

Factors influencing the behavioural intention to adopt mobile money transfer services in South Africa

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ABSTRACT

South Africa is a country that faces many socio-economic challenges including unemployment, poverty and inequality and could benefit substantially to enhancements of financial inclusion to close the economic gap. Despite the country having a highly developed financial infrastructure and well-regulated financial sector, and achievements of growing financial inclusion levels, the country still experiences a significant number of adults who are financially excluded. This study focused on the factors influencing the intention to adopt mobile money transfer services in South Africa which could be used as a financial inclusion strategy. According to the UTAUT and TAM frameworks utilised in the study, the leading factors that influence the behavioural intention to adopt mobile money transfer services included, attitude, utilitarian performance expectancy, effort expectancy, social influence, hedonic performance expectancy, self-efficacy, trust, perceived risk, perceived security and facilitating conditions. The key findings revealed that attitude, hedonic performance expectancy, social influence, risk, security and facilitating conditions had a significant influence on behavioural intention to adopt mobile money transfer services in South Africa. However, utilitarian performance expectancy, effort expectancy, self-efficacy and trust, were found to have insignificant influence on the behavioural intention to adopt mobile money transfer services in South Africa.

KEYWORDS

Mobile money transfers; South Africa; UTAUT & TAM; Mobile Money; User Behavioural Intention, e-money, e-wallet, mobile financial services, FinTech, mobile wallet, e-banking.

DECLARATION

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

Name : Vuyokazi Mothoagae Signature: 

Signed At : Johannesburg, Gauteng

Date : 27 June 2023

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LIST OF ACRONYMS

ACP - African, Caribbean and Pacific Group of States

ATM – Automated Teller Machine

CFA - Confirmatory Factor Analysis

COVID – Corona Virus Disease

DOI - Diffusion of innovations

EFA – Exploratory Factor Analysis

E-Money – Electronic Money

EY – Ernst & Young

GDP – Gross Domestic Product

GSMA - Global System for Mobile Communications Association

IBM - International Business Machines Corporation

ID – Identity Document

KMO - Kaiser-Meyer Olkin Measure

MFS – Mobile Financial Services

MNO – Mobile Network Operators

OTC – Over the Counter

SARB - South African Reserve Bank

SEP – Standard Encyclopaedia Philosophy

SPSS - Statistical Package for the Social Sciences

TAM - Technology Acceptance Model

TOE - Technology Organisation Environment

TPB - Theory of Planned Behaviour

TRA - Theory of Reasoned Action

UTAUT & TAM - Unified Theory of Acceptance & User of Technology

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

South Africa faces many challenges related to poverty, unemployment and inequality, which have a knock-on impact on the country's level of financial inclusion, particularly in facilitating access to cost effective banking services and products (Mhlanga, Dunga & Moloi, 2021). Financial inclusion has remained the priority of the South African Reserve Bank's [SARB] vision 2025, and the country is making good strides in improving its financial inclusion rate from the financial services sector (Delloite, 2019). As a result, Delloite (2019) notes in their report that the banked population in South African has increased to 80% from 46% in 2004. While this increase in the banked population shows improvement, efforts to reduce both the unbanked and underserved population remain a focus. The rapid penetration and adoption of mobile phones will play a vital role in delivering this goal. Bringing the financial services to the unbanked has been a key driver of innovative financial solutions such as the mobile money transfer services which could potentially be a substitute for formal banking (World Remit, 2022).

Financial inclusion is considered to be one of the strategies that can be used to eliminate poverty, reduce unemployment and inequality (Mhlanga et al., 2021). It is further asserted in Mhlanga et al. (2021) that it is also acknowledged in the South African National Development Plan Vision 2030, that financial inclusion is a crucial tool that will help the country to alleviate some of the challenges it faces and improve the livelihood of its citizens. Growth in the proportion of the population that has access to banking is anticipated and financial inclusion will be pivotal in broadening access of banking services to the underserved community thereby closing the economic gap.

South Africa is a country with high levels of domestic remittances with a market holding an estimation between \$11 billion and \$13 billion in annual transactions. This translates to 4% of South Africa's Gross Domestic Product (GDP) (Technoserve, 2016). Sending money to family and friends across South Africa is one of the most widely used financial service and plays a crucial role in the economy. This is supported by statistics provided by Technoserve (2016) that circa two thirds of the adult population (24 million people) send, receive, or perform both in domestic remittances. This is driven mostly by large numbers attributed to internal migrants within the country, transferring money to family and friends.

Over the last decade there has been significant improvement in innovative offerings from financial service institutions partnering with retailers as well as mobile operators. In 2006, Shoprite introduced money transfer service at its money market and since then, money transfer service providers have targeted remittance users and have aggressively released offerings that are centred around these users. Most banks in South Africa enable account holders to transfer money to any person with a mobile phone in which case the money can be retrieved from an Automated Teller Machine (ATM) or partner retailer using an access code or pin. The evolution of remittance methods from different providers is outlined in table 1 below.

Table 1: Remittance Product Line (Technoserve, 2016)

Remittance product launch	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Retail											
Post Office/PostBank	←										→
Shoprite Money Market											→
Spar (Instant Money partnership)											→
Pep (various partnerships*)											→
Pick n Pay Money Transfer (& Mobile Money partnership)											→
Bank											
ABSA CashSend											→
FNB eWallet											→
Standard Bank Instant Money											→
NedBank Send-iMali											→
Mobile / Digital / Social											
Vodacom M-Pesa											→
MTN Mobile Money											→
WeChat Wallet											→
MobiCash											→
Facebook Messenger											→

Key factors that drive the utilisation of mobile money transfer services in South are convenience, price and receiving money without a bank account (Finmark Trust, 2017). Innovative developments have significantly enabled secure and low-cost channels for South Africans to remit money at a national level, however opportunities exist to enhance user experience and reinforce overall financial inclusion through leveraging on the potential of remittance interactions.

Another key driver in the global context has been the COVID-19 pandemic where new behaviours had to be adopted like social distancing to adhere to the safety protocols of the pandemic (Daragmeh, Sagi & Zeman, 2021). This had a negative impact on the global economy and slowed economic development. Innovative solutions through digital financial services around digitisation of banking and financial services have enabled access and have played a critical role in ensuring that safety and preventive measures are adhered to, in order to curb the spread of COVID-19.

In the same breath, according to Daragmeh et al. (2021), the pandemic influenced a shift in consumer preferences which are now geared more towards digital payment methods, such as e-wallets, versus traditional payment methods.

Therefore encouraging financial institutions to closely monitor the dynamics in consumer behavior and accelerate innovation to meet consumer demands.

Considering the large number of people within the country that use these services, an understanding of the factors that influence them to adopt mobile money transfer services needs to be established. This study will examine the factors that influence the consumer's intention to adopt mobile money transfer services in South Africa from a user or consumer perspective which will help the players within the financial industry to understand the role that it plays in enabling access to banking and how they can improve their offering to add maximum value to the users. This research can also be used by other researchers and scholars in expanding on the topic of mobile money transfer services in South Africa.

To explore the factors that drive behavioral intention of mobile money transfer services, a framework based on the combination of two models will be used namely, Unified Theory of Acceptance & User of Technology (UTAUT) and Technology Adoption Model (TAM) which was developed by Khalilzadeh, Ozturk and Bilgihan in 2017. The interest to understand the factors that drive technological adoption started in 1975 with the introduction of the Theory of Reasoned Action (TRA) which was used in explaining and predicting behaviour based on attitudes, norms and intentions. This theory was enhanced in 1989 by Ajzen, by incorporating perceived behavioural control and was named the Theory of Planned Behaviour (TPB). Davis, Bagozzi, and Warshaw (1989) sought to understand user acceptance of computer technology and further developed TPB with additional variables namely, perceived usefulness and perceived ease of use, which then became known as the Technology Adoption Model (TAM). To deeply understand the factors that drive adoption of technology, the TAM model was modified by Venkatesh and Davis (2000) to include social influence and cognitive variables which became known as what is now the TAM 2 framework. Thereafter Venkatesh, Morris, Davis and Davis (2003) developed the Unified Theory of Acceptance & User of Technology (UTAUT) which sought to understand how well social influence, effort expectancy, performance expectancy, facilitating conditions, explained technology adoption. In 2005, Wu and Wang further extended the TAM 2 and added compatibility, perceived risk

and cost variables as part of the drivers of technology adoption. In 2012, the UTAUT was enhanced by Venkatesh, Thong and Xu in UTAUT 2 by recognising that hedonic motivation, price value and habit could potentially answer the questions around consumer acceptance and use of technology.

The culmination of the above theorems was the Unified Theory of Acceptance & User of Technology (UTAUT) and Technology Adoption Model (TAM) developed in 2017 by Khalilzadeh, Ozturk and Bilgihan. Included in the variables of the two theories was attitude, utilitarian performance expectancy, effort expectancy, social influence, hedonic performance expectancy, self-efficacy, trust, perceived risk, perceived security and facilitating conditions. These combined models are the theorems that will be used in this study to gain a deeper understanding of the factors that drive the intention to adopt mobile money transfer services in South Africa.

Below is an illustration of the combined UTAUT and TAM theories for this study.

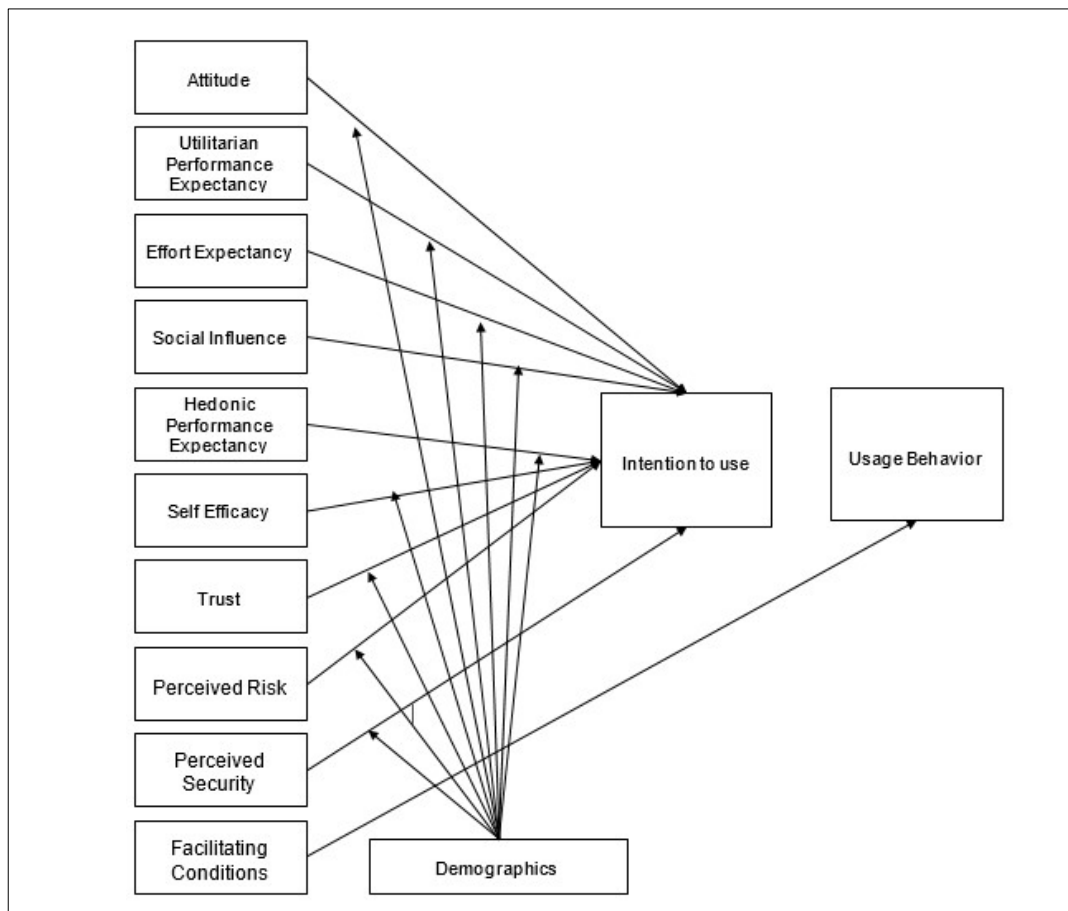


Figure 1: UTAUT & TAM Theoretical Framework (Khalilzadeh, Ozturk & Bilgihan, 2017)

1.2 Background of the study

The mobile phone revolution has had a global impact on how people conduct economic activities and has influenced the growth of mobile banking (Ramnath, 2018). Mobile phones were initially built as an innovative technological tool to facilitate communication, however, have evolved into enabling access to financial services through mobile banking and mobile money transfers (Ramnath, 2018). The steady growth of mobile phones penetration globally has been driven by advancements in communications and technology. In 2020, the penetration rate was estimated to have reached over 78% compared to 49% in 2016 (Statista, 2021). This translates to an estimated 6.4 billion mobile phone subscriptions against a world population of around 7.7 billion.

Similarly in Africa, mobile phone penetration rate has progressed to 78%, and adoption has been driven particularly by the younger population (18-30 years) (Jere & Augustine, 2014). Inline with the steady mobile phone penetration growth perceived both globally and in Africa, a surge has been observed in South Africa over the years (Ramnath, 2018).

1.2.1 Mobile Money Transfer Services and channel landscape in South Africa

Mobile money transfer services refer to the electronic wallet services used to store, send and receive money through use of mobile phones (World Remit, 2022). Mobile money transfer services include mobile banking, mobile payments and mobile transfers (Africa, Caribbean and Pacific Observatory [ACP], 2014). This research will focus on mobile money transfers for both banked and unbanked population. The mobile money services include, Banks-based money transfers (FNB e-wallet, Standard bank instant money, Absa cash send, Nedbank send'imali and Tyme Bank cash send), retail-based money transfers (Pep store's money transfers, Spar, Pick n Pay and Shoprite Checkers money markets) and digital money transfers (MTN mobile money, Vodacom M-Pesa and m-cash). The use of mobile money transfer services has gained momentum throughout the years with more banks partnering with retailers to offer this product. The minimum

functionality of this kind of service in South Africa includes low or no charges or monthly fees to receive money, no bank account requirement for the receiver of bank related transactions and cash can be sent to any cell phone number. This innovative service contributes towards curbing high costs or charges associated with banking transactions and seeks to include the unbanked population. The mobile money transfer channel landscape is depicted in table 2 below.

Table 2: Mobile Money Transfer Landscape (Technoserve, 2016)

	Bank	Retail	Mobile/Digital	Money transfer org.	Cash / goods
Leading providers					
Model	- Send money by SMS to any cell phone using ATM, online, or mobile banking; or - Account transfers	Send money from a retail store to a recipient who retrieves funds at another location	Send money by phone; utilize agent networks to cash in/cash out	Traditional brick and mortar money transfer operators	People bring cash and/or goods to family and friends on visits
Market share	50%	20%	<5%	0%	25-30%
Typical cost	- R8-10 per transfer - Account fees vary	R10	Free to R10	...	Free (not common to hire couriers)
Pros	- Low cost - Integration with other banking services/ mobile apps - Recipients not need accounts	- Low cost - Accessible footprint - No bank account needed and additional financial services offered	- Low cost - Convenience due to high penetration of mobile phones	- Accessible storefront network - No account needed	Universally accepted
Cons	Not interoperable across banks	Requires cash out in stores, often with queues	Limited agent networks for cash in/cash out and payment options	- High cost - Geared to international senders	- Risk of loss or theft - Transfers are limited by visit frequency

According to a report published by Technoserve (2016), the findings revealed that around 50% of all domestic remittance transfers are initiated through bank services. This was driven by the convenience, speed and reduced costs of using mobile money transfers as well as the benefit of avoiding queues. Retail-based transfers account for 20% of transfers in South Africa, and a decline in market share of the retail-based transfer has been noted, while an increase in the bank-based money transfers has been indicated. Early entrants, mobile and digital channel products experienced challenges in generating their user base. These include, MTN Mobile Money and Vodacom M-Pesa. In addition, these digital channel offerings experienced robust competition from banks and retail-based transfer products and also experienced challenges with their agent network,

including trust, cash float, value proposition, aggregation, and poor technology for implementing the services (Finmark Trust, 2017).

1.3 Research problem

According to Deloitte (2014), financial inclusion in South Africa has shifted from being an issue of access to being an issue of digital adoption and usage. This is echoed by Ramnath (2018), that while technologies have the potential to break financial access and geographical barriers, they are often hindered by a number of challenges including, lack of adoption, constraints around infrastructure and implementation (Ramnath, 2018).

According to South African National Treasury (2020), financial exclusion of individuals exaggerates poverty levels and income inequality, negatively impacting economic growth particularly in a country like South Africa. South Africa suffers from socio-economic challenges such as unemployment, poverty and inequality which could be reduced by strategies of financial inclusion such as the mobile money transfer services to close the economic gap. Even though financial inclusion is increasing in South Africa, there is still a concerning number of financially excluded and underserved individuals.

There is a need to understand in detail the factors that influence the intention to adopt mobile money transfer services in South Africa especially when mobile money services could further promote financial inclusion and help extend financial offering to the underserved population of South Africa.

1.4 Research objectives

The main objective is to determine the factors influencing the intention to adopt mobile money transfer services in South Africa.

Objectives

1. To investigate whether effort expectancy influences the intention to adopt mobile money transfer services in South Africa
2. To explore whether personal factors (Attitude, self-efficacy, hedonic performance expectancy and utilitarian performance expectancy) influence the intention to adopt mobile money transfer services in South Africa
3. To ascertain whether security related factors (Trust, risk & security) influence the intention to adopt mobile money transfer services in South Africa
4. To investigate whether facilitating and social conditions influence the intention to adopt mobile money transfer services in South Africa
5. To justify whether demographic factors (Gender, age, education and employment) influence the intention to adopt mobile money transfer services in South Africa

1.5 Rationale

South Africa provides a favourable environment and need for mobile money services. One of the factors include the vast majority of financially underserved population which could highly benefit from mobile money services. Additionally, with the high crime rate in the country, there is a need for a much safer money transfer service. The other significant factor that drives the need and usage of mobile money services is the convenience of having money in a central repository for access at any point in time, affording the unbanked and under-banked access to financial inclusion.

The market for mobile money transfer services in South Africa is currently booming, with the primary providers being banks and retailers. Whether it is counter to counter transfer services or from bank account to Automated Teller Machine [ATM] withdrawal, there is a growing usage of these services. A study

conducted by Global System for Mobile Communications Association [GSMA] (2021) has shown that, factors that will determine the success of mobile financial services in a market include, pricing, ease of use, trust, interoperability, service offered, ease of registration and incentive. Several other researchers have undertaken studies to understand the factors driving adoption of mobile financial services and employed different adoption frameworks for deeper understanding. The most popular frameworks that have been used in South African studies to understand factors driving adoption of Fintech, mobile banking and internet banking, are the UTAUT and TAM models.

Both UTAUT and TAM models support the view that, actual usage of technology is affected by one's behavioural intention to use it. In TAM, the intention to use a certain technology is determined by attitude towards using that technology, which in turn is determined by two observations: perceived usefulness and perceived ease of use. UTAUT is an extension of TAM and seven other theoretical frameworks. It proposes four constructs that affect the intention for usage of technology: performance expectancy, effort expectancy, social influence and facilitating conditions. This study justifies the usage of combined UTAUT and TAM models to further study the factors influencing the intention to adopt mobile money transfer services in South Africa. The simplicity of TAM combined with additional constructs of the UTAUT will seek to provide clarity on the needs of South African population in adopting mobile money transfer services and provide insights on the actual usage of this service in a broad South African context.

Considering the large number of people within the country that use mobile money transfer services, there is a need to understand what factors affect the intention to use this service.

1.5.1 *Adoption of Mobile Money Transfer Services*

While mobile phones penetration is growing in South Africa, this does not guarantee the adoption of mobile money services. This topic is researched widely (see Maradung, 2013; Ramnath, 2018; Njele & Phiri, 2021) covering mobile money comprehensively including the adoption of mobile banking and internet

banking. Previous studies have cited various challenges experienced while using mobile money transfer services such as losing till slips that contain the pin, long queues, unreliability of network and not being able to reverse a transaction mistakenly sent to the wrong recipient (Finmark Trust, 2017). This suggests that an opportunity exists in the improvement of mobile money transfer service to eliminate these challenges.

This research will examine the factors driving the intention to adopt mobile money transfer services in South Africa. Furthermore, this will be evaluated in light of the combined UTAUT and TAM theories. The expectation is that the findings from this study will contribute in enhancing the body of knowledge particularly in the financial banking industry and inform improvement strategies of the mobile money transfer services in the South African context.

1.6 Delimitations of the study

This study is an application of the combined UTAUT and TAM theories on the factors affecting the intention to adopt different mobile money transfer services offered by financial and non-financial institutions in South Africa. As illustrated in the theories, this study will only examine how the ten variables identified in this study influence the intention to use mobile money transfer services in the South African context.

1.7 Definition of terms

Banked

Refers to individuals who have access to any traditional financial services, including savings accounts, credit cards, or personal checks.

Mobile Money Transfers

A facility that enables financial transactions through mobile means.

Remittance

Refers to an action of sending money to another as payment or as gifts.

Unbanked

Refers to individuals who do not use or do not have access to any traditional financial services, including savings accounts, credit cards, or personal checks.

Underbanked/underserved

Customers with accessibility to a basic transactional account obtainable from a formal financial institution, however, still have financial needs that are not met or not appropriately met.

1.8 Assumptions

The ten factors identified in this study are foundational determinants of mobile money transfer services.

1.9 Chapter Outline

This study is made of six chapters which include this introduction and the following sections:

- Chapter 2 is a literature review which covers financial and technological developments, theoretical and empirical discussion as well as the research hypothesis
- Chapter 3 focusses on the methodology of the research, data sources and definitions, and lastly the analytical approaches to data analysis
- Chapter 4 presents and analyses the results of the study
- Chapter 5 discussed key results
- Chapter 6 summarises concludes the study with practical implications and recommendations

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This section will unpack the overview of mobile money services from a global and African perspective. The second section will look at an overview of mobile money services from a South African perspective, this will include the players and landscape in the South African context. The last section will cover a review of literature and discussions on the relationship that certain factors have on the intention to adopt mobile financial services including mobile money transfer services.

2.2 Mobile Money Transfer Services Overview Global Perspective

The growth of mobile users worldwide has enabled the mobile industry to extend financial inclusion and more equitable societies through innovation (GSMA, 2021). Mobile money services are an innovative mobile financial service and have grown from strength to strength over the years. They have proven to be a vital vehicle in the delivery of financial support and safe ways of facilitating payments. When many markets were negatively affected by COVID 19 pandemic, the vulnerable especially the poor and financially excluded were impacted, and mobile money providers played an integral part in easing some of the disparities and socio-economic challenges magnified by the pandemic. Mobile money services offered a safe channel to distribute pandemic relief funds to the public quickly, efficiently and securely (GSMA, 2021). As the widespread shift from cash to digital was accelerated by the pandemic, mobile money usage grew steadily in 2020 reaching a global increase of 12.7% in registered accounts, putting the number of accounts at 1.21 billion during that time (See Figure 2). It was stated that, not only were mobile money accounts frequently used but were being used for more advanced scenarios suggesting that there was appetite from the people

to transform their lives to digital ways of living (GSMA, 2021). The increased usage in mobile money also drove global transaction values where daily transactions surpassed \$2 billion dollars, with an expectation that it would surpass \$3 billion a day by the end of 2022 (GSMA, 2021). In addition, the factors that have created a favourable environment for mobile money services to thrive included, strong partnerships and collaboration with FinTech's, governments, banks and other stakeholders. Additionally, robust agent networks, regulatory landscape, interoperability, increase in international remittances, and the need for digital merchant payments (Ernst & Young [EY], 2019). As a result of these capabilities and assets, mobile money providers are in a strong position to build resilience into local economies and societies.

Below is a depiction of the regional growth in the mobile money industry in 2020.



Figure 2: Regional Growth of Mobile Money Services (GSMA, 2021)

2.2.1 Adoption of Mobile Money Transfer Services

The increasing adoption rate of mobile money services was noted in an EY report on global FinTech adoption and this includes money transfer and payment services (EY, 2019). It was indicated in this report that one of the main reasons that drive adoption of FinTech services is consumer awareness. To support this statement, it was reported that 89% of consumers globally have awareness of mobile phone payment platforms and 82% of peer-to-peer payment systems and non-bank money transfers (EY, 2019). Money transfer and payment services have been one of FinTech's services that have enjoyed a faster adoption rate and were ranked number one compared to other categories in 2019 (See Figure 3) (EY, 2019). Below is a depiction of adoption rate by Fintech category.

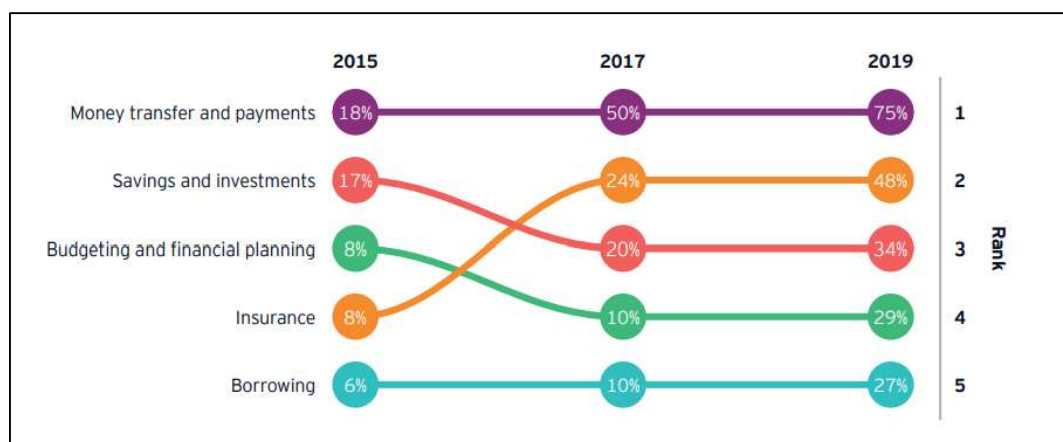


Figure 3: Adoption Rate of Fintech Categories (EY, 2019)

The commonly used Fintech service emerged as the money transfer and payment services, showing that 75% of consumers used at least one service in this category. What also emerged from this report was that, lack of awareness and trust were the biggest reasons why consumers would not adopt and use FinTech services. It has become critical for FinTech providers to have the ability to build on pre-existing trust to appeal to non-adopters of FinTech (EY, 2019).

2.2.2 Mobile Money Transfer Services Overview African Perspective

Mobile money services resulted from a need to securely and cost effectively transfer funds from one person to another. High costs of formal banking have been one of the important drivers of mobile money use particularly in emerging countries. Unbanked population would resort to using informal financial services in keeping the costs manageable. Mobile money services proved to be beneficial especially to factory workers who needed to send money to their families in the rural areas. Previously, the money would have been sent by bus, taxi, train or post through parcels and letters (ACP, 2014). Furthermore, in remote areas where there are challenges around sufficient infrastructure, roads and electricity, mobile phones brought a promising future in being able to facilitate mobile money transfers to the most remote areas. The real value of these services in the African context is bringing financial access to the poorest of the poor and closing the gap on financial inclusion. It provides a cost effective and convenient alternative to a formal bank account, that a lot of disadvantaged people in the African countries cannot afford.

Around 57% of the African population does not own a bank account (FinTech Times, 2021), in the same vein 650 million people in the African population own a mobile phone. This suggests that there are fertile conditions in Africa additional to low financial inclusion and high crime rates, for the sustainability of such services. Mobile money usage growth has been perceived globally, similarly, Africa has also seen a sharp increase. It was reported that, increase in Africa has been driven mostly by Sub-Saharan Africa which has been at the forefront of the mobile money industry for over a decade (GSMA, 2021). In 2020, 43% of all new accounts were attributed to the Sub-Saharan Africa region, resulting in 548 million registered accounts, of which 150 million were active on a monthly basis. While the highest growth was experienced in West and East Africa, Southern Africa also showed some growth at 24% year on year (GSMA, 2021).

The mobile money ecosystem embraces various players and participants who collaborate to ensure the success of the mobile money network. It typically would include players such as financial institutions, mobile network operators (MNOs),

airtime agents, retailers and regulators (Meritt, 2010). Mobile money services first saw light of day in 2007 in Kenya through M-PESA which is a popular service offered by one of the MNOs, Safaricom. Since then, this service has been prevalent in emerging economies including Africa, India, Pakistan and Bangladesh (Meritt, 2010). The implementation of this service was very successful in countries like Kenya, Philippines, Uganda and Côte d'Ivoire, mainly driven by the low levels of financial inclusion and high crime statistics (ACP, 2014). The service replaced manual remittances where money was predominantly moved by hand and allowed users to do more than just transferring and drawing out cash. It has brought benefits of fast, affordable and reliable money transfer services.

2.3 Mobile Money Transfer Services Overview South African Perspective

2.3.1 The South African Banking landscape

South Africa prides itself of a large and sophisticated financial sector which has a high concentration around five largest banks, holding over 90% of total assets (BusinessTech, 2021). The banking sector has played a considerable role in the financial inclusion imperative evolution. The National Treasury continues to indicate some of the factors that have been key to this imperative in South Africa including, focus on consumer literacy, technological innovations aiding in the development of affordable products and robust infrastructure. It has also been highlighted by Slazus and Bick (2022) in their study that, technological innovations of financial services have played a vital role in increasing accessibility of financial services. Money transfers and mobile payments are some of the technological innovations in the finance services that have been pivotal in the adoption of financial technology (Slazus & Bick, 2022). These technological innovations in the financial services could be enablers of the financial inclusion imperative by making the services far reaching and widely accessible. Mobile money transfer services is believed to be an innovation that will extend financial services to the poor (Donovan, 2012). This could be achieved in a number of

ways which include, using a mobile application to transfer digital value that can be redeemed as cash through a retailer or ATM or used to make payments. While mobile financial services enable the financially excluded population to transfer money, they cannot be used in isolation for enhancing financial inclusion. There is great potential in mobile money transfer services advancing financial inclusion, however, the challenge remains that it does not increase access to banking (Donovan, 2012). Use and access to more sophisticated financial services such as insurance, credit, and savings facilities could prove far more valuable to the poor and thus it is a consideration for mobile money transfer services to enhance its services beyond transfer of cash. The use of mobile money transfer services has increased in parallel to the steady growth of remittances within the country and as a result, further developments and innovation in mobile services are expected to increase competition and lower prices.

2.3.2 *Financial Inclusion Imperative*

Financial inclusion is described as the accessibility of cost effective and suitable financial services to those who need these services or where they are inadequately provided (South African National Treasury, 2020). It has been indicated as one of the important tools for economic growth of a country (World Bank, 2013). Over the years, an increased focus has been placed on financial inclusion at a global level. Evidently, financially excluded adults have seen a decrease in the population from 2.5 billion to 1.7 billion. Financially excluded individuals are those that may not own a transactional, saving, credit or insurance accounts. The exclusion of these individuals further intensifies poverty, income inequality and slower economic growth (South African National Treasury, 2020).

South Africa is a country that has a population of over 55 million. It faces many socio-economic challenges including unemployment, poverty and inequality that could be significantly reduced by financial inclusion strategies. Despite the country having a highly developed financial infrastructure and well-regulated financial sector, and achievements of growing financial inclusion levels (91 % of adults included in the formal financial system), the country still experiences a significant number of adults (2.9 million) who are financially excluded (South

African National Treasury, 2020). South Africa has the world's highest unemployment rate, high poverty levels as well as inequality and could benefit substantially to enhancements of financial inclusion to close the economic gap.

2.3.3 Mobile Money Transfer Services

In South Africa, a similar implementation of M-PESA was not as successful as it was in Kenya mainly due to the levels of financial inclusion which are higher compared to their African counterparts. In South Africa there's also an established network of retailers (Over the counter OTC) and banks offering remittance services. Even with the failure of M-PESA in the South African context, majority of remittances were being successfully serviced by banks and retailers (Finmark Trust, 2017). A depiction of South African remittances is shown below where the majority of remittances (32%) were completed through retailers (Shoprite, Checkers, Spar and Pep).

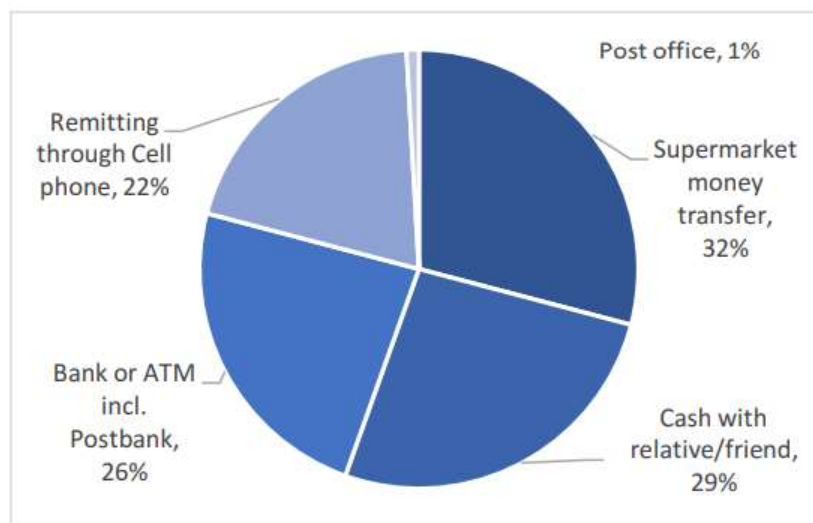


Figure 4: Distribution of Remittances in South Africa (Finmark Trust, 2017)

Through using over the counter services to remit money, users enjoyed benefits of security, convenience, cost effectiveness and easy on-boarding where users needed only a cell phone number and an Identity Document (ID) to use the service. Unlike Kenya, the mobile money services landscape allowed both the banked and unbanked population to use the services (Finmark Trust, 2017)

2.3.4 Main Uses of Mobile Money Transfer Services

Finmark Trust (2017), did a study that revealed that, money transfer services are predominantly used for sending and receiving of money as well as bill payments. The respondents in that study also indicated that it was not rare for them to use more than one money transfer service depending on different reasons including which service is offline, has the shortest queue and most convenient to the receiver. From the study done by Finmark (2017), some of the main challenges experienced by money transfer users included, not being able to reverse a transaction once it is sent to an incorrect cell phone number, losing of receipts with pin, network instability, and congestion in queues. This shows that an opportunity exists in enhancing the service offerings to alleviate some of the pain points experienced in using the services. In South Africa, these services are mainly driven by the need for cash, and to reduce this need, the mobile money transfer service would have to evolve its use to enable transactions in the retailer and informal markets (Finmark Trust, 2017).

2.4 Theoretical framework

Application of numerous theories has dominated in previous studies to understand technology adoption, which have also been crucial in understanding mobile financial services adoption. Included in the theories are, Diffusion of innovations (DOI) (Roger, 1962), Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Technology Acceptance Model (TAM) (Davis, 1989), Theory of Planned Behaviour (TPB) (Ajzen, 1989), TAM 2 (Venkatesh & Davis, 2000), Unified Theory of Use and Acceptance of Technology (UTAUT) (Venkatesh & Davis, 2003), TAM 2 Extension (Wu & Wang, 2005), UTAUT 2 (Venkatesh, Thong & Xu, 2012), UTAUT & TAM (Khalilzadeh, Ozturk & Bilgihan, 2017), Technology Organisation Environment (TOE) (Seethamraju & Diatha, 2018).

Combined UTAUT and TAM models will be used as theoretical frameworks in this study, mainly due to their prominence in exploring factors for technology acceptance (Phiri & Njele, 2021).

The TAM model suggests that attitude, perceived ease-of-use, perceived usefulness, concerning use, and behavioural intention, will determine the actual usage of technology (Phiri & Njele, 2021). It has been suggested in previous studies that, this model has been applied in the prediction of intention to adopt new technology. This model has also played a key role and contribution towards the development of other theories like the UTAUT. Empirically, the TAM has been supported in mobile payments, money transfer services, mobile financial services, mobile phone, mobile banking and many others (Phiri & Njele, 2021; Maradung, 2013; Ramnath, 2018; Lema, 2017; Jere & Augastine, 2014).

The UTAUT model, studies technology related adoption particularly in corporate environments (Slazus & Bick, 2022). It is a consolidation of eight existing theories and emphasises on four constructs that affect the intention to use technology: performance expectancy, effort expectancy, social influence and facilitating conditions (Slazus & Bick, 2022).

This study is ultimately grounded in the combined Unified Theory of Acceptance & User of Technology (UTAUT) and Technology Adoption Model (TAM) as these

two models have been found to be capable of analytical accuracy than the original UTAUT (Khalilzadeh, Ozturk & Bilgihan, 2017). The UTAUT has been supported in mobile money and FinTech (Penney, Agyei, Boadi, Abrokwah & Ofori-Boafo, 2021; Slazus & Bick, 2022).

2.4.1 Attitude

Attitude refers to the feelings one has, concerning a certain behaviour. It is influenced by users' perceived usefulness (Productivity) and perceived ease of use (Effort) (Maradung, 2013). These two constructs are believed to influence an individual's attitude that result in his/her behavioural intention, which ultimately influences his/her actual usage of technology (Maradung, 2013). User attitude has been found in numerous studies as having an influence on the intention to adopt technology. Various authors have proven this in their studies and share the same sentiments that attitude does influence new technologies' adoption particularly mobile banking applications, FinTech, mobile money services and mobile financial services.

The authors covering these beliefs (see Maradung, 2013; Belkhamza & Niasin, 2016; Maitai & Omwenga, 2016; Yunus & Mohammed, 2017; Lema, 2017; Mhlanga et al., 2017; Koloseni & Mandari, 2017; Himel, Ashraf, Bappy, Abir, Morshed & Hossain, 2021; Koenait, Maziriri & Chuchu, 2021; Slazus & Bick, 2022; Kelly & Palaniappan, 2022).

H1: Attitude positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.4.2 Utilitarian Performance Expectancy and Hedonic Performance Expectancy

Performance expectancy is defined as the degree to which users perceive a technological system will assist them to perform their task (Belkhamza & Niasin, 2016).

The concept of utilitarianism was originally put forward by Jeremy Bentham (Stanford Encyclopaedia Philosophy [SEP], 2014) and founded on normative belief that, an action chosen should be in the best interest of the entity that performs the action (Belkhamza & Niasin, 2016). Utilitarianism can be applied to performance expectancy to predict the behavioural intention of users to perform mobile based activities. Utilitarian performance expectancy has been found in previous studies to be significant in new technology adoption. Several authors supported this view in the context of mobile money platforms and mobile financial services including (Omigie, 2017; Ngwenya & Pelser, 2020; Xavier & Zakkariya, 2021; Gbongli, 2022).

Hedonism is based on the theory that, using a technological system results in fun, enjoyment, or happiness and plays a significant role in determining the acceptance of new technology (Lin, Lin & Ding, 2020). Similarly with Utilitarianism, hedonism can also be applied to performance expectancy to predict the behavioural intention of users in performing mobile based activities. Hedonic performance expectancy has been found in previous studies to have an influence on new technology adoption. Various authors have indicated this, including (Lin et al., 2020; Ngwenya & Pelser, 2020; Nur & Panggabean, 2021; Xavier & Zakkariya, 2021; Ly, Khuong & Son, 2022) sharing the view that, hedonic performance significantly influences the intention to adopt new technologies.

H2: Utilitarian performance expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H5: Hedonic performance expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.4.3 Effort Expectancy

Effort expectancy has been documented in the context of mobile payments as a factor that affects the intention of its adoption (Abrahao, Moriguchi & Andrade, 2016). In a study conducted by Rahmiati, Vernanda and Susanto (2021) on the intention of consumers to adopt electronic money (e-money) as a means of

payment in Indonesia, the results revealed that effort expectancy significantly and positively affects behavioural intention to use e-money. This is due to e-money being easily understandable, also easy to learn and use. Similarly in Ghana, it was found that effort expectancy positively influenced consumers' adoption of mobile money (Penney et al., 2021) which was also supported by prior studies conducted (see Martins, Oliveira & Popovic, 2014; Rahmiati et al., 2021; Penney et al., 2021; Yan, Siddik, Akter & Dong, 2021).

H3: Effort expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.4.4 Social Influence

In a study done by Murendo, Wollini, de Brauw and Mugabi (2018), it was found that social networks play a vital role in the adoption of mobile money in Uganda. Similarly in a study conducted by Lema (2017) on mobile financial services adoption, social influence emerged as a significant factor.

Social influences have also been highlighted in the Ernst & Young's FinTech Adoption Index (Slazus & Bick, 2022) as a key role player in encouraging potential customers to adopt FinTech services in South Africa. As an addition to the TAM model, social constructs, specifically social influence, were considered to be critical in better understanding adoption of technology (Slazus & Bick, 2022). Prior studies on mobile-banking adoption have shown a relationship between social influence and intended use of mobile-banking or mobile money (see Bankole & Cloete, 2011; Chitungo & Munongo, 2013; Murendo et al., 2018; Maduku, 2017; Makanyeza, 2017; Püschel, Mazzon & Hernandez, 2010; Penney et al., 2021) and FinTech (Lema, 2017; Yan et al., 2021; Slazus & Bick, 2022).

H4: Social influence positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.4.5 Self-Efficacy

Describes the users' confidence concerning technology use (Slazus & Bick, 2022). Linkages between self-efficacy and technology adoption has been mentioned in past studies (see Alalwan, Rana, Dwivedi & Lal, 2015; Koksai, 2016; Maduku, 2017; Daragmeh et al., 2021; Slazus & Bick, 2022; Sujith, Sumathy & Jisha, 2022; Anane & Nie, 2022).

H6: Self efficacy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.4.6 Perceived Risk, Security and Trust

Perceived Risk is related to the users' perceived uncertainty linked to using a particular technology (Penney et al., 2021). When there is a sense of potential loss resulting from uncertainties in utilising technology, this tends to increase the risk perception. Perceived risk has been found in previous studies to have a significant influence on the intention of users to use technology. Authors that have found similar results include (Noreen, Ghazali & Mia, 2021; Slazus & Bick, 2022)

Perceived Security refers to the degree of ones' belief that, usage of technology provides secure mechanism for achieving their goal (Saprikis, 2021). It is alleged that the greater the users' perceived security around a particular technology, the higher their intention to adopt the technology. Several Authors have shared this sentiment in previous studies including (Pikkarainen, Pikkarainen, Karjaluo & Pahnla, 2004; Mashagba & Nassar, 2012; Mlitwa & Tshetsha, 2012; Mago & Chitokwindo, 2014; Moyo, Zimusi, Ncube & Kupfurwa, 2022).

Nur and Panggabean (2021) describe trust as the extent to which users believe a certain technology usage is trustworthy. With high levels of trust in new technology, the more is the likelihood of intention to engage in that technology (Lema, 2017; Koloseni & Mandari, 2017; Garapo, 2018; Noreen et al., 2021; Slazus & Bick, 2022).

All these three constructs have been considered central to new technology adoption in the FinTech industry (Slazus & Bick, 2022), to foster the adoption of FinTech, internet banking (see EY, 2016; Pikkarainen et al., 2004; Slazus & Bick, 2022), m-banking (see Baptista & Oliveira 2015; Hanafizadeh, Behboudi, Koshksaray & Tabar, 2014; Ismail & Masinge, 2011; Maduku, 2017; Slazus & Bick, 2022), and m-payments (see Dastan & Gurler, 2016; Kim, Choi, Park & Yeon, 2016).

H7: Trust positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H8: Perceived risk influences the consumer's intention to adopt mobile money transfer services in South Africa

H9: Perceived security positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.4.7 *Facilitating conditions*

Facilitating conditions refer to the degree to which a user believes that organizational and technical infrastructure exists to enable technology usage (Saprikis & Alviqaris, 2021). If users have access to technology and knowledge on how to use it, it can be stated that their behavioural intention towards this technology will be increased. In the original UTAUT model, facilitating conditions is depicted as not exerting a positive effect on behavioural adoption intention. However, there have been various studies that have confirmed the opposite (Unyolo, 2012; Ndekwa, Ochumbo, Ndekwa & John, 2018; Lin et al., 2020; Aristotle, 2020; Rahmiati et al., 2021; Nur & Panggabean, 2021; Slazus & Bick, 2022; Ly et al., 2022).

H10: Facilitating conditions positively influences the consumer's intention to adopt mobile money transfer services in South Africa

2.5 Empirical Review

2.5.1 Adoption of Mobile Financial Services (MFS)

MFS as an innovative channel to deliver financial services to the unbanked population, have played a significant role in promoting financial inclusion in the African continent (Lema, 2017). The adoption of MFS is equally important as it drives usage of the new innovative services. In a study conducted by Lema (2017), six phases of mobile money adoption by the unbanked population were identified. These stages provide a very good indication of the barriers and opportunities that lie within this service. Included in the stages are customer awareness, trial, ultimate awareness, knowledge, clear understanding and regular use (Lema, 2017). It is further mentioned in Lema's study (2017) that, adoption or rejection of any innovation, commenced with the customer being aware of the existence of the service. Any difference in patterns of adoption would be indicative of the different economic environments both in developed and developing countries as well as urban or rural areas. Intermedia (2013) conducted a study in Tanzania and asserted that differences in gender, residence (urban or rural), income level and understanding in mobile money usage affected the adoption of the service. Lema (2017) concluded in his study that the factors that affect the adoption of mobile money services by the unbanked population are perceived usefulness, social influence and perceived cost.

In a study conducted by Technoserve (2016), it emerged that, the factors that drive customers towards using remittance products like mobile money services are, existing finance, shopping relations, time efficiency, location, mobile and internet usage, trust and safety. The argument made in this study was that, most people would look for products that would fit in an already existing lifestyle pattern and further indicated that most people gravitated towards bank remittance products due to their patterns of online shopping and mobile banking. Transfer speed and convenience were also big drivers in determining which remittance product users chose.

Penney et al. (2021) conducted a study in Ghana using UTAUT 2, where it was found that social Influence, perceived risk, performance expectancy, habit, effort expectancy, price value and trust influenced the adoption of mobile money and usage. Hedonic performance and facilitating conditions were not found to be significant in mobile money adoption. This suggested that customers are in a good position to accept technology if it brought enhancement to their lifestyle.

A study conducted by Njele and Phiri (2021), revealed that customers' adoption and usage behaviour was highly influenced by whether they perceived the service to be useful. Furthermore, it was revealed that if customers perceived the service to be effortless, it was likely to be used. The study also brought to surface that social influence or advice from ones' close social circle, significantly influenced the decision to use technology. Facilitating conditions were found not to be significant.

Maradung (2013) conducted a study in Botswana using the TAM, and found that, levels of income, gender, age and employment status were significant in mobile money services adoption. Education level was not found to be significant.

Maitai & Omwenga (2016) studied mobile money strategy adoption using the theory of planned behaviour. It was found that consumer behaviour, resource availability, technology and attitude were significant in Kenya.

Lema (2017), employed the TAM methodology on mobile financial services adoption in Tanzania. The findings revealed that social influence, perceived usefulness and perceived cost were significant, with social influence being most effective. Trust, perceived ease of use and risk were not found to be of significance.

Banganzi and Lau (2017), further examined risk and trust in mobile money acceptance in Uganda using the TAM model. Performance expectancy, perceived risk and structural assurance were found to be significant while trust was not.

Njele and Phiri (2021) used the TAM model to study mobile money adoption in Lusaka. Their study showed that perceived ease of use, perceived cost and

perceived usefulness were significant. This suggested that, the costly the mobile money service is, the less chances that people will use it. The study also revealed that if the service was found to be easy and useful, customers were more likely to accept it.

Nur and Panggabean (2021), used the extended UTAUT to explore mobile payment adoption amongst generation Z in Indonesia. The results showed that, perceived enjoyment, performance expectancy, trust, facilitating conditions, and social influences were significant while effort expectancy was found to have no significant effect.

Slazus and Bick (2022), studied FinTech adoption in South Africa using UTAUT and found that trust, perceived usefulness, social influence, perceived ease of use and economic benefit were enablers that influenced the usage and adoption of Fintech. The inhibiting factors were identified as cost and risk.

Kelly and Palaniappan (2022), employed the TAM model in studying mobile money transaction adoption in Ghana. It was found that social influence, perceived risk, perceived usefulness, perceived cost and ease of use were significant.

Ly et al. (2022), employed the UTAUT 2 to study the determinants that affect mobile wallet continuous usage in COVID 19 pandemic in Vietnam. The factors that were studied included, performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, trust, and price saving orientation. The findings showed that, all factors except for effort expectancy and social influence, had a significant influence on the behavioural intention to adopt mobile wallet in Vietnam.

Rahmiati et al. (2021), used the UTAUT to study the factors influencing consumer intention to adopt e-money. The factors that were included as part of this study were, performance expectancy, effort expectancy, social influence and facilitating conditions. The results revealed that performance expectancy, facilitating conditions, and effort expectancy had a significant and positive effect on e-money

behavioural intentions. Social influence emerged to have a positive effect on e-money behavioural intention but was not found to be statistically significant.

Babatope and Abbyssinia (2020) investigated the determinants of mobile money adoption in rural areas of Africa and used data from Research ICT Africa Access Survey. The results indicated that mobile money was found to be safer, easier, more trustworthy, faster and more convenient. Additionally, the findings showed that ownership of a bank account, years of education, age and unemployment, explain both the adoption and the amount of money sent using mobile money technology.

Anane and Nie (2022) Used a representative national dataset from Ghana to explore the determinants of digital financial services adoption. The model used in this study indicated that awareness, effort expectancy, facilitating conditions, security and privacy, transaction cost, and self-efficacy positively influenced digital financial services adoption. Moreover, the results revealed a significant difference of adoption levels across key socio-demographic variables, including gender, education level, urban and rural residence, and administrative regions of Ghana.

2.6 Conceptual Framework

The conceptual framework adapted from the theoretical framework is as follows.

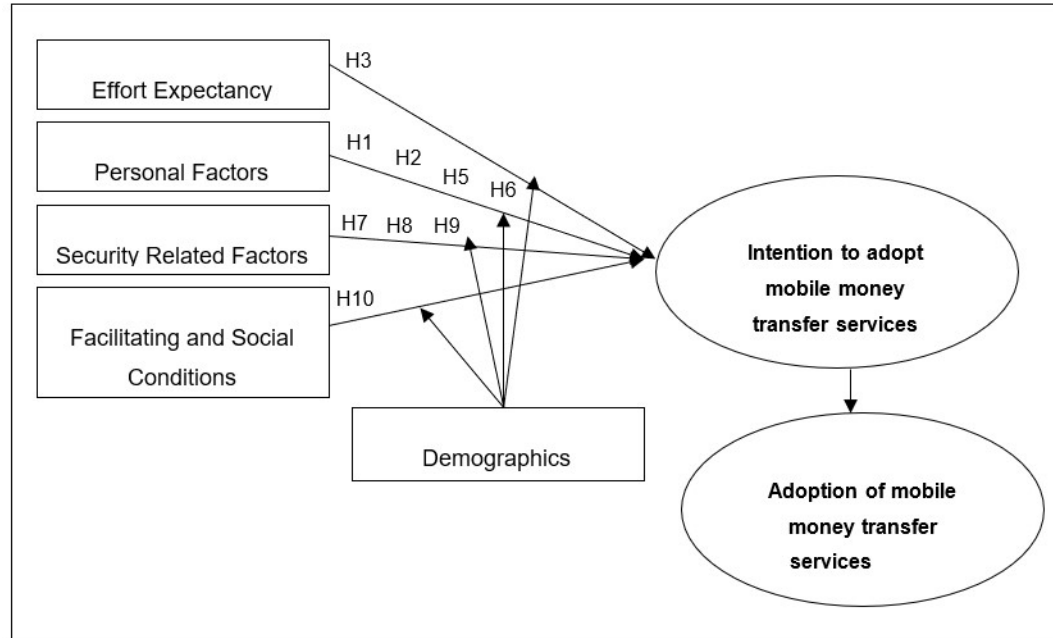


Figure 5: Conceptual Framework of the study (Researcher’s own depiction)

Personal factors include attitude, self-efficay, hedonic performance and utilitarian performance. Security Factors include trust, risk and security.

The variables in the conceptual framework are adapted from the theoretical framework (UTAUT & TAM) and futher supported by some of the authors in the literature review. These variables will be tested in the South African context to determine which of them have an influence on the consumer’s intention to adopt mobile money transfer services in South Africa.

2.7 Conclusion

Most previous studies have found that TAM & UTAUT methodologies worked and in some cases, these were modified to accommodate the particular environment and nature of the study. The previous studies showed that there have been significant improvements in the mobile financial services sector enabled by

technological innovation to bring the financially excluded and underserved population to have access to financial services. The usage and adoption of mobile money services has been influenced by different factors in different parts of the world depending on various conditions which either promoted or prevented the use and adoption of mobile financial services, including mobile money transfer services.

The positive sentiments to note are that, the faster the move from cash to digital, the more increased is the adoption rate of mobile money services especially by the vulnerable. Furthermore, mobile money services can potentially be the solution to accelerate financial inclusion in many countries. The challenges noted from previous studies are that, mobile money services in some countries have failed due to various reasons mentioned in this study, this suggests that there is a need to improve this service in some parts of the world and further research be conducted to deepen understanding.

The review of literature on mobile money transfer services suggests the following hypotheses:

H1: Attitude positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H2: Utilitarian performance expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H3: Effort expectancy positively influences on the consumer's intention to adopt mobile money transfer services in South Africa

H4: Social influence positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H5: Hedonic performance expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H6: Self-efficacy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H7: Trust positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H8: Perceived risk influences the consumer's intention to adopt mobile money transfer services in South Africa

H9: Perceived security positively influences the consumer's intention to adopt mobile money transfer services in South Africa

H10: Facilitating conditions positively influences the consumer's intention to adopt mobile money transfer services in South Africa

CHAPTER 3. RESEARCH METHODOLOGY

This chapter presents the research approach, the adopted design as well as data and data sources that have been used. Following these components will be the research data analysis covering the main models that have been identified in order to achieve the objectives of the study. This chapter will also discuss sampling methods used and limitations of the study. Furthermore, reasons will be provided for every method chosen to be used in this research.

3.1 Research approach

A quantitative approach was followed where the effect of the variables identified in theory were tested. Quantitative method is a process that involves the collection of numerical data and analysis thereof, and employing mathematically founded methods (Ramnath, 2018). Furthermore, it is asserted in Ramnath (2018) that in a case where factors impacting an outcome of a study need to be identified, the quantitative approach is appropriate in achieving this. This approach carries many benefits relating to generating accurate and consistent data associated with a large population. Additionally, it enables generalisation of outcomes by the researcher using a sample that embodies similar circumstances (Ramnath, 2018). For this reason, this approach was ideal for this study as it considers a larger population and allows generalisation of the outcome with the sample taken.

This approach only considered the effect of the known variables which have been identified and does not consider unknown variables.

3.2 Research design

Research design informs the theoretical structure of the study. This includes methods and techniques adopted to collect and analyse relevant data, all while maintaining objectivity of the research. There are five categories of research design namely, descriptive, experimental, correlational, diagnostic, and explanatory. This study pursued a descriptive research design for the reasons

described by Kothari (2019), that it is an ideal approach in studying specific predictions, utilising narration of facts and characteristics with reference to individuals, groups or situation. The majority of social research falls within this category. In a similar study conducted by Maitai and Omwenga (2016) for determining factors affecting the adoption of mobile money transfers in the telecommunications industry, the descriptive research design approach was found to be useful in obtaining the information concerning the phenomena. The researchers observed that the mentioned approach is best in providing a comprehensive examination of the answers to precise questions.

3.3 Data collection methods

There are several methods of collecting data particularly in descriptive studies such as questionnaires, interviews, observations, content analysis and others (Kothari, 2019). The data collection for this study was done through a self-administered questionnaire that followed the format of a survey. A questionnaire is described in Maitai and Omwenga (2016) as a measuring instrument that seeks answers to a set of questions from individuals. Some of the merits concerning this form of data collection include, cost effectiveness especially in achieving wide reach spread across geographies, free from bias, convenient for respondents who can answer at their own time and comfort and also affords respondents adequate time to provide well thought responses (Kothari, 2019). For these reasons, the study utilised a questionnaire to collect primary data from a sample of interest. There were categorised sections in the questionnaire which covered the variables measured in this study. The survey went through a testing process before it was administered to the respondents to ensure that it was valid, accurate, understandable and also to identify any misinterpretation. A pilot study resembling the questionnaire on Qualtrics was conducted on 10 participants prior to data collection to test the effectiveness of the questionnaire as well as weaknesses and areas of improvement including clarity of the questions, flow of the questionnaire and any technical challenges that were experienced by the respondents in the pilot study. The data collected was then processed and analysed using appropriate methods and techniques that have been unpacked in

the following sections. The questionnaire method was also used by other researchers in previous studies to explore determinant factors of internet banking; mobile money transfers, and FinTech (Ramnath, 2018; Matai & Omwenga, 2016; Maradung, 2013; Slazus & Bick, 2022).

3.4 Population and sample

In a research or study, it is crucial to know and clearly understand the population of interest and where to access that population to answer the relevant questions in your study and test your hypothesis (Ramnath, 2018). Population in this context is described in Maitai and Omwenga (2016), as a complete group of individuals, events or objects that possess common observable characteristics. Often it is not possible to conduct a study using the entire population especially for large populations, this can be a timely and costly undertaking. It is then suggested by Kothari (2019) that in such cases, part of the total population can be studied, alternatively a sample of the population can be studied. Kothari (2019) further described a sample as a finite selection from the total population that embodies the characteristics or properties of the total population as far as possible. This sample is studied to obtain and gain information and understanding of the whole population (Maitai & Omwenga, 2016). The population of interest in this study is detailed in the section below.

3.4.1 Population

For this study, the relevant population was the general public of South Africa. These individuals belonged to various age groups, racial groups, gender and social standing. They have in some way utilised one or more services related to mobile money transfer services, whether through a bank, retailer or digital platform.

3.4.2 Sample

A sample size of 200 was targeted across the country. The sample size of about 200 is also believed that it can promote a good response rate ensuring a

representative sample of the research (Lema, 2017). The sample had similar qualities, or profiles; being financially included or excluded and based in South Africa. Financially included represented accessibility to formal financial services and products, while those who are financially excluded represented the inaccessibility to financial services.

3.4.3 Sampling method

This study adopted an approach of convenience sampling which is a type of non-probability sampling. Convenience sampling is a form of sampling where the respondents are drawn from part of the population which is close to hand (Kothari, 2019). This is an ideal method for obtaining respondents easily and quickly, and if used correctly with maintained impartiality, without bias, and the ability of the researcher to make sound judgement, the results can be of tolerable reliability (Kothari, 2019).

3.5 The research instrument

The data was collected by means of a self-administered questionnaire (Appendix B). The questions in the questionnaire were guided and developed from the theoretical framework. Participants were asked to provide their view on the questions that were outlined in the questionnaire. Respondents were asked whether they agreed or disagreed to provided statements using a Four-point Likert scale from 1= Strongly Agree, 2= Somewhat Agree 3= Somewhat Disagree and 4= Strongly Disagree. The Four-point Likert scale was used to eliminate response or data that would not be of value in providing insights such as 'neutral' or 'agree nor disagree'. In total, 200 questionnaires were targeted for distribution to the sample described in the section above. Each of the ten independent variables identified in this study were measured using the Likert scale with various indicators. According to Lema (2017), it is recommended that constructs are measured using a method like the Likert scale to capture the completeness and the meaning of complex concepts.

3.6 Procedure for data collection

The questionnaire was administered through an online survey platform namely Qualtrics. A link was generated and distributed by means of electronic mail and shared in various social media channels including Facebook, WhatsApp and LinkedIn for convenience. The link was also shared with the University of Witwatersrand's office of the Deputy Registrar for distribution to students after permission was granted. Online survey platforms have benefits of cost effectiveness, time efficiency, ease of data analysis and easy to use for researchers and participants.

3.7 Data analysis strategies and interpretation

There are various data processing and analysis tools that could be utilised in a study dependant on the nature and scope of the enquiry, finance availability, time and precision required (Kothari, 2019). The term "analysis", refers to the "computation of certain measures along with searching for patterns of relationships that exist among data-groups" (Kothari, 2019). This study explored the use of a software tool called IBM SPSS Statistics which is a statistical analysis tool that is commonly used within the research fraternity to facilitate data analysis. Different data analysis methods were employed in this study subsequent to data collection. Methods such as editing, coding and tabulation were utilised. Subsequently correlation and regression analysis were conducted. In addition, a reliability and validity tests were done which are unpacked in the quality assurance section.

3.7.1 *Editing*

According to Kothari (2019), editing of data relates to a process where the raw data collected is examined in an effort to identify errors and correct these where possible. In this case, it involved careful scrutiny of the completed questionnaire to ensure accuracy, consistency and completeness. Responses that were incomplete or invalid were not included for further analysis. A valid and complete data set was then coded and tabulated for analysis.

3.7.2 Coding

Coding is a form of categorisation of data through assigning numerals to the responses so that they can belong to some sort of category or class. Through the use of the Likert scale, numerals were assigned to responses to further categorise them. This enabled efficiency in data analysis and reduced the number of responses by categorising them in relevant classes.

3.7.3 Tabulations

Where large data has been assembled, edited and coded, there is a need for the data to be ordered in a logical way and this process is known as tabulation (Kothari, 2019). It ultimately helps in the summarisation of data in a more concise and compact form for further analysis such as data comparisons, summations, and other statistical computations. The data collected in this study was then tabulated and various percentages and other statistical computations were performed on it through using the IBM SPSS Statistical tool.

3.7.4 Correlation Analysis

Multiple correlation relates to the degree of a linear relationship that exists between two or more independent variables and a single dependent variable (Kothari, 2019). This study tested the degree of correlation between the identified independent variables, to determine the extent of linear dependency among the variables used in the study.

3.7.5 Regression Analysis

Regression analysis is concerned with the explanation that, the change in a dependent variable is explained by a change in the independent variable (Kothari, 2019). In this study, it was the change in the dependant variable (Intention to adopt mobile money transfer services) could be explained by a change in the ten independent variables.

As the availability of computer facilities increased over time, so had the rapid development of multivariate analysis which relates to statistical methods aimed at analysing more than two variables on a sample of observations (Kothari, 2019). This was best to use for our study as we were testing multiple independent variables to one dependent variable.

The multiple linear regression equation is: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon$

Whereby Y = Consumer's intention to adopt mobile money transfer services

X1= Social Influence

X2= Effort Expectancy

X3= Utilitarian performance expectancy

X4= Hedonic performance expectancy

X5= Self-efficacy

X6= Facilitating Conditions

X7= Attitude

X8= Perceived Security

X9= Trust

X10=Risk

ε = Error term/Erroneous variables

β_0 = The minimum change in Y when the rest of the variables are held at a constant zero

β = Measure of the rate of change i.e. β_1 measures the rate of change in Y as a result of a unit change in X1

3.8 Possible limitations and challenges of the study

This study will only be concerned with only ten variables. Notwithstanding that there might be other variables influencing the intention to adopt mobile money transfer services in South Africa. Secondly, the sample of this study might not be representative of the population.

3.9 Quality Assurance

Lincoln and Guba (1985) explored the concept of trustworthiness of data in research in their thematic analysis study. They suggested that trustworthiness is one of the ways researchers and readers can be persuaded that the findings of the research are worthy of attention. In line with a quantitative study, the criteria for testing trustworthiness includes validity and reliability and this study performed both trustworthiness tests.

3.9.1 Validity

Validity refers to the degree at which a concept is correctly measured in a quantitative study (Heale & Twycross, 2015). It ensures that the study actually measures what it is originally designed for. In similar studies, the Confirmatory Factor Analysis (CFA) has been used to test if all items are set to measure the same factor included in the study (Lema, 2017; Saprikis & Avlogiaris, 2014; Slazus & Bick, 2022). It is suggested in Lema (2017) that if the items measure a similar phenomena, they should have the same variable in common.

This study conducted an Exploratory Factor Analysis (EFA) as a construct validity technique to test whether the factor structure of the questionnaire makes intuitive sense (Field, 2013). Before carrying out the factor analysis, the Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity were used to assess the sampling adequacy of the data as well as the data's factorability. This ensured that the correlations between items were sufficiently large enough for EFA to be carried out.

3.9.2 Reliability

Reliability relates to testing the consistency of a measure (Heale & Twycross, 2015). There is slim possibility in calculating exact reliability however an estimation can be made through various measures such as correlation tests including Cronbach's Alpha and Kuder-Richardson test. The Cronbach's Alpha is the most popular and commonly used for determining the instrument's internal consistency. The Cronbach's Alpha result that is acceptable is a score of 0.7 and higher. This study used the Cronbach's Alpha to test reliability. This is also in line with other previous studies on adoption of internet banking, mobile purchases and mobile financial services (Ramavhona & Mokwena, 2016; Saprikis & Avlogiaris, 2021; Lema, 2017).

3.10 Ethical considerations

Data was only collected once the ethical clearance was obtained from the University of Witwatersrand Human Research Ethics Committee (Non-Medical). Necessary permission and consent were obtained from the participants before administering the questionnaire. Confidential information of participants was protected and not disclosed. Data was kept confidential and was only accessed by the researcher in a password protected data analysis system. All information obtained was only used for academic purposes and to satisfy the requirements of the qualification of Master of Management in Digital Business. Data will only be kept and used for the intended purposes and for an approved period of time (2 years), subsequently it will be safely discarded within the guidelines of the University of Witwatersrand.

CHAPTER 4. PRESENTATION OF RESULTS

In this chapter, the analysis of data collected for the study and analysed using IBM SPSS statistics and Stata software tools are presented. The first part outlines the summary of respondents' demographic profile, followed by an analysis of the trends in the demographic characteristics. For the presentation of data, percentages, tables and graphs will be utilised.

Following the sections described above, the Explanatory Factor Analysis (EFA) will test validity while the Kaiser-Meyer Olkin Measure (KMO) and Bartlett's test will assess data's factorability.

Inferential statistics will then follow in the form of t-test, reliability test, correlation and regression analysis in an effort to answer the research objectives.

Prior to the analysis of the data, the response rates of the questionnaire are presented in table 3 below.

Table 3: Response Rate

Description	Frequency	Percentage
Usable questionnaires	231	50%
Unanswered and unusable questionnaires	233	50%
Total	461	100%

Source Data: Authors Calculations

The total number of fully completed questionnaires was 231 (50%), while unanswered and unusable questionnaires were 233 (50%), with the total being 461 responses. The response rate is considered adequate based on the recommendations of various researchers including Mugenda and Mugenda (2003), who asserted that 50% is considered an adequate response rate, while 60% is good and above 70% is very good.

Babbie (2004) indicated that return rates of 50% are acceptable to analyse and publish, where 60% is good and 70% is very good. Saunders, Lewis and Thornhill (2009) proposed a 30-40% response rate.

4.1 Demographic Profile of Respondents

Demographic details of the sample analysed included the profile of respondents relating to age, gender, education and employment. Additionally, this section includes mobile money transfer services user frequency analysis.

4.1.1 Sample Size

As discussed in Chapter Three, the sample size estimation for the respondents was 200. A total of 231 valid responses were received during the survey which were beyond the initial sample size anticipated for this study.

4.1.2 Age Profile

Of 231 respondents, 87 (37.7%) were in the age group 18-25 years, 81 (35.1%) in the age group, 26-35 years, and 55 (23.8%) between the ages of 36-45 years. Six respondents were in the age group of 46-55 years (2.6%), while those who were 55 years and over comprised of two respondents (0.9%). The results showed that, majority of respondents were youthful (between the ages of 18-35 years) compared to the adult population. Figure 6 below illustrates the age distribution of respondents.

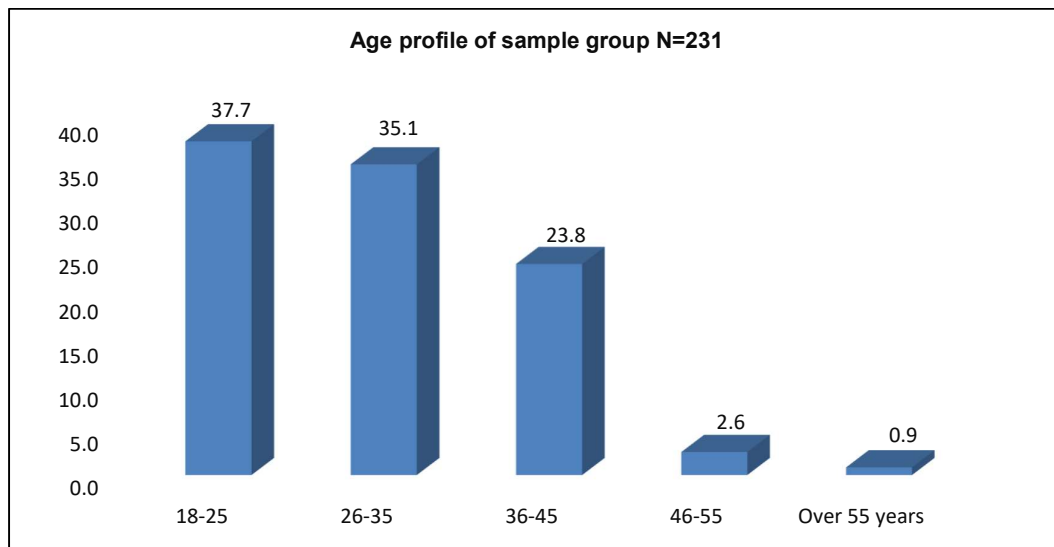


Figure 6: Age Profile of Sample Group (Field Survey, 2023)

4.1.3 Gender Profile

Females comprised of 136 respondents (59%), while 89 (38.5%) were males. The least represented group in this sample with 3 respondents each (1.3%) were non-binary or individuals who preferred not to disclose their gender status.

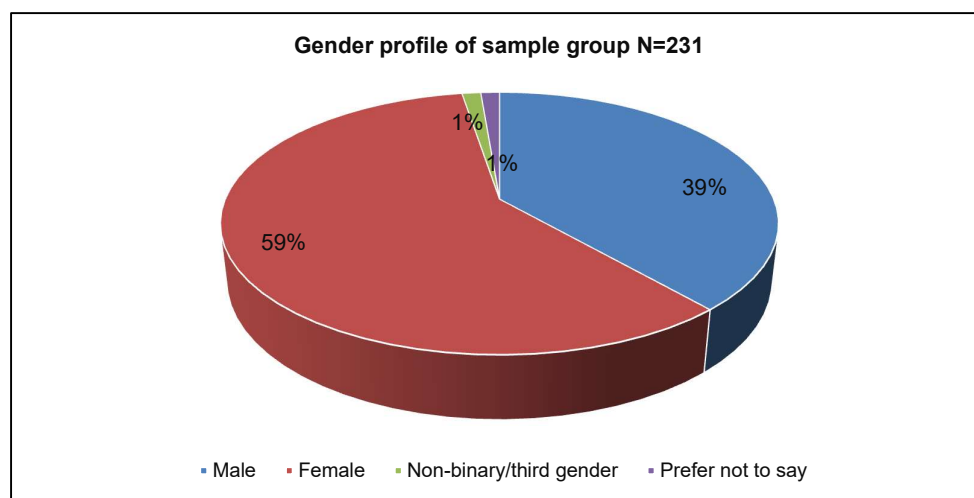


Figure 7: Gender Profile of Sample Group (Field Survey, 2023)

4.1.4 Education Profile

Majority of respondents, 114 (49.2%), were those who had a post graduate degree and 81 (35.1%) had a degree. Those with grade 12 or matric comprised of 16 respondents (6.9%) while those who had post matric certificate or diploma comprised of 9 respectively (3.9%). One (0.4%) respondent had secondary schooling and another one (0.4%) had no schooling. The study showed that the majority of respondents were highly educated which could indicate that there was a clear understanding of the questions and well thought responses provided which promotes the reliability of the responses provided in this study.

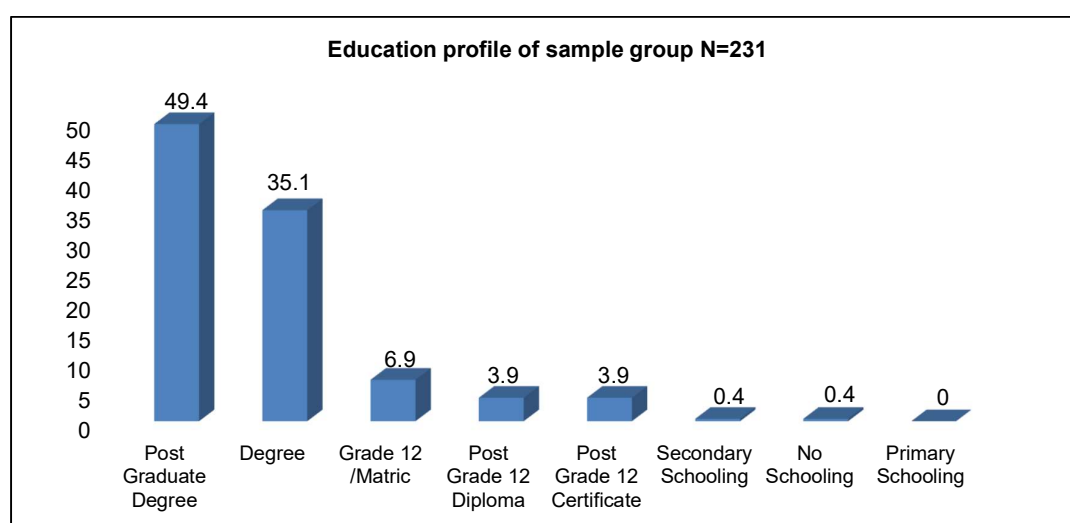


Figure 8: Education Profile of Sample Group (Field Survey, 2023)

4.1.5 Employment Profile

Majority of respondents, 148 (64%) indicated that they were employed (full-time, part-time or self-employed). A large proportion, over a third, 83 (36%) were unemployed. The results showed that, majority of respondents were employed which could suggest that they had financial means to use mobile money transfer services which qualified the reliability of the responses of this study.

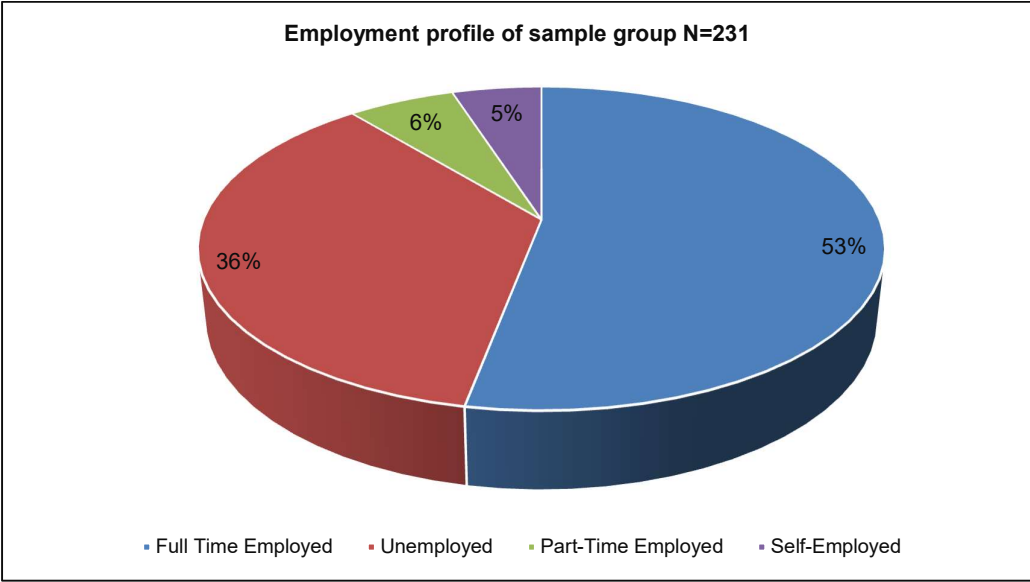


Figure 9: Employment Profile of Sample Group (Field Survey, 2023)

4.1.6 Usage of Mobile Money Transfer Services

Majority, 229 (99.1%) indicated that they use mobile money transfer services in order to transfer money, while 2 (0.9%) indicated that they did not use mobile money transfer services.

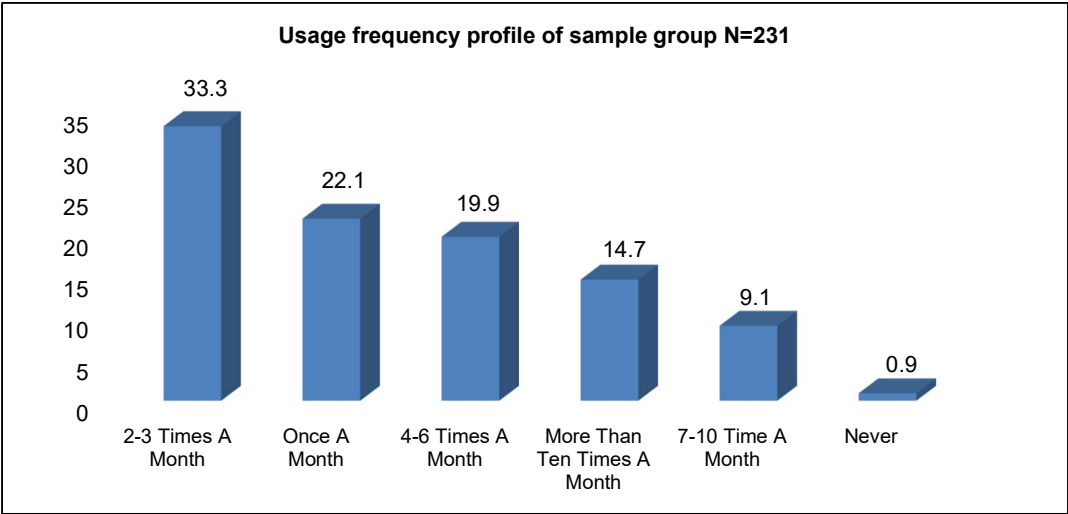


Figure 10: Usage Frequency Profile of Sample Group (Field Survey, 2023)

The responses showed that, of the 231 respondents, 229 indicated the frequency of usage of mobile money transfer services. Almost three quarters of respondents 178 (78%) indicated that they use mobile money transfer services more than twice a month and almost a third of these use mobile money transfer services seven or more times a month. Those who used mobile money transfer services only once a month comprised of 51 (22%). The results showed that the majority of respondents use mobile money transfer services and this suggests that they have some experience in using mobile money transfer platforms.

4.1.7 Summary of Respondents' Characteristics

Table 2 summarises the respondents' demographic characteristics, as explained in Figures 6-10.

Table 4: Respondent Characteristics (N = 231)

Variables	Categories	Frequency	Percentage	Cum. Percentage
Age	18-25	87	37.7	37.7
	26-35	81	35.1	72.7
	36-45	55	23.8	96.5
	46-55	6	2.6	99.1
	Over 55 years	2	0.9	100.0
Gender	Male	89	38.5	38.5
	Female	136	58.9	97.4
	Non-binary/third gender	3	1.3	98.7
	Prefer not to say	3	1.3	100.0
Education	No Schooling	1	0.4	0.4
	Primary Schooling	0	0.0	0.4
	Secondary Schooling	1	0.4	0.9
	Grade 12/Matric	16	6.9	7.8
	Post Grade 12 Certificate	9	3.9	11.7
	Post Grade 12 Diploma	9	3.9	15.6
	Degree	81	35.1	50.6

	Post Graduate Degree	114	49.4	100.0
Employment	Unemployed	83	35.9	35.9
	Part-Time Employed	13	5.6	41.6
	Full-Time Employed	123	53.2	94.8
	Self-Employed	12	5.2	100.0
How often do you use mobile money transfer services	Once a month	51	22.1	22.1
	2-3 times a month	77	33.3	55.4
	4-6 times a month	46	19.9	75.3
	7-10 times a month	21	9.1	84.4
	More than 10 times a month	34	14.7	99.1
	Never	2	0.9	100.0

Source Data: Field Data (2023)

4.2 Descriptive Analysis

This section describes respondents' opinions on their intention to adopt mobile money transfer services in South Africa. The questions were assessed using a Four-point Likert scale where (1) = Strongly Agree, (2) = Somewhat Agree, (3) = Somewhat Disagree and (4) = Strongly Disagree. The mean value measures the average response to each question in a collective manner. A mean value below the average score (2.5) shows high acceptance/agreement with the survey questions and vice-versa. The one-sample t-test was used to determine whether each item differs significantly from the average score of 2.5. The results are presented in the Tables below.

4.2.1 Attitude

The first statement tested whether respondents had positive feelings associated with mobile money transfer services. Majority, 92.2%, agreed, while 7.8% disagreed. The mean value for this statement registered below average at 1.51, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

On whether they aimed to use the service whenever they needed to transfer money, majority of respondents, 81%, agreed, while a few, 19.1% respondents disagreed. The mean value registered below average at 1.77, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 93.5%, agreed that it was a good idea to use the technology, while 6.5% disagreed. The mean value registered below average at 1.48, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 5: Attitude Response Frequency

Attitude	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I have a positive feeling when using mobile money transfer services.	138(59.7%)	75(32.5%)	12(5.2%)	6(2.6%)	231	1.51	<.001
I aim to always use mobile money transfer services whenever I need to transfer money.	109(47.2%)	78(33.8%)	32(13.9%)	12(5.2%)	231	1.77	<.001
I think it's a good idea to use mobile money transfer services.	139(60.2%)	77(33.3%)	11(4.8%)	1.7%)	231	1.48	<.001

Source Data: Field Data (2023)

4.2.2 Utilitarian Performance

On whether the service helped them stay abreast with the latest developments, majority, 83.1% agreed, and 16.9% disagreed. The mean value for this statement registered below average at 1.82, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 42.72% agreed that the service enhanced their knowledge, while 12.1% disagreed. The mean value for this statement registered below average at 1.65, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 93.9%, agreed that the service was practical to use, while 6% disagreed. The mean value for this statement registered below average at 1.4, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 6: Utilitarian Performance Response Frequency

Utilitarian Performance	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree 1	Somewhat Agree 2	Somewhat Disagree 3	Strongly Disagree 4			
Using mobile money transfer services helps me stay up to date with the latest developments in mobile money transfer services space.	88(38.1%)	104(45.0%)	32(13.9%)	7(3.0%)	231	1.82	<.001
Using mobile money transfer services enhances my knowledge on mobile money transfer services.	116(5.02%)	87(37.7%)	21(9.1%)	7(3.0%)	231	1.65	<.001
Mobile money transfer services are practical to use.	156(67.5%)	61(26.4%)	10(4.3%)	4(1.7%)	231	1.4	<.001

Source Data: Field Data (2023)

4.2.3 Effort Expectancy

Majority, 93.5% agreed that the service was easy to use, while 6.5% disagreed. The mean value for this statement registered below average at 1.37, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 91.3% of respondents agreed that the service was easy to learn, while, 8.7% disagreed. The mean value for this statement registered below average at 1.44, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 91.7% agreed that their interaction with the service was pleasant, while 8.2% disagreed. The mean value for this statement registered below average at 1.53, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 7: Effort Expectancy Response Frequency

Effort Expectancy	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree 1	Somewhat Agree 2	Somewhat Disagree 3	Strongly Disagree 4			
I find it easy to use mobile money transfer services.	170(73.6%)	46(19.9%)	6(2.6%)	9(3.9%)	231	1.37	<.001
It would not take me long to learn and understand how to use mobile money transfer services.	164(71.0%)	47(20.3%)	66(2.6%)	14(6.1%)	231	1.44	<.001
My interaction with mobile money transfer services channels is easy and pleasant.	135(58.4%)	77(33.3%)	12(5.2%)	7(3.0%)	231	1.53	<.001

Source Data: Field Data (2023)

4.2.4 Social Influence

Majority, 59.8% agreed that people who influenced their behaviour believed that they should use the service and 41.1% disagreed. The mean value for this statement registered below average at 2.26, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 69.7% agreed that people around them encouraged them to use the service, while 30.3% disagreed. The mean value for this statement registered below average at 2.08, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 68,8% agreed that people who were important to them believed that they should use the service, while 31.2% disagreed. The mean value for this statement registered below average at 2.09, indicating high acceptance of the of the statement. The p-value suggests statistical significance at 1%.

Table 8: Social Influence Response Frequency

Social Influence	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree 1	Somewhat Agree 2	Somewhat Disagree 3	Strongly Disagree 4			
People who influence my behavior believe that I should use mobile money transfer services.	67(29.0%)	69(29.9%)	64(27.7%)	31(13.4%)	231	2.26	<.001
People around me encourage me to use mobile money transfer services.	75(32.5%)	86(37.2%)	46(19.9%)	24(10.4%)	231	2.08	<.001
People who are important to me believe that I should use mobile money transfer services.	77(33.3%)	82(35.5%)	46(19.9%)	26(11.3%)	231	2.09	<.001

Source Data: Field Data (2023)

4.2.5 Hedonic Performance

Majority, 84.8% agreed that they enjoyed using the service, and 15.1% disagreed. The mean value for this statement registered below average at 1.71, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 75.4% of respondents agreed that using the service was fun, while 24.7% disagreed. The mean value for this statement registered below average at 1.96, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 96.1% agreed that the service was useful, while 3.9% disagreed. The mean value for this statement registered below average at 1.29, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%

Table 9: Hedonic Performance Response Rate

Hedonic Performance	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I enjoy using mobile money transfer services.	110(47.6%)	86(37.2%)	28(12.1%)	7(3.0%)	231	1.71	<.001
Using mobile money transfer services is fun.	72(31.2%)	102(44.2%)	46(19.9%)	11(4.8%)	231	1.98	<.001
I believe that mobile money transfer services are useful.	177(76.6%)	45(19.5%)	5(2.2%)	4(1.7%)	231	1.29	<.001

Source Data: Field Data (2023)

4.2.6 Self-Efficacy

Majority, 94.8% agreed that they could adapt to any mobile money transfer service, while 5.2% disagreed. The mean value for this statement registered below average at 1.38, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 89.6% agreed that they were confident in the use of the service, while 10.4% disagreed. The mean value for this statement registered below average at 1.51, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 80.5% respondents agreed that using the service was second nature to them, while, 19.5% disagreed. The mean value for this statement registered below average at 1.8, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 10: Self-Efficacy Response Rate

Self-Efficacy	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I believe that I can adapt to any mobile money transfer service.	161(69.7%)	58(25.1%)	6(2.6%)	6(2/6%)	231	1.38	<.001
I am confident with the use of mobile money transfer services.	146(63.2%)	61(26.4%)	16(6.9%)	8(3.5%)	231	1.51	<.001
Using mobile money transfer services is second nature to me.	100(43.3%)	86(37.2%)	36(15.6%)	9(3.9%)	231	1.8	<.001

Source Data: Field Data (2023)

4.2.7 Trust

Majority, 93.1% of respondents agreed that service providers had the ability to provide the service effectively, while 6.9% disagreed. The mean value for this statement registered below average at 1.53, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 82.7% agreed that they believed that mobile money transfer services are reliable and trustworthy, while 17.3% disagreed. The mean value for this statement registered below average at 1.78, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 80.5% of respondents agreed that they did not doubt the integrity of the service providers, while 19.5% disagreed. The mean value for this statement registered below average at 1.81, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 11: Trust Response Frequency

Trust	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I believe that mobile money transfer service providers have the ability to provide the service effectively.	128(55.4%)	87(37.7%)	13(5.6%)	3(1.3%)	231	1.53	<.001
I believe that mobile money transfer services are reliable and trustworthy.	97(42.0%)	94(40.7%)	33(14.3%)	7(3.0%)	231	1.78	<.001
I do not doubt the integrity of mobile money transfer service providers.	94(40.7%)	92(39.8%)	41(17.7%)	4(1.7%)	231	1.81	<.001

Source Data: Field Data (2023)

4.2.8 Risk

Majority, 81.4% agreed that privacy of information was maintained, while 18.6% disagreed. The mean value for this statement registered below average at 1.86, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 71.7% agreed that all risks associated with the service was managed, and 28.1% disagreed. The mean value for this statement registered below average at 2.1, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 80.1% of respondents agreed that their money was safe while using the service, while 20% disagreed. The mean value for this statement registered below average at 1.84, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 12: Risk Response Frequency

Risk	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I believe that privacy of information is maintained when using mobile money transfer services.	87(37.7%)	101(43.7%)	31(13.4%)	12(5.2%)	231	1.86	<.001
I believe that mobile money transfer service providers manage all risk associated with the service.	56(24.2%)	110(47.6%)	52(22.5%)	13(5.6%)	231	2.1	<.001
I believe that my money is safe when using mobile money transfer services.	91(39.4%)	94(40.7%)	38(16.5%)	8(3.5%)	231	1.84	<.001

Source Data: Field Data (2023)

4.2.9 Security

Majority, 88.3% agreed that the service providers took the necessary security pre-cautions to keep information safe, while 11.7% disagreed. The mean value for this statement registered below average at 1.77, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 79.2% of respondents, agreed that they felt safe when using the service, while 20.8% disagreed. The mean value for this statement registered below average at 1.9, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 63.6% of respondents indicated they had no security concerns when using the service, while 36.4% indicated that they have security concerns. The mean value for this statement registered below average at 2.17, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 13: Security Response Frequency

Security	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
Mobile money transfer service providers take the necessary security pre-cautions to keep my information safe.	86(37.2%)	118(51.1%)	20(8.7%)	7(3.0%)	231	1.77	<.001
I feel safe when I am using mobile money transfer services.	85(36.8%)	98(42.4%)	35(15.2%)	13(5.6%)	231	1.9	<.001
I have no security concerns when using mobile money transfer services.	67(29.0%)	80(34.6%)	61(26.4%)	23(10.0%)	231	2.17	<.001

Source Data: Field Data (2023)

4.2.10 Facilitating Conditions

Majority, 93.9% of respondents agreed that they had the necessary knowledge to use the service, while 6.1% disagreed. The mean value for this statement registered below average at 1.45, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 90.4% of respondents agreed that they had access to multiple channels that allowed them to use the service, while 9.6% disagreed. The mean value for this statement registered below average at 1.56, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 82.6% agreed that they could easily get help from others when using the service, while 17.3% disagreed. The mean value for this statement registered below average at 1.69, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 14: Facilitating Conditions Response Frequency

Facilitating Conditions	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I have the necessary knowledge to use mobile money transfer services.	144(62.3%)	73(31.6%)	11(4.8%)	3(1.3%)	231	1.45	<.001
I have access to multiple channels that allow me to use mobile money transfer services.	129(55.8%)	80(34.6%)	17(7.4%)	5(2.2%)	231	1.56	<.001
I can easily get help from others when using mobile money transfer services.	120(51.9%)	71(30.7%)	31(13.4%)	9(3.9%)	231	1.69	<.001

Source Data: Field Data (2023)

4.2.11 Behavioural Intention (Dependant Variable)

Majority, 93.9% agreed that they intended to use the service given that they are aware and have access, while 6% disagreed. The mean value for this statement registered below average at 1.44, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 77.1% agreed that they predicted they would use the service every time they needed to transfer money, while 23% disagreed. The mean value for this statement registered below average at 1.83, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Majority, 91.3% agreed that they intended to use the service in the near future while 8.6% disagreed. The mean value for this statement registered below average at 1.43, indicating high acceptance of the statement. The p-value suggests statistical significance at 1%.

Table 15: Behavioural Intention Response Frequency

Behavioural Intention	Responses as Frequency (%)				N	Mean	p-value
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree			
	1	2	3	4			
I intend to use mobile money transfer services given that I'm aware and have access to them.	150(64.9%)	67(29.0%)	7(3.0%)	7(3.0%)	231	1.44	<.001
I predict that I would use mobile money transfer services every time I need to transfer money.	111(48.1%)	67(29.0%)	35(15.2%)	18(7.8%)	231	1.83	<.001
I intend to use mobile money transfer services in the near future.	152(65.8%)	59(25.5%)	13(5.6%)	7(3.0%)	231	1.46	<.001

Source Data: Field Data (2023)

4.3 KMO and Bartlett's Test

This study conducted an Exploratory Factor Analysis (EFA) as a construct validity technique. Construct validity refers to whether the factor structure of the questionnaire makes intuitive sense (Field, 2013).

Before carrying out factor analysis, the Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity were used to assess the data's factorability.

Specifically, the KMO test was utilised to check the sampling adequacy of the data, and Bartlett's Test of Sphericity was used to check if correlations between items were sufficiently large enough for EFA to be carried out.

Bartlett's test of Sphericity should reach a statistical significance of less than 0.05 for factor analysis to be considered appropriate (Bartlett, 1954). The KMO index value ranges from 0 to 1, with 0.6 considered the minimum value for exploratory factor analysis to be appropriate (Tabachnick, Fidell, & Ullman, 2007). The KMO and Bartlett's test results are presented in Table 16 below.

Table 16: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.922
Bartlett's Test of Sphericity	Approx. Chi-Square	5045.697
	Df	528
	Sig.	0.000

Source Data: Field Data (2023)

As shown in Table 16 above, the Kaiser-Meyer-Olkin Measure verified the sampling adequacy for the analysis with the KMO value = 0.922 above the minimum value of 0.6 (Tabachnick et al., 2007). The Bartlett Test of Sphericity was statistically significant (p -value < 0.05), indicating that correlations between items were sufficiently large for EFA to be conducted.

4.4 Reliability Statistics

The Cronbach's alpha is commonly used as a measurement for internal consistency of a scale (a measure of reliability) (Ramnath, 2018). The Cronbach's alpha enables the researcher in ensuring that, items encompassed in the scale are measuring the same underlying construct especially where the Likert-scale has been used for the questions in the survey. This will determine the reliability of the scale (Ramnath, 2018).

In this study, in order to illustrate the internal consistency of the questionnaire, the Cronbach's alpha coefficient was calculated for each factor. Results from tests of reliability for each of the factors considered in this study namely: attitude, utilitarian performance, effort expectancy, social influence, hedonic performance, self-efficacy, trust, risk, security, facilitating conditions and behavioural intentions are outline below.

Table 17: Cronbach Alpha Result

Factors	No. of items	Valid Cases	Cronbach Alpha
Attitude	3	231	0.781
Utilitarian Performance	3	231	0.667
Effort Expectancy	3	231	0.773
Social Influence	3	231	0.862
Hedonic Performance	3	231	0.761
Self-Efficacy	3	231	0.769
Trust	3	231	0.829
Risk	3	231	0.828
Security	3	231	0.839
Facilitating Conditions	3	231	0.769
Behavioural Intentions	3	231	0.819

Source Data: Field Data (2023)

The Cronbach's alpha values for all the factors are above the recommended threshold for exploratory analysis of 0.6 thus considered acceptable.

4.5 Exploratory Factor Analysis (EFA)

EFA is used to infer the number of factors affecting the intention to adopt of mobile money transfer services among South Africans. This analysis enables the determination of the underlying factor structure for the factors studied in this research represented by their associated group of items.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy value was 0.992 which is above the recommended threshold of 0.5, and the Bartlett's Test of Sphericity which was statistically significant ($p\text{-value} < 0.05$) indicating that correlations between the items were sufficiently large for Exploratory Factor Analysis to be conducted.

In this study, an EFA was then conducted to determine the impact of each item on their respective constructs. Ten factors were considered including the dependant variable, with each having three items.

Factors loadings were produced by means of orthogonal varimax rotation. Rotated factors were then extracted based on variable values, the higher the value, the greater the influence the variable has on the factor. Slazus and Bick (2022) consider values with a reading of 0.5 or greater to be particularly significant. The factor loadings for each item under the ten factors are shown in Table 18 below.

Of the 33 variables for which factor loadings were produced, the results indicated that the factor loadings for 27 variables were higher than 0.50, consequently satisfying the convergent validity criteria (Penney et al., 2021) with the top 3 highest factor loadings being 0.878, 0.859 and 0.855. This suggests that the variables have a higher explanatory power of the construct to which they are assigned. Six variables achieved factor loadings which are below the threshold of 0.50, with the lowest value being 0.126, indicating that these variables have a low explanatory power for the constructs to which they are assigned.

Table 18: Exploratory Factor Analysis (EFA)

	Component										
	1	2	3	4	5	6	7	8	9	10	11
I have a positive feeling when using mobile money transfer services.	0.640										
I aim to always use mobile money transfer services whenever I need to transfer money.	0.624										
I think it's a good idea to use mobile money transfer services.	0.749										
Using mobile money transfer services helps me stay up to date with the latest developments in mobile money transfer services space.		0.828									
Using mobile money transfer services enhances my knowledge on mobile money transfer services.		0.855									
Mobile money transfer services are practical to use.		0.139									
I find it easy to use mobile money transfer services.			0.792								
It would not take me long to learn and understand how to use mobile money transfer services.			0.579								
My interaction with mobile money transfer services channels is easy and pleasant.			0.699								

People who influence my behavior believe that I should use mobile money transfer services.				0.827							
People around me encourage me to use mobile money transfer services.				0.859							
People who are important to me believe that I should use mobile money transfer services.				0.878							
I enjoy using mobile money transfer services.					0.701						
Using mobile money transfer services is fun.					0.845						
I believe that mobile money transfer services are useful.					0.126						
I believe that I can adapt to any mobile money transfer service.						0.597					
I am confident with the use of mobile money transfer services.						0.325					
Using mobile money transfer services is second nature to me.						0.302					
I believe that mobile money transfer service providers have the ability to provide the service effectively.							0.457				
I believe that mobile money transfer services are reliable and trustworthy.							0.597				
I do not doubt the integrity of mobile money transfer service providers.							0.725				

I believe that privacy of information is maintained when using mobile money transfer services.								0.720			
I believe that mobile money transfer service providers manage all risk associated with the service.								0.839			
I believe that my money is safe when using mobile money transfer services.								0.779			
Mobile money transfer service providers take the necessary security pre-cautions to keep my information safe.									0.719		
I feel safe when I am using mobile money transfer services.									0.739		
I have no security concerns when using mobile money transfer services.									0.825		
I have the necessary knowledge to use mobile money transfer services.										0.773	
I have access to multiple channels that allow me to use mobile money transfer services.										0.690	
I can easily get help from others when using mobile money transfer services.										0.376	
I intend to use mobile money transfer services given that I'm aware and have access to them.											0.599
I predict that I would use mobile money transfer services every time I need to transfer money.											0.652

I intend to use mobile money transfer services in the near future.											0.579
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Source Data: Field Data (2023)

4.6 Correlation Matrix

The correlation matrix indicates the extent of linear dependency among the variables used in the study and whether there were positive or negative relationships between the variables of interest in this study. To examine the association between two variables or whether an observed covariance between two variables of interest exist, correlation analysis is used (Lema, 2017). The correlation coefficient ranges between -1 and 1. The coefficient which is close to +1 or -1 indicates a strong linear relationship between the two variables.

This matrix shows the correlation coefficient between every single pair of variables. The correlation matrix is presented in Table 19.

Correlation between independent variables ranged between $r = -0.000$ to $r = 0.86$. Security and risk had the highest observed correlation, indicating a strong association between the variables due to their similar characteristics. There is generally a positive relationship observed between the majority of independent variables. The results revealed that facilitating conditions has a strong positive correlation with effort expectancy and security. Also, self-efficacy has a strong positive relationship with effort expectancy and hedonic performance.

The critical values of correlation between the dependent variable and the independent variables were all positive and ranged from $r = 0.03$ to $r = 0.71$. The results revealed that attitude, self-efficacy, and hedonic performance had a strong positive relationship with the dependent variable with $r = 0.710$, 0.709 and 0.701 . The results show that there is high correlation between various independent variables like (self-efficacy and effort expectancy or hedonic performance), (security and risk), (facilitating condition and effort expectancy/self-efficacy). These variables have similar characteristics but by no means could replace each other which justifies the high correlation between them.

Where correlation was found to be minimal was in the demographic variables where there is little or no correlation observed between most the demographic variables and the independent or dependant variables with r ranging from -0.00 to 0.4 .

Table 19: Correlation Analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) BI	1.000														
(2) AT	0.710	1.000													
(3) UT	0.552	0.609	1.000												
(4) EFF	0.674	0.608	0.536	1.000											
(5) SI	0.343	0.303	0.380	0.244	1.000										
(6) HP	0.695	0.672	0.586	0.666	0.366	1.000									
(7) SE	0.709	0.649	0.515	0.757	0.194	0.736	1.000								
(8) TRU	0.640	0.568	0.488	0.528	0.276	0.644	0.675	1.000							
(9) RISK	0.569	0.420	0.387	0.503	0.263	0.552	0.539	0.629	1.000						
(10) SECU	0.599	0.467	0.459	0.516	0.248	0.556	0.544	0.679	0.806	1.000					
(11) FC	0.701	0.536	0.533	0.748	0.329	0.648	0.727	0.586	0.499	0.597	1.000				
(12) age	0.135	0.006	0.068	-0.032	0.083	0.051	-0.107	-0.087	-0.021	-0.046	0.003	1.000			
(13) sex	0.087	0.057	-0.000	-0.002	-0.004	0.092	0.041	-0.026	-0.069	-0.046	0.015	0.080	1.000		
(14) education	0.030	0.105	0.133	0.034	0.076	0.066	-0.068	-0.064	0.048	0.065	0.084	0.410	0.049	1.000	
(15) employment	0.136	0.071	0.141	-0.001	0.051	0.111	-0.071	-0.041	0.042	0.065	0.035	0.674	0.175	0.473	1.000

Note: BI represent behavioral intention; AT represent attitude; UT represent Utilitarian Performance; EFF represent effort expectancy; SI represent Social Influence; HP represent hedonic performance; SE represent self-efficacy; TRUST represent trust; SECU represent security; FC represent facilitating condition

Source Data: Field Data (2023)

4.7 Regression Analysis

4.7.1 *Factors influencing the intention to adopt mobile money transfer services in South Africa*

The main objective of this study is to examine the various factors affecting the intention to adopt mobile money transfer services in South Africa. A cross-sectional data and multiple regression technique was used to examine this objective. A composite index was created for each of the variables due to the various items that were used to assess each variable. The results of the model showed an R-squared of 0.660, which indicates that the independent variables explain about 66% of the variation in the dependent variables. The Prob. > F is statistically significant at 1% (0.000), showing that all the variables are fit to be used in the regression model.

Table 20: Regression Result and Hypothesis (Dep Var: Behavioural Intention)

Variables	Coefficient	Std. Err.	P-Values	Hypothesis
Attitude	0.310	0.063	0.000	Supported
Utilitarian Performance	0.090	0.061	0.144	Not Supported
Effort Expectancy	0.026	0.065	0.693	Not Supported
Social Influence	0.086	0.036	0.017	Supported
Hedonic Performance	0.199	0.070	0.005	Supported
Self-Efficacy	0.112	0.074	0.131	Not Supported
Trust	-0.013	0.067	0.848	Not Supported
Risk	0.024	0.068	0.078	Supported
Security	0.014	0.067	0.036	Supported
Facilitating Conditions	0.304	0.066	0.000	Supported
Constant	-0.315	0.107	0.003	
Number of Observations= 231				
Prob>F=0.000				
R-Squared=0.660				

Source Data: Field Data (2023)

4.8 Statistical Testing for Hypothesis H1-H10

H1: Attitude positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive correlation between attitude towards mobile money transfer services and the intention to use them which is statistically significant ($r=.310$, $N=231$, $p=0.000$, i.e., < 0.001). Therefore, the hypothesis is supported. Hence there is a positive relationship between attitude and the intention to use mobile money transfer services. This suggests that, individuals with positive attitude towards mobile money transfer services, are more likely to use it.

H2: Utilitarian performance positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive correlation between utilitarian performance of mobile money transfer services and the intention to use them however is statistically insignificant ($r=.090$, $N=231$, $p=0.114$) and therefore not supported. This suggests that, the fact that individuals might think that using mobile money transfer services is in their best interest, does not mean that it is the main determinant for them to use the service, they could still choose not to use it.

H3: Effort expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive correlation between effort expectancy of mobile money transfer services and the intention to use them which is statistically insignificant ($r=.026$, $N=231$, $p=0.693$, i.e., > 0.10). Therefore, the hypothesis is not supported. Suggesting that, individuals in South Africa are not motivated by how easy mobile money transfer services is to use. This is not a significant driver for them in using the services.

H4: Social influence positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive correlation between social influence of mobile money transfer services and the intention to use them which is statistically significant ($r=.086$, $N=231$, $p=0.017$, i.e., < 0.05). Therefore, the hypothesis is supported. This suggests that, individuals in South Africa, consider social influence as the main driver of using mobile money transfer services. They are easily influenced by close friends and family in using the service to gain social standing

H5: Hedonic performance positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive correlation between hedonic performance of mobile money transfer services and the intention to use them which is statistically significant ($r=.199$, $N=231$, $p=0.005$, i.e., < 0.05). Therefore, the hypothesis is supported. This suggests that, individuals in South Africa are mainly driven by the fun and enjoyment benefit that they get from using mobile money transfer services and this is a significant determinant when deciding whether to use the service or not.

H6: Self-efficacy positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive correlation between self-efficacy of mobile money transfer services and the intention to use them which is statistically insignificant ($r=.112$, $N=231$, $p=0.131$, i.e., > 0.10). Therefore, the hypothesis is not supported. This suggests that, individuals in South Africa are not driven by the fact that they can easily operate mobile money transfer services. While they find it easy to use and can use it without challenges, does not mean that they will use mobile money transfer services.

H7: Trust positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a negative relationship between trust of mobile money transfer services and the intention to use them which is statistically insignificant ($r=-.013$, $N=231$, $p=0.848$, i.e., > 0.10). Therefore, the hypothesis is not supported. This

suggests that, while trust could be high in mobile money transfer services and their service providers, does not necessarily mean that it will be used. Individuals in South Africa do not consider level of trust as a significant factor that could help them decide whether to use mobile money transfer services.

H8: Perceived risk influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive relationship between perceived risk of mobile money transfer services and the intention to use them which is statistically significant ($r=.0024$, $N=231$, $p=0.078$, i.e., < 0.10). Therefore, the hypothesis is supported. This suggests that, levels of risk are considered as an important factor in deciding whether to use mobile money transfer services. The more respondents believed that there is low risk associated with mobile money transfer services, the more likely they will use it.

H9: Security positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive relationship between perceived security of mobile money transfer services and the intention to use them which is statistically significant ($r=.0014$, $N=231$, $p=0.036$, i.e., < 0.05). Therefore, the hypothesis is supported. This suggests that the higher security that is perceived by individuals when using mobile money transfer services, the more likely they will use the service.

H10: Facilitating conditions positively influences the consumer's intention to adopt mobile money transfer services in South Africa

The results show that there is a positive relationship between perceived risk of mobile money transfer services and the intention to use them which is statistically significant ($r=.304$, $N=231$, $p=0.000$, i.e., < 0.001). Therefore, the hypothesis is supported. This suggests that, where individuals have the necessary resources that enable them to use mobile money transfer services efficiently, the more likely they will use the service.

In summary, the results in table 20, indicate that the intention to adopt mobile money transfer services in South Africa can be predicted by, attitude, social influence, hedonic

performance, risk, security and facilitating conditions but not by utilitarian performance, effort expectancy, self-efficacy, and trust.

4.9 The Impact of Demographic Characteristics on the Adoption of Mobile Money Transfer Services

Table 21: Demographics and Adoption of Mobile Money Transfer Services (Dep Var: Behavioural Intention)

Variables	Coefficient	Std. Err.	P Values	Hypothesis
Age	0.071	0.078	0.362	Not Supported
Sex	0.080*	0.087	0.078	Supported
Education	-0.027	0.044	0.534	Not Supported
Employment	0.062**	0.068	0.056	Supported
Constant	1.421	0.303	0.000	

Number of Observations= 231

Prob>F=0.000

R-Squared=0.380

Variables with *, ** and *** are statistically significant at 10%, 5% and 1% respectively

Source Data: Field Data (2023)

Age - the coefficient results of $r = 0.071$ indicate a positive relationship between the age, and behavioural intention. The p-value (0.362) suggests that the relationship is statistically insignificant. This suggests that while age of individuals plays a role in influencing the intention to use mobile money transfer services, it is not a significant one. Individuals, no matter how old, might still use mobile money transfer services.

Sex - the coefficient results of $r = 0.080$ indicate a positive relationship between the sex and behavioural intention. The p-value (0.078) suggests that the relationship is statistically significant at 10%. This suggests that females in South Africa, who are more represented in the data, are more likely to use mobile money transfer services than males.

Education - the coefficient results of $r = -0.027$ indicate a positive relationship between education and behavioural intention. The p-value (0.078) suggests that the relationship is statistically insignificant. This suggests that while education plays a role in influencing the intention to use mobile transfer services in South Africa, It is not a significant one. Individuals whether educated or not might use mobile money transfer services.

Employment - the coefficient results of $r = 0.062$ indicate a positive relationship between employment and behavioural intention. The p-value (0.056) suggests that the relationship is statistically significant at 5%. This suggests that, the intention to use mobile money transfer services is highly influenced by the state of employment of an individual. If the individual is employed in any form, the more likely they are to use mobile money transfer services.

In summary, sex, particularly females who are more represented in the data, are found to have an effect on the intention to use mobile money transfer services which indicate that females and employed individuals in general are more likely to use mobile money transfer services in South Africa.

4.10 Summary of Results

This Chapter presented the results of the study which examined the perception of respondents on the factors that influence the intention to adopt mobile money transfer services in South Africa. As part of this presentation, the demographic profile of the respondents preceded and was followed by the descriptive analysis. Validity and reliability statistics were then presented using KMO and Bartlett's test as well as the Cronbach's Alpha respectively. Subsequently, the factor analysis was conducted and finally the correlations, multiple regression and t-tests.

Majority of respondents used mobile money transfer services for transferring money, while only a small percentage indicated that they did not use the technology. Majority of respondents indicated that they use mobile money transfer services more than twice a month and almost a third of that, uses mobile money transfer services seven or more times a month.

Majority of respondents in the study were females between the ages of 18 to 25 years. Employed and highly educated respondents dominated the study while a small percentage had matric or post matric diploma.

The results from the descriptive analysis showed that the items in the questionnaire indicated high acceptance/agreement with the survey questions based on their mean scores.

An exploratory factor analysis was conducted to determine the effects of the ten factors on behavioural intention of mobile money transfer services. The KMO and Bartlett's Test results, qualified the factor analysis. The results showed that of the 33 variables for which factor loadings were produced, factor loadings for 27 variables satisfied the convergent validity suggesting that that the variables had a higher explanatory power of the construct to which they belonged to. Six variables achieved factor loadings which are below threshold, indicating that these variables have a low explanatory power for the constructs to which they are assigned.

Inferential analysis was done including correlation, t-test, and multiple regression analysis.

CHAPTER 5. Discussion of Results

This Chapter presents the summary of the results that were discussed in Chapter 4 in relation to the hypotheses that were formulated in this study.

5.1 Results of the Study

Based on the results, South African mobile money behavioural intention is driven by the following factors: attitude, social influence, hedonic performance, risk, security and facilitating conditions, empirically qualifying most of the hypotheses made in this study.

5.1.1 H1: Attitude

Majority of respondents agreed with the statements supporting positive attitude as a driver of the intention to use mobile money transfer services. This suggests that individuals who have a positive attitude towards mobile money transfer services are more likely to use it. This could also be attributed to the fact that majority of respondents in this study were young people from the ages of 18 to 35 years. This generation is considered to be a technologically knowledgeable population group (Koenait et al., 2021). Furthermore, a substantial portion of the sample in this study were University students. This population group is considered to be early adopters of technology. The findings of this study are in line with the UTAUT and TAM models.

The above findings are aligned to findings of a previous study done by Maitai and Omwenga (2016) who found that user behaviour and attitudes played an influential role in the context of mobile money transfer strategy. As part of the same study, user attitudes were found to be statistically significant which is also in line with the findings of this study.

Similarly in a study conducted by Slazus and Bick (2022) on FinTech adoption in South Africa through the use of UTAUT model, attitude emerged as significant. Lema (2017) also found that perceived usefulness and ease of use which influenced attitude, was significant in the context of mobile financial services. In a study done by (Koenait et al., 2021), it was found that attitude towards mobile banking applications and their

actual usage was supported and significant. This is consistent with the study done by Mhlanga et al. (2017), on e-banking adoption, where attitude was one of the significant factors. Himel et al. (2021) also supported this view, for mobile financial services adoption, that attitude was a significant and favourable factor in Bangladesh. This is further corroborated in a study by Koloseni and Mandari (2017), on mobile money continuance adoption in Tanzania, that attitude was significant.

Certain respondents from this study indicated that they do not have positive feelings or thoughts towards mobile money transfer services. This suggests that where individuals have a negative attitude towards the services, the lower will be their intention to use them. This could be related to a group of individuals in the study who are over 35 years of age, additionally have low levels of education. This population group is generally not enthusiastic about new technologies and lack technical skills to use them. This was also observed in the results of the study done by Holmkvist, Karlsson and Kuossari (2016), where older respondents between the ages of 41 to 60 years and over, appeared to have lack of skills with mobile banking.

5.1.2 H2: *Utilitarian performance expectancy*

While the relationship between utilitarian performance and behavioural intention of mobile money services was positive, it has been found to be statistically insignificant. Suggesting that while respondents agreed to the statements that using the services is in their best interest, this does not drive their intention towards the service. These findings are not in line with the UTAUT and TAM models that suggests that utilitarian performance is significant in influencing the users' intention to adopt technology.

In contrast with several previous studies, Ngwenya and Pelsier (2020) on mobile platforms continuance intention, showed that utilitarian value was significant in Zimbabwe. It was further asserted in the same study that, not only did utilitarian value significantly influence the intention to adopt mobile money platforms, but also motivated users to continuously use mobile money platforms. This sustained usage and adoption of the technology over time. These findings were replicated in a study done by Xavier and Zakkariya (2021), who found that utilitarian value has the strongest influence in the continuance intention to use mobile wallets, further establishing the

importance of utilitarian value. Similarly in a study done by Omigie (2017) the results indicated that utilitarian value positively influences continuance intention to use mobile financial services in Kenya. This is supported by findings in a study done by Gbongli (2022), on mobile financial services adoption, where results indicated that utilitarian features emerged as significant.

Some of the respondents in this study disagreed with the statements that suggested that using mobile money transfer services is in their best interest. This could be attributed to the population that is unemployed, who do not have the financial means to engage in the use of these services, whether it was in their best interest or not.

5.1.3 H3: *Effort Expectancy*

Mobile money transfer services is easy to understand, interact with and use, this is the sentiment shared by majority of respondents. This suggests that individuals who perceive the services easy to use, have access to them, sufficient knowledge about them and are willing to learn the technology will tend to influence their intention towards them. This view is supported by the UTAUT and TAM models.

Although the relationship between this factor and mobile money behavioural intention was positive, it was found to be statistically insignificant.

Reasons could be that most of respondents were highly educated and could be more exposed to different and advanced technologies. These users could expect, as a minimum requirement that technologies should be easy to use. Awareness, knowledge and regular use of the system could deem these users proficient in the use of mobile money transfer services. Effort expectancy might not be a significant factor that drives them towards these services, particularly when many competitors in the market are offering this as a basic need.

These results are consistent with the findings of Lema (2017) in Tanzania on mobile financial services adoption, where effort expectancy was not significant. Similarly in a study done by Lin et al. (2020), on mobile payments adoption in Taiwan, effort expectancy was not found to be significant. The argument was that, significance will

be observed when users find the technology effortless and non-time-consuming to operate. Correspondingly in Ly et al. (2022), effort expectancy was not found to be significant in influencing the intention to adopt mobile wallet services in Bangladesh.

In contrast to these findings, a study done by Rahmiati et al. (2021) in Indonesia, showed that effort expectancy had a positive and significant effect to behavioural intention of mobile money and this was mainly due to mobile money being easy to understand, learn and use. Similarly, a study conducted in Ghana on mobile money adoption, effort expectancy was a significant factor (Penney et al., 2021). It was further suggested that, for use of any technology, little effort should be required by the user whether physical or mental (Penney et al., 2021). It was also further indicated that the availability of technology, accessibility, coupled with the necessary qualities and software will improve the ease of use. Yan et al. (2021) corroborates the findings from these authors and found that effort expectancy had a significant influence in the intention to adopt fintech in Bangladesh. The findings from these authors are in line with the theoretical perspective of the UTAUT & TAM models where effort expectancy influences the adoption of new technology.

Some individuals in this study indicated that they disagree with statements that mobile money transfer services is easy to understand, interact with and use. This could be attributed to the older generation of this study who are not well informed or aware of new technology and do not often use it. This suggests that where individuals perceive the technology, complex and difficult to understand and use, the lower their intention to adopt that technology. Furthermore, the willingness of the individuals to use technology based on the benefits offered, also drives the intention to use and adopt a certain technology. Lema (2017) emphasised that awareness, understanding, knowledge and being exposed to a technology influences the adoption of that technology. In support of this view, Penney et al. (2021) further asserted that the intention to use and adopt mobile money services will be higher if users perceive it not to be challenging, that is, if little effort is required to use it.

5.1.4 H4: Social influence

There is a positive and statistically significant relationship between these two variables. This suggests that the more individuals are connected to people who use mobile money transfer services, the more they believe it is important for them to use the service. These individuals take in high regard and are influenced by their close family and friends. This could be attributed to the young makeup of the respondents who are mainly associated with generation Z. This generation was brought up in a world of internet and technology and as a result adopted mobile phones and mobile applications on the influence of friends to gain social acceptance among their peers (Xavier & Zakkariya, 2021). Additionally, the majority of the sample in this study were University students who are considered to be susceptible to social pressure. This view is supported by the findings from a study by Ndekwa et al. (2018) where results indicated that social pressure is significant in influencing university students' adoption of mobile money services. This is in line with UTAUT and TAM models which assert that social influence is one of the factors that influence the intention to adopt new technologies.

These results are supported by empirical review conducted in previous studies, for example, Murendo et al. (2018) found that social networks played a vital role in the adoption of mobile money in Uganda. Similarly in a study conducted by Lema (2017) on mobile financial services adoption, social influence emerged to be significant amongst the unbanked population of Tanzania. Social influences have also been highlighted in the EY's FinTech Adoption Index (see Slazus & Bick, 2022) as a key role player in encouraging potential customers to adopt FinTech services in South Africa. It was further corroborated in Njele & Phiri (2021), that social influence or advice from one's close social circle significantly influenced the decision to use technology. Consistent with these results, Slazus and Bick (2022), found that social influence in the form of positive word-of-mouth and peer influence were enabling forces that helped with FinTech adoption. This finding is in accordance with a study done by Penney et al. (2021), who found that social influence was a significant with regards to mobile money adoption. Yan et al. (2021), amongst other factors, found that social influence was significant in influencing the intention to adopt FinTech.

Some respondents disagreed with this view suggesting that they are not influenced by social pressure. This could be attributed to the group of respondents who are unemployed as they would not afford to use such technologies regardless of whether they are influenced by their close family and friends. Furthermore, this could also be attributed to the older generation who would generally not be susceptible to social pressure and prefer to experience things themselves. In support of this finding, Unyolo (2012) also found in his study that social influence had no impact on the users' decision to use mobile money. In agreement to this view, Koloseni and Mandari (2017) on mobile transfer services intention, could not find social influence as significant. It was asserted in the same study that possibly, social pressure could only influence the initial intention to use the service, however, the effect of social pressure is not sustained for continued usage. The same result was found by Rahmiati et al. (2021), that the opinion of influential people and of those in a social circle did not have significant effect on one's behavioural intention to use e-money. In line with these authors, in a study done by Ly et al. (2022), social influence was found to be insignificant in association with the decision on adopting mobile wallet services in Vietnam.

5.1.5 H5: Hedonic Performance Expectancy

Majority of respondents found mobile money transfer services to be fun and enjoyable to use and thus hedonic performance was found to be statistically significant. Suggesting that, the more individuals perceive the benefits of using technology as fun and enjoyable, the more likely they are to use them.

This is in line with previous studies for example, Nur and Panggabean (2021) who found that enjoyment was an inherent reward culminating from the use of technology that had been learnt. This is a characteristic that has been noted in generation Z who get amusement or enjoyment from adopting a system and more likely to use it than others. It was further proven in the same study that enjoyment or hedonism had a positive significant influence on behavioural intention of mobile payment. Similarly, Lin et al. (2020) found that the relationship between hedonic motivation and behavioural intention to adopt mobile payment was positive and significant. Furthermore, Ngwenya and Pelser (2020) found that hedonic value significantly influenced repetitive customer behaviours in adopting mobile platforms in Zimbabwe. In support of the findings by

these authors, Xavier and Zakkariya (2021), asserted in a study that hedonic value had a positive significant effect on the intention to use mobile wallets in India. Identically, it was found in a study by Ly et al. (2022) that hedonic motivation significantly influenced the intention to adopt mobile wallet in Vietnam.

Some of the respondents in this study did not agree to this view. This could be attributed to the older generation of the participants which have a big age gap from generation Z. These individuals do not find the usage of new technologies amusing and thus are less likely to use them. Alternatively, this could be due to features of the technology that do not enable the fun and enjoyment element. Although users might find the technology useful, it does not mean they necessarily find it fun to use.

Penney et al. (2021), on mobile money services intention, did not find hedonic motivation as significant, thereby suggesting that not everyone perceives enjoyment and fun from the use of technology. In agreement to this finding, Pikkarainen et al. (2004) found that perceived enjoyment had no statistical significance in the intention to adopt mobile banking. Similarly, Slazus and Bick (2022), in their study on factors influencing FinTech adoption in South Africa, could not find perceived enjoyment as significant factor in influencing the adoption of FinTech.

5.1.6 H6: Self-efficacy

The relationship between self-efficacy and intention to use mobile money transfer services was found positive but statistically insignificant. This could be attributed to the characteristics or profile of respondents from an age perspective. The majority of the respondents in this study were found to be between the ages of 18 to 35 years which is representative of a youthful group of individuals. This age group is considered to be technologically skilful and feel comfortable around the use of new technologies which reduces the effect of self-efficacy, making it insignificant.

Self-efficacy was found to be insignificant in influencing customers' adoption of FinTech in South Africa (Slazus & Bick, 2022). Similarly, findings from a study done by Kumar, Dhingra, Batra and Purohit (2020), indicated that self-efficacy was insignificant in influencing the intention to adopt mobile banking in India. In agreement with these findings, Yu (2012), revealed in his study that self-efficacy neither

significantly influenced behavioural intention nor affected the actual behaviour in the mobile banking context.

On the contrary, Sujith et al. (2022) on mobile banking adoption, found self-efficacy to be significant. Identical results were observed in a study done by Daragmeh et al. (2021), where self-efficacy was found to be significant in influencing the continuous intention to use e-wallets. Anane and Nie (2022), in their study of determinant factors of digital financial services adoption in Ghana, found that self-efficacy influenced a person's intention to adopt digital financial services and increased the probability of adoption.

Some of the respondents of this study indicated that they did not agree with the statements that suggested that they have high confidence concerning mobile money transfer services. This is due to the older population of this study who might not be sufficiently exposed to the technology and thus do not use it frequently and lack the technical skills to use it.

5.1.7 H7: Trust

Majority of respondents agreed that they found mobile money transfer services trustworthy. They also trusted in the integrity of the service providers. The study found a negative relationship between trust and the independent variable and that the relationship was not significant. This suggests that even though respondents may trust in the services, it does not necessarily translate in to intention to use the service. This could suggest that there are other reasons why they would intend to use such services. These could include convenience, affordability, security or many other reasons. Technoserve (2016) found that, transfer speed and convenience were big drivers in determining which remittance product users chose.

Baganzi and Lau (2017) on mobile money services adoption in Uganda, found trust to be significant and therefore not directly related to behavioural intention. This finding was further supported by findings in a study done by Lema (2017), where trust was not found to be significant. Furthermore, a study done by Kelly and Palaniappan (2022) found that trust was not significant in influencing users' intention and usage of mobile money banking in Ghana.

Trust was found to be one of the factors that drive customers towards using remittance products like mobile money services (see Technoserve, 2016). Furthermore, a study done by Slazus and Bick (2022) on FinTech adoption in South Africa found that trust was one of the factors that influenced behavioural intentions to adopt a technology while Penney et al. (2021) in Ghana also found that trust positively influenced behavioural intentions to adopt a technology. Koloseni and Mandari (2017) on users' mobile money continuance intention, corroborated these findings, that trust was significant. This finding is further supported in a study done by Noreen et al. (2021), on mobile money adoption in Pakistan, that trust was significant. Garapo (2018) indicated in their study on mobile money intention in South Africa, that trust was found to be statistically significant.

Some respondents indicated that they do not agree with the statements that they find mobile money transfer services trustworthy. This could be attributed to an older generation who still prefer and feel comfortable with physical or traditional banking channels and might not trust new technologies. Additionally, the same generation still prefer to have cash on hand and feel secure with physical transactions through a traditional bank.

5.1.8 H8: *Perceived Risk*

Most of the respondents believed that their money and information was safe when using mobile money transfer services. The relationship between risk and the independent variable was found to be statistically significant, in line with the UTAUT models.

These results are consistent with the findings from Slazus and Bick (2022) on mobile financial services adoption, where risk was found to be significant and was deemed as an inhibiting factor. This is supported by the findings in Noreen et al (2021) on mobile money adoption, that risk was significant. This further indicated that service providers in Pakistan provided adequate security and privacy of information for mobile money users.

Comparatively, findings from Lema (2017) on mobile financial services adoption, showed that perceived risk was not significant. In agreement, Njele and Phiri (2021),

on mobile money services adoption in Lusaka, found risk to be insignificant. Additionally, Baganzi and Lau (2017) on mobile money transfer services adoption, found that risk had a negative relationship. Similarly with Penney et al. (2021) on mobile money services adoption, found that perceived risk had a negative effect. Yan et al (2021) on mobile financial services platforms adoption, could not find risk as statistically significant. Identical findings were observed in a study done by Hassan et al. (2022), where risk was not found to be significant in influencing the behavioural intention to use mobile financial services.

Some of the respondents disagreed that there is low risk associated with the technology. This might be attributed to an older generation, and those who have low levels of education and not sufficiently informed about the safety of mobile financial services or technologies. The risk might be perceived due to lack of human interaction associated with mobile financial services.

5.1.9 H9: *Perceived Security*

The relationship between security and the independent variable are statistically significant. This suggests that, with higher perceived security, comes the likelihood for individuals to use the services.

In support of these findings, Mashagba and Nassar (2012) on mobile banking services adoption, found that security played the most significant role in Jordan. Mlitwa and Tshetsha (2012), also found security to be a significant in the context of mobile banking in South Africa. Similar findings were observed in a study done by Mago and Chitokwindo (2014), where security emerged as a significant factor. Further to these findings, Moyo et al. (2022), asserted in their study of the factors affecting adoption of mobile money services by artisan gold miners, that a percentage improvement in security resulted in an increase in the adoption and usage of mobile money services. Thus, concluding that, security provided by mobile money service providers may provide the necessary confidence in the use of the services. Similar results have been noted in a study done by Pikkarainen et al. (2004), where security was found to have a significant effect in consumer acceptance of online banking.

In contrast, the findings from a study done by Rahman and Islam (2021), indicated that security was not significant in influencing the behavioural intention to adopt mobile payment systems in Bangladesh. In support of this, Malinga and Maiga (2019) on mobile money intention in Uganda, found that security was insignificant.

Some of the respondents disagreed that mobile money transfer services is highly secured. This could be attributed to an older generation of individuals who are still uneasy using mobile technology especially for banking related services. These individuals do not feel safe using mobile technology and might still need a certain level of human interaction to conduct financial transactions.

5.1.10 H10: *Facilitating Conditions*

Majority of respondents agreed with the statements that support that there are necessary resources available to allow the use of mobile money transfer services, thus this factor was found to statistically significant. This suggests that the more individuals think there is accessible resources around them that support their use of technology, then the more likely they are to use that particular technology.

These results align to finding of a study done by Lin et al. (2020) on mobile payments intention, asserted that better resource adequacy played a significant role. Similarly, Rahmiati et al. (2021), also stated that mobile money users felt that mobile resources, knowledge, and suitable technology were all crucial to customer's use of technology. This was further supported by Nur and Panggabean (2021), that when operational infrastructure is in place, knowledge and support required is available, then mobile payment usage is supported. The finding from a study done by Ly et al. (2022), specified the decisive role of facilitating conditions in influencing users to use new technology. It is further revealed in the same study that users will use new technology if it is compatible with existing resources at their disposal, so as to avoid time consuming and risky activities in learning unfamiliar systems. Unyolo (2012) in South Africa and Aristotle (2020) in Philippines on mobile money usage behaviour, also corroborated these findings, that facilitating conditions was statistically significant. Ndekwa et al. (2018), also found that facilitating conditions was one of the factors that

strongly influenced the adoption of mobile money services among university students in Tanzania.

Contrary to previous studies, Penny et al. (2021) found that the effect of facilitating conditions on users' behavioural intention to adopt mobile money was not significant. It was further implied in the same study that using mobile money did not depend on availability of resources like facilities, support systems or skills, rather these resources were readily available and accessible to users and thus do not hinder the use or non-use of mobile money services. Rahman and Islam (2021) also found facilitating conditions to be statistically insignificant in influencing behavioural intention to use mobile payments in Bangladesh. These findings are similar to findings from Cato (2022) who concluded that the effect of facilitating conditions on usage behaviour of mobile money technology in Ghana was not significant.

Some of the respondents in the study disagreed that there are adequate resources available to them to enable use of mobile money transfer services. This could be attributed the group of respondents who are not employed, who would have challenges obtaining the money to use mobile money transfer services. Furthermore, this could be attributed to connectivity challenges during loadshedding.

5.2 Discussion pertaining to Demographic Factors

5.2.1 Gender

Gender has an influence in behavioural intention of mobile money transfer services. This relationship is positive and significant, suggesting that young females in particular who are mostly represented in the data are more likely to use mobile transfer services in the South African context. This finding is in line with empirical studies done by Maradung (2013) on mobile money services adoption in Botswana, where gender was found to be significant.

In contrast, in a study done by Coulibaly (2021) on mobile money accounts ownership, gender showed a negative significant relationship. Further indicating that being a female did not guarantee ownership of a mobile money account. Similarly, Ramnath

(2018), found no statistical significance in the difference between responses of males and females in the study to determine factors influencing mobile banking in rural South Africa.

5.2.2 Education

Education was also found to be statistically significant as majority of respondents had a university degree. This enhanced the respondents' understanding and ability regarding the use of mobile money transfer services. This in line with Ramnath (2018) on mobile banking adoption, who found that it was higher amongst individuals who were educated due to their awareness. In support of this finding, Coulibaly (2021), stated that the chances of owning a mobile money account improved as individuals progressed with their level of education. Babatope and Abbyssinia (2020) supported these findings in their study of mobile money technology adoption in Africa, where years of education were found to explain the adoption. Implying that the more years of education one had, the more likely they were to use and adopt mobile money technology.

This was contradicted by findings in Maradung (2013) who found no statistical significance in education.

5.2.3 Age

Age was not found to be statistically significant in this study. Although the majority of respondents were youthful (below the age of 35 years) and might have been proficient in the use of new technologies, that was not a determinant of whether they will use the services or not.

In a study done to determine factors Influencing the adoption of mobile banking service by Informal Sector workers in Accra, Balinto, Azumah and Osei (2020), found that age was statistically significant. Furthermore, a negative relationship was observed between Age and the adoption of mobile banking, implying that the younger informal sector workers had more probability of using mobile money services than the elderly

informal sector workers due to the high ability of the youths to embrace new technologies.

Babatope and Abbyssinia (2020) found in their study that age was significant and had an inverse relationship with adoption of mobile money technology in rural areas of Africa. This implied that the younger the respondent, the higher the probability of adopting mobile money technology. Comparatively, Coulibaly (2021), argued in their study that the chances of owning a mobile money account increased with age.

5.2.4 *Employment*

Employment was not found to be statistically significant in this study. Whilst the majority of the respondents were employed, which would support the assumption that they had the financial means to use the service, however, are not driven by employment status or affordability in the use of this services in South Africa.

Coulibaly (2021), asserted in their study that chances of owning a mobile money account increased for an employed individual than for unemployed individuals. Babatope and Abbyssinia (2020), further supported this finding and argued in their study that the probability of adopting mobile money decreased with being unemployed.

CHAPTER 6. Conclusion

This section starts with a discussion of the results as they pertain to the objectives of this study followed by practical, business strategy, policy and societal implications of the study. This chapter will conclude by providing recommendations, limitations of the study and suggestions for future research.

The steady growth of mobile phones penetration and developments has been noted over the years. This has further driven advancements in communications and technology spaces and has impacted how economic activities are facilitated particularly through mobile financial services. This further intensified the need for cost effective means/access to financial services and inclusion particularly in South Africa, a country faced by many socio-economic challenges including unemployment, poverty and inequality. Growth in affordable mobile banking was inevitable which ultimately influenced growth in mobile financial services.

The aim of this research was to understand the factors that influenced mobile money adoption intention among South Africans. Previous studies were reviewed in light of the above, and it was revealed that there could be differences in patterns of adoption of mobile money transfer services due to different economic environments both in developed and developing countries as well as urban and rural areas. The factors that were examined in this study were mainly based on the UTAUT and TAM models.

Many studies attempted to study the mobile money services adoption of mobile money services broadly which included mobile banking and mobile payments, a few focussed particularly on mobile money transfer services. This study then focused on these services, especially since there is currently a thriving market for mobile money transfer and payment services. The results of this study could be used to inform improvement strategies and enhance future research on this topic.

Ten variables were tested to identify the factors influencing the mobile money behavioural intention. From the ten variables, attitude, social influence, hedonic performance, risk, security and facilitating conditions were significant in the context of South Africa. The research results summary in relation to the objectives of this study, is documented below.

6.1 Objective 1: Effort Expectancy

This factor was not found to be significant suggesting that, respondents expected technologies to be easy as a minimum requirement, particularly to the highly educated population who are highly aware, have access to knowledge and exposed to technologies like mobile money transfer services. This group of respondents is highly exposed to different advanced technologies which makes effort expectancy insignificant. This suggests that respondents were mainly driven by something other than effort expectancy of technology to influence their behaviour towards that technology and these factors far outweigh effort expectancy. In a country like South Africa where majority of banks offer mobile money transfer services, respondents are accustomed to this technology and would not necessarily deem effort expectancy as a significant factor but as a basic offering. Based on these findings, it is critical for the industry to enhance their offerings beyond making them easy to use. The majority of users of this service in South Africa are sophisticated in the use of technology and expect a lot more from this technology. This is an opportunity for the industry to explore and understand the evolution of the customer's need when it comes to mobile money transfer services.

The study also found that not everyone regarded mobile money transfer services as easy to use. This could be particularly from the older generation with low levels of education. There is an opportunity for the industry to improve these services for this population or offer educational, awareness and support strategies targeted at the older generation to ensure that they are able to reap the benefits of this technology.

6.2 Objective 2: Attitude, self-efficacy, hedonic performance expectancy and utilitarian performance expectancy

Attitude and hedonic performance were found to be significant. This indicated that, majority of respondents had positive feelings towards mobile money transfer services and thought it was a good idea to use it which also resulted in fun and enjoyment. This could be attributed to several factors such as age of respondents, awareness, proficiency and accessibility. In this study, majority of respondents who felt positive about mobile money transfer services were mainly the younger generation. This population group generally feel comfortable with technology as they are more exposed to it and are more willing to try new technologies.

This indicates to the financial industry that, mobile money transfer services appeal more to the younger generation and particularly university students. This suggests that, the financial industry and service providers should be more deliberate in continuing to target the younger generation in South Africa and put more focus on university or college students, ensuring that they are constantly motivated for sustained adoption intention. Positive attitude and the benefit of enjoyment culminating from use of this technology is a great motivation for increased adoption intention amongst the young people.

Some respondents did not agree that they have a positive attitude towards mobile money transfer services and that it resulted in fun and enjoyment. This is predominantly from the older generation who need to be prioritised by the industry in terms of ensuring that this population group is also motivated to use mobile money transfer services. More needs to be done to transform the perceptions of these respondents and empower them with education, knowledge and support to be able to have similar outcomes as the youth of this country when it comes to attitude and hedonic performance towards mobile money transfer services.

6.3 Objective 3: Trust, risk & security

Security and risk were found to be significant factors in influencing the intention to adopt mobile money transfer services. In a country like South Africa with high cyber-

crime statistics, according to Interpol's 2022 Africa Cyberthreat Assessment report, this country is termed as the cyber-crime hub of Africa (Modise, 2023). It is therefore crucial for the mobile money industry to ensure that their digital channels and services are safe to use for all South Africans. Security and risk play a key role in defining mobile money adoption intention. Majority of respondents associated mobile money transfer services with low risk and high security. This is attributed to the younger and educated population who are informed about online security risks and how to maintain safety when interacting with this technology. This group has also been exposed to a number of digital channels and are familiar with safety protocols associated with use of digital channels.

This implies that the financial industry should continue to strengthen their security measures around mobile money transfer services and assure the users that it is completely safe to use. This is an educational message that should constantly be reiterated among South Africans in awareness campaigns that the accountability to keep the users safe remains with the service providers. This should provide some level of trust and confidence in the technology as well as integrity of the service providers.

There are some individuals who still felt that mobile money transfer services were not safe to use particularly the older generation who might not be sufficiently exposed to technology to understand the safety capabilities. Furthermore, this generation might be generally fearful to be exposed to fraud and lose their hard earned and insufficient social grants. They still associate safety with face-to-face interactions and might need a human touch or element to feel completely secure with their money. The financial industry has an opportunity to explore ways in which they can enhance their digital offerings to offer the same level of security and trust as afforded by human interaction and traditional banks.

6.4 Objective 4: Facilitating and social conditions

Facilitating conditions and social influence were found to be of significance. Majority of respondents agreed that they are influenced by those around them in determining whether to use the technology or not. Furthermore, they were significantly influenced by available resources or conditions that enabled them to use the technology. This

was more prevalent in the younger generation who are greatly influenced by their peers and social circles.

The availability of resources and environment that enables the use of this service is also crucial and was more prevalent from the population of respondents that had an income which allowed them to use the technology to transfer money that they have earned. It is clear from the results that, social pressure plays a significant role in promoting the adoption especially among South African university or college students. This indicates to the financial industry and service providers the importance of ensuring that, existing users are satisfied with the service as they are potential referral sources.

Some respondents indicated that they are not influenced by their social circles and do not believe that there are favourable conditions for them to use the service. The reasons could be that, these are older individuals who prefer experiencing things themselves and not necessarily convinced by other people and are quite reluctant to be influenced especially where there is money involved which is a scarce resource to the unemployed.

6.5 Practical Implications of the Study

These findings may provide insights to the financial industry and service providers, into the aspects that were assessed to improve the probability of adoption and utilisation by individuals in South Africa. Other developing African countries could also infer from this study to improve their own mobile money transfer services strategies in their own context. Possible strategies could be established by banks and service providers in this industry, to control the significant factors identified in this study to positively influence adoption intention.

It is recommended that banks and service providers should design services which result in positive attitude of users, especially amongst university or college students. In addition to this, they should ensure that users' attitudes are constantly monitored through customer surveys and other data collection tools to gauge the perception

towards mobile money transfer services and tailor their improvements and innovation based on these facts.

In relation to social influence, banks and service providers in the industry could create strategies around brand ambassadors through influencers on social media and within universities and communities. Recruiting particularly female brand ambassadors to capitalise on the fact that, females are more likely to use mobile money transfer services and can be a valuable vehicle in motivating other females to use the service. This will ensure continued uptake in the use of the service and help service providers distinguish themselves in this highly competitive industry. Additionally, these institutions should consider adding features that appeal to the younger generation such as peer-to-peer lending.

In relation to hedonic performance, institutions should consider adding fun features through gamification and inclusion of incentives like rewards, cashback or discounts.

Pertaining to risk, more education around safety measures of using mobile money transfer services should be prioritised to ensure that, users especially the older generation are more tolerant towards risk. Additionally, security concerns need to be eradicated by inclusion of effective security features and practices that lower risk exposure.

Lastly, in relation to facilitating conditions, Banks and service providers should ensure that modern and adequate infrastructure exist to enable uninterrupted use of the service. Additionally, invest in diagnostic and quality assurance strategies that will help in preventing any downtime of their services. Challenges like load shedding in South Africa should be better managed to prevent any detrimental effect on the service.

6.6 Policy Implications

The financial inclusion policy has a key role in ensuring that relevant stakeholders (Government, Regulators, Agents, etc), mobilise to enable a thriving market of the services in South Africa that is underpinned by growth and representative of a larger ecosystem. To support the financial inclusion policy, more needs to be done from a regulatory perspective to further level the mobile money playing field to allow more

players to enter the market, particularly non-financial banking institutions. This will ensure that there are different value propositions, that could provide a wide range of services that create more value for the mobile money customer, broadening the scope of mobile money services and promoting healthy competition. The results indicated that, South African customers are quite advanced in usage and that there is appetite to include more financial services beyond just transferring of money.

6.7 Business Strategy Implications

Based on the results, majority of respondents are youthful and influenced significantly by social pressure. Business strategy should take this as an opportunity to explore ways in which partnerships with social media channels like Facebook, Twitter, TikTok, You Tube, etc. can be achieved to offer mobile money transfer services through these channels, with access to more features that appeal to the younger generation. Furthermore, marketing strategies need to be enhanced to create a bold presence in the same social media ecosystem.

Business strategies around mobile money transfer services should include, state of the art infrastructure to ensure continuous service uptime. Banks and service providers should partner with relevant technology providers to ensure that they offer their customers not only continuous service uptime but also access to technology that is robust, compatible with current trends and is able to keep up with future trends.

Mobile money service providers should improve their business strategies to further promote the safety of the service and ensure that they offer the same protection as traditional banks. The older generation are more concerned about the safety of their hard-earned cash, and thus might be sceptical in the use of the service. Additionally, they might not be aware of any process to correct or recover from errors made in sending money to the wrong recipient. Service providers and banks should ensure that routine financial literacy training as well as awareness training for the elderly in helping to maintain awareness and transparency around the technology. Transactional fees should be easily accessible and understandable especially to this older generation, to assure them that, no hidden or extra fees are being charged by using the service.

Customer education should be provided to ensure that there is awareness on the process to recover lost funds due to errors and that customers should be assured that they are protected in such cases.

Furthermore, banks and service providers should look for ways to offer mobile money transfer services at very low costs to ensure that even the lowest earning people of South Africa such as pensioners, are able to participate in this service.

Lastly, banks and service providers should collect and analyse the data that comes from mobile money transactions, under the guidelines of digital governance laws of South Africa. This will not only ensure that they use the data to improve innovative offerings, but also aid in the detection of fraudulent activities, further strengthening security measures around mobile money transfer services.

6.8 Societal Implications

As mentioned previously in this study, South Africa faces many challenges including unemployment, poverty, high crime, etc. Mobile money transfer services could play a crucial role in alleviating some of these challenges through different strategies that have been proposed in this study. For an example, recruitment of brand ambassadors could contribute towards creating jobs for the unemployed, and further promote women empowerment of female brand ambassadors. This could further lift poverty in the country for those individuals that have been employed to promote the service.

Service providers could adopt poverty reduction initiatives, to ensure that not only are they bringing awareness of the service, but also pro-active in working with the South African government to reduce poverty in the country.

By extending robust infrastructure to the rural areas of South Africa, could enhance the use of mobile money transfer services and ensure accessibility and inclusion. Furthermore, the strengthened safety features could improve the digital crime statistics and contribute to the wellbeing of the citizens.

6.9 Recommendations

It is recommended that banks and service providers should design these services in a way that promotes positive attitude to the users by increasing the existing users' satisfaction. To gain new customers, these institutions should ensure that their existing customers are adequately satisfied by the service and find it valuable. It is through this that they can be used as a marketing strategy to influence potential users and grow market share.

While the service should cater for all generations, young or old, it is imperative for these institutions to constantly innovate their offerings to ensure that they keep the fun and enjoyment element to increase the intention to use mobile money transfer services. Based on this study, users of mobile money transfer services in South Africa are quite advanced in the use of technologies, thus there is appetite for inclusion of advanced innovative features and financial services.

High risk and low security are inhibitors of the service. These institutions should address all concerns pertaining to risks and invest in more measures to keep the users safe and the service secure. Lastly, ensure that the users are adequately educated about safety measures and how they can prevent any security threats.

In conclusion, the financial institutions and service providers should create conducive facilities which include continued service up time, connectivity, and less interruptions from loadshedding to ensure that service is constantly available for use.

6.10 Limitations of the Study and Suggestions for Future Research

This study has produced interesting results, but not without constraints. The results of this study cannot be generalised as the majority of the population constituted of university students. The future study, therefore, requires consideration of a distributed population sample from which to generalise the outcomes.

This study also mainly focused on initial mobile money transfer services user intention. Further research can investigate whether the factors identified in this study can sustain

usage of mobile money transfer services beyond adoption. Additionally, research could also be conducted to determine and expand on which type of service is dominant in South Africa and which features are mostly used to inform banks and service providers on improvements and better tailor their products to customers' needs.

The study was concerned with all types of mobile money transfer services. Future research could focus on the commonly used in South Africa between the banks, retailers and digital mobile money offerings. Additionally, study the appetite of South Africans to adopt other mobile money transfer services that are most dominant in other African countries like Mukuru, MTN mobile money, Vodacom M-Pesa and M-cash.

In conclusion, if a blended method of quantitative and qualitative was used, it may have produced more detailed and rich information. As necessary, future studies may, explore indistinct points from the current study using a blended technique to further expand on the examination outcome.

Table 22: Consistency table: Research Questions, Propositions, Data Collection and Data Analysis

RQ #	Objective	hyp #	Hypothesis	Data collection detail	Data analysis method
1	To investigate whether ease of use of technology or system (effort expectancy) influences the intention to adopt mobile money transfer services in South Africa	H3	Effort expectancy positively influences the consumer's intention to adopt mobile money transfer services in South Africa	Q3 Questionnaire Likert statement	Regression Analysis
2	To explore whether personal factors (Attitude, self-efficacy, hedonic performance expectancy and utilitarian performance expectancy) influence the intention to adopt mobile	H1, H2, H5, H6	Attitude/Self-Efficacy/Hedonic Performance/Utilitarian Performance positively influence the consumer's intention to adopt mobile money transfer services in South Africa	Q1, Q2, Q5,Q6 Questionnaire Likert statements	Regression Analysis

RQ #	Objective	hyp #	Hypothesis	Data collection detail	Data analysis method
	money transfer services in South Africa				
3	To ascertain whether security related factors (Trust, risk & security) influence the intention to adopt mobile money transfer services in South Africa	H7, H8, H9	Trust, risk/security influences the consumer's intention to adopt mobile money transfer services in South Africa	Q7, Q8, Q9 Questionnaire Likert statements	Regression Analysis
5	To justify whether demographic factors (Gender, age, education and employment) influence the intention to adopt mobile money	N/A	N/A	Section B Demographics - Questionare	Regression analysis

RQ #	Objective	hyp #	Hypothesis	Data collection detail	Data analysis method
	transfer services in South Africa				

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APPENDIX A (Cover Letter)

Cover Letter

Dear Participant,

This is a questionnaire designed to generate information on the **factors influencing the behavioural intention to adopt mobile money transfer services in South Africa.**

My name is **Vuyokazi Mothoagae**, I am a participant in the course, Master of Management in the field of Digital Business at Wits Business School in Johannesburg.

I would like to invite you to take part in my survey, which will involve answering a few questions and will take approximately 15 minutes. I herewith confirm and guarantee your anonymity and confidentiality with respect to information you share in this survey.

There is no compensation or benefit for participating in this study, however, your participation will be a valuable contribution to this research which could be leveraged by future researchers.

I would really appreciate your participation in this study. Please follow link below which will take you to the online survey:

https://wits.eu.qualtrics.com/jfe/form/SV_5bx9fiOGeghgJjo

If you have any questions, please do not hesitate to contact me on
2412436@students.wits.ac.za

Yours sincerely,

Vuyo Mothoagae (Researcher)

Email: 2412436@students.wits.ac.za

Cellphone number: 072 424 9746

APPENDIX B (Questionnaire)

Questionnaire

Background

Mobile money transfer services in this research refer to the electronic wallet services used to store, send and receive money through use of mobile means (World Remit, 2022). The mobile money transfer services include, Bank-based money transfers (e.g. FNB e-wallet, Standard bank instant money, Absa cash send, Nedbank send'imali and Tyme Bank cash send), retail- based money transfers (e.g. Pep store's money transfers, Spar, Pick n Pay and Shoprite Checkers money markets), and digital money transfers (e.g. MTN mobile money, Vodacom M-Pesa and m-cash).

Instructions:

Read the following statements and indicate the degree to which you agree or disagree from a list of 4 possible choices (Strongly agree, Somewhat agree, Somewhat disagree and Strongly disagree).

Section A: This section intends to identify your opinion regarding Mobile Money Transfer Services

Q1. Attitude (Refers to the individual's positive or negative feelings towards a certain behaviour)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I have a positive feeling when using mobile money transfer services.				
I aim to always use mobile money transfer services whenever I need to transfer money.				
I think it's a good idea to use mobile money transfer services.				

Q2. Utilitarian Performance (Relates to a notion that using a certain technological system is in the best interest of the individual using it)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Using mobile money transfer services helps me stay up to date with the latest developments in mobile money transfer services space.				
Using mobile money transfer services enhances my knowledge on mobile money transfer services.				
Mobile money transfer services are practical to use.				

Q3. Effort Expectancy (Refers to the degree of ease, associated with the use of a system)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I find it easy to use mobile money transfer services.				
It would not take me long to learn and understand how to use mobile money transfer services.				
My interaction with mobile money transfer services channels is easy and pleasant.				

Q4. Social Influence (Relates to how an individual feels the importance that others believe he/she should use the new system)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
People who influence my behaviour believe that I should use mobile money transfer services.				
People around me encourage me to use mobile money transfer services.				
People who are important to me believe that I should use mobile money transfer services.				

Q5. Hedonic Performance (Relates to a notion that using a technological system results in fun, enjoyment, or happiness)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I enjoy using mobile money transfer services.				
Using mobile money transfer services is fun.				
I believe that mobile money transfer services are useful.				

Q6. Self-Efficacy (Relates to an individual's confidence concerning use of technology)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I believe that I can adapt to any mobile money transfer service.				
I am confident with the use of mobile money transfer services.				
Using mobile money transfer services is second nature to me.				

Q7. Trust (Refers to the extent to which an individual believes that a certain technology usage is trustworthy)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I believe that mobile money transfer service providers have the ability to provide the service effectively.				
I believe that mobile money transfer services are reliable and trustworthy.				
I do not doubt the integrity of mobile money transfer service providers.				

Q8. Risk (Relates to an individual's degree of anticipated uncertainty linked to the consequence of using a particular technology)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I believe that privacy of information is maintained when using mobile money transfer services.				
I believe that mobile money transfer service providers manage all risk associated with the service.				
I believe that my money is safe when using mobile money transfer services.				

Q9. Security (Refers to the degree to which an individual believes that the usage of technology provides secure mechanism for achieving their goal)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Mobile money transfer service providers take the necessary security pre-cautions to keep my information safe.				
I feel safe when I am using mobile money transfer services.				
I have no security concerns when using mobile money transfer services.				

Q10. Facilitating Conditions (Relate to the degree to which an individual believes that the necessary resources exist to support the use of the system)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I have the necessary knowledge to use mobile money transfer services.				
I have access to multiple channels that allow me to use mobile money transfer services.				
I can easily get help from others when using mobile money transfer services.				

Q11. Behavioural Intention (Refers to the motivational factors that influence a given behaviour, where, the stronger the intention to perform the behaviour, the more likely the behaviour will be performed)

Question	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I intend to use mobile money transfer services given that I'm aware and have access to them.				
I predict that I would use mobile money transfer services every time I need to transfer money.				
I intend to use mobile money transfer services in the near future.				

Section B: This section intends to identify the Demographic Information of the respondent.

Demographics

1. Age:

☐	18vrs-25vrs
☐	26vrs-35vrs
☐	36vrs-46vrs
☐	47vrs-55vrs
☐	Over 55vrs

2. Gender:

☐	Male
☐	Female
☐	Non-binary / third gender
☐	Prefer not to say

3. Education:

☐	No Schooling
☐	Primary Schooling
☐	Secondary Schooling
☐	Grade 12/Matric
☐	Post Grade 12 Certificate
☐	Post Grade 12 Diploma
☐	Deegree
☐	Post Graduate Degree

4. Employment:

☐	Un-Employed
☐	Part-Time Employed
☐	Full-Time Employed
☐	Self-Employed

5. How often do use mobile money transfer services?

☐	Once a month
☐	2-3 times a month
☐	4-6 times a month
☐	7-10 times a month
☐	More than 10 times a
☐	Never

APPENDIX C (Participant Consent Form)

Participant Consent Form

Title of project: Factors influencing the behavioural intention to adopt mobile money transfer services in South Africa

Name of researcher: Vuyokazi Mothoagae (2412436)

- ☐ I Consent
- ☐ I do not Consent