking services for three years or longer. Therefore, they no longer depend on the available support or resources to use mobile banking applications.

6.5.2. Habit

The results revealed that habit positively and significantly affect consumers use of mobile banking applications ($\beta = 0.373$, $P= 0.001$). Therefore, the hypothesis is supported. A similar conclusion has been reached by previous studies (Nguyen et al., 2020; Penney et al., 2021). Kwateng et al. (2018) also found that habit significantly affects use behavior among users with three to four years of experience. This is supported by our results, as most of the respondents have used mobile banking applications for three years or more. The results suggest that the extent of using mobile banking gets to its highest level among consumers who have previously established habitual behaviors related to this technology (Penney et al., 2021). Additionally, Bank of Namibia noted an increase in digital transactions, especially mobile money (Bank of Namibia, 2024). In contrast, Maduku and Thusi (2020) found a negative relationship between habit and use behavior in South Africa.

6.5.3. Behavioral Intention

Behavioral intention to use is the inclination or tendency to keep on using a technology (Rachmawati et al., 2020). The results revealed that behavioral intention positively and significantly affects consumer use of mobile banking applications ($\beta = 0.235$, $P= 0.036$). Therefore, the hypothesis is supported. This finding is consistent with previous studies (Nguyen et al., 2020; Penney et al., 2021; Purwanto & Loisa, 2020; Thusi & Maduku, 2020). Behavioral intention effectively and greatly contributes to the actual use of mobile banking (Farah et al., 2018). In contrast, a previous study found no effect between behavioral intention and use in Indonesia (Rachmawati et al., 2020). The results suggest that consumers prefer to use mobile banking applications compared to alternative banking channels and intend to transact using mobile banking applications. Additionally, consumers will use mobile banking applications at any chance they get.

6.6. Extension of UTAUT2 Constructs

This section discusses the constructs that were added to UTAUT2 model: Trust, Perceived Risk, Financial Literacy, and Distance.

6.6.1. Trust

Consumers' trust is of great importance in financial transactions and in mobile money payments trust is a need (Penney et al., 2021). The results show that trust was significant in affecting consumers behavioral intention ($\beta = 0.267$, $P= 0.000$). Thus, supporting the hypothesis. The findings are not consistent with previous studies in mobile banking in Britain, Ghana, Iran, Lebanon, South Africa and Vietnam (de Sena Abrahão et al., 2016; Farzin et al., 2021; Masinge,

2010; Merhi et al., 2019; Nguyen et al., 2020; Penney et al., 2021). Similarly, the relationship between trust and behavioral intention was not significant in Tunisia and United Kingdom (Abdennebi, 2023; Hanif & Lallie, 2021).

The results suggest that consumers perceive mobile banking applications to be trustworthy and secure. Additionally, the result shows trust negatively and significantly affects perceived risk in mobile banking applications adoption ($\beta = -0.421$, $P = 0.000$). The findings are in line with the initial hypothesis. Indicating that consumers have trust in their banks which reduces the risk associated with mobile banking applications (Hanif & Lallie, 2021).

6.6.2. Perceived Risk

Mobile banking apps are subject to possible cyber-attacks, and in the event of a cyber-attack consumers are at risk of financial loss. Surprisingly, the result indicates that perceived risk positively affects consumers' behavioral intentions, however the relationship is not significant ($\beta = 0.060$, $P = 0.163$). Similarly, in South Africa, perceived risk had no effect on mobile banking adoption (Masinge, 2010). A negative perceived risk effect on behavioral intention suggests that it is a major barrier to the acceptance of electronic banking services for example mobile payment and e-banking (Chauhan et al., 2022). Previous studies have found perceived risk to negatively and significantly affect consumers behavioral intention to accept mobile money/banking in Ghana, India, South Africa, and United Kingdom (Chauhan et al., 2022; Hanif & Lallie, 2021; Penney et al., 2021; Thusi & Maduku, 2020). Migliore et al. (2022) also found a negative insignificant relationship with behavioral intention in China and Italy.

Data breaches and leakages are security risks remain a great concern and barrier to mobile banking acceptance (Merhi et al., 2019). The mean average score of perceived risk is 2.61 and standard deviation is 1.13. The result suggests that some respondents generally feel that mobile banking applications pose some risks, while others have a different perception of risk as responses range from strong disagreement to strong agreement regarding perceived risk. The findings are surprising, given that the number of fraudulent transactions in Namibia continues to grow; electronic transfer funds increased by 14% mainly due to phishing and electronic money increased by 12% due to phone scams (Bank of Namibia, 2024). Electronic money fraudulent transactions have been growing in the last 5 years in Namibia and card fraudulent transactions increased by 58% from 2022, and most of the fraudulent transactions were done through internet banking and/or mobile banking applications using card-not-present functionality (Bank of Namibia, 2024). Despite the financial risk that keeps increasing, perceived risk is not a barrier to mobile banking acceptance.

6.6.3. Financial Literacy

Financial literacy is an important factor in making financial decisions (Lahiri & Biswas, 2022). Financial literacy is important as it enables individuals to make well informed financial decisions that can impact their financial well-being positively and promote economic growth for countries (Cossa et al., 2022; Hasan et al., 2021). Individuals level of financial literacy highly impacts their well-being (Cossa et al., 2022). Lahiri and Biswas (2022) found that adults who scored higher in financial literacy possess better financial behavior, and that financial literacy was found to increase the likelihood of financial planning and had a positive impact on financial behavior in India for people staying in urban areas.

The results show that financial literacy has a very small positive non-significant effect on behavioral intention ($\beta = 0.001$, $P = 0.986$). Rejecting the hypothesis. Similarly, financial skills were found insignificant in affecting consumers' behavioral intention to accept mobile banking in Pakistan (Ullah et al., 2022). In Vietnam financial literacy affected consumers' behavioral intention to accept mobile money (Ha et al., 2023). In Indonesia, financial literacy was found to have a positive significant effect on the use of electronic banking therefore, individuals that have good financial literacy skills, an income, and education are most likely to use electronic banking (Munari & Susanti, 2021). Because of high levels of illiteracy in many African countries, particularly in rural areas, many people find it difficult to understand and effectively use mobile banking services (Pankomera & Van Greunen, 2018). Financial literacy rates in Namibia remain relatively low (Bank of Namibia & Namibia Financial Institutions Supervisory Authority, 2023). A study found that financial literacy is positively associated with the use of mobile financial services for male users with an upper level of primary education, age, income, and living in an urban area (Matita & Chauma, 2021) In this study, most respondents are female, which may have influenced the results. Individuals that score higher on financial literacy questions tend to increase their usage of mobile banking services compared to those that obtained lower scores (Matita & Chauma, 2021). From the results, the mean average score of financial literacy is 2.98 and standard deviation is 1.39. The results show that most respondents scored below the average on the five questions for financial literacy used in the survey, with some respondents scoring lower or higher than the average. Therefore, respondents have a medium level of financial literacy and financial literacy differs substantially among respondents. The positive effect on behavioral intention shows that financial literacy is not a barrier of mobile banking applications, however, it is not significant.

6.6.4. Distance

The findings of this study indicate an insignificant negative relationship between the bank branch distance and behavioral intention ($\beta = -0.115$, $P = 0.385$). Thus, rejecting the initial hypothesis that distance will positively affect consumers behavioral intention to adopt mobile banking applications. Additionally, the results of the multigroup analysis showed no significant differences between factors that affect the behavioral intention of consumers to adopt mobile banking and impact on financial behavior between people that stay near the branch and those that stay far from the branch. This might be due to the majority of respondents residing within 10 kilometres of their nearest bank branch. Additionally, in Namibia, bank branches are predominantly situated in urban areas, where 90% of individuals can reach one in under an hour, while 40% of people living in rural areas need an hour or more to reach a bank (World Bank Group, 2022). Moreover, COVID-19 pandemic has accelerated the use of mobile financial services in rural and urban areas including LMICs because of the physical distance that was required to manage the spread of the virus (Yan et al., 2021). This might have forced some consumers to use mobile banking services regardless of their distance from the bank branch.

6.6.5. Financial behavior

Using mobile banking applications has the potential to alter consumers' financial behaviour. The result shows that mobile banking use positively affects consumers' financial behavior ($\beta = 0.514$, $P = 0.000$). The results for mobile banking use reveal that majority of the consumers in the last 6 months used mobile banking applications every time to check their account balance (69.7%), bought airtime or data bundles (64.2%), sent electronic wallets (Ewallet, EasyWallet, BlueWallet, Send Money) (63%), transferred money between their bank accounts (57.5%), received electronic wallets (Ewallet, EasyWallet, BlueWallet (52%), and received money (49.2%), got proof of payment (46.50%), paid beneficiaries (41.30%), got account statement (39%), managed cards (37%), did cardless cash withdrawal (35.80%), updated transaction limits (32.70%), added/edited/removed beneficiaries (31.10%), or updated personal information (26.80%). Some of the features of mobile banking applications are rarely used. For example, the majority of consumers never applied for account products (42.5%), made international payments (31.5%), or managed debit orders (27.6%). Therefore, implying that these are among the least used functionalities on mobile banking applications. Another reason might be that these features are not available on all mobile banking applications. Additionally, a lack of awareness may contribute to consumers not utilizing some services on mobile banking applications

The last decade has seen a noteworthy rise in the use of digital financial services, especially from LMICs (Chamboko, 2022). This is confirmed by the results of the study. The results indicate that

firstly, consumers use mobile banking applications every time to check their account balance more compared to other functionalities. This might be due to the fact that one needs to know their account balance before considering or performing any financial transactions. Secondly, to buy airtime or data bundles. This might be due to the convenience and accessibility of mobile banking applications; consumers do not need to visit shops or nearest airtime vendors, and the airtime is instantly loaded on users' number. Thirdly, given that electronic wallets are the most popular in Namibia, the frequency of sending electronic wallets result is expected. Bank of Namibia noted that there has been a rise in the usage of electronic money, which is the preferred payment channel of consumers (Bank of Namibia, 2024). Other countries have experienced the same growth in electronic money services too like Mozambique (Fernandes et al., 2021).

The result for financial behavior shows that 53.50% of the consumers paid all their bills on time every time. This finding is in line with findings by 2023 Consumer Pulse Study by TransUnion that found that almost half (49%) of consumers in Namibia are struggling to pay one or more of their existing bills and loans in full (Observer, 2024), followed by consumers who settled their credit card balance in full every month (37%), while consumers that rarely, occasionally or settled their credit card outstanding balance are more than those that did. In 2021, credit cards became a burden to Namibian consumers as credit cards were in arrears with about N\$62 million (Amukeshe, 2021) therefore, justifying the results the study found. Lastly only 28% of consumers always "kept a written or electronic record of their monthly expenses". Namibian consumers are struggling to cultivate the essential financial discipline and saving prioritization (Financial Literacy Initiative, 2023a). The findings are supported by the previous statement. The results indicate that most consumers 39% occasionally honored their budget or spending plans, while 28.30% of consumers occasionally "comparison shopped when purchasing a product or service", and only 25.60% of consumers occasionally "began or maintained an emergency savings fund" in the last 6 months.

Most consumers accounting for 62.20% indicated that they did not buy bonds, stocks, or mutual funds, followed by 48.80% of consumers that did not "max out the limit on one or more credit cards", while 41.30% of consumers never "contributed money to a retirement account", and a substantial number 38.60% of consumers indicated that they never made minimum payments on a loan and lastly, 25.20% of consumers indicated that they did not "save for a long-term goal such as a car, education, home, etc." in the last 6 months. These are the less performed financial behavior or do not apply to all consumers that took part in the survey.

Households are struggling with the high inflation worsened by the increase in fuel prices in Namibia (Observer, 2024). In Zimbabwe soaring inflationary pressures caused consumers to lose their savings (Chamboko, 2022). Our findings reveal that only 29.10% of consumers saved money from every paycheck/salary every time, while a substantial number of consumers rarely or never saved money in the last 6 months. This implies that some consumers might not have money left to save once they have paid all their bills, as most consumers indicated that they paid all their bills on time using mobile banking applications. In addition, households have experienced a decline in income due to loss of employment and reductions in wages (Observer, 2024). Due to the financial struggles that have been experienced by consumers, many have changed their spending behaviors by reducing non-essential expenses, terminating memberships or subscriptions (Observer, 2024). This is in line with the use of mobile banking applications as the majority of consumers updated their transaction limits every time in the last 6 months, suggesting that they might have updated transaction limits to control their spending behavior. Similarly, controlling spending behavior might be the reason behind majority of consumers indicating that they have added/edited/removed beneficiaries using mobile banking applications.

The result of the financial behavior engagement are in line with those of the 2023 Consumer Pulse Study that found about 25% of consumers plan to ask for financial assistance from their relatives or friends to make ends meet (Observer, 2024). The results show that consumers credit management behavior is poor as most consumers indicated that they never, rarely or sometimes engaged in those financial behavior. Households indebtedness reduced with an inch from the previous year, and this was attributed to the switch of consumers from taking up credit from banking institutions to Namibia's non-bank financial institutions (NBFI), as microlenders recorded an increase in consumers debt, while banking institutions experienced a reduction in consumers debt. The results indicated that consumers have good cash management behavior, as most of the consumers reportedly engaged in those financial behaviors sometimes, often or always. Consumers have poor savings and investment management behavior, as most consumers indicated that they never, rarely, or sometimes engage in those financial behaviors. However, statistical significance was not measured in the analysis of financial behavior. Therefore, the observed differences in the data may be due to random chance rather than a true effect.

6.7. Moderation Analysis

A moderator is a variable that has the potential to change the direct relationship between the constructs in a model (Hair et al., 2022). The results show that age does not moderate any

relationships as estimated. Similarly, gender does not moderate relationships as hypothesized. Women have limited access to, and use of digital financial services compared to men, according to evidence from past research in LMICs (Chamboko, 2022). The same is true for Namibia, as women in Namibia manage a significant share of daily transactions, limited mobile phone access and low internet usage, only 47% have access, therefore, excluding many from using mobile money services (World Bank Group, 2022). The results suggest that from the sample used in the study is might not the case, indicating that women and men have equal opportunities to access and use mobile banking applications.

The findings suggest that experience does not moderate the relationships between facilitating, hedonic motivation, and habit with behavioral intentions. However, the findings suggest that experience moderates the relationship between behavioral intention and behavior use, indicating that higher levels of experience decrease the influence of behavioral intention on mobile banking applications use. On the other hand, experience was found to positively and significantly affect the use behavior of South African millennials (Thusi & Maduku, 2020). Furthermore, experience moderates the relationship between habit and mobile banking use. Increased experience increases the habitual use of a technology (Penney et al., 2021). Therefore, as consumers gain more experience, their habits of using mobile banking applications also increase.

To conclude, by reintegrating the findings of the study into the UTAUT2 framework, this study highlights that the key constructs affecting behavioral intention to accept mobile banking applications in Namibia are Effort Expectancy and Habit, while both Habit and Behavioral Intention significantly affect actual Use Behavior. Furthermore, Experience plays a mediating role in the relationship between Habit and Use Behavior, as well as between Behavioral Intention and Use Behavior. Additionally, Use Behavior affects Financial Behavior. Trust was found to be an important factor, affecting both Behavioral Intention and Perceived Risk, Unlike the original UTAUT2 model, which views constructs in isolation, the findings of this study suggest important interdependencies between constructs.

6.8. Summary

This chapter discusses the findings of the study. Habit is the strongest factor that influences behavioral intention of consumers to accept and use mobile banking. Unexpectedly, performance expectancy does not influence users behavioral intention to accept and use mobile banking. Additionally, mobile banking strongly affects users' financial behavior.

Chapter 7: Conclusion

This chapter concludes the study with a research contribution to theory, implications, limitations and conclusion.

7.1. Research contributions to theory

In this study, the antecedents of mobile banking applications acceptance and use in Namibia, and consequence of using mobile banking applications has on financial behavior were explored. UTAUT2 guided the study. In addition to the factors of UTAUT2; performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, behavioral intention, and use behavior, the study added perceived risk, trust, distance, financial literacy, and financial behavior.

The result of the study shows that the research model has a high predictive power. Furthermore, the model is able to explain a variance of 63% (R^2 adjusted = 0.638) in consumers' behavioral intention, 51% (R^2 adjusted = 0.506) in consumers' use behavior, 26% (R^2 adjusted = 0.262) in consumers' financial behavior, and 17% (R^2 adjusted = 0.174) in consumers' perception of risk.

Adding distance to the model, we aimed at assessing the effect distance has on consumers' decision in accepting a technology, particularly in Namibia, a LMIC, where the majority of the population travel far for necessities. Further, adding financial literacy was needed since LMICs like Namibia have many individuals that lack financial knowledge and skills (Financial Literacy Initiative, 2023b). In addition, we explored the impact that the use of mobile banking applications has on financial behavior. Therefore, our contribution to theory is extension of the theoretical framework by providing new insights into the mechanisms of use behavior and financial behavior as well as distance, financial literacy, trust, and perceived risk on behavioral intention in a LMIC context. Furthermore, the study responds to the call of Venkatesh et al. (2012) to apply UTAUT2 to different technologies and different countries, by applying it to the Namibian context, a country with a small population that lacks competition in the financial sector, and still in early stages of mobile banking acceptance.

7.2. Implications of the study

This section discusses the implication of the study.

7.2.1. Practical implications

The findings of the study can enable mobile banking applications service providers in Namibia to focus on key factors that drive acceptance and use, leading to the successful acceptance of mobile banking services. The findings show that habit is the most influential factor in consumers'

intention to accept mobile banking applications, followed by trust then effort expectancy. Additionally, habit has the most significant effect on use behavior, followed by behavioral intention. This means that mobile banking services providers should focus on improving consumers' experience that will lead to habitual use of mobile banking applications, increasing its use and acceptance. Furthermore, they must also focus on improving consumers' trust in mobile banking applications, as it is a key factor that affects consumers' intention to accept mobile banking services. Moreover, they need to ensure that mobile banking applications are trustworthy and safe. In addition, they should try to address security issues, by constructing a strong service platform that integrates effective security measures and practices, aiming to reduce consumers' risk exposure or ideally eliminate it (Penney et al., 2021). Additionally, service providers need to educate their consumers on safe banking practices.

Kwateng et al. (2018) noted that the reasons for insignificant effect in some UTAUT2 variables like performance expectancy, social influence, hedonic motivation etc. in influencing consumer's intention to adopt and use mobile banking services must be addressed by creating mobile banking awareness initiatives such as programs with the banking consumers. Mobile banking services providers should raise awareness about their services and the benefits they offer to increase consumers' intention to accept them. Additionally, they should focus on making the applications easy to use, reducing challenges and difficulties associated with operating mobile banking applications. It is imperative for mobile banking services providers to develop mobile banking applications that are exclusive and cater to all consumer's needs, especially those consumers that are financially excluded. From literature, most LMICs have mobile agents that are providing banking services to people in remote areas; thus, it is important for Namibian financial institutions or telecommunication companies to develop mobile banking applications with mobile money agents in mind.

It is important for Namibian telecommunication companies to join the world of mobile money to increase the competitiveness in the banking sector. Competition in the banking sector can put pressure on banking institutions to reduce the high fees and charges being experienced in the country. Furthermore, consumers can use the results to adjust their use of mobile banking services to achieve better financial behavior.

7.2.2. Theoretical Implications

This study extends the UTAUT2 theoretical framework by integrating key behavioral factors; financial literacy, trust, perceived risk, and distance variables that are important in a LMIC, such as Namibia, as explained in earlier chapters. Furthermore, it has integrated it with a key outcome

variable: financial behavior into the mobile banking acceptance context, offering several important theoretical implications.

Firstly, by adding factors, such as risk, financial literacy, trust, and distance, the extended model provides a more comprehensive understanding of the determinants that affect users' acceptance and use of mobile banking applications. This integration is beyond traditional technology acceptance variables (performance expectancy, effort expectancy, social influence, habit, price value, and facilitating conditions) to capture the ways in which individuals' financial decision-making impact technology acceptance.

Finally, the extension of the model with financial behavior as a key outcome connects behavioral finance and information systems theories, implying that financial behavior is a critical outcome of technology acceptance in financial service contexts. This contributes to bridging disciplinary gaps and encourages further interdisciplinary research to explore how financial attitudes and behaviors interact with technology use, as well as their impact on financial decision making.

7.2.3. Policy Implications

The findings of the study of financial behavior can be used by organizations such as Financial Literacy Initiative to determine the dimensions of financial behavior to focus on, to improve consumers' financial knowledge therefore, reducing chances of poor financial choices, particularly in a world where financial services are easily accessible. Furthermore, the results can be used to guide policy development in financial matters or financial laws.

7.3. Limitations of the study and suggestions for future studies

The study has several limitations. Firstly, the sample size - future research may consider increasing their sample size and diversity to increase the reliability of the results and adopt a different sampling method. Secondly, the study did not measure the statistical significance of consumers financial behavior dimensions. Therefore, future research can explore this area to investigate if there are statistically significance between the dimensions of financial behavior. Thirdly, consumers who use cellphone banking (USSD) may have been excluded because the study relied on an online survey. Therefore, excluding consumers that do not have smartphones and Laptop or Personal Computers, and those in rural areas. Thus, future research can consider another data collection method. Fourthly, the study considered all mobile banking applications, future research can investigate a specific mobile banking application such as USSD, mobile banking apps or electronic wallets, to gain a better understanding regarding the factors that affect the acceptance of the specific mobile banking application. Fifthly, it would be interesting and beneficial for financial institutions to know the specific factors that affect their mobile banking

applications acceptance and use. Therefore, future research can investigate factors that affect mobile banking applications focusing on a single bank or doing a multigroup analysis on banks. Sixth, future studies could explore the moderating role of Financial Literacy and Distance to provide a better understanding of their impact on mobile banking adoption in the Namibian context or other context. Lastly, the financial literacy questions used were five. This is not substantial to measure financial literacy of respondents. Therefore, future research should try to measure financial literacy scores covering all dimensions of financial knowledge.

7.4. Research Conclusions

Mobile banking applications can reach consumers in remote areas therefore, contributing to improving financial inclusion, particularly in LMICs where most people live in rural areas. Therefore, it is of importance for countries to ensure that mobile banking applications are well accepted by consumers. Importantly, consumers need to be educated on the consequences of using mobile banking applications for financial services, particularly in countries where individuals have poor financial knowledge, to allow them to make well-informed financial decisions. Poor financial decisions can lead to financial stress, put strains on relationships, and cause mental and health issues.

The study was conducted to investigate the factors affecting mobile banking acceptance and use in Namibia. In addition, the study assessed how using mobile banking applications affects consumers' financial behavior. The results show that habit, effort expectancy, trust, behavioral intention are the antecedents of mobile banking applications acceptance and use in Namibia. Furthermore, the results revealed that mobile banking applications use strongly affects financial behavior.

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List of Appendixes

Appendix A: Approval letters

Approval Letter from National Commission of Research, Science and Technology in Namibia


FORM RST/4 Ver.6 (19/07/2023)


NATIONAL COMMISSION ON RESEARCH, SCIENCE AND TECHNOLOGY
RESEARCH, SCIENCE AND TECHNOLOGY ACT, 2004
RESEARCH PERMIT
OF
NON-NAMIBIAN-BASED RESEARCH
INSTITUTE/PERSON
(Section 21 and Regulation 22)

Permit Number
 RPIV012122023

Name of Non-Namibian-based Research Institute/Person: Anna Nambahu Panduleni Nuunyango	Physical Address: Erf 1941, Unit 5, Johanna Cottages, Johanna Street, Khomasdal, Windhoek				
Issue Date: 12 December 2023	Commence Date: 13 December 2023				
Termination Date: 31 December 2024	Sample Collection Authorised: <table border="1" style="float: right; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">YES</td> <td style="padding: 2px 5px;">NO</td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px; text-align: center;">✓</td> </tr> </table>	YES	NO		✓
YES	NO				
	✓				
Type of Research Authorised Antecedents of Mobile Banking Adoption and Usage and its Consequence on Financial Behavior in Namibia. Non-Commercial research and the use of the resources must be limited to what is specified in the research proposal.					
Type and Size of Sample Collection Authorised N/A					
Locations Authorised for Research and/or Sample Collection In Namibia Country wide, an online survey.					
Intended Use of Samples N/A					
Responsible Person: Anna Nambahu Panduleni Nuunyango	Contact No: +264813578911				



Prof. Dr. Anicia Peters
Chief Executive Officer



Research / Sample Collecting Permit Conditions

1. The data collected and results derived from this study should only be used for the academic purpose as indicated in the research proposal.
2. The applicant should not collect other data other than the one indicated in the research proposal.
3. The applicant should share the final copy of the research finding with National Commission on Research, Science and Technology (NCRST).
4. The research permit is renewable three months before the expiring date if the applicant does not complete the research work.

Approval Letter from Ethics in Research Committee UCT Faculty of Commerce.



2024/01/30

COM/00579/2024

RE: Research Ethics Committee Project Approval Letter

Dear Anna Nambahu Panduleni Nuunyango,

Your application for ethics review of your project titled
Antecedents of Mobile Banking Acceptance and Usage in Namibia and its Consequence on Financial Behavior

has been reviewed and evaluated by the
Commerce Research Ethics Committee.

You may proceed with your research project titled:
Antecedents of Mobile Banking Acceptance and Usage in Namibia and its Consequence on Financial Behavior

Please note that should:

- (i) any serious or adverse effects to participants occur and/or,
- (ii) aspect(s) of your current project change and/or
- (iii) any unforeseen events that might affect continued ethical acceptability of the project occur then you should immediately report this to the approving REC. You may be required to submit an amendment to this application, in order to determine whether the changed aspects increase the ethical risks of your project.

Based on the information supplied your application has been successful and is approved.

Please note the following additional conditions associated with this approval:

- (i)

Regards,
Commerce Research Ethics Committee.

Appendix B: Survey Design



Department of Information Systems

Leslie Commerce Building
Engineering Mall, Upper Campus
OR
Private Bag X3 - Rondebosch - 7701
Tel: +27 (0) 21 650 2261 Fax: +27 (0) 21650 2280
Internet: <http://www.commerce.uct.ac.za/informationssystemsi/>

Mobile Banking Acceptance and Usage, and its impact on Financial Behavior Survey

Dear Respondent,

In terms of the requirements for a Master of Commerce in Information Systems degree at the University of Cape Town, I, Anna Nuunyango, am embarking on a research study that aims to shed light on the factors influencing the acceptance and usage of mobile banking applications in Namibia. Additionally, I am keen to investigate the impact that the use of these applications has on consumers' financial behavior.

I kindly request your participation in this research study which is entirely voluntary. This survey is anonymous and personal or private information will not be collected, ensuring your privacy is protected. The survey will take approximately 10 minutes to complete.

If you are willing to participate in this study, kindly complete this survey. Should you have any questions regarding this research, please feel free to contact me at email: nnyann001@myuct.ac.za.

I consent, begin the study

I do not consent, I do not wish to participate

>>

Q1. What is your gender?

Male	Female	Other	Prefer not to answer
------	--------	-------	----------------------

Q2. What is your age?

>= 19	20 - 29	30 - 39	40 - 49	50 - 59	60+
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Q3. What is your highest level of education?

Never attended school
Adult Literacy Programme
Primary Education
Secondary Education
Technical/Vocational/College Certificate
Undergraduate Diploma
Bachelor's Degree
Honours/Postgraduate Diploma
Masters/Doctor of Philosophy

Q6. Which bank do you bank with?

Bank Windhoek

First National Bank Namibia

Nedbank Namibia

Standard Bank Namibia

Nampost

Letshego Namibia

Other

Q7. How far is your nearest bank branch from where you live?

Less than 1 Kilometer

1 to 2 Kilometers

2 to 5 Kilometers

5 to 10 Kilometers

More than 10 Kilometers

Q8. How far is your nearest bank ATM from where you live?

Less than 1 Kilometer

1 to 2 Kilometers

2 to 5 Kilometers

5 to 10 Kilometers

More than 10 Kilometers

Q9. Please indicate how often you have engaged in the following activities in the past 6 months.

	Never	Rarely	Sometimes	Often	Always
Comparison shopped when purchasing a product or service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paid all your bills on time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kept a written or electronic record of your monthly expenses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stayed within your budget or spending plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paid off credit card balance in full each month.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maxed out the limit on one or more credit cards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made only minimum payments on a loan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Began or maintained an emergency savings fund.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saved money from every paycheck/salary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saved for a long-term goal such as a car, education, home, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contributed money to a retirement account.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bought bonds, stocks, or mutual funds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10. Suppose you had N\$100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you estimate to have in this account?

More than N\$200

Exactly N\$200

Less than N\$200

Q11. Do you think that the following statement is true or false? "Bonds are normally riskier than stocks."

True

False

Neither true or false

Q12. When an investor spreads money among different assets, does the risk of losing a lot of money

Increase

Decrease

Stay the same

Q13. Normally, which asset described below displays the highest fluctuations over time?

Savings accounts

Stocks

Bonds

Q14. Which of the following statement is correct? If somebody buys a bond of firm B:

The person owns a part of firm B

The person has lent money to firm B

The person is liable for firm B's debts

Q15. Do you own a cellphone?

Yes

No

Q16. What type of phone do you have?

Basic/Feature phone

Smartphone

Q17. What type of mobile banking do you use?

Mobile Banking App

Cellphone Banking (USSD)

Internet Banking (Banking Website)

None

Q18. How long have you used mobile banking?

Never

Less than a year

1-2 years

3-5 years

6+ years

Q19. Please indicate the level of agreement with the following statements regarding mobile banking.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Using mobile banking subjects my banking account to potential fraud.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using mobile banking subjects my banking account to financial risk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think using mobile banking puts my privacy at risk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hackers might take control of my bank account if I use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking might not perform well and will create problems with my bank account.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I gain time using mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking optimizes my financial operations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking allows me to make my payments quicker.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will improve my earnings using mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skilfully using mobile banking is easy for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find that using mobile banking is easy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning how to use mobile banking is easy for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My interaction with mobile banking is clear and understandable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends and family value the use of mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The people that influence me use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find mobile banking trendy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The use of mobile banking gives me professional status.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the resources necessary to use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the knowledge necessary to use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking is compatible with other technologies I use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can get help from others when I have difficulties using mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using mobile banking is fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using mobile banking is enjoyable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using mobile banking is entertaining.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking is reasonably priced.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking is good value for the money.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At the current price, mobile banking provides good value.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

At the current price, mobile banking provides good value.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The use of mobile banking has become a habit for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am addicted to using mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I must use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using mobile banking has become natural to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking seems trustworthy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking seems secure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile banking keeps its promise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to transact using mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given the chance, I intend to use mobile banking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q20. Please indicate the extent to which you have used mobile banking for each of the following in the past 6 months.

	Never	Rarely	Sometimes	Often	Always
Transfer money between my bank accounts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Update transaction limits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Send payment (EFT) to a different local bank	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Send electronic wallets (Ewallet, EasyWallet, BlueWallet, Send Money)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Check account balance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bill Payments (DSTV, GoTV, Box Office, Municipality)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receive money via mobile banking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Update personal information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buy airtime/ data bundles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buy electricity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receive electronic wallets (Ewallet, EasyWallet, BlueWallet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get proof of payment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get account statement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cardless cash withdrawal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add/Edit/Remove beneficiaries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pay beneficiaries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage debit orders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make international payments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply for account products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for your participation!
Your response has been submitted.

Appendix C: Constructs and measure items

The table below shows the construct with their corresponding indicators, as well as the statements they represent.

Construct	Measure	Statement
Performance Expectancy	PE1	I gain time using mobile banking.
	PE2	Mobile banking optimizes my financial operations.
	PE3	Mobile banking allows me to make my payments quicker.
Effort Expectancy	PE4	I will improve my earnings using mobile banking.
	EE1	Skilfully using mobile banking is easy for me.
	EE2	I find that using mobile banking is easy.
Social Influence	EE3	Learning how to use mobile banking is easy for me.
	EE4	My interaction with mobile banking is clear and understandable.
	SI1	My friends and family value the use of mobile banking.
	SI2	The people that influence me use mobile banking.
Facilitating Conditions	SI3	I find mobile banking trendy.
	SI4	The use of mobile banking gives me professional status.
	FC1	I have the resources necessary to use mobile banking.
	FC2	I have the knowledge necessary to use mobile banking.
Hedonic Motivation	FC3	Mobile banking is compatible with other technologies I use.
	FC4	I can get help from others when I have difficulties using mobile banking.
	HM1	Using mobile banking is fun.
Price Value	HM2	Using mobile banking is enjoyable.
	HM3	Using mobile banking is entertaining.
	PV1	Mobile banking is reasonably priced.

	PV2	Mobile banking is good value for the money.
	PV3	At the current price, mobile banking provides good value.
Habit	HB1	The use of mobile banking has become a habit for me.
	HB2	I am addicted to using mobile banking.
	HB3	I must use mobile banking.
	HB4	Using mobile banking has become natural to me.
Trust	TT1	Mobile banking seems trustworthy.
	TT2	Mobile banking seems secure.
	TT3	Mobile banking keeps its promise.
Perceived Risk	PR1	Using mobile banking subjects my banking account to potential fraud.
	PR2	Using mobile banking subjects my banking account to financial risk.
	PR3	I think using mobile banking puts my privacy at risk.
	PR4	Hackers might take control of my bank account if I use mobile banking.
	PR5	Mobile banking might not perform well and will create problems with my bank account.
Behavioral Intention	BI1	I prefer to use mobile banking.
	BI2	I intend to transact using mobile banking.
	BI3	Given the chance, I intend to use mobile banking.
Mobile banking Use	MU1	Transfer money between my bank accounts.
	MU2	Update transaction limits.
	MU3	Update transaction limits.
	MU4	Manage cards.
	MU5	Send electronic wallets (Ewallet, EasyWallet, BlueWallet, Send Money).
	MU6	Check account balance.
	MU7	Bill Payments (DSTV, GoTV, Box Office, Municipality).
	MU8	Receive money via mobile banking.
	MU9	Update personal information.
	MU10	Buy airtime/ data bundles.
	MU11	Buy electricity.
	MU12	Receive electronic wallets (Ewallet, EasyWallet, BlueWallet).

	MU13	Get proof of payment.
	MU14	Get account statement.
	MU15	Cardless cash withdrawal.
	MU16	Add/Edit/Remove beneficiaries.
	MU17	Pay beneficiaries.
	MU18	Manage debit orders.
	MU19	Make international payments.
	MU20	Apply for account products.
Financial	FB1	Comparison shopped when purchasing a product or service.
Behavior	FB2	Paid all your bills on time.
	FB3	Kept a written or electronic record of your monthly expenses.
	FB4	Stayed within your budget or spending plan.
	FB5	Paid off credit card balance in full each month.
	FB6	Maxed out the limit on one or more credit cards.
	FB7	Made only minimum payments on a loan.
	FB8	Began or maintained an emergency savings fund.
	FB9	Saved money from every paycheck/salary.
	FB10	Saved for a long-term goal such as a car, education, home, etc.
	FB11	Contributed money to a retirement account.
	FB12	Bought bonds, stocks, or mutual funds.

Appendix D: Initial Outer loadings

Measures and Constructs	Outer loadings	Measures and Constructs	Outer loadings
BI1 <- Behavioral Intention	0.923	PE1 <- Performance Expectancy	0.663
BI2 <- Behavioral Intention	0.935	PE2 <- Performance Expectancy	0.786
BI3 <- Behavioral Intention	0.933	PE3 <- Performance Expectancy	0.768
EE1 <- Effort Expectancy	0.791	PE4 <- Performance Expectancy	0.373
EE2 <- Effort Expectancy	0.864	PR1 <- Perceived Risk	0.816
EE3 <- Effort Expectancy	0.885	PR2 <- Perceived Risk	0.831
EE4 <- Effort Expectancy	0.88	PR3 <- Perceived Risk	0.852
FC1 <- Facilitating Conditions	0.826	PR4 <- Perceived Risk	0.789
FC2 <- Facilitating Conditions	0.874	PR5 <- Perceived Risk	0.68
FC3 <- Facilitating Conditions	0.862	PV1 <- Price Value	0.765
FC4 <- Facilitating Conditions	0.487	PV2 <- Price Value	0.932
HB1 <- Habit	0.837	PV3 <- Price Value	0.915
HB2 <- Habit	0.663	SI1 <- Social Influence	0.732
HB3 <- Habit	0.767	SI2 <- Social Influence	0.787
HB4 <- Habit	0.889	SI3 <- Social Influence	0.829
HM1 <- Hedonic Motivation	0.922	SI4 <- Social Influence	0.644
HM2 <- Hedonic Motivation	0.94	TT1 <- Trust	0.874
HM3 <- Hedonic Motivation	0.851	TT2 <- Trust	0.891
		TT3 <- Trust	0.854

Appendix E: Initial Cronbach's Alpha, Composite Reliability, and AVE

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Behavioral Intention	0.922	0.923	0.951	0.866
Effort Expectancy	0.878	0.886	0.916	0.733
Facilitating Conditions	0.769	0.826	0.855	0.606
Habit	0.811	0.874	0.87	0.63
Hedonic Motivation	0.889	0.898	0.931	0.819
Perceived Risk	0.854	0.862	0.896	0.633
Performance Expectancy	0.55	0.602	0.752	0.447
Price Value	0.844	0.88	0.906	0.764
Social Influence	0.74	0.76	0.837	0.564

Trust	0.844	0.844	0.906	0.763
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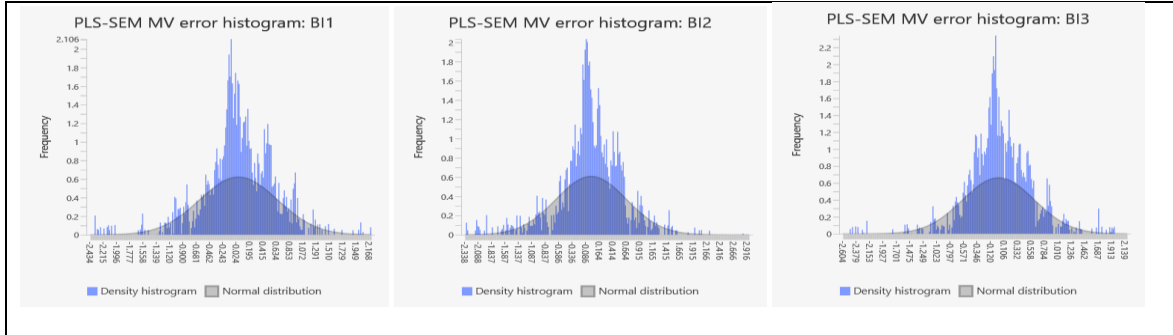
Appendix F: Cross loadings

Measure	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Habit	Hedonic Motivation	Performance Expectancy	Perceived Risk	Price Value	Social Influence	Trust
BI1	0.923	0.559	0.489	0.7	0.498	0.396	-0.265	0.463	0.483	0.631
BI2	0.935	0.574	0.532	0.653	0.436	0.391	-0.132	0.411	0.462	0.548
BI3	0.933	0.524	0.528	0.656	0.471	0.349	-0.141	0.446	0.485	0.578
EE1	0.432	0.791	0.574	0.385	0.371	0.537	-0.147	0.305	0.451	0.29
EE2	0.557	0.864	0.6	0.478	0.4	0.535	-0.147	0.259	0.434	0.359
EE3	0.506	0.885	0.676	0.454	0.45	0.509	-0.207	0.303	0.501	0.343
EE4	0.528	0.88	0.697	0.539	0.483	0.44	-0.167	0.268	0.559	0.371
FC1	0.436	0.566	0.826	0.392	0.368	0.465	-0.137	0.238	0.482	0.306
FC2	0.481	0.72	0.874	0.428	0.426	0.554	-0.167	0.344	0.485	0.393
FC3	0.509	0.63	0.862	0.458	0.409	0.399	-0.166	0.287	0.559	0.37
FC4	0.252	0.338	0.487	0.257	0.463	0.255	-0.058	0.276	0.314	0.239
HB1	0.618	0.547	0.471	0.837	0.541	0.453	-0.215	0.471	0.488	0.506
HB2	0.32	0.182	0.145	0.663	0.345	0.027	-0.058	0.308	0.254	0.345
HB3	0.462	0.278	0.289	0.767	0.397	0.076	-0.086	0.404	0.416	0.451
HB4	0.75	0.574	0.546	0.889	0.595	0.419	-0.198	0.51	0.517	0.603
HM1	0.491	0.509	0.508	0.571	0.922	0.376	-0.243	0.492	0.559	0.512
HM2	0.475	0.493	0.496	0.589	0.94	0.36	-0.311	0.524	0.616	0.502

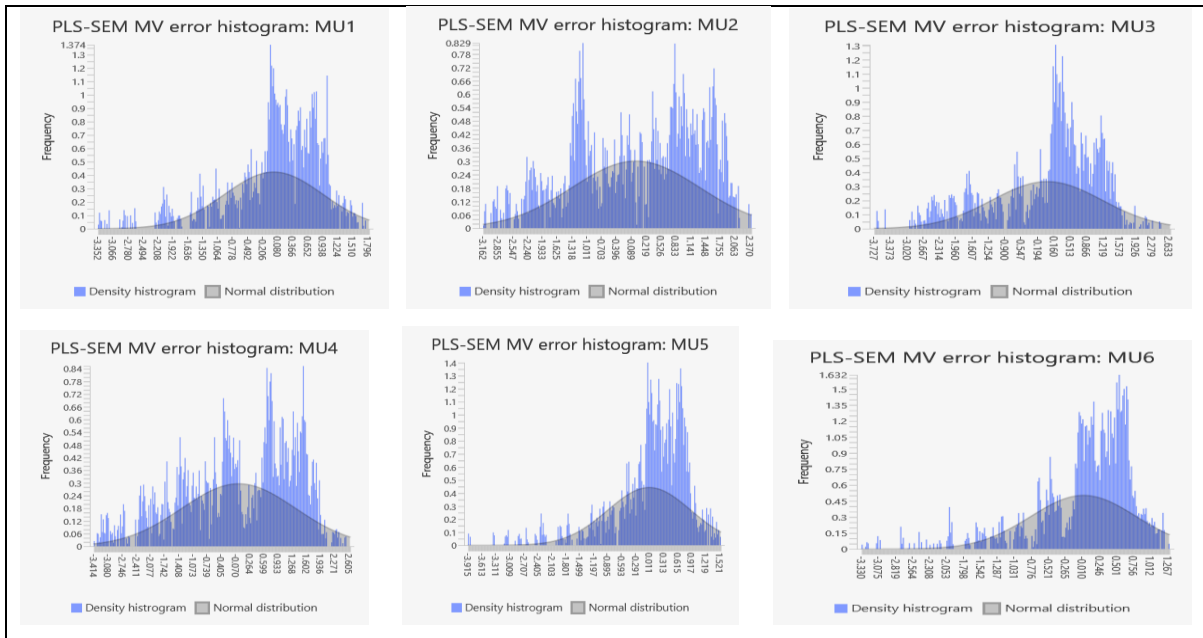
HM3	0.394	0.338	0.384	0.5	0.851	0.185	-0.2	0.466	0.519	0.442
PE1	0.234	0.284	0.251	0.129	0.158	0.72	-0.004	0.137	0.141	0.055
PE2	0.344	0.418	0.422	0.325	0.302	0.813	-0.165	0.254	0.277	0.284
PE3	0.35	0.617	0.555	0.349	0.314	0.791	0.019	0.198	0.381	0.206
PR1	-0.155	-0.181	-0.181	-0.194	-0.299	-0.106	0.816	-0.237	-0.209	-0.354
PR2	-0.136	-0.131	-0.125	-0.131	-0.232	-0.009	0.831	-0.204	-0.183	-0.35
PR3	-0.167	-0.139	-0.155	-0.193	-0.258	-0.059	0.852	-0.23	-0.202	-0.374
PR4	-0.113	-0.127	-0.113	-0.133	-0.184	-0.022	0.789	-0.172	-0.136	-0.334
PR5	-0.208	-0.209	-0.132	-0.11	-0.118	-0.087	0.68	-0.187	-0.135	-0.243
PV1	0.316	0.26	0.293	0.326	0.432	0.209	-0.219	0.765	0.385	0.416
PV2	0.438	0.3	0.328	0.524	0.52	0.269	-0.25	0.932	0.432	0.537
PV3	0.467	0.301	0.327	0.552	0.481	0.208	-0.217	0.915	0.44	0.513
SI1	0.372	0.436	0.473	0.347	0.365	0.26	-0.109	0.342	0.732	0.323
SI2	0.391	0.546	0.468	0.445	0.478	0.291	-0.116	0.306	0.787	0.328
SI3	0.454	0.484	0.529	0.465	0.525	0.402	-0.246	0.376	0.829	0.313
SI4	0.306	0.193	0.309	0.392	0.523	0.074	-0.184	0.442	0.644	0.367
TT1	0.53	0.368	0.398	0.52	0.467	0.211	-0.424	0.488	0.373	0.874
TT2	0.527	0.314	0.349	0.513	0.441	0.182	-0.395	0.498	0.375	0.891
TT3	0.592	0.365	0.366	0.588	0.499	0.265	-0.28	0.488	0.393	0.854

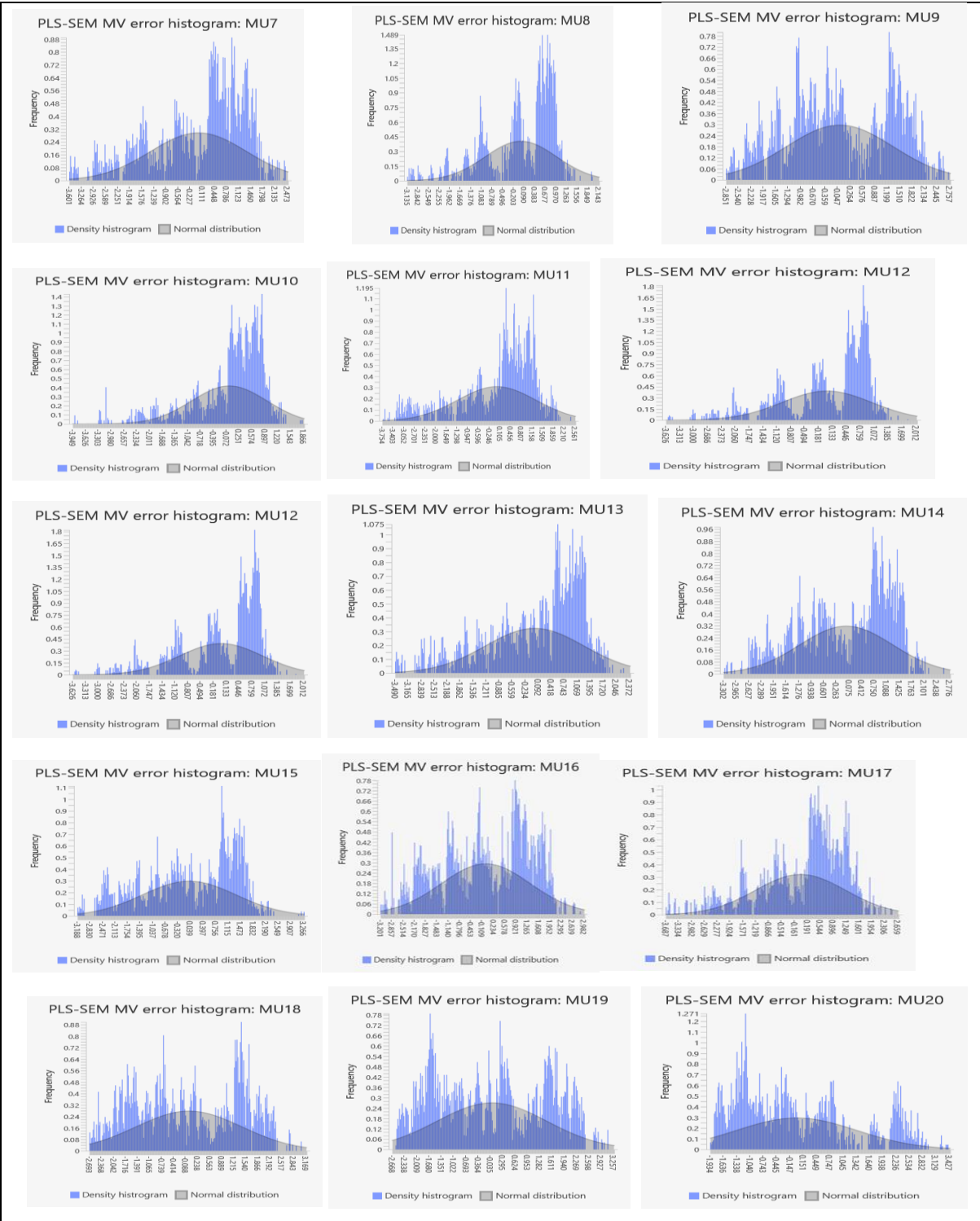
Appendix G: Histograms of endogenous constructs

Behavioral intention

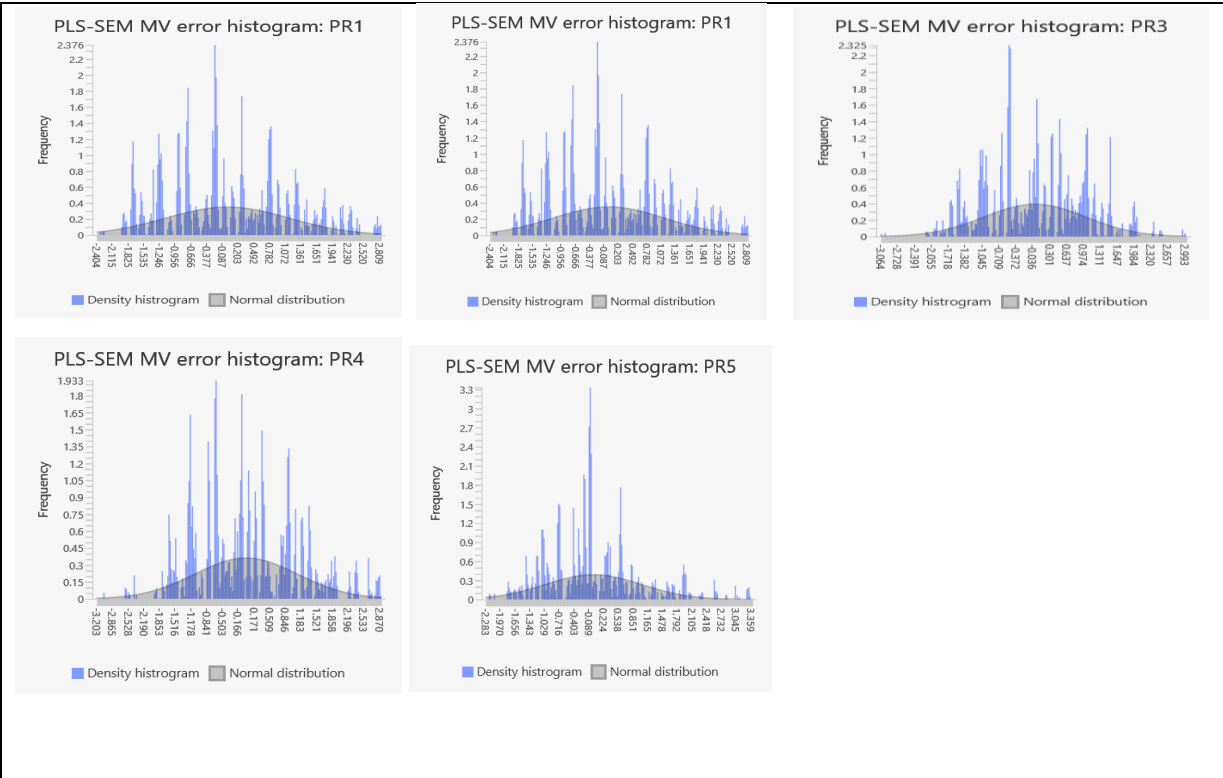


Mobile banking use

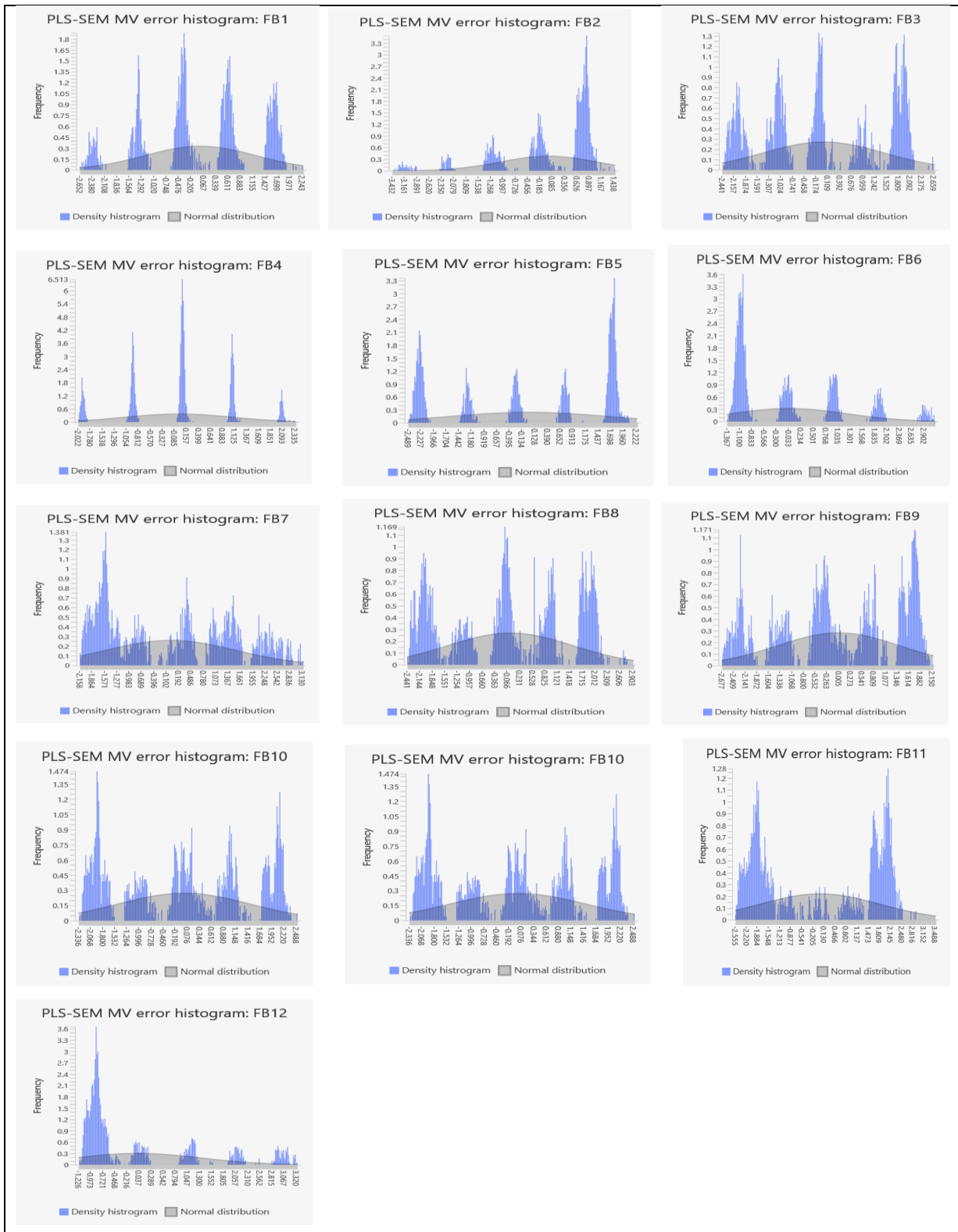




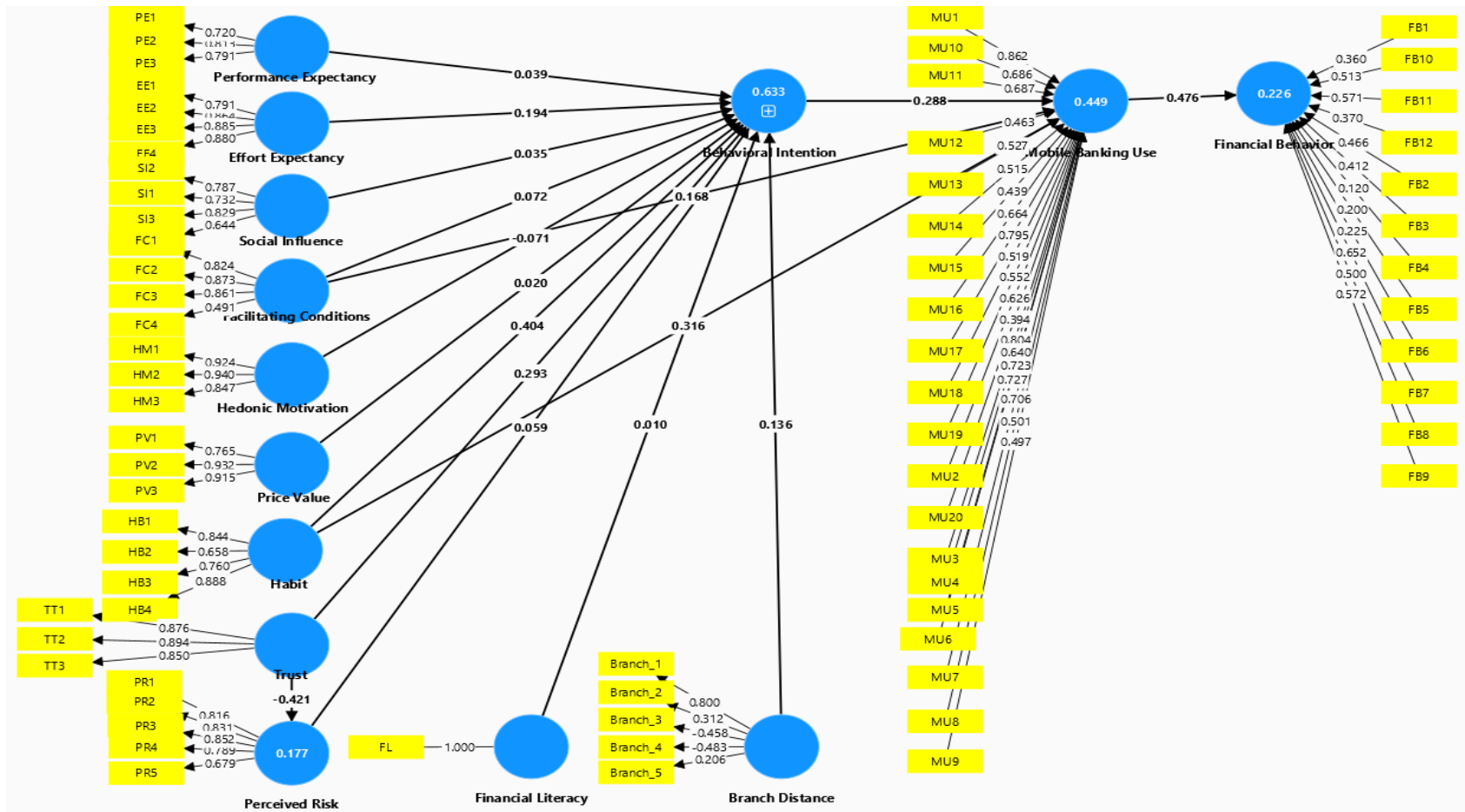
Perceived Risk



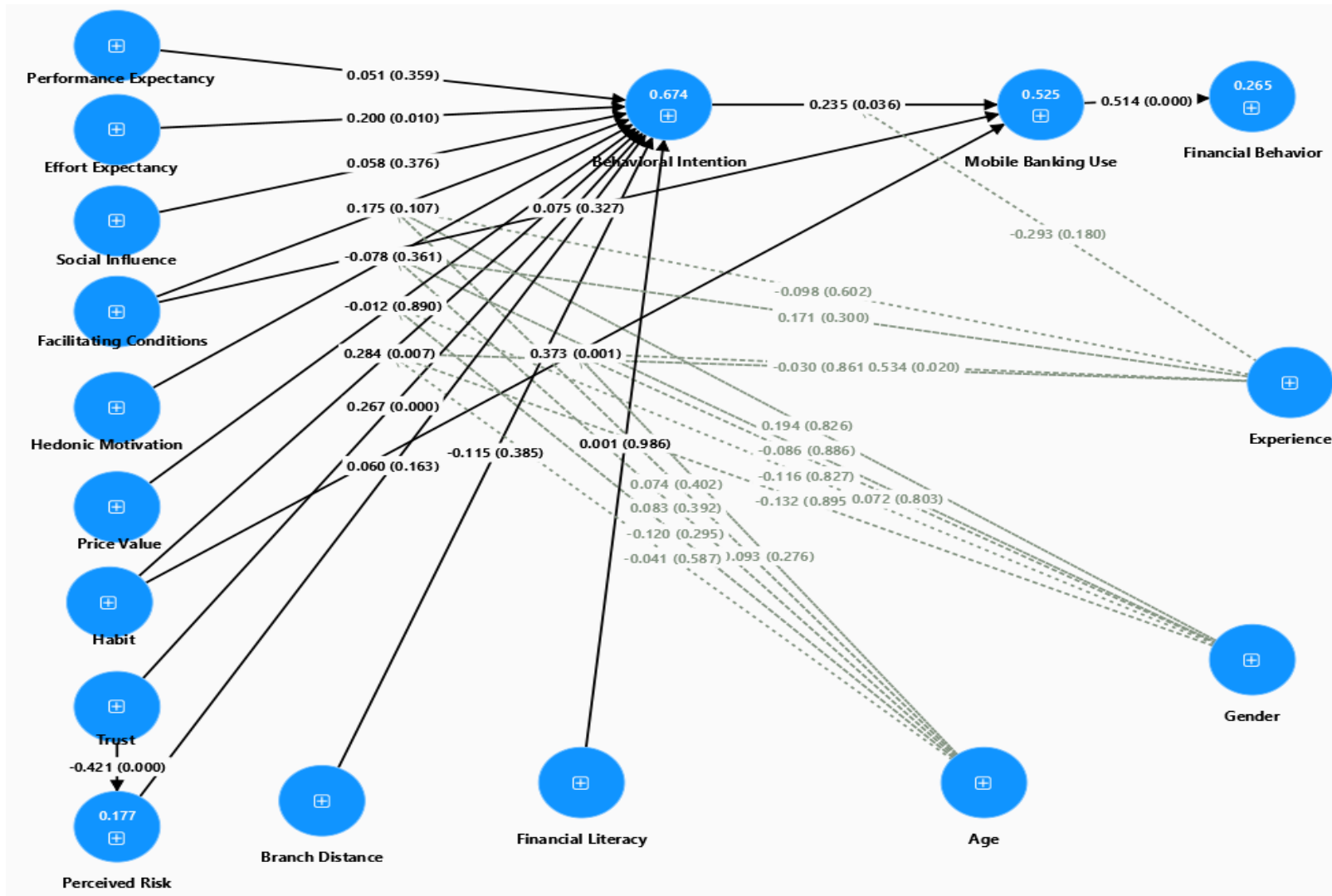
Financial Behavior



Appendix H: Path coefficients of the model without moderators



Appendix I: Path coefficients of the model with Moderators



Appendix J: Multigroup Analysis

Age

Age: Outer loadings, reliability and validity

Construct	Indicator	Young Adults (YA) (B)	Middle Adults (MA) (B)	Young adults (B) - Middle Adults (B)	Cronbach's alpha (CA)	Composite reliability (CR)	Average variance extracted (AVE)
Behavioral Intention	BI1	0.932	0.924	0.008	YA = 0.926	YA = 0.929	YA = 0.870
	BI2	0.936	0.936	0.001	MA = 0.924	MA = 0.924	MA = 0.867
	BI3	0.930	0.935	-0.005			
Effort Expectancy	EE1	0.882	0.724	0.158	YA = 0.903	YA = 0.916	YA = 0.774
	EE2	0.869	0.869	-0.001	MA = 0.861	MA = 0.893	MA = 0.706
	EE3	0.920	0.851	0.070			
	EE4	0.847	0.905	-0.058			
Facilitating Conditions	FC1	0.880	0.765	0.115	YA = 0.873	YA = 0.878	YA = 0.798
	FC2	0.919	0.815	0.105	MA = 0.796	MA = 0.798	MA = 0.710
	FC3	0.874	0.829	0.046			
	FC4 **	0.386	0.598	-0.212			
Habit	HB1	0.846	0.841	0.005	YA = 0.798	YA = 0.858	YA = 0.604
	HB2	0.703	0.634	0.069	MA = 0.820	MA = 0.879	MA = 0.647
	HB3	0.688	0.808	-0.121			
	HB4	0.856	0.908	-0.052			
Hedonic Motivation	HM1	0.913	0.935	-0.022	YA = 0.862	YA = 0.903	YA = 0.784
	HM2	0.946	0.939	0.007	MA = 0.905	MA = 0.910	MA = 0.841
	HM3	0.789	0.875	-0.086			
Performance Expectancy	PE1	0.619	0.777	-0.158	YA = 0.660	YA = 0.710	YA = 0.580
	PE2	0.844	0.797	0.046	MA = 0.687	MA = 0.688	MA = 0.614
	PE3	0.804	0.776	0.028			
Perceived Risk	PR1	0.719	0.866	-0.147	YA = 0.824	YA = 0.828	YA = 0.588
	PR2	0.799	0.853	-0.054	MA = 0.869	MA = 0.887	MA = 0.660
	PR3	0.815	0.874	-0.059			
	PR4	0.792	0.785	0.007			
	PR5	0.702	0.667	0.035			
Price Value	PV1	0.659	0.828	-0.169	YA = 0.791	YA = 0.865	YA = 0.708
	PV2	0.927	0.937	-0.010	MA = 0.876	MA = 0.891	MA = 0.803
	PV3	0.911	0.918	-0.007			
Social Influence	SI1	0.743	0.749	-0.006	YA = 0.648	YA = 0.757	YA = 0.489
	SI2	0.666	0.848	-0.182	MA = 0.794	MA = 0.805	MA = 0.619
	SI3	0.880	0.806	0.074			
	SI4	0.428	0.739	-0.311			
Trust	TT1	0.912	0.854	0.058	YA = 0.876	YA = 0.880	YA = 0.802
	TT2	0.911	0.884	0.027	MA = 0.826	MA = 0.826	MA = 0.742
	TT3	0.862	0.845	0.016			

Note: ** dropped because of low loading.

Age step 2 Measurement Invariance of Composite Models (MICOM)

	Original correlation	Correlation mean	5%	P Value
Behavioral Intention	1.000	1.000	1.000	0.619
Effort Expectancy	0.994	0.997	0.993	0.081
Facilitating Conditions	0.999	0.997	0.992	0.834
Financial Behavior	0.461	0.498	0.209	0.387
Financial Literacy	1.000	1.000	1.000	0.336
Habit	0.997	0.997	0.993	0.249
Hedonic Motivation	0.999	0.998	0.994	0.449
Mobile Banking Use	0.763	0.807	0.709	0.202
Perceived Risk	0.998	0.994	0.982	0.836
Performance Expectancy	0.987	0.982	0.945	0.466
Price Value	0.998	0.997	0.990	0.372
Social Influence	0.975	0.990	0.973	0.067
Trust	1.000	0.999	0.998	0.740

Age step 3 Measurement Invariance of Composite Models (MICOM)

	Mean					Variance				
	Original difference	Mean difference	2.5%	97.5%	P value	Original difference	Mean difference	2.5%	97.5%	P Value
Behavioral Intention	0.057	-0.001	-0.253	0.252	0.662	0.109	-0.008	-0.560	0.514	0.704
Effort Expectancy	-0.093	0.006	-0.252	0.244	0.466	0.192	-0.043	-0.832	0.727	0.637
Facilitating Conditions	-0.252	0.005	-0.256	0.257	0.056	0.486	-0.023	-0.555	0.560	0.097
Financial Behavior	-0.678	-0.003	-0.256	0.251	0.000	0.630	-0.007	-0.370	0.345	0.001
Financial Literacy	-0.404	0.000	-0.248	0.255	0.001	-0.164	-0.007	-0.276	0.246	0.198
Habit	-0.061	-0.001	-0.252	0.245	0.655	0.032	-0.012	-0.438	0.430	0.888
Hedonic Motivation	0.010	0.007	-0.264	0.260	0.927	-0.061	-0.010	-0.425	0.369	0.768
Mobile Banking Use	-0.328	-0.002	-0.256	0.243	0.011	0.330	-0.004	-0.535	0.519	0.238
Perceived Risk	0.156	-0.004	-0.257	0.256	0.213	-0.111	-0.015	-0.347	0.283	0.488
Performance Expectancy	-0.177	-0.001	-0.246	0.252	0.170	0.355	-0.015	-0.592	0.575	0.244
Price Value	-0.197	-0.004	-0.259	0.242	0.131	0.024	-0.010	-0.355	0.334	0.893
Social Influence	-0.168	0.005	-0.249	0.255	0.206	-0.013	-0.012	-0.405	0.347	0.943
Trust	0.008	0.003	-0.266	0.250	0.955	0.123	-0.011	-0.393	0.334	0.509

Age groups path coefficients

	Original (Young Adults) (β)	Original (Middle Adults) (β)	Original difference	Mean difference	2.5%	97.5%	P value
Behavioral Intention -> Mobile Banking Use	-0.019	0.544	-0.563	0.006	-0.445	0.423	0.008
Effort Expectancy -> Behavioral Intention	0.150	0.211	-0.061	0.005	-0.327	0.328	0.730
Facilitating Conditions -> Behavioral Intention	0.114	0.056	0.058	0.006	-0.282	0.290	0.685
Facilitating Conditions -> Mobile Banking Use	0.340	0.055	0.285	0.029	-0.249	0.325	0.053
Financial Literacy -> Behavioral Intention	0.001	0.034	-0.033	0.005	-0.178	0.182	0.711
Habit -> Behavioral Intention	0.332	0.440	-0.108	-0.010	-0.370	0.325	0.573
Habit -> Mobile Banking Use	0.514	0.255	0.259	-0.004	-0.371	0.403	0.250
Hedonic Motivation -> Behavioral Intention	-0.181	0.016	-0.197	0.004	-0.328	0.322	0.236
Mobile Banking Use -> Financial Behavior	0.631	0.305	0.326	0.053	-0.158	0.262	0.002
Perceived Risk -> Behavioral Intention	-0.054	0.095	-0.149	-0.005	-0.183	0.185	0.110
Performance Expectancy -> Behavioral Intention	0.071	0.063	0.008	0.002	-0.243	0.266	0.950
Price Value -> Behavioral Intention	0.158	-0.064	0.223	-0.008	-0.309	0.285	0.147
Social Influence -> Behavioral Intention	0.049	0.045	0.004	0.010	-0.283	0.282	0.975
Trust -> Behavioral Intention	0.292	0.232	0.061	-0.009	-0.334	0.305	0.698
Trust -> Perceived Risk	-0.396	-0.438	0.041	0.001	-0.252	0.269	0.761

Age Bootstrap MGA

	Difference (Young Adults - Middle Adults) (β)	1-tailed (Young Adults vs Middle Adults) p value	2-tailed (Young Adults vs Middle Adults) p value
Behavioral Intention -> Mobile Banking Use	-0.684	0.982	0.035
Effort Expectancy -> Behavioral Intention	-0.059	0.618	0.764
Facilitating Conditions -> Behavioral Intention	0.058	0.352	0.704
Facilitating Conditions -> Mobile Banking Use	0.35	0.053	0.105
Financial Literacy -> Behavioral Intention	-0.033	0.647	0.707
Habit -> Behavioral Intention	-0.111	0.764	0.472
Habit -> Mobile Banking Use	0.314	0.113	0.226
Hedonic Motivation -> Behavioral Intention	-0.196	0.897	0.206
Mobile Banking Use -> Financial Behavior	0.305	0.002	0.004
Perceived Risk -> Behavioral Intention	-0.15	0.952	0.095
Performance Expectancy -> Behavioral Intention	0.01	0.466	0.932
Price Value -> Behavioral Intention	0.224	0.059	0.118
Social Influence -> Behavioral Intention	0.004	0.481	0.962
Trust -> Behavioral Intention	0.061	0.329	0.657
Trust -> Perceived Risk	0.041	0.368	0.736

Gender

Gender outer loadings, reliability and validity

Construct	Indicator	Female (B)	Male (B)	Female (B) - Male (B)	Cronbach's alpha (CA)	Composite reliability (CR)	Average variance extracted (AVE)
Behavioral Intention	BI1	0.916	0.930	-0.014	F = 0.919	F = 0.921	F = 0.860
	BI2	0.942	0.930	0.012	M = 0.926	M = 0.926	M = 0.871
	BI3	0.924	0.940	-0.016			
Effort Expectancy	EE1	0.694	0.841	-0.147	F = 0.0.861	F = 0.893	F = 0.708
	EE2	0.853	0.879	-0.026	M = 0.890	M = 0.892	M = 0.751
	EE3	0.900	0.879	0.022			
	EE4	0.902	0.868	0.034			
Facilitating Conditions	FC1	0.797	0.836	-0.039	F = 0.733	F = 0.780	F = 0.579
	FC2	0.882	0.868	0.013	M = 0.789	M = 0.836	M = 0.622
	FC3	0.838	0.859	-0.021			
	FC4	0.448	0.546	-0.098			
Habit	HB1	0.857	0.836	0.021	F = 0.842	F = 0.909	F = 0.672
	HB2	0.652	0.658	-0.006	M = 0.793	M = 0.856	M = 0.604
	HB3	0.820	0.728	0.092			
	HB4	0.925	0.869	0.056			
Hedonic Motivation	HM1	0.933	0.920	0.012	F = 0.906	F = 0.914	F = 0.843
	HM2	0.951	0.935	0.016	M = 0.879	M = 0.898	M = 0.805
	HM3	0.869	0.834	0.035			
Performance Expectancy	PE1	0.860	0.592	0.268	F = 0.763	F = 0.803	F = 0.674
	PE2	0.860	0.767	0.093	M = 0.619	M = 0.693	M = 0.553
	PE3	0.737	0.849	-0.112			
Perceived Risk	PR1	0.849	0.790	0.058	F = 0.886	F = 0.891	F = 0.690
	PR2	0.851	0.821	0.030	M = 0.829	M = 0.845	M = 0.596
	PR3	0.890	0.823	0.067			
	PR4	0.824	0.765	0.059			
	PR5	0.730	0.648	0.083			
Price Value	PV1	0.720	0.795	-0.074	F = 0.827	F = 0.908	F = 0.740
	PV2	0.923	0.936	-0.013	M = 0.856	M = 0.868	M = 0.779
	PV3	0.921	0.910	0.011			
Social Influence	SI1	0.729	0.718	0.011	F = 0.738	F = 0.755	F = 0.565
	SI2	0.774	0.794	-0.019	M = 0.741	M = 0.706	M = 0.560
	SI3	0.861	0.805	0.056			
	SI4	0.621	0.669	-0.048			
Trust	TT1	0.897	0.863	0.034	F = 0.847	F = 0.858	F = 0.767
	TT2	0.907	0.886	0.021	M = 0.843	M = 0.844	M = 0.761
	TT3	0.820	0.868	-0.048			

Gender step 2 Measurement Invariance of Composite Models (MICOM)

Original correlation	Correlation mean	5%	P Value
Behavioral Intention	1.000	1.000	1.000 0.789
Effort Expectancy	0.998	0.997	0.992 0.539
Facilitating Conditions	0.999	0.993	0.979 0.876
Financial Behavior	0.738	0.564	0.269 0.871

Financial Literacy	1.000	1.000	1.000	0.134
Habit	0.999	0.997	0.992	0.816
Hedonic Motivation	1.000	0.998	0.994	0.824
Mobile Banking Use	0.764	0.791	0.681	0.314
Perceived Risk	0.997	0.994	0.983	0.629
Performance Expectancy	0.962	0.984	0.952	0.086
Price Value	0.996	0.997	0.991	0.222
Social Influence	0.991	0.990	0.974	0.439
Trust	0.999	0.999	0.998	0.249

Gender step 3 Measurement Invariance of Composite Models (MICOM)

	Mean					Variance				
	Original difference	Mean difference	2.5%	97.5%	P value	Original difference	Mean difference	2.5%	97.5%	P Value
Behavioral Intention	0.003	-0.001	-0.268	0.241	0.988	-0.063	-0.012	-0.556	0.527	0.824
Effort Expectancy	0.017	0.003	-0.251	0.248	0.897	-0.218	-0.021	-0.905	0.755	0.604
Facilitating Conditions	0.088	0.001	-0.233	0.264	0.485	-0.304	-0.011	-0.571	0.545	0.325
Financial Behavior	0.304	-0.001	-0.258	0.257	0.015	-0.327	-0.017	-0.374	0.339	0.072
Financial Literacy	0.391	-0.001	-0.242	0.238	0.004	0.039	0.000	-0.257	0.250	0.755
Habit	-0.070	-0.003	-0.257	0.240	0.601	-0.009	-0.007	-0.430	0.410	0.968
Hedonic Motivation	-0.017	-0.002	-0.245	0.254	0.903	-0.157	-0.004	-0.370	0.360	0.397
Mobile Banking Use	0.200	0.002	-0.263	0.246	0.122	-0.413	-0.012	-0.512	0.472	0.099
Perceived Risk	-0.039	0.001	-0.250	0.249	0.746	0.097	0.009	-0.294	0.313	0.514
Performance Expectancy	0.065	0.003	-0.250	0.250	0.601	-0.053	-0.011	-0.639	0.586	0.868
Price Value	-0.102	-0.003	-0.247	0.246	0.403	-0.068	0.003	-0.329	0.366	0.700
Social Influence	-0.062	-0.002	-0.256	0.249	0.633	0.022	0.002	-0.355	0.344	0.913
Trust	-0.051	0.000	-0.253	0.268	0.687	-0.132	0.000	-0.357	0.362	0.475

Gender groups path coefficients

	Original			Mean			P value
	Original (Female)(β)	Original (Male)(β)	Original difference (β) difference	2.5%	97.5%		
Behavioral Intention -> Mobile Banking Use	0.684	0.092	0.593	-0.009	-0.557	0.513	0.021
Effort Expectancy -> Behavioral Intention	0.196	0.276	-0.080	0.000	-0.354	0.326	0.656
Facilitating Conditions -> Behavioral Intention	0.037	0.174	-0.136	0.010	-0.285	0.330	0.396
Facilitating Conditions -> Mobile Banking Use	-0.041	0.352	-0.393	0.020	-0.320	0.376	0.027
Financial Literacy -> Behavioral Intention	0.109	-0.093	0.202	0.001	-0.189	0.190	0.035
Habit -> Behavioral Intention	0.487	0.299	0.188	-0.006	-0.336	0.326	0.291
Habit -> Mobile Banking Use	0.028	0.339	-0.311	-0.003	-0.449	0.462	0.212
Hedonic Motivation -> Behavioral Intention	-0.006	-0.154	0.148	0.002	-0.314	0.319	0.385
Mobile Banking Use -> Financial Behavior	0.584	0.533	0.051	0.055	-0.158	0.246	0.683
Perceived Risk -> Behavioral Intention	0.111	-0.003	0.113	-0.002	-0.172	0.171	0.210
Performance Expectancy -> Behavioral Intention	-0.025	0.036	-0.061	0.004	-0.258	0.263	0.692
Price Value -> Behavioral Intention	0.078	0.000	0.078	0.001	-0.267	0.278	0.618
Social Influence -> Behavioral Intention	0.051	-0.004	0.055	0.001	-0.285	0.273	0.712
Trust -> Behavioral Intention	0.217	0.318	-0.101	-0.008	-0.314	0.301	0.524
Trust -> Perceived Risk	-0.372	-0.462	0.090	-0.008	-0.255	0.249	0.517

Gender Bootstrap MGA

	Difference (Female - Male)	1-tailed (Female vs Male) p value	2-tailed (Female vs Male) p value
Behavioral Intention -> Mobile Banking Use	0.593	0.055	0.109
Effort Expectancy -> Behavioral Intention	-0.080	0.694	0.612
Facilitating Conditions -> Behavioral Intention	-0.136	0.833	0.334
Facilitating Conditions -> Mobile Banking Use	-0.393	0.967	0.067
Financial Literacy -> Behavioral Intention	0.202	0.007	0.014
Habit -> Behavioral Intention	0.188	0.124	0.248
Habit -> Mobile Banking Use	-0.311	0.845	0.310
Hedonic Motivation -> Behavioral Intention	0.148	0.188	0.377
Mobile Banking Use -> Financial Behavior	0.051	0.229	0.459
Perceived Risk -> Behavioral Intention	0.113	0.104	0.208
Performance Expectancy -> Behavioral Intention	-0.061	0.669	0.662
Price Value -> Behavioral Intention	0.078	0.285	0.570
Social Influence -> Behavioral Intention	0.055	0.351	0.702
Trust -> Behavioral Intention	-0.101	0.767	0.466
Trust -> Perceived Risk	0.090	0.249	0.499

Experience

Experience outer loadings, reliability and validity

Construct	Indicator	Less			Cronbach's alpha (CA)	Composite reliability (CR)	Average variance extracted (AVE)
		Less Experienced (LE) (B)	More Experienced (ME) (B)	Experienced (B) - More Experienced (B)			
Behavioral Intention	BI1	0.929	0.913	0.016	LE = 0.919	LE = 0.921	LE = 0.861
	BI2	0.933	0.932	0.001	ME = 0.923	ME = 0.925	ME = 0.866
	BI3	0.921	0.947	-0.026			
Effort Expectancy	EE1	0.865	0.692	0.173	LE = 0.805	LE = 0.807	LE = 0.720
	EE2	0.836	0.947	-0.112	ME = 0.837	ME = 0.926	ME = 0.755
	EE3 **						
	EE4	0.844	0.943	-0.099			
Facilitating Conditions	FC1	0.852	0.787	0.065	LE = 0.746	LE = 0.837	LE = 0.592
	FC2	0.891	0.813	0.078	ME = 0.766	ME = 0.796	ME = 0.593
	FC3	0.846	0.852	-0.006			
	FC4	0.366	0.605	-0.239			
Habit	HB1	0.845	0.810	0.035	LE = 0.810	LE = 0.855	LE = 0.628
	HB2	0.707	0.613	0.094	ME = 0.800	ME = 0.911	ME = 0.614
	HB3	0.740	0.775	-0.035			
	HB4	0.867	0.908	-0.041			
Hedonic Motivation	HM1	0.901	0.945	-0.044	LE = 0.854	LE = 0.900	LE = 0.771
	HM2	0.929	0.949	-0.020	ME = 0.915	ME = 0.915	ME = 0.855
	HM3	0.799	0.879	-0.079			
Performance Expectancy	PE1	0.780	0.678	0.102	LE = 0.660	LE = 0.674	LE = 0.598
	PE2	0.821	0.782	0.040	ME = 0.687	ME = 0.754	ME = 0.606
	PE3	0.716	0.864	-0.147			
Perceived Risk	PR1	0.748	0.865	-0.117	LE = 0.824	LE = 0.871	LE = 0.638
	PR2	0.842	0.832	0.010	ME = 0.869	ME = 0.886	ME = 0.617
	PR3	0.825	0.864	-0.039			
	PR4	0.769	0.810	-0.040			
	PR5	0.807	0.494	0.313			
Price Value	PV1	0.800	0.754	0.046	LE = 0.791	LE = 0.890	LE = 0.780
	PV2	0.934	0.924	0.010	ME = 0.876	ME = 0.855	ME = 0.751
	PV3	0.910	0.912	-0.003			
Social Influence	SI1	0.723	0.727	-0.004	LE = 0.648	LE = 0.712	LE = 0.517
	SI2	0.709	0.833	-0.124	ME = 0.794	ME = 0.802	ME = 0.606
	SI3	0.798	0.851	-0.053			
	SI4	0.637	0.693	-0.056			
Trust	TT1	0.877	0.877	0.000	LE = 0.876	LE = 0.837	LE = 0.752
	TT2	0.864	0.929	-0.065	ME = 0.826	ME = 0.864	ME = 0.771
	TT3	0.860	0.825	0.035			

Experience step 2 Measurement Invariance of Composite Models (MICOM)

Original correlation	Correlation		
	mean	5%	P value

Behavioral Intention	1.000	1.000	1.000	0.586
Effort Expectancy	0.991	0.997	0.990	0.065
Facilitating Conditions	0.987	0.993	0.979	0.142
Financial Behavior	0.269	0.520	0.251	0.058
Financial Literacy	1.000	1.000	1.000	0.525
Habit	0.997	0.997	0.992	0.288
Hedonic Motivation	0.996	0.998	0.994	0.103
Mobile Banking Use	0.745	0.805	0.704	0.149
Perceived Risk	0.986	0.994	0.984	0.068
Performance Expectancy	0.987	0.984	0.953	0.444
Price Value	1.000	0.997	0.991	0.896
Social Influence	0.992	0.991	0.975	0.446
Trust	0.999	0.999	0.998	0.213

Experience step 3 Measurement Invariance of Composite Models (MICOM)

	Mean					Variance				
	Original difference	Mean	2.5%	97.5%	P value	Original difference	Mean	2.5%	97.5%	P Value
		difference					difference			
Behavioral Intention	-0.467	-0.005	-0.224	0.233	0.000	0.327	0.001	-0.527	0.507	0.209
Effort Expectancy	-0.381	-0.001	-0.229	0.239	0.000	0.151	0.004	-0.721	0.723	0.700
Facilitating Conditions	-0.570	0.000	-0.240	0.250	0.000	0.256	0.009	-0.540	0.555	0.391
Financial Behavior	-0.639	0.000	-0.273	0.248	0.000	0.311	-0.002	-0.350	0.352	0.097
Financial Literacy	-0.339	0.006	-0.237	0.250	0.008	0.068	0.006	-0.250	0.266	0.619
Habit	-0.470	-0.002	-0.247	0.238	0.000	0.197	-0.004	-0.396	0.410	0.325
Hedonic Motivation	-0.432	0.001	-0.241	0.241	0.000	-0.026	0.000	-0.357	0.349	0.902
Mobile Banking Use	-0.644	-0.002	-0.241	0.227	0.000	0.760	0.006	-0.506	0.516	0.001
Perceived Risk	0.366	0.004	-0.244	0.242	0.003	-0.116	-0.006	-0.329	0.290	0.469
Performance Expectancy	-0.333	0.002	-0.252	0.228	0.003	0.052	0.001	-0.573	0.590	0.855
Price Value	-0.242	0.003	-0.251	0.242	0.052	-0.156	0.000	-0.343	0.327	0.336
Social Influence	-0.275	0.004	-0.244	0.234	0.023	-0.184	-0.003	-0.336	0.334	0.288
Trust	-0.303	0.000	-0.255	0.246	0.023	0.192	0.000	-0.350	0.351	0.282

Experience groups path coefficients

	Original (Less Original (More Experienced)	Original (More Experienced)	Original difference	2.5%	97.5%	P value
Behavioral Intention -> Mobile Banking Use	0.175	0.617	-0.442	-0.422	0.419	0.037
Effort Expectancy -> Behavioral Intention	0.154	0.236	-0.083	-0.342	0.341	0.662
Facilitating Conditions -> Behavioral Intention	-0.037	0.182	-0.219	-0.283	0.259	0.116
Facilitating Conditions -> Mobile Banking Use	0.164	0.049	0.115	-0.302	0.263	0.425
Financial Literacy -> Behavioral Intention	-0.010	0.056	-0.066	-0.186	0.177	0.517
Habit -> Behavioral Intention	0.296	0.491	-0.195	-0.343	0.331	0.258
Habit -> Mobile Banking Use	0.495	0.136	0.359	-0.385	0.359	0.062
Hedonic Motivation -> Behavioral Intention	-0.067	-0.056	-0.011	-0.328	0.288	0.941
Mobile Banking Use -> Financial Behavior	0.356	0.440	-0.084	-0.219	0.202	0.463
Perceived Risk -> Behavioral Intention	0.020	0.083	-0.063	-0.171	0.164	0.501
Performance Expectancy -> Behavioral Intention	0.114	-0.040	0.154	-0.260	0.252	0.255
Price Value -> Behavioral Intention	0.174	-0.133	0.307	-0.292	0.294	0.041
Social Influence -> Behavioral Intention	0.085	-0.025	0.109	-0.281	0.300	0.470
Trust -> Behavioral Intention	0.324	0.265	0.058	-0.289	0.327	0.725
Trust -> Perceived Risk	-0.382	-0.459	0.076	-0.232	0.253	0.571

Experience bootstrap MGA result

	Difference (Less Experienced - More Experienced)	1-tailed (Less Experienced vs More Experienced) p value	2-tailed (Less Experienced vs More Experienced) p value
Behavioral Intention -> Mobile Banking Use	-0.442	0.995	0.010
Effort Expectancy -> Behavioral Intention	-0.083	0.693	0.614
Facilitating Conditions -> Behavioral Intention	-0.219	0.938	0.124
Facilitating Conditions -> Mobile Banking Use	0.115	0.204	0.408
Financial Literacy -> Behavioral Intention	-0.066	0.788	0.423
Habit -> Behavioral Intention	-0.195	0.882	0.237
Habit -> Mobile Banking Use	0.359	0.014	0.029
Hedonic Motivation -> Behavioral Intention	-0.011	0.536	0.929
Mobile Banking Use -> Financial Behavior	-0.084	0.837	0.326
Perceived Risk -> Behavioral Intention	-0.063	0.773	0.455
Performance Expectancy -> Behavioral Intention	0.154	0.100	0.199
Price Value -> Behavioral Intention	0.307	0.011	0.023
Social Influence -> Behavioral Intention	0.109	0.191	0.383
Trust -> Behavioral Intention	0.058	0.334	0.667
Trust -> Perceived Risk	0.076	0.265	0.530

Distance

Distance outer loadings, reliability and validity

Construct	Indicator	Distance Near (DN) (B)	Distance Far (DF) (B)	Distance Near (B) - Distance Far (B)	Cronbach's alpha (CA)	Composite reliability (CR)	Average variance extracted (AVE)
Behavioral Intention	BI1	0.938	0.887	0.050	DN = 0.936	DN = 0.937	DN = 0.886
	BI2	0.943	0.914	0.029	DF = 0.887	DF = 0.891	DF = 0.815
	BI3	0.943	0.907	0.037			
Effort Expectancy	EE1	0.790	0.807	-0.017	DN = 0.865	DN = 0.874	DN = 0.712
	EE2	0.834	0.920	-0.086	DF = 0.902	DF = 0.908	DF = 0.774
	EE3	0.859	0.928	-0.069			
	EE4	0.890	0.859	0.031			
Facilitating Conditions	FC1	0.825	0.814	0.011	DN = 0.735	DN = 0.792	DN = 0.574
	FC2	0.832	0.925	-0.094	DF = 0.818	DF = 0.905	DF = 0.656
	FC3	0.848	0.890	-0.042			
	FC4	0.452	0.560	-0.108			
Habit	HB1	0.864	0.802	0.062	DN = 0.819	DN = 0.894	DN = 0.637
	HB2	0.666	0.670	-0.004	DF = 0.801	DF = 0.827	DF = 0.622
	HB3	0.742	0.815	-0.073			
	HB4	0.899	0.857	0.043			
Hedonic Motivation	HM1	0.931	0.916	0.015	DN = 0.900	DN = 0.913	DN = 0.834
	HM2	0.950	0.919	0.031	DF = 0.863	DF = 0.889	DF = 0.784
	HM3	0.856	0.818	0.038			
Performance Expectancy	PE1	0.780	0.548	0.232	DN = 0.690	DN = 0.693	DN = 0.616
	PE2	0.797	0.856	-0.059	DF = 0.649	DF = 0.708	DF = 0.566
	PE3	0.778	0.815	-0.038			
Perceived Risk	PR1	0.818	0.810	0.009	DN = 0.858	DN = 0.875	DN = 0.639
	PR2	0.850	0.799	0.051	DF = 0.845	DF = 0.850	DF = 0.619
	PR3	0.849	0.850	0.000			
	PR4	0.788	0.782	0.006			
	PR5	0.677	0.684	-0.007			
Price Value	PV1	0.851	0.487	0.364	DN = 0.889	DN = 0.906	DN = 0.818
	PV2	0.936	0.940	-0.005	DF = 0.733	DF = 0.885	DF = 0.661
	PV3	0.924	0.929	-0.005			
Social Influence	SI1	0.750	0.655	0.095	DN = 0.758	DN = 0.766	DN = 0.580
	SI2	0.794	0.741	0.053	DF = 0.695	DF = 0.887	DF = 0.515
	SI3	0.814	0.890	-0.076			
	SI4	0.682	0.538	0.145			
Trust	TT1	0.870	0.889	-0.019	DN = 0.857	DN = 0.857	DN = 0.778
	TT2	0.899	0.889	0.010	DF = 0.815	DF = 0.825	DF = 0.731
	TT3	0.877	0.782	0.095			

Distance step 2 Measurement Invariance of Composite Models (MICOM)

Original correlation	Correlation mean	5%	P Value
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Behavioral Intention	1.000	1.000	0.999	0.345
Effort Expectancy	0.999	0.997	0.993	0.842
Facilitating Conditions	0.997	0.993	0.978	0.717
Financial Behavior	0.387	0.527	0.219	0.191
Financial Literacy	1.000	1.000	1.000	0.102
Habit	0.998	0.997	0.993	0.387
Hedonic Motivation	1.000	0.998	0.993	0.782
Mobile Banking Use	0.756	0.798	0.682	0.222
Perceived Risk	0.996	0.994	0.983	0.587
Performance Expectancy	0.980	0.983	0.951	0.313
Price Value	0.992	0.997	0.989	0.092
Social Influence	0.982	0.990	0.973	0.168
Trust	0.999	0.999	0.998	0.398

Distance step 3 Measurement Invariance of Composite Models (MICOM)

	Mean					Original difference	Mean				
	Original difference	difference	2.5%	97.5%	P value		difference	difference	2.5%	97.5%	P Value
Behavioral Intention	-0.068	0.002	-0.252	0.253	0.606	-0.534	-0.013	-0.571	0.494	0.052	
Effort Expectancy	-0.062	0.007	-0.247	0.251	0.646	0.164	-0.032	-0.869	0.719	0.688	
Facilitating Conditions	-0.149	0.004	-0.262	0.258	0.263	0.261	-0.019	-0.588	0.535	0.413	
Financial Behavior	0.025	-0.002	-0.253	0.260	0.828	-0.094	-0.004	-0.347	0.367	0.592	
Financial Literacy	0.003	0.002	-0.262	0.256	0.993	-0.140	-0.008	-0.281	0.279	0.284	
Habit	-0.038	0.004	-0.240	0.249	0.783	-0.343	-0.010	-0.481	0.408	0.128	
Hedonic Motivation	-0.264	-0.005	-0.262	0.251	0.043	-0.220	-0.005	-0.410	0.388	0.282	
Mobile Banking Use	0.052	-0.001	-0.255	0.247	0.689	-0.605	-0.014	-0.539	0.525	0.027	
Perceived Risk	0.179	0.000	-0.257	0.250	0.185	-0.154	-0.002	-0.318	0.320	0.324	
Performance Expectancy	-0.039	0.003	-0.266	0.259	0.757	0.014	-0.020	-0.598	0.563	0.958	
Price Value	-0.097	-0.003	-0.233	0.265	0.467	-0.358	-0.001	-0.353	0.352	0.045	
Social Influence	-0.297	-0.003	-0.258	0.245	0.023	-0.087	-0.009	-0.389	0.333	0.642	
Trust	-0.088	0.002	-0.261	0.253	0.492	-0.311	0.004	-0.380	0.352	0.096	

Appendix K: Indirect Path coefficient

Table 1

	P values
Habit -> Financial Behavior	0.001
Experience -> Financial Behavior	0.018
Experience x Habit -> Financial Behavior	0.026
Trust -> Mobile Banking Use	0.048
Behavioral Intention -> Financial Behavior	0.051
Trust -> Financial Behavior	0.071
Experience x Behavioral Intention -> Financial Behavior	0.072
Effort Expectancy -> Mobile Banking Use	0.105
Experience -> Mobile Banking Use	0.131
Habit -> Mobile Banking Use	0.132
Effort Expectancy -> Financial Behavior	0.136
Facilitating Conditions -> Financial Behavior	0.158
Hedonic Motivation -> Mobile Banking Use	0.167
Facilitating Conditions -> Mobile Banking Use	0.169
Trust -> Behavioral Intention	0.174
Perceived Risk -> Mobile Banking Use	0.199
Hedonic Motivation -> Financial Behavior	0.209
Perceived Risk -> Financial Behavior	0.245
Age x Price Value -> Mobile Banking Use	0.259
Age -> Mobile Banking Use	0.278
Age x Price Value -> Financial Behavior	0.312
Age x Habit -> Financial Behavior	0.347
Age x Hedonic Motivation -> Mobile Banking Use	0.418
Age -> Financial Behavior	0.423
Age x Facilitating Conditions -> Mobile Banking Use	0.429
Experience x Facilitating Conditions -> Mobile Banking Use	0.454
Performance Expectancy -> Mobile Banking Use	0.471
Age x Hedonic Motivation -> Financial Behavior	0.473
Age x Facilitating Conditions -> Financial Behavior	0.475
Social Influence -> Mobile Banking Use	0.479
Experience x Facilitating Conditions -> Financial Behavior	0.500
Gender x Facilitating Conditions -> Mobile Banking Use	0.511
Performance Expectancy -> Financial Behavior	0.519
Social Influence -> Financial Behavior	0.526
Gender -> Financial Behavior	0.532
Gender x Facilitating Conditions -> Financial Behavior	0.553
Gender x Habit -> Mobile Banking Use	0.694
Experience x Hedonic Motivation -> Mobile Banking Use	0.731
Gender x Hedonic Motivation -> Mobile Banking Use	0.749
Experience x Hedonic Motivation -> Financial Behavior	0.755
Gender x Hedonic Motivation -> Financial Behavior	0.778
Gender x Price Value -> Mobile Banking Use	0.778
Age x Habit -> Mobile Banking Use	0.788
Gender x Price Value -> Financial Behavior	0.805
Financial Literacy -> Mobile Banking Use	0.817
Financial Literacy -> Financial Behavior	0.835
Experience x Habit -> Mobile Banking Use	0.880
Gender -> Mobile Banking Use	0.901
Price Value -> Mobile Banking Use	0.956
Price Value -> Financial Behavior	0.960
Gender x Habit -> Financial Behavior	0.971

Table 2

	P values
Habit -> Mobile Banking Use -> Financial Behavior	0.013
Experience x Habit -> Mobile Banking Use -> Financial Behavior	0.024
Experience -> Mobile Banking Use -> Financial Behavior	0.025
Trust -> Behavioral Intention -> Mobile Banking Use	0.043
Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.051
Trust -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.065
Experience x Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.072
Effort Expectancy -> Behavioral Intention -> Mobile Banking Use	0.105
Experience -> Behavioral Intention -> Mobile Banking Use	0.131
Habit -> Behavioral Intention -> Mobile Banking Use	0.132
Effort Expectancy -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.136
Experience -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.166
Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use	0.167
Habit -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.167
Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use	0.169
Trust -> Perceived Risk -> Behavioral Intention	0.174
Perceived Risk -> Behavioral Intention -> Mobile Banking Use	0.199
Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.209
Trust -> Perceived Risk -> Behavioral Intention -> Mobile Banking Use	0.209
Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.211
Perceived Risk -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.245
Trust -> Perceived Risk -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.254
Age x Price Value -> Behavioral Intention -> Mobile Banking Use	0.259
Age -> Behavioral Intention -> Mobile Banking Use	0.278
Age x Habit -> Mobile Banking Use -> Financial Behavior	0.297
Age x Price Value -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.312
Age -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.326
Facilitating Conditions -> Mobile Banking Use -> Financial Behavior	0.368
Age -> Mobile Banking Use -> Financial Behavior	0.384
Age x Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use	0.418
Age x Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use	0.429
Experience x Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use	0.454
Performance Expectancy -> Behavioral Intention -> Mobile Banking Use	0.471
Age x Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.473
Age x Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.475
Social Influence -> Behavioral Intention -> Mobile Banking Use	0.479
Experience x Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.500
Gender x Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use	0.511
Performance Expectancy -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.519
Gender -> Mobile Banking Use -> Financial Behavior	0.526
Social Influence -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.526
Gender x Facilitating Conditions -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.553
Gender x Habit -> Behavioral Intention -> Mobile Banking Use	0.694
Gender x Habit -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.726
Experience x Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use	0.731
Gender x Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use	0.749
Experience x Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.755
Gender x Hedonic Motivation -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.778
Gender x Price Value -> Behavioral Intention -> Mobile Banking Use	0.778
Age x Habit -> Behavioral Intention -> Mobile Banking Use	0.788
Gender x Price Value -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.805
Age x Habit -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.809
Financial Literacy -> Behavioral Intention -> Mobile Banking Use	0.817
Gender x Habit -> Mobile Banking Use -> Financial Behavior	0.822
Financial Literacy -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.835
Experience x Habit -> Behavioral Intention -> Mobile Banking Use	0.880
Experience x Habit -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.892
Gender -> Behavioral Intention -> Mobile Banking Use	0.901
Gender -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.912
Price Value -> Behavioral Intention -> Mobile Banking Use	0.956
Price Value -> Behavioral Intention -> Mobile Banking Use -> Financial Behavior	0.960