Factors influencing the adoption of m-commerce platforms by individuals in South African townships.

Master of Management in Digital Business

Research Report

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ABSTRACT

Since the COVID-19 pandemic outbreak in 2020, there has been an increase in the adoption of e-commerce (electronic commerce) from which m-commerce (mobile commerce) was born. M-commerce is the use of a mobile phone to purchase goods and services. M-commerce is flexible because it is easily accessible and convenient. In addition, the rise of smartphones and internet availability has also contributed to the increase in m-commerce.

The South African digital economy has developed drastically over the past years due to infrastructure development, including internet connectivity. The majority of the South African population resides in townships and rural areas and contributes significantly to the economy. Internet accessibility advancement in townships has led to more consumers purchasing goods and services online in the comfort of their homes.

The study researched m-commerce adoption in South African townships by determining the factors that affect m-commerce adoption in South African townships. The study only focused on two townships in Johannesburg: Soweto and Tembisa. A conceptual research model based on the following factors from the UTAUT2 technology model: performance expectancy, hedonic motivation, and facilitating conditions, with social media and trust as two additional constructs. A digital online survey was used to collect respondents' data was analysed quantitatively using SPSS.

The findings of the study are discussed in detail, including testing the hypotheses formulated. Firstly, the results indicated that social media and perceived security have a significant, positive effect on the trust of South African township residents to adopt m-commerce platforms. Secondly, performance expectancy, hedonic motivation, trust, and facilitating conditions positively affect the intention of South African township residents to adopt m-commerce; however, trust and facilitating conditions were insignificant.

Keywords: m-commerce, UTAUT, UTAUT2, townships, social media, perceived security, trust, performance expectancy, facilitating conditions, hedonic motivation.

DECLARATION

I, Mogau Malekgala Mashishi, 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: Mogau Mashishi Signature: MM Mashishi

Signed at Johannesburg

On the 26th day of June 2023.

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LIST OF ACRONYMS AND ABBREVIATIONS

PDA Personal Digital Assistant
GPS Global Positioning System
SNS Social Network Service
SPSS Statistical Package for the Social Science
TAM Technology Acceptance Model
TPB Theory of Planned Behaviour
TRA Theory of Reasoned Action
UTAUT Unified Theory of Acceptance and Use of Technology
UTAUT2 Unified Theory of Acceptance and Use of Technology 2

CHAPTER 1: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

This study is about the factors affecting m-commerce adoption by individuals in South African townships. M-commerce (mobile commerce) is an extension of e-commerce (electronic commerce), where a mobile device is utilised to buy goods and services using a wireless network (Abdelkarim & Nasereddin, 2010). M-commerce is an extension of e-commerce (electronic commerce) (Abdelkarim & Nasereddin, 2010). There are different ways m-commerce can be administered, by using, namely: satellite-based global position system (GPS), personal digital assistant (PDA), hand-held wireless computers, internet smartphones with applications, and short-message service (SMS) (Abdelkarim & Nasereddin, 2010).

In the past few years, the infrastructure of South African townships has been developed, thus uplifting the township economy with shopping malls and entertainment and improving the standard of living (McGaffin et al., 2015). The infrastructure development has also enabled an economic interlink between urbanised economic hubs and townships. This study solely focuses on South African townships, with research performed in two large townships in Johannesburg, Gauteng, Soweto, and Tembisa. In addition, Internet accessibility in townships has improved, allowing consumers the flexibility to purchase goods and services online (Rogerwilco et al., 2022).

The contents of this chapter include the purpose statement and background of the study, the research objectives, the research problem, the significance of the study, and the summary of the methodology and the results.

1.2 Purpose statement

This study aims to determine the factors that influence the intention to adopt m-commerce platforms by individuals in South African townships.

1.3 Background of the study

A township is “a residential area outside towns and cities with predominantly black, coloured, or Indian people and associated with low-cost housing and a lack of infrastructure” (Sandeep Mahajan, 2014). South African townships and informal settlements account for 60% of unemployment in the country (SME South Africa, 2019). South African townships have

revolutionised and have, over the years, become economic hub with infrastructure improvements, shopping centres, and malls (McGaffin et al., 2015). The rise in economic activity and improvement in many individuals' lifestyles has sparked a desire to obtain a better understanding of the economic landscape of South African townships and how it contributes to the economy of the country with digital transformation at the forefront of everything and with recent growth in electronic commerce (e-commerce) and mobile commerce (m-commerce).

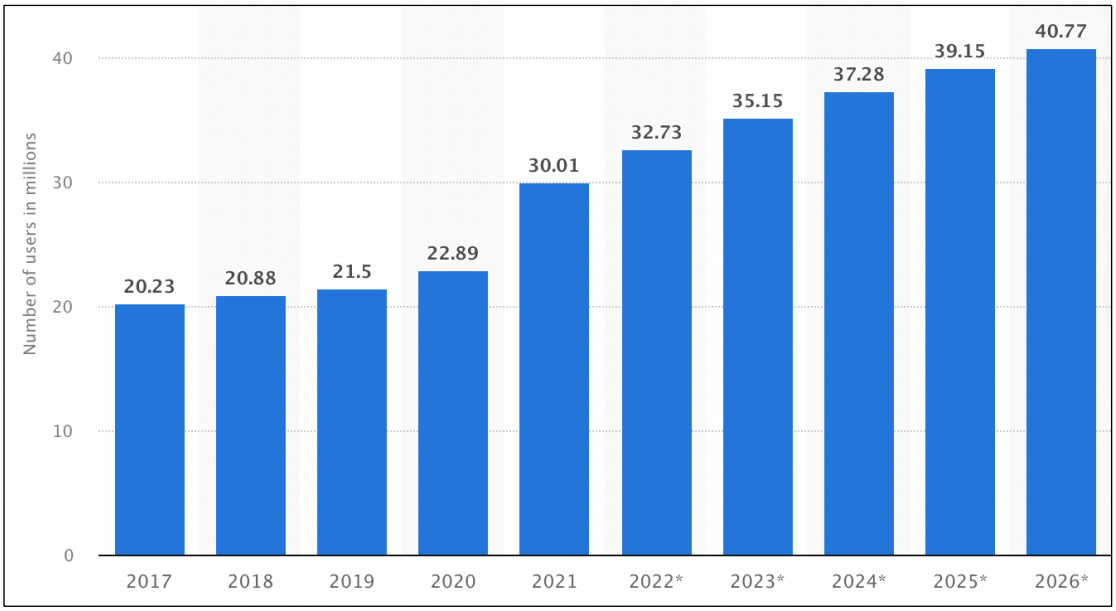
Mobile commerce (m-commerce) comprises various aspects, which include online retail shopping, mobile banking, and mobile payments (Tiwari & Buse (2007). Due to technological advancements, South African townships and rural communities have been encouraged to embrace digital transformation (Rasimeni, 2022). As a result, mobile devices have become convenient tools for people because they can use them to perform multiple transactions in their hands, leading to m-commerce becoming more favoured over e-commerce. After all, transactions can be conveniently done on the go (Abdelkarim & Nasereddin, 2010).

The internet and data are significant in social media usage and m-commerce adoption. According to Statistics South Africa (2019), the General Household Survey of 2019 indicated that 63.3% of South African households had at least one member with internet access. Western Cape had the highest home access, with a 21.7% of households connected at home, followed by Gauteng with 14.9%, and Limpopo had the lowest with 1.6% (Statistics South Africa, 2019).

The use of mobile internet access devices in rural areas is still lagging at 44%, the metropolitan areas with 67.8% usage and urban areas being the highest with 59.5% (South African Government, 2022). As of January 2022, 41.1 million South Africans are active internet users, with only 28 million social media users, at 68% (Johnson, 2022).

Social media platforms like Instagram with InstaShop, Facebook, and TikTok have become marketplaces allowing users to purchase products and services online on these platforms. In addition, businesses collaborate with influencers on these platforms to market and promote their products and services. As a result, consumers decide to purchase products and services based on influencer comments and usage of the products and services also based on comments from other social media users.

Figure 1: Number of social network users in South Africa from 2017 to 2026 (in millions)



Source: Statista, 2022a

As per Figure 1, the number of social network users in South Africa has been increasing from the year 2017, and it is estimated to reach 40.77 million in 2026 (Statista, 2022a).

1.4 Research problem

Digital transformation has significantly changed South Africans' livelihood, greatly accelerated by the COVID-19 pandemic (Antonella & Cicchiello, 2020). Technological advancements like smart devices, mobile applications, wireless connectivity, and secure payment devices have changed how many people communicate and transact (Township Tech Sector Intelligence Report, 2021). In addition, social networking has increased in the past years, and individuals are using social platforms to influence their online shopping decisions (Miah et al., 2022).

According to Shang & Wu (2017), there is an increase in online shopping globally. This trend is a gap that has allowed more research to be performed around online shopping and most recently m-commerce especially in developing countries like South Africa. With technology on the rise and a digitally transforming country, it is imperative to understand how business can be expanded on digital platforms and understand both the needs of businesses and customers, to ensure that everyone is included in the economy, including the vulnerable still residing in townships and rural areas. South African townships are still not as technologically advanced as compared to urban areas therefore this research is an opportunity to understand the evolution of m-commerce in the townships and the factors influencing the adoption of m-commerce.

According to Ligthelm (2010), most of township residents have moved out of the lower-income group into the middle-income group, increasing their spending power, thus leading to the development of townships, with new shopping malls and shopping centres developments (McGaffin et al., 2015) leading to individuals in townships not having to leave the townships to do shopping.

Dzimati (2017) and Dakduk et al.(2020) studied m-commerce adoption in South African townships, both using the UTAUT model. Dakduk et al.(2020) included the trust and perceived security elements in the UTAUT. They concluded that perceived trust, habit, positive motivation, and facilitating conditions affected the decision of individuals to use m-commerce. Dzimati (2017) also added perceived security and trust as additional constructs to the UTAUT model for the study of online shopping acceptance in South African townships and concluded that effort expectancy, performance expectancy, social influence, perceived security, and trust are significant factors to adopting online shopping.

As evidenced by Dzimati (2017) and Dakduk et al.(2020), research has been conducted in the past regarding m-commerce adoption in townships, using technology acceptance models to investigate the acceptance of m-commerce, according to the researcher’s knowledge, literature has yet to be discovered regarding m-commerce adoption in South African townships from the consumers' perspective using the conceptual framework developed in Chapter 2. The purpose of this research report is to bridge that gap.

1.5 Research objectives of this study

The research objectives of the study are presented in the below table together with their hypotheses. The hypotheses were developed using a conceptual framework, which is explained in detail in Chapter 2.

Table 1:Research objectives and their hypotheses

Research objective	Hypothesis no:	Hypotheses
1. Determine whether perceived security and social media affect trust to adopt m-commerce by individuals in South African townships.	1a	Social media (SM) positively affects users' trust in m-commerce (T) in South African townships.
	1b	Perceived security (PS) positively affects users' trust in m-commerce in South African townships.
2. Determine whether trust affects the intention of individuals to adopt m-commerce in South African townships.	2	Trust (T) positively affects a user's intention to adopt m-commerce in South African townships (IA).
3. Determine whether motivation affects the intention of individuals to adopt m-commerce in South African townships.	5	Hedonic motivation (HM) positively affects a user's intention to adopt m-commerce in South African townships.
4. Determine whether technological constraints and conditions affect the intention of individuals to adopt m-commerce in South African townships.	3	Facilitating conditions (FC) positively affect users' intention to adopt m-commerce.
	4	Performance expectancy (PE) positively affects users' intention to adopt m-commerce.

1.6 Significance of this study

As a developing country, South Africa faces many socioeconomic challenges, such as high unemployment, poverty, and inequality; however, it is recognised as one of the most advanced economies in Africa (Manda & Backhouse, 2018). Despite all these challenges, South Africa has started to adopt digital transformation as one of its strategic economic strategies for government, society, business, and other dimensions of the economy (Manda & Backhouse, 2018).

Accordingly, South Africa has adopted three pillars to transform the country: digital access, digital transformation of government, and digital access (South African Government, 2019). These three pillars are part of the 2016 Integrated Policy Framework which is part of the National Development

Plan with a vision that states: “by 2030, ICT will underpin the development of a dynamic and connected information society and a vibrant knowledge economy that is more inclusive and prosperous” (South African Government, 2012).

South Africa is ranked the highest unequal country in the world (World Bank, 2022), which has led to an even greater digital divide among the poor because technology has become critical in participating in the economy (Aruleba & Jere, 2022). In addition to the execution of the three pillars mentioned above, the following progress has also been made: In 2021, the South African government, under the Communications and Digital Technologies department in partnership with Genesis Analytics and Knowledge Executive, has finalised the Digital Economy Master Plan (Department of Communications and Digital Technologies, 2021). However, the government still engages various stakeholders regarding the plan's implementation (Department of Communications and Digital Technologies, 2021). Furthermore, the department has also developed the National Digital and Future Skills Strategy to provide all South Africans with the necessary skills to participate in the digital economy (Department of Communications and Digital Technologies, 2021).

Although policies have been formulated, their implementation has been a great challenge. Manda & Backhouse (2018) investigated the inclusive digital transformation in South Africa, using institutional theory as their framework. They focused on policy implementation, specifically addressing the two pillars of digital inclusion and digital access per the Integrated ICT policy. Manda & Backhouse (2018) found that poor coordination and collaboration among government departments responsible for digital transformation was causing the challenge of implementation of policy.

This study can contribute to the government’s plan by understanding the factors influencing mobile commerce adoption in South African townships from both a consumer and a business perspective and what initiatives government can create to assist in the economic growth of townships. M-commerce retailers can also use this study to understand the challenges faced by customers in the townships and how they can assist customers to overcome those challenges. According to the researcher’s knowledge, literature has yet to be discovered regarding m-commerce adoption in South African townships from the consumers' perspective using the conceptual framework developed in Chapter 2. This study can also contribute academically to the further research regarding m-commerce adoption in South African townships.

1.7 Summary of methodology and results

The purpose of this study was to answer the following questions to meet the research objectives highlighted in section 1.5:

- Do security and social media affect trust to adopt m-commerce by individuals in South African townships?
- Determine whether trust affects the intention of individuals to adopt m-commerce in South African townships.
- Are individuals in South African townships motivated to use m-commerce platforms?
- Do technological constraints and conditions affect m-commerce adoption by individuals in South African townships?

Literature from journals, textbooks, government reports, theses, and dissertations was reviewed better to understand prior studies on m-commerce adoption and the problem. A conceptual research framework was developed based on the UTAUT2 model, with social media and perceived security as additional constructs. Hypotheses were formulated from the research framework to answer the above questions.

The quantitative research method was applied to collect data and enable the researcher to meet the research objectives highlighted in section 1.5. The targeted population of the study was the residents of Soweto and Tembisa. According to Statista (2022b), the estimated populations of Soweto and Tembisa are 1,695 000 and 512 000 respectively. The researcher used random convenience sampling to select the sample. The sample size was 220 respondents; comprising of a mixture of residents from both Tembisa and Soweto. A digital survey to collect data was distributed to respondents via an online link via email and social media platforms.

A conceptual research framework was used to develop the research model for hypotheses development based on constructs of the Unified Theory of User Acceptance and Use of Technology2 (UTAUT2) acceptance model that was developed by Venkatesh et al. (2012), together with social media, perceived security, and trust as additional constructs.

Data were analysed, the hypotheses tested, and the results indicated that the testing supported all hypotheses. Therefore the research objectives were met, and the above research questions were answered positively. Perceived security and social media positively affect trust to adopt m-commerce. Therefore, trust has a positive effect on individuals adopting m-commerce. The three constructs of the UTAUT2 model, performance expectancy, hedonic motivation, and facilitating conditions, also positively affect the individuals to adopt m-commerce.

1.8 Overview of the rest of the report

- **Chapter 2: Literature review**

Chapter 2 reviews the literature and framework relevant to adopting m-commerce and develops a research framework and hypotheses. A summary of the literature reviewed ends this chapter.

- **Chapter 3: Research methodology**

Chapter 3 discusses the research methodology and methods used in this study, the population and sampling methods, the data collection procedures, and how the data was analysed and interpreted.

- **Chapter 4: Data analysis and presentation of findings**

Chapter 4 quantitatively analyses the data collected via the digital survey, including the demographics of the respondents. Finally, the findings are graphically presented using tables and illustrations.

- **Chapter 5: Discussion and interpretation of research findings**

Chapter 5 extends Chapter 4 by providing an in-depth discussion and interpretation of the data analysed, and the hypotheses are tested and linked back to the literature reviewed in Chapter 2.

- **Chapter 6: Conclusion and evaluation of the research**

Chapter 6 reviews the research objectives and provides a conclusion and recommendations for further studies.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. Introduction

This chapter focuses on the literature review, key findings, and theoretical frameworks for adopting mobile commerce. Extensive research has been done on m-commerce adoption in South Africa, with various theories and conclusions formulated. However, there needs to be more research on the relationship between social media and mobile commerce adoption in South African townships. The purpose of the literature review below is to identify that gap.

2.2. M-commerce (mobile commerce) overview

Mobile commerce is the “purchase and sale of goods and services using smart devices utilizing wireless technological infrastructure such as Wi-Fi” (Zorayda, 2003).

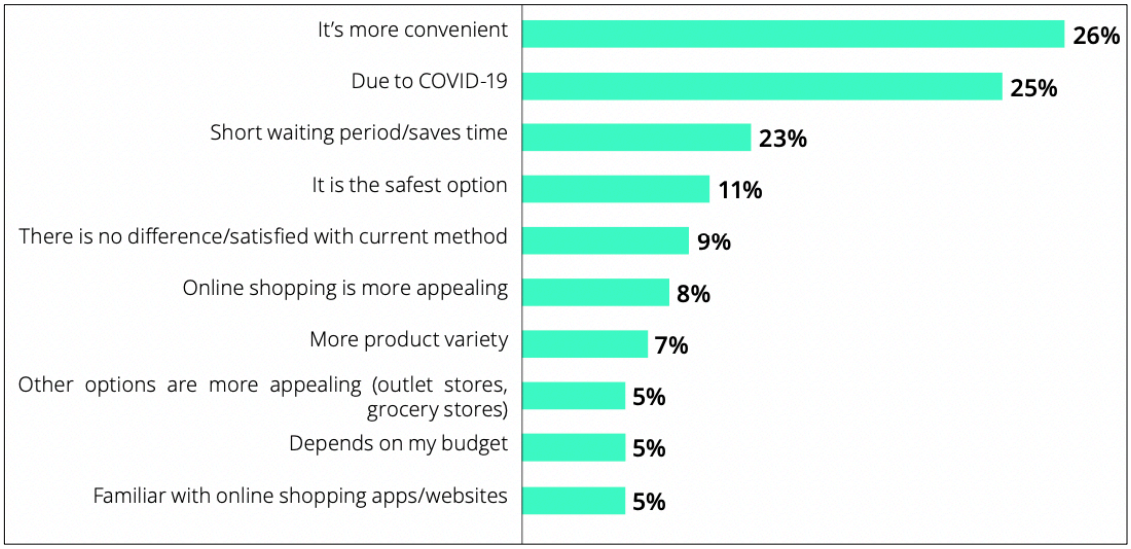
2.2.1. M-commerce services

Rajnish Tiwari & Buse (2007) identified various mobile commerce applications, including mobile online shopping, mobile payments, mobile banking, and mobile entertainment. However, this study mainly focused on mobile online shopping because it is expected to expand rapidly over the coming years (Wang et al., 2015).

- **Mobile online shopping**

Online shopping in South Africa has grown exponentially, especially during the COVID-19 pandemic. According to the Deloitte Digital Acceleration Report by Schaefer & Bulbulia (2021), the two reasons why online shopping has increased in South Africa are because of its convenience and due to the COVID-19 pandemic, as indicated by Figure 2.

Figure 2: Reasons for increased online shopping in South Africa

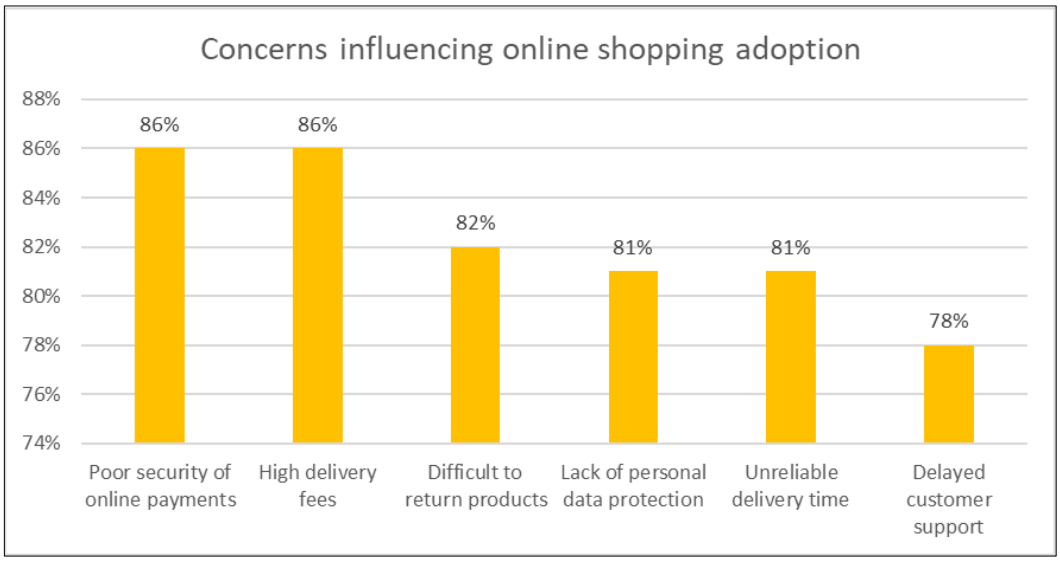


Source: Schaefer & Bulbulia, 2021

Online retailers in South Africa sell groceries, apparel, and general consumables. Most online retailers have mobile applications that customers can use to shop at their convenience. Amongst them are Takealot, Superbalist, and Checkers Sixty60. According to Goga et al. (2019), online shopping is accessed by large via mobile devices than any other channel.

Figure 3 indicates the various concerns that influence online shopping adoption by consumers. Poor security of online payments and high delivery fees ranked the highest. Delayed customer support ranked the lowest (Deloitte Digital, 2020).

Figure 3: Concerns influencing online shopping adoption



Source: Deloitte Digital, 2022

- **Mobile banking**

Mobile banking is "an m-commerce application used by customers to access their bank accounts and perform various transactions with the bank online, such as transfer of funds and more advanced transactions such as stock trading (Kim et al., 2009). To further support this, mobile banking is "an innovative method for accessing banking services via a mobile device or personal digital assistant (PDA)" (Luo et al., 2010). However, only three technology solutions currently enable mobile banking implementation: browser-based applications, messaging-based applications, and client-based applications (Kim et al., 2009; Rajnish Tiwari & Buse, 2007).

- **Mobile payments**

A mobile payment is "a payment that is made using a mobile device for goods and services rendered by a seller" (Mhlongo, 2016). Before a purchase is made, a bank account, credit or debit card, or store card needs to be linked to a mobile payment account (Wang et al., 2016). According to Flood et al. (2013), there are two types of activities that mobile payments can is classified into, namely:

  - **Purchases** - the user pays for items or services purchased from a seller.
  - **Transfers, also known as Remittances** have no financial obligation for which the payment is made.

2.2.2. Features of m-commerce

According to Golden and Regi (2013), mobile commerce has advantages over other forms of commerce due to the following features:

- **Convenient** – Mobile devices are convenient because they are taken almost anywhere and can easily store data.
- **Accessible** – As long as the mobile device is connected to a network, the user can be contacted, although the user can also elect who is able to access them and when.
- **Instant connection** – Mobile devices are connected to the internet at different speed levels of network connectivity, like third-generation (3G) and fourth-generation (4G). The fifth generation (5G) is the latest network connectivity.
- **Pervasive** – The mobile phone can be used anywhere and at any time if the device is connected to a network.
- **Personalisation** – The m-commerce services offered are tailored to suit the personal use of the mobile device user.

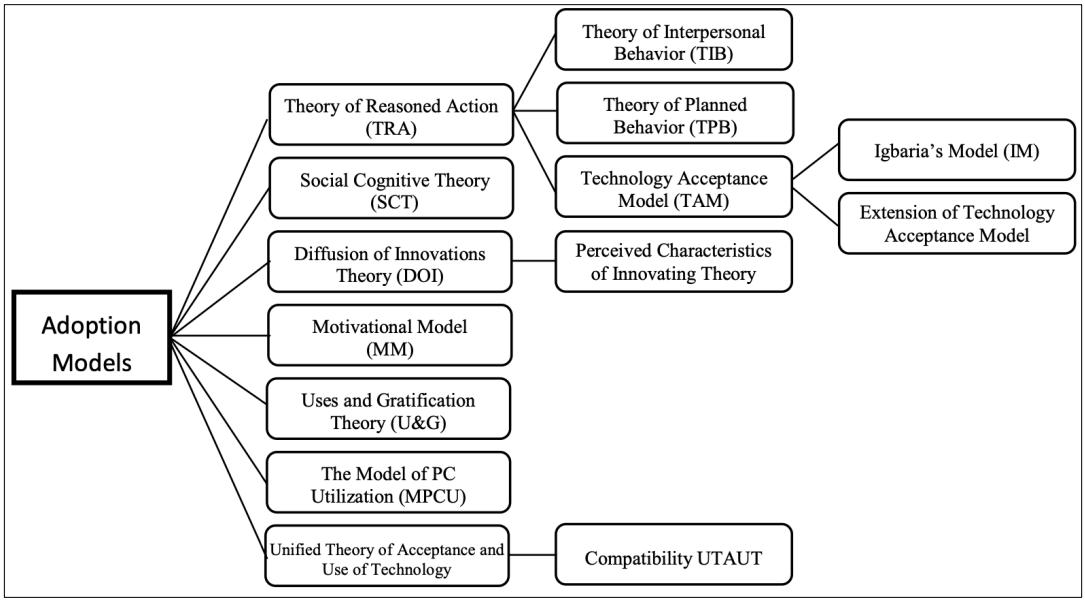
2.2.3. M-commerce adoption

Technological advancement has led to the speedy adoption of m-commerce. However, in developing countries like South Africa, access to the internet and mobile devices can be costly (Cullen & Kabanda, 2018), especially in the townships and rural areas; however, this has changed over time as infrastructure has been gradually developed in these areas with (McGaffin et al., 2015) townships like Soweto and Tembisa, having become their economic hubs.

Over the years, as more research has become available, m-commerce adoption has been studied using different technology adoption frameworks. The most well-known used theories are: The Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), the Theory of Planned Behaviour (TPB) (Ajzen, 1985), the Technology Acceptance Model (TAM) (Davis, 1986), the Diffusion of Innovation Theory (Rogers, 1962/2003), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) and the Unified Theory of Acceptance and Use of Technology2 (UTAUT2) being the latest developed model (Venkatesh et al., 2012).

2.3. Technology acceptance and adoption models and theories

Figure 4: An overview of technology adoption and acceptance Models



Source: Taherdoost, 2018

Figure 4 illustrates an overview of the different technology adoption and acceptance models that have been developed over the years. Some of the most commonly used technology acceptance models and frameworks mentioned above are discussed below in detail. It is clear how different models are an extension of older models, thus illustrating that as technology enhances and

develops, certain factors and constructs need to be included in the models to make them relevant. Prior studies have used different models to determine behaviour intention to use and adopt the technology. For this study, the latest model, the UTAUT2, is used as a base for the research framework.

2.3.1. Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) model was initially developed in 1975 (Ajzen & Fishbein, 1980). It was initially developed for sociological and psychological studies but later used for researching information technology usage (Kuo et al., 2015). There are three cognitive components, namely: attitude (a person's feelings for a behaviour), social norms (social influence), and intentions (Taherdoost, 2018). The disadvantages of the TRA model are that it does not address the role of habit and moral factors (Taherdoost, 2018). Voluntary usage is critical for validating the TRA model (Taherdoost, 2018).

2.3.2. Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour model (TPB) is an extension of the TRA model, a new variable, perceived behavioural control (PBC), is added (Taherdoost, 2018). According to White et al.(2015), perceived behavioural control (PBC) results from available resources, opportunities, and skills and the perceived significance of those resources, opportunities, and skills to achieve the outcomes. In the TPB model, the following three main factors, namely: perceived behavioural control (PBC), subjective norm, and behavioural attitude, determine the behavioural intention of the individual (Taherdoost, 2018).

2.3.3. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is derived from the TRA model (Taherdoost, 2018). The Technology Acceptance Model (TAM) includes two additional factors, perceived ease of use and perceived usefulness, to determine the behavioural intention of the individual (Silva, 2020, pp. 205–219). TAM is the most commonly used model when determining the acceptance of technology by individuals and the intention to adopt new technology (Lee et al., 2003).

2.3.4. Uses and Gratification Theory (U&G)

The Uses and Gratification Theory (U&G) focuses on users' social and psychological aspects and how the individual uses media for motivation and satisfaction (Grellhesl & Punyanunt-Carter, 2012). The U&G includes three constructs: motivations, behavioural usage, and

gratification/satisfaction (Taherdoost, 2018). The U&G model is unique compared to the other models because it is applied to the media environment for communication and entertainment purposes (Taherdoost, 2018).

2.3.5. Unified Theory of Acceptance and Use of Technology (UTAUT)

The UTAUT is an integration of the eight dominant models, namely: Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), the Motivational Model (MM), the Social Cognitive Theory (SCT), a combined TBP/TAM, the Model of PC Utilization, and Innovation Diffusion Theory (IDT) (Williams et al., 2015).

As illustrated in Figure 5, the UTAUT model has four constructs that affect the behavioural intention to accept and use technology: performance expectancy, facilitating conditions, social influence, and facilitating conditions, and four moderators, which are gender, age, experience, and voluntariness of use.(Venkatesh et al., 2003). According to Venkatesh et al.(2012), the UTAUT model was developed by organisations for their employees but has now been used to study other areas like customer technology adoption, as is with this study.

2.3.6. Unified Theory of Acceptance and Use of Technology2 (UTAUT2)

The Unified Theory of Acceptance and Use of Technology 2 model (UTAUT2) was developed in 2012 and is an extension of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2012). It includes three additional constructs: hedonic motivation, price value, and habit, and the voluntariness of use moderator is excluded (Venkatesh et al., 2012). According to Rogers (1962/2003), the UTAUT2 focuses on the perspective of the customer compared to the UTAUT, which focused on the organisation and employee perspective.

2.4. M-commerce adoption and acceptance using other technology acceptance models

Chhonker et al.(2017) performed a study to investigate mobile commerce adoption based on all the above technology adoption frameworks and found that the Technology Acceptance Model (TAM) was the most popular framework and the Unified Technology Acceptance and Use of Technology (UTAUT) was gaining traction. Asastani et al. (2018) used both the UTAUT (Unified Theory of Acceptance and Use of Technology) and TAM (Technology Acceptance Model). They concluded that performance expectancy, effort expectancy, social influence, and perceived trust influence of the use of m-commerce while facilitating condition and perceived cost have no significant effect on the use of m-commerce.

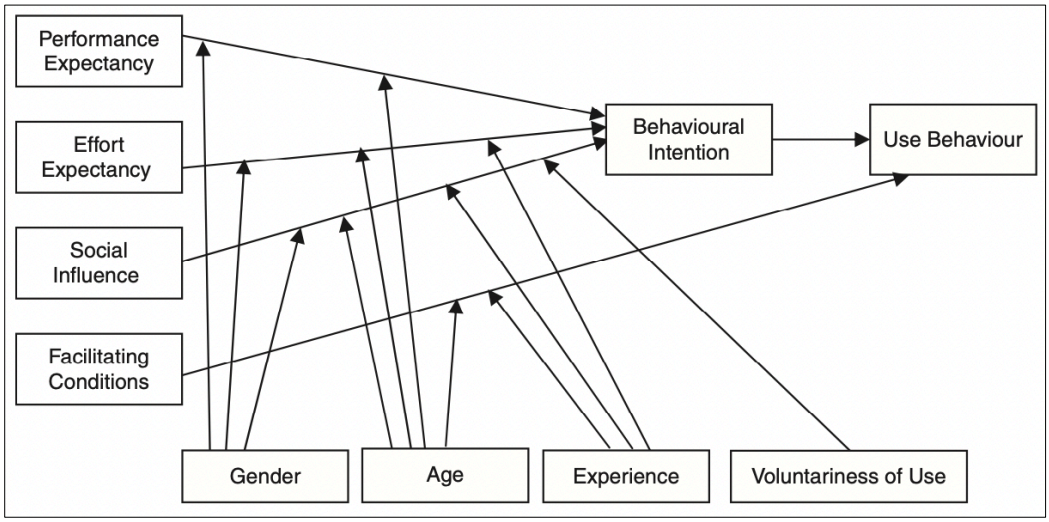
Using Chong's research model, Cullen & Kabanda (2018) only focused on two factors affecting m-commerce adoption in South Africa: demographic and motivational factors (Chong, 2013). Demographic factors are the characteristics of the individual and include, amongst others, age, gender, and educational level (Cullen & Kabanda, 2018). Both studies performed by Chong (2013) and Cullen & Kabanda (2018) concluded that mobile commerce adoption is negatively affected by the age, educational levels, and gender of an individual, meaning that the older an individual is, and the less educated they are, the more likely they will not use mobile commerce, and their gender play a significant role too. Cullen & Kabanda (2018) focused wholistically on South Africa and not on South African townships only; this is the gap that was identified in their study.

Motivational factors that include perceived ease of use, perceived enjoyment, and perceived usefulness are positively related to m-commerce adoption by individuals. Although South African townships have developed significantly, many other factors can affect m-commerce adoption in South African townships, other than the two mentioned above, which were further explored in this study. Lastly, Pankomera & Greunen (2019) identified that financial, technical, and cultural barriers affect the adoption of m-commerce in the informal sector, including both rural and urban areas in Africa, not focusing solely on South Africa. However, the study solely focused on townships, and social media impact was also not considered in the review by Pankomera & Greunen (2019). This research paper bridges the gap by narrowing the study to only South African townships and not other countries.

Informal and rural settlements encompass South African townships; it would be beneficial to understand the constraints that affect m-commerce adoption in rural areas. Okonkwo et al.(2019) contributed to this phenomenon by performing a study that determined whether a relationship exists between rural individuals' attitudes and innovation characteristics toward adopting m-commerce apps. He based his study on the diffusion of innovation theory framework that was developed by Rogers (1962/2003). From this theory, Okonkwo et al.(2019) determined that the following innovation characteristics: relative advantage, ease of use, facilitating conditions, compatibility, voluntariness, self-efficacy, and perceived risk affect the attitude of individuals residing in rural areas on the adoption of mobile commerce. The individuals were positive and were open to new technological advancements, although they were late adopters. However, their study has not considered social media usage to accelerate m-commerce adoption amongst rural dwellers, and this is the knowledge gap that was filled by this research study.

2.5. M-commerce adoption and acceptance using UTAUT and UTAUT2 as base models

Figure 5: Unified Theory of Acceptance and Use of Technology (UTAUT)



Source: Venkatesh et al., 2003

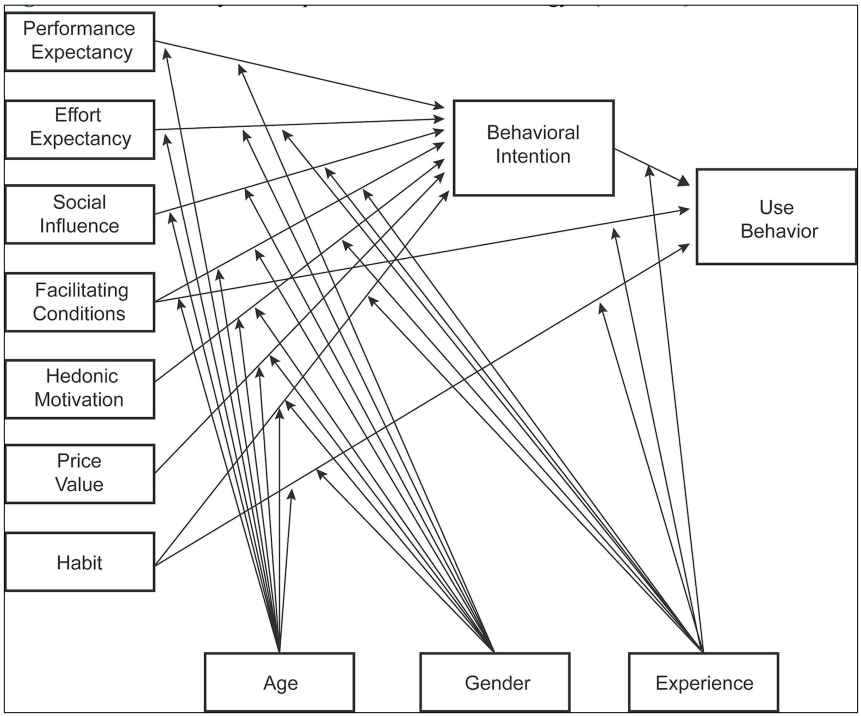
The following researchers moved away from the technology acceptance model (TAM). Instead, they focused on the Unified Theory of Acceptance and use of technology (UTAUT) to explore m-commerce adoption amongst low-income consumers (Dakduk et al., 2020) and South African townships (Dzimati, 2017), similar to the study.

Dakduk et al.(2020) included the trust and perceived security elements in the UTAUT. They concluded that perceived trust, habit, positive motivation, and facilitating conditions affected the decision of individuals to use m-commerce. Although Dakduk et al.(2020) used the UTAUT as a base framework, similar to this research, they did not focus solely on South African townships; this being the gap that is filled by this research. Using the same framework, Dzimati (2017) researched online shopping acceptance in South African townships and concluded that the following factors: effort expectancy, performance expectancy, social influence, perceived security, and trust are significant to adopting online shopping.

Similar to Dzimati (2017), this research focused on South African townships. However, m-commerce is widespread and includes mobile shopping amongst others. Dzimati (2017) narrows the study to only mobile online shopping. Lian & Yen (2014) also used the UTAUT together with innovation resistance theory to study factors affecting the acceptance of online shopping by older customers. He revealed that performance expectancy and social influence constructs have a significant effect on the acceptance of online shopping by older adults and younger consumers had higher drives and lower barriers towards acceptance as compared to older consumers.

However, unlike Lian & Yen (2014), this research focused on all age groups above the age of 18 and not only on older adults and extended the research to townships exclusively.

Figure 6: Unified Theory of Acceptance and Use of Technology2 (UTAUT2)



Source: Venkatesh et al., 2012

Gharaibeh et al.(2020) used the UTAUT2 model as a base for their study on m-commerce adoption; however, they extended the model by adding social media as an additional construct. Although the study by Gharaibeh et al.(2020) was done in Jordan, situated in Western Asia, it is similar to this study because it also focuses on the impact of social media on the intention to adopt m-commerce. The conclusion was made that the six constructs of the UTAUT2 model and social media immensely affect the intention of consumers in Jordan to adopt m-commerce. Unfortunately, no available literature has shown evidence of a similar study performed in South Africa, specifically the townships and this is the knowledge gap intended to be filled by this research.

Lin & Theingi (2019) extended the UTAUT2 model by adding disturbance concerns and perceived trust. They concluded that social influence, facilitating conditions, price value and habit, and trust, positively influence the behavioural intention of m-commerce adoption. Lastly, Bendary & Al-Sahouly (2018) focused on Egypt, exploring the UTAUT2 factors' effect on perceived usefulness and ease of use on mobile commerce. They concluded that social influence and hedonic motivation were the most predominant factors. From these two studies performed by Lin & Theingi (2019)

and Bendary & Al-Sahouly (2018), it is evident that there is still a knowledge gap on the study of m-commerce adoption in South African townships.

2.6. Security and trust in the adoption of m-commerce

Smartphones and technological advancement have enabled individuals to communicate and share information globally, leading to the rise of security concerns and the trust in systems to protect information. Research has indicated that security and trust are additional factors affecting individuals' adoption of m-commerce.

In the absence of brick n mortar shopping experience, trust becomes a significant factor between the vendor and the customer, especially with the perceived risks encompassing technological advances such as m-commerce (Corbitt et al., 2003). Trust is "a subjective belief that a party will fulfil their obligations," and in the context of m-commerce, the following factors: privacy of customer information, quality of information, m-commerce usability, vendor's trustworthiness and reputation, influence trust (Siau et al., 2003).

According to Cho et al.(2007), situational normality, calculative trust, and familiarity with a trustworthy online vendor are the factors a customer considers concerning trusting m-commerce. Trusting beliefs in the online environment can be classified into either external or internal factors (Salo & Karjaluoto, 2007). External factors include consumer characteristics, products and services, past experiences of the consumer, and risk perception (Salo & Karjaluoto, 2007). Internal factors include the information system and privacy protection (Salo & Karjaluoto, 2007).

Security is "a circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service, and fraud, waste, and abuse" (Ravi Kalakota & Whinston, 1996, p. 224). Although m-commerce is becoming a success, security is still a concern (Yan Li et al., 2010). Confidentiality, systems availability, and data integrity are among consumers' security concerns in an online environment (Ghani & Sidek, 2009).

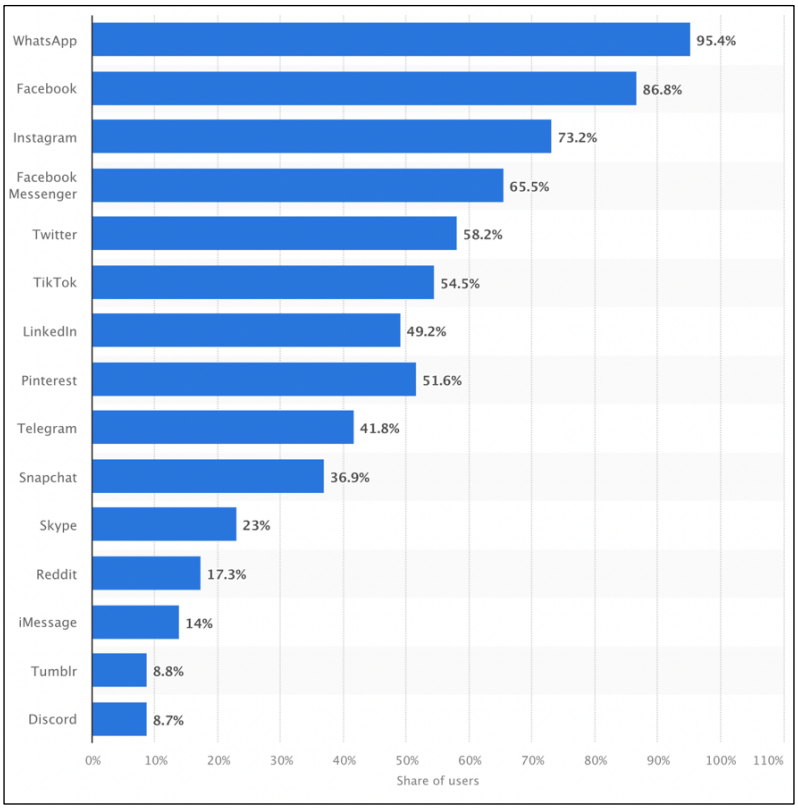
Vasileiadis (2014) concluded that both security and trust are critical factors in the adoption of m-commerce by using the Technology Acceptance Model (TAM) and extended it by adding perceived trust and perceived risks (security and privacy concerns) as additional factors. Likewise, Armesh et al. (2010) stated that the security and privacy of information affect trust & trustworthiness, and loyalty in online marketing in Malaysia. The knowledge gap identified in both of these studies is that the studies were not performed in South Africa, but rather developed countries; this gap will be bridged by performing this research in South African townships.

2.7. Social media overview

Social media is defined as "online text, image, audio, and video content offered on Web 2.0 platforms and tools, that people use for interactions and conversations, mainly to share opinions, experiences, insights and perceptions via text, photos, and videos" (Stephen & Toubia, 2010).

Social media platforms such as Twitter, LinkedIn, Facebook, and Instagram are widely used globally by individuals to interact. Social media is increasingly used in m-commerce with the rise of mobile phone usage (Venkatesh et al., 2003). In 2021, WhatsApp was the most famous social media platform in South Africa, with a penetration rate of 95%, with Facebook in second place and Instagram coming in at a third place, with penetration rates of 87% and 73%, respectively, as indicated in Figure 7 (Statista, 2022c). In January 2022, there were 28 million social media users in South Africa (DataReportal, 2022).

Figure 7: Most used social media platforms in South Africa as of the 3rd quarter of 2021



Source: Statista, 2022c

2.7.1. Social media usage and networking

Despite South Africa being a developing country with economic and infrastructure challenges, online social media usage has spiralled (Budree et al, 2019). Social media has changed how consumers utilize their smartphones, allowing them to be open about their personal life and

voluntarily share personal information about their habits, location, and activities (Pelet & Papadopoulou, 2015). Although Budree et al.(2019) concluded that age and gender affect the usage of social media based on the frequency of use, the purpose of this study was to take this a step further and determine the effect social media has on m-commerce; this is the knowledge gap that this research tended to fill. The growth of social media platforms has allowed businesses to have direct and quick access to their consumers. With social media proliferating, individuals are using social media to share and access information quickly.

According to Bekmagambetov et al. (2018), social media assesses m-commerce websites and allows customers to quickly manoeuvre to the desired m-commerce page, also serving as a direct mode of communication between business and the customer (Pelet & Papadopoulou, 2015). Hajli (2014) adopted the Technology and Acceptance Model (TAM) constructs with social support and trust to determine how social media has allowed consumers to interact with other consumers and found that when consumers interact on social media, it increases trust and their intention to purchase products. According to Pelet & Papadopoulou (2015), social media use on mobile devices is growing, and there is a positive attitude towards m-commerce. The factors affecting m-commerce and social media adoption are trust, reputation, speed, ease of use, and security. The is a knowledge gap in this study by Pelet & Papadopoulou (2015) is that it was not performed in South Africa, specifically the townships.

The contribution made by Mani & Gunasekaran (2018) discovered that social media and m-commerce adoption (Zheng & Jin, 2018) are affected by factors such as trust, product reputation, ease of use, and security, and the gap filled by this research study was to take it a step further by focusing on South African townships. Hossain et al. (2020) investigated the role of social networking in driving m-commerce from a different perspective, using the Uses and Gratifications (U&G) Theory, which is a theoretical framework that is used to explain the different reasons why an individual uses a specific media platform (Gan, 2017), focusing on both mobile online shopping and the mode of payment, and found that from the customer's perspective using m-commerce through social networking sites (SNSs) is easy, saves time and secure if the following factors, namely trust, mobile application compatibility, the perceived value of online shopping mobile apps and online payment are met. This research extended the research of Hossain et al. (2020) to the South African townships to determine whether different results may be yielded.

2.8. Conceptual research framework and research model

2.8.1. Conceptual research framework

A conceptual research framework was used to develop the research model for hypotheses development based on constructs of the Unified Theory of User Acceptance and Use of

Technology2 (UTAUT2) acceptance model that was developed by Venkatesh et al. (2012), together with social media, perceived security, and trust as additional constructs.

2.8.2. Research model

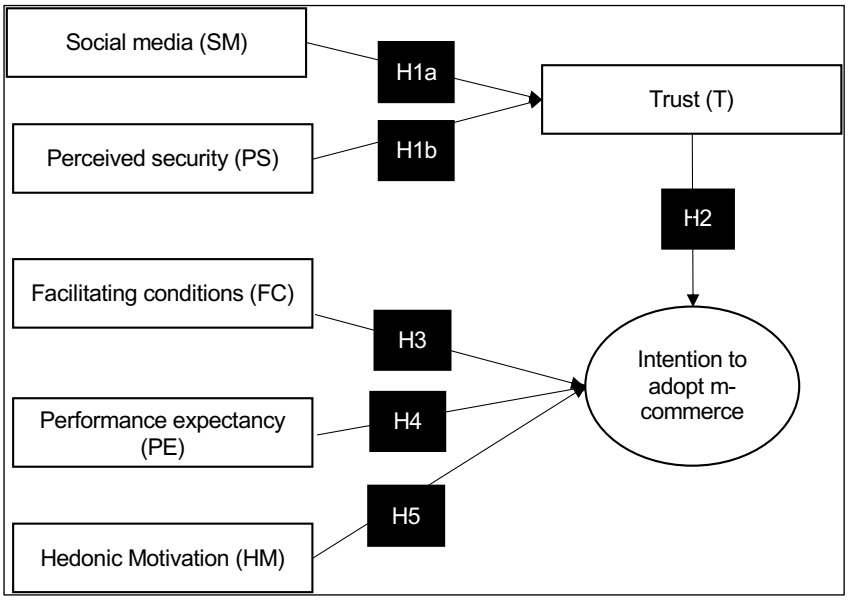
The Unified Theory of User Acceptance and Use of Technology2 (UTAUT2) model was used to develop a conceptual research model for this study because it is the latest technology acceptance model. As illustrated in Figure 6, the UTAUT2 model has seven constructs: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. It also consists of three moderators: age, gender, and experience.

However, only the hedonic motivation, facilitating conditions, and performance expectancy constructs were considered for this study. Due to resources and time constraints, the price value and habit constructs were not considered. The effort expectancy construct was also not considered in the study because it conflicts with facilitating conditions constructed in mobile shopping adoption, according to Yang & Forney (2013). According to Venkatesh et al. (2003), the facilitating conditions construct becomes a predictor of intention when the effort expectancy construct is not included in the model. According to Wu et al. (2007), effort expectancy is not critical for consumer technology adoption. Therefore the compatibility of the mobile device, including features and functions, is more important than the ease of use of the services of the mobile devices (Yang & Forney, 2013).

The social influence construct was not used directly in the conceptualised research model (Figure 8) but was, however, it has been replaced with the social media construct. Perceived security and trust are the two additional constructs to the research model because, with online shopping and payments, security is vital in gaining customers' trust and loyalty (Özgüven, 2011).

Figure 8 illustrates the conceptualised research model. The hypotheses are further developed and explained.

Figure 8: Conceptualized research model



2.8.3. Hypotheses development

The hypotheses illustrated in Figure 8 are further explained below.

1. Social media (SM)

For this research, the social influence construct is used as a base for the social media construct. According to Venkatesh et al. (2003), social influence is defined as "how the behaviour of an individual is influenced by the perception of others regarding the utilization of technology", in this context, mobile commerce. Social networking has led to increased content creation, where individuals can share experiences and interact with others (Hajli, 2014). Social media has become an essential tool used by companies to gain a competitive advantage because it has enabled communication which assists in obtaining a better understanding of customers' needs, therefore becoming an integral part of their marketing strategies (Gharaibeh et al., 2020).

According to Luo et al. (2010), when individuals socially interact, it leads to familiarity, thus creating trust among themselves. Ratings and reviews, online forums and communities, and recommendations are social media tools individuals have applied to interact with one another online. According to Pan & Chiou (2011), these activities have created electronic word of mouth through social media, assisting consumers with purchasing decisions and increasing their intention

to buy. Research has shown that consumers rely significantly more on other consumers' ratings, reviews, and recommendations of products and services than on product information (Ridings & Gefen, 2006).

Through social media tools, consumers can create assurance through shared information and experiences, increasing the trust and intention to buy (Han & Windsor, 2011). Mostly on social networks, individuals do not personally know each other, and therefore a high level of social trust eases the progress of information exchange among them (Hajli, 2012).

The more consumers interact and engage with other consumers on social media platforms about products and services, the higher their trust will be in those products and services. According to Swamynathan et al.(2008), consumers significantly improve their satisfaction and shopping experiences when interacting with family and friends on social platforms. Thus:

H1a: *Social media (SM) positively affects users' trust in m-commerce (T) in South African townships.*

2. Perceived security (PS)

Security is an essential construct of online shopping and any risks associated with security affect m-commerce adoption by individuals (Jarupunphol & Mitchell, 2002). Perceived security (PS) is "the comfort the user has that their personal information is kept safe online against infringements in any form such as fraud and theft" (Matbouli & Gao, 2012). When consumers feel like their information is safe, they are put at ease, thus increasing the intention to buy and pay online. According to Martins et al.(2014), perceived security and trust are essential factors consumers consider when performing monetary transactions online; this is why both constructs have been considered essential for the research model. The higher the perceived security, the higher the individual's trust in m-commerce. Thus:

H1b: *Perceived security (PS) positively affects users' trust in m-commerce in South African townships.*

3. Trust (T)

In traditional shopping, it is easy to gain consumer trust because consumers can physically see the product and engage with sales personnel prior to purchasing; however, with online shopping, specifically mobile, in the context of this study, consumer trust is more challenging to gain, there is an essential factor to consider in the online context (Gefen et al., 2003). Trust and security in

social network services (SNSs) play an essential role in determining a positive attitude for consumers regarding online shopping and payments (Cha, 2009).

Trust is vital in this research because trust can influence online buyers (McCole et al., 2010) and increase their intention to buy. Web 2.0 applications like ratings and reviews are essential in gaining the trust of consumers (Hajli, 2012). Thus:

H2: *Trust (T) positively affects a user's intention to adopt m-commerce in South African townships (IA).*

4. Facilitating conditions (FC)

Venkatesh et al. (2012) define facilitating conditions as "the degree to which a user believes that they have all the necessary technological infrastructure and conditions to adopt the technology." In their study, Venkatesh et al. (2003) identified that providing guidance and support staff can assist users in overcoming difficulties they may face with technology use. However, in this context, similar to the study performed by Yang & Forney (2013), the facilitating conditions focus on technological conditions and infrastructure that enable consumers to use their mobile devices for commercial transactions. Therefore, facilitating conditions of a mobile device, like smartphone compatibility, internet access, data usage, internet speed, and interface, and the individual's knowledge to use m-commerce features and applications are the conditions for a consumer to use m-commerce easily. Thus:

H3: *Facilitating conditions (FC) positively affect users' intention to adopt m-commerce in South African townships.*

5. Performance expectancy (PE)

Performance expectancy (PE) is "the degree to which a user expects to benefit from the use of technology to enhance their performance" (Venkatesh et al.,2003). The original UTAUT model focuses on utilitarian (functional aspect) performance expectancy and not hedonic performance expectancy (Yang & Forney, 2013). Utilitarian performance expectancy is defined as "the extent to which an individual believes that using technology will assist them in achieving their tasks" (Yang & Forney, 2013), and hedonic performance expectancy is defined as "the extent to which an individual believes that using technology is fun" (Davis et al., 1992).

In the context of this study, utilitarian performance expectancy was the predominant of the two, and this is evident in the survey because the questions under performance expectancy are utilitarian. According to Venkatesh et al. (2003), utilitarian performance expectancy was found to

be the strongest construct of intention to use technology. Kleijnen et al. (2007) concluded that personalisation, time efficiency, and flexibility of use are variables of utilitarian performance expectancy in mobile shopping. These are the variables that were considered in this study. Hedonic performance expectancy is obtained through emotions and experiences via social interactions and entertainment shopping functions(Yang & Forney, 2013). Thus:

H4: *Performance expectancy (PE) positively affects users' intention to adopt m-commerce in South African townships.*

6. Hedonic Motivation (HM)

Hedonic motivation is defined as "the pleasure or enjoyment an individual obtains from using technology" (Venkatesh et al., 2012). According to Arnold & Reynolds (2003), hedonic motivation has six dimensions: social, gratification, adventure, role, idea, and value. Perceived enjoyment is considered the main component of hedonic motivation, and the two are interchangeably used (Bendary & Al-Sahouly, 2018). In the past years, information systems have been task orientated with adoption and use driven mainly by utilitarian factors such as perceived use and perceived ease of use (Thong et al., 2006); however, this has evolved to include an entertaining value and resulted in enjoyment (Dwivedi et al., 2014). According to Amin et al. (1970), "mobile devices have become entertainment gadgets to some individuals, and enjoyment plays an essential role in using mobile applications. Gharaibeh et al. (2020) state that hedonic motivation positively affects the intention to adopt and use technology. The higher the level of hedonic motivation, the higher the probability of using mobile commerce. Thus:

H5: *Hedonic motivation (HM) positively affects a user's intention to adopt m-commerce in South African townships.*

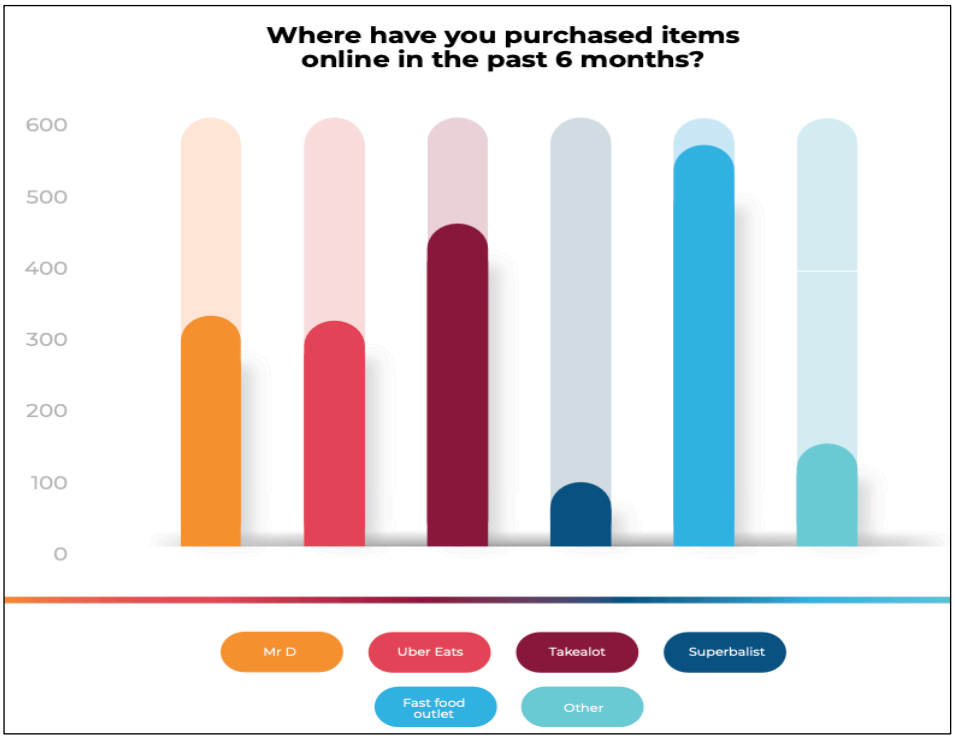
2.9. South African townships and online shopping

South African townships are underdeveloped, residential areas reserved mainly for non-whites under the apartheid era (Cant, 2017). High levels of financial leakage characterize south African townships and poor resource retention, poor economic infrastructure, low investment in people, and low-capacity network infrastructure like electricity, water, and sanitation systems (Scheba and Turok, 2020).

In 2022, the Township CX Report conducted a survey and noted that 70% of the respondents were making purchases online compared to 29% in 2021, and 48% of respondents have Wi-Fi in their residential homes (Rogerwilco et al., 2022); this is evidence that online shopping is rapidly growing; thus providing a basis for understanding the factors affecting m-commerce usage is amongst

residents. Internet availability is a significant factor in online shopping; according to Rogerwilco et al. (2022), 60% of their respondents were R15 to R29 data bundles monthly from spaza shops. Fast food outlets were the most popular, with 29% of respondents have ordered online from small independent outlets (Rogerwilco et al., 2022). In addition, 23% of the respondents have used Takealot in the past six months (Rogerwilco et al., 2022). Therefore, this study focuses solely on townships because it is clear that the economy of the South African township has snowballed, and online shopping has gained traction (Rogerwilco et al., 2022).

Figure 9: Most popular online shopping sites in South African townships



Source: Rogerwilco et al., 2022

2.10. Summary of the reviewed literature

The chapter reviewed different literature based on studies on m-commerce adoption and social media, yielding different results. Prior studies indicate various factors that affect m-commerce adoption in townships and low-income individuals. However, none of the literature reviewed focused on how social media platforms can accelerate m-commerce in South African townships. This research study intended to bridge that gap. The following chapter discusses the research methodology used to carry out the research.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

Chapter 3 outlines the research design and methodology adopted to address the research objectives identified in chapter 1. The chapter is outlined as follows: Sections 3.2 to 3.4 describe the research objectives, research approach, and design to be adopted. Next, sections 3.5 to 3.7 describe the procedures undertaken for data collection. Finally, section 3.8 to 3.12 describes the constructs considered when selecting respondents.

3.2. Research objectives

The research methodology and design are to meet the research objectives of the study:

1. Determine whether perceived security and social media affect trust to adopt m-commerce by individuals in South African townships.
2. Determine whether individuals in South African townships trust m-commerce platforms.
3. Determine whether individuals in South African townships are motivated to use m-commerce platforms.
4. Determine whether technological constraints and conditions affect m-commerce adoption by individuals in South African townships.

3.3. Research approach

Research may be conducted using three approaches, namely qualitative and quantitative, or both, known as the mixed method (Creswell, 2014). The research approach used for this study is the quantitative method approach.

According to Saunders et al.(2019), quantitative approach is deductive in nature with the purpose of testing a theory compared to qualitative approach which is inductive in nature with the purpose of developing a theory. The deductive approach was followed for this research by testing the hypotheses developed from the conceptual research framework; hence the quantitative approach was followed.

Quantitative research is classified as either experimental or non-experimental (Jackson & Borbasi, 2012). Experimental research is hypothesis testing or a deductive method (Mohajan, 2020). The purpose of it is to test a hypothesis that is pre-determined in the planning phase of the study with the end goal of establishing a relationship between an independent and dependent variable.

(Mohajan, 2020). Non-experimental research is different from experimental research because it does not test pre-determined hypotheses but tests variables as they occur. (Mohajan, 2020). The study followed the experimental research method because pre-determined hypotheses were tested as they occurred.

3.4. Research design

The research design aims to provide a plan to answer the research question (W.A. Edmonds & Kennedy, 2017). A conceptual research framework was used to form the basis of the research design, and the hypotheses were tested to determine whether the research objectives had been met. The research framework, as indicated below, was based on constructs of the Unified Theory of User Acceptance and Use of Technology2 (UTAUT2) acceptance model developed by Venkatesh et al. (2012), together with social media, perceived security, and trust as additional constructs.

In our study, we used a cross-sectional survey to collect data using a digital survey. A survey is a research technique that collects data from the research participant through a set of ordered questions (André Queirós et al.,2017). Surveys include questionnaires, personal interviews, phone surveys, and normative surveys. A cross-sectional survey takes place at one point in time compared to a longitudinal survey requiring data to be collected over a long period (Creswell, 2014). A cross-sectional survey was used due to limited resources and research time.

A digital survey was employed in our study due to the following:

- It was easier to collate the data collected,
- It allowed for flexibility because respondents were able to complete it in their own time and convenience, and
- It sped up the research process because all respondents were reached by sharing one link.

3.5. Population and sample

3.5.1. Population

According to Zikmund (2003), a population is defined as a finite group of individuals or items that share similar characteristics. According to Statista (2022b), the estimated populations of Soweto and Tembisa are 1,695 000 and 512 000 respectively. The targeted population of this study is individuals residing in Soweto and Tembisa, who meet the following criteria:

- Be 18 years or older,
- Have a compatible mobile phone,
- Residents of Soweto or Tembisa

3.5.2. Sample and sampling methods

A sample is a subset of an entire population chosen to take part in a study, and sampling is used to generalize the population in relation to theory (Taherdoost, 2016). There are different types of sampling techniques suitable for different research purposes. Firstly, sampling is divided into two types: Probability or random sampling and non-probability or non-random sampling (Taherdoost, 2016). Probability sampling means that all individuals or items of the population have the same equal chance of being selected as part of the sample. Non-probability sampling means that "the probability that a subject is selected is unknown and results in selection bias in the study" (Acharya et al., 2013). However, rationale needs to be applied for why some individuals or items of the population were chosen over others (Taherdoost, 2016).

For this study, non-probability convenience sampling was used. Convenience sampling is selecting readily available participants (Taherdoost, 2016). The sample is selected on the basis of the convenience of the researcher (Acharya et al., 2013). The reason why convenience sampling was used for this research was because it was less time consuming and convenience to select respondents in different public areas, e.g. shopping malls and work spaces. Convenience sampling also allowed the researcher the flexibility to reach participants on online social platforms. A sample size of 220 respondents was used across both townships.

The digital survey was sent to respondents via email, embedding a link to the survey, and the link was shared with them on social media platforms like WhatsApp, Facebook and LinkedIn. This distribution method was chosen because of its ease of accessibility, convenience, limited resources, and cost-saving benefit.

3.6. The research instrument

3.6.1. Questionnaire design

An online digital questionnaire was used to test the cause-effect of the identified variables, which form part of the research model because it grants the participants the flexibility to complete the questionnaire in their free time. It was also more manageable for the researcher to collate the data.

Using an online survey has its disadvantages especially in South African townships. Internet accessibility is still a challenge in townships because of the lack of infrastructure in some areas and many of them still cannot afford data and Wi-Fi access.

The hypotheses and constructs were derived from various literature sources. The questions to address each of the hypotheses and constructs were also adopted from literatures sources that had used similar questions. Some of the questions were changed for the suitability of this research.

A Likert scale questionnaire was used because it allowed the researcher to gather data effectively from a large sample (Nemoto & Beglar, 2014) and because participants could indicate their emotions and attitudes with the topic statements (Zikmund, 2003). According to Nemoto & Beglar (2014), a Likert scale has a few categories from which participants indicate their opinions, attitudes, or feelings about a particular topic. Although, according to Zikmund (2003), a Likert scale usually has five options to agree with a statement: strongly agree, agree, uncertain, disagree or strongly disagree. The questionnaire used this five-point scale, where 1 was 'strongly disagree', 2 was 'somewhat disagree', 3 was 'neither agree nor disagree', 4 was 'somewhat agree' and 5 was ' strongly agree'.

Table 2: Research objectives, constructs and hypotheses

Research objective	**Construct**	**Hypothesis no:**	**Hypotheses**	**Number of questions**	**Measures**	**Source**
Determine whether perceived security and social media affect trust to adopt m-commerce by individuals in South African townships. .	Social media (SM)	1a	Social media (SM) positively affects users' trust in m-commerce (T) in South African townships.	Five	Question 10 of the survey (Annexure A)	Gharaibeh et al.(2020)
	Perceived security (PS)	1b	Perceived security (PS) positively affects users' trust in m-commerce in	Five	Question 11 of the survey (Annexure A)	Vasileiadis (2014)

			South African townships.			
Determine whether trust affects the intention of individuals to adopt m-commerce in South African townships.	Trust (T)	2	Trust (T) positively affects a user's intention to adopt m-commerce in South African townships (IA).	Five	Question 12 of the survey (Annexure A)	Lin & Theingi (2019)
Determine whether motivation affects the intention of individuals to adopt m-commerce in South African townships.	Hedonic motivation (HM)	5	Hedonic motivation (HM) positively affects a user's intention to adopt m-commerce in South African townships.	Five	Question 15 of the survey (Annexure A)	Venkatesh et al., (2012)
Determine whether technological constraints and conditions affect the intention of	Facilitating conditions (FC)	3	Facilitating conditions (FC) positively affect users' intention to adopt m-commerce.	Five	Question 13 of the survey (Annexure A)	Venkatesh et al., (2012)

individuals to adopt m-commerce in South African townships.	Performance Expectancy (PE)	4	Performance expectancy (PE) positively affects users' intention to adopt m-commerce.	Five	Question 14 of the survey (Annexure A)	Venkatesh et al., (2012)

A sample of the survey is attached to this study under Annexure A.

3.6.2. Questionnaire pre-testing (pilot testing)

According to Babin & Zikmund (2016), pre-testing the research instrument allows the researcher to determine if the instrument is valid and understandable and if the questions are unambiguous. Therefore, convenience sampling was used to select a small sample of the target population in Soweto and Tembisa to pre-test the questionnaire. Four participants were selected from Soweto, and three were selected from Tembisa to pre-test the survey. Should the questionnaire need to be modified to suit the target, changes were made before it was issued to participants.

3.7. Data collection

An online digital survey was used to collect data amongst participants of this research study to address the objectives of this study, as stated in Chapter 1. The questionnaire was formulated to bridge the gaps identified in the literature review Chapter 2. The link to digital survey was shared with participants via email and social media platforms like WhatsApp, Facebook, LinkedIn and Instagram. The researcher used her profile on these platforms to distribute the link to distributes. These platforms were selected because they are amongst the most used social media platforms in South Africa (Statista, 2022c), allowing greater accessibility to potential respondents.

Respondents in public areas were asked permission for their participation in the survey and if interested, their email addresses and WhatsApp numbers were obtained and the link to the survey was shared with them. A consent section was incorporated into the survey, on the first page of the survey requesting consent from the respondents prior to continuing with answering the questions.

3.8. Data analysis strategies and interpretation

The data collected for this study was analysed using Statistical Package for the Social Science (SPSS) version 28[1]. Regression analysis was used to determine the cause and effect relationship between the variables (Sykes, 1993). Regression analysis is defined as “a statistical technique for estimating the relationship among variables which have reason and relation” (Uyanık & Güler, 2013).

Multiple linear regression analysis is applied to a dependent variable which has more than one independent variable, as is the case in this study.For this study, multiple linear regression was used in two instances. In the first instance, trust (T) is the dependent variable, with social media (SM) and perceived security (PS) as the independent variables. In the second instance, the independent variables are social media (SM), trust (T), facilitating conditions (FC) and performance expectancy (PE), with intention to adopt m-commerce (IA) as the dependent variable. The following assumptions of multiple linear regression analysis - normality, linearity, no extreme values (Uyanık & Güler, 2013) were met by the study as tested and proven in Chapter 4.

Descriptive and inferential statistics were used to analyse and interpret the data collected. According to Fisher & Marshall (2009), descriptive statistics is used to analyse the characteristics of a sample numerically and graphically. Descriptive statistics includes determining the data's mean, mode, variance, and standard deviation (Louangrath & Sutanapong, 2015). Inferential statistics is defined as estimating the population and forming a conclusion based on observations described by descriptive statistics (Louangrath & Sutanapong, 2015).

3.9. Limitations

This research had the following limitations:

- First, the digital survey is limited to participants from the two townships.
- The Soweto and Tembisa townships are black-dominated; therefore, the survey was race limited.
- Only certain areas in Soweto and Tembisa were covered due to resource limitations.

3.10. Assumptions

The following assumptions were formulated for this study:

[1] The researcher used SPSS to perform calculations and present data graphically.

- The research participants are full-time residents of the Soweto and Tembisa townships and therefore represent the population rightfully.
- The participants have mobile devices internet access.

3.11. Quality assurance

According to Heale & Twycross (2015), one must not only consider the results of the study; the rigour of the study must also be considered. Rigour refers to the measures implemented by the researcher to ensure that the study is of the highest quality (Heale & Twycross, 2015). The research method of this study is quantitative; therefore, rigour is achieved through the measurement of validity and reliability (LoBiondo-Wood et al., 2014). Validity is defined as how accurately a construct is measured in a quantitative study, and reliability is how accurate and consistent the research instrument is if it were to be repeatedly used in the same situation (Heale & Twycross, 2015).

3.11.1. External validity (generalisability)

External validity refers to the extent to which results from a study can be projected to the broader or targeted population (Findley et al., 2021). The study is based on the experience and opinions of the research participants who represent the targeted population of the Soweto and Tembisa townships. The data was collected first-hand from the participants using a digital survey to ensure validity.

3.11.2. Internal validity

Internal validity refers to whether the design or analyses of a study answers the research question sufficiently (Andrade, 2018). The digital survey was designed to answer the research question and achieve the research objectives of this study.

3.11.3. Reliability

The digital survey has been constructed to answer the research question and meet the objectives of the study in a way that it would yield the same results if it were to be used by another researcher. Cronbach's alpha (α) was used in SPSS to test the reliability of the variables of the survey to determine whether the alpha values are above the acceptable reliability score of 0.7 (LoBiondo-Wood et al., 2014)

3.12. Ethical considerations

The University of Witwatersrand ethics committee issues an ethical clearance prior to the commencement of this study (Appendix D). The ethics clearance aims to ensure that the researcher does not engage in unethical activities that are against the norms of conduct during their research period (Bhattacherjee, 2012).

Prior to conducting research, Polonsky & Waller (2019) stated that the researcher should consider the following regarding ethics:

- The participants should voluntarily elect whether they want to participate in the research study.
- The participants may elect to remain anonymous, and the researcher has to consider the confidentiality of the participants and not reveal them.

The researcher ensured that the above was taken into consideration for this study. The link to the digital survey was distributed to respondents on online social platforms. A consent section was incorporated into the survey, on the first page of the survey requesting consent from the respondents prior to answering the questions.

3.13. Summary of the chapter

The quantitative research methodology was followed to collect data from respondents using a digital survey. Descriptive and inference statistics methods were adopted to analyse data using SPSS software.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1. Introduction

This chapter outlines the data processing procedures applied prior to analysing the data. Then, a report of the analysis results is presented by starting with the descriptive statistics and frequencies, followed by validity and reliability testing of data, description of the mean, correlation, and regression analysis. Lastly, a brief synopsis of the hypotheses results is provided.

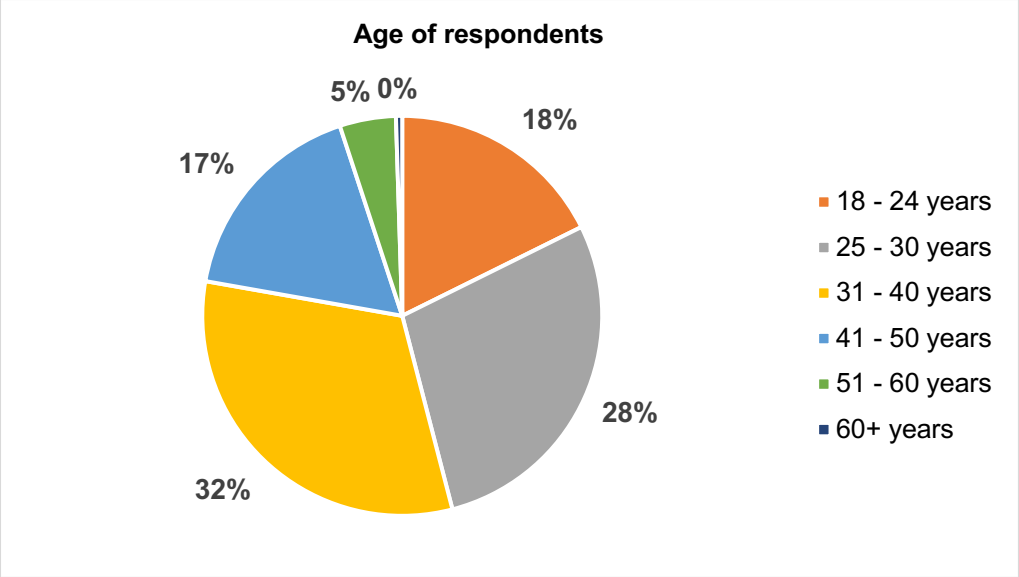
The population for this research was adults over the age of 18 years who reside in the two South African townships of Soweto and Tembisa as explained in detail in Chapter 3. The link to the digital survey was shared via email, 56 emails were sent to respondents. The other 164 responses were received via social media platforms such as WhatsApp, LinkedIn, Facebook, and Instagram. The sample size was two hundred and twenty (220) responses were received and recorded of which only hundred and ninety-eight (198) responses were fully completed. The data is further analysed and presented below.

4.2. Demographic statistics and frequencies

The first step to analysing and discussing the data collected is to discuss the demographic variables and frequencies of all the survey respondents.

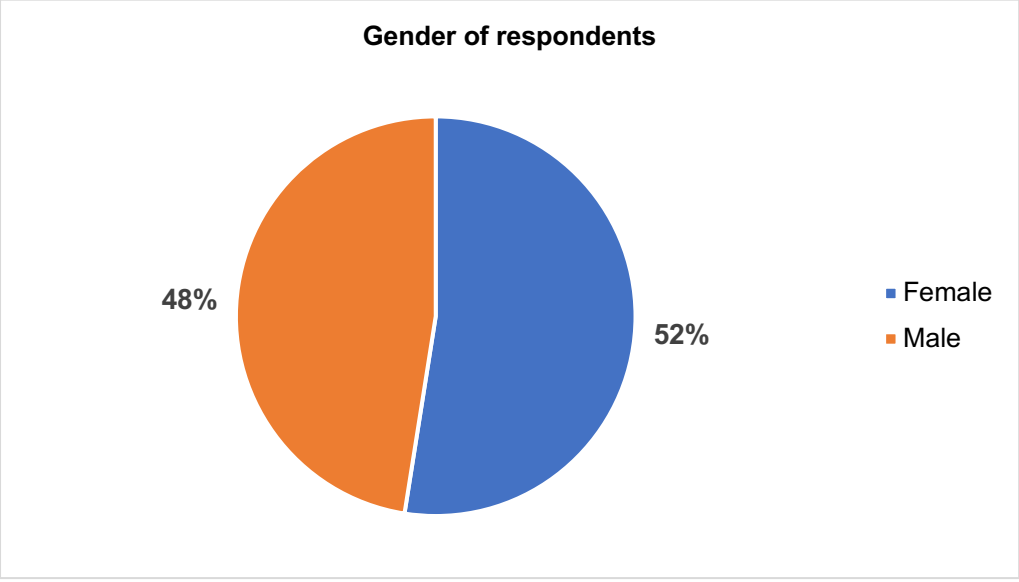
4.2.1. Age of respondents

The majority of respondents were between 31 - 40 years, comprising 32% of the respondents. The age group 25-30 years followed by 28%, and the age group 18-24 years comprised of 18% of the respondents. Respondents who are older than 40 were the least of the respondents, with a total of 22%.



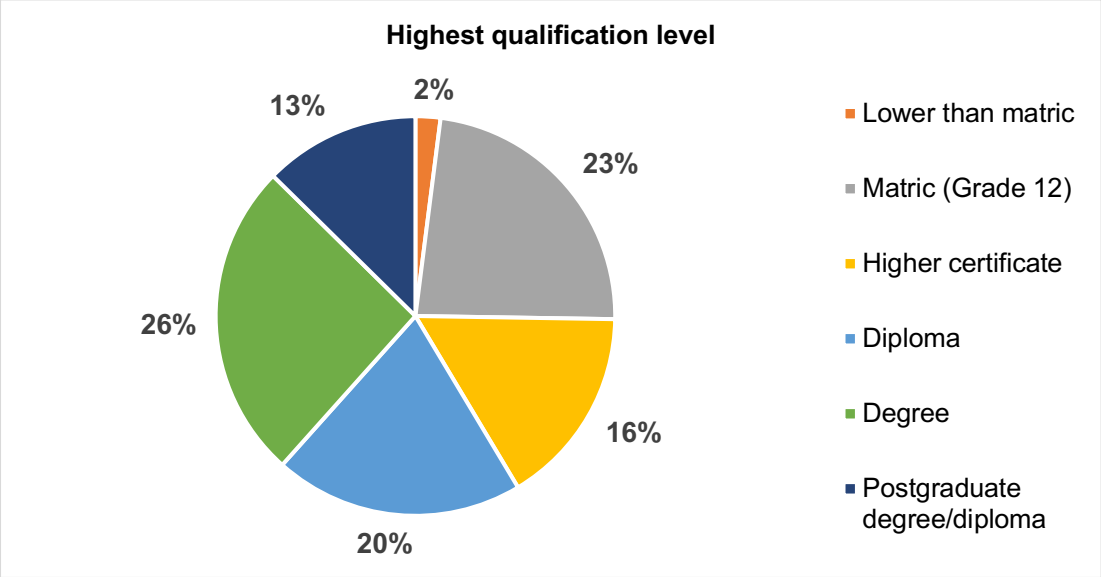
4.2.2. Gender of respondents

More than half of the 220 respondents were female, comprising 52%, and the remainder, 48% were males.



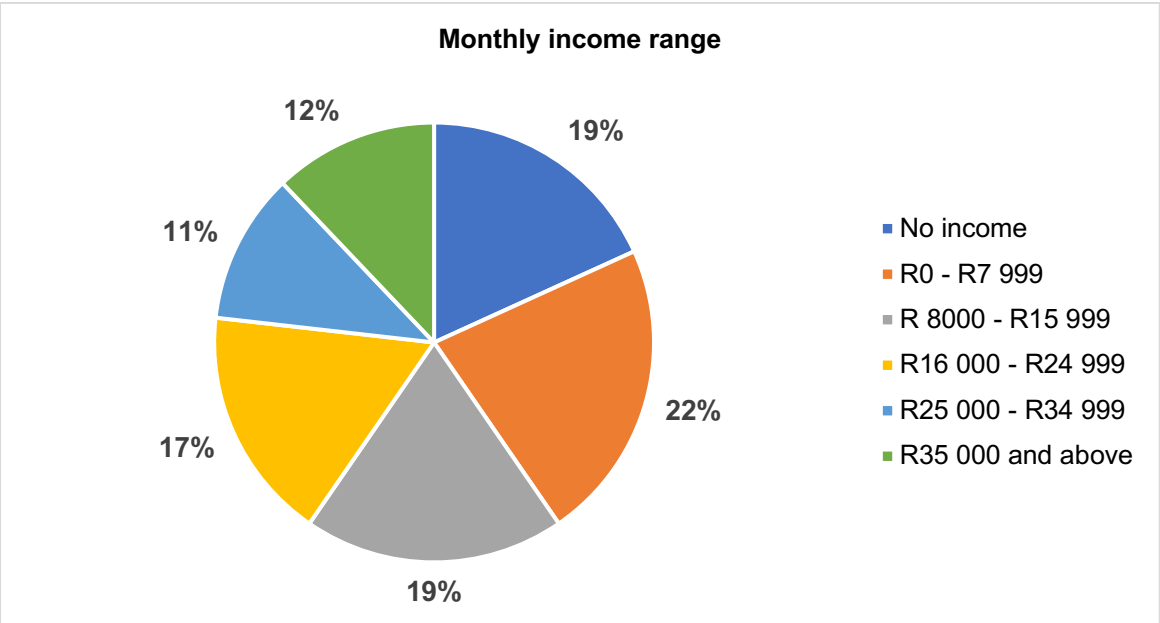
4.2.2. Qualification level of respondents

26% of the respondents are degree holders, followed by matric holders at 23%. Higher certificate and diploma holders comprised 36%, with postgraduates only at 13% and lower than matric at 12%.



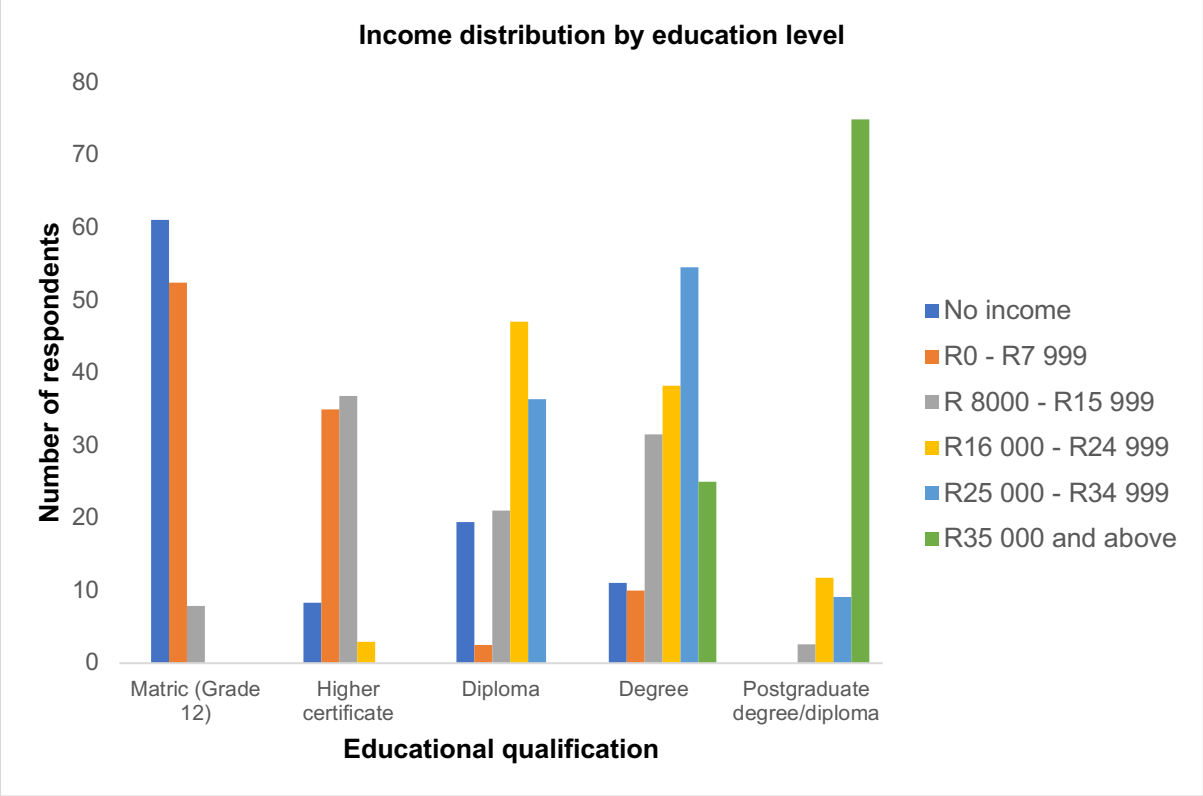
4.2.3. Monthly income range of respondents

The majority of respondents (22%) earn between R0 - R7 999. 19% earn between R8000 - R15 999 and the other 19% do not earn an income. 12% earn between R35 000 and above and lastly 11% earn between R25 000 - R34 999.



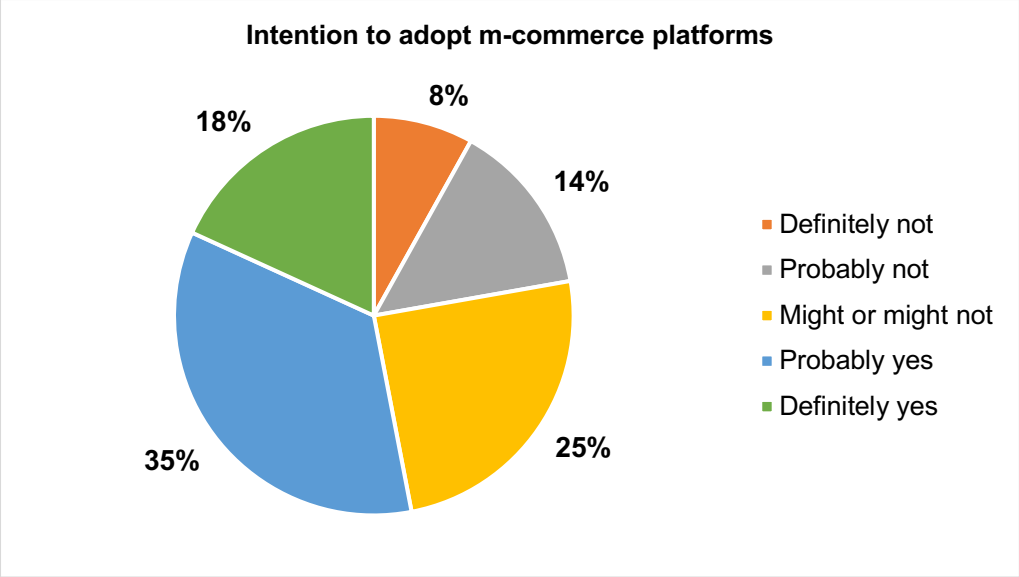
4.2.4. Monthly income distribution by qualification level

Further analysis of monthly income distribution by qualification level was performed. The majority of respondents who earned no monthly income and earned a maximum of R7 999 had matric as their highest qualification. The highest income earners with a monthly salary of R35 000 and above were postgraduate degree/diploma holders. Most degree holders earned between R25 000 to R34 999.



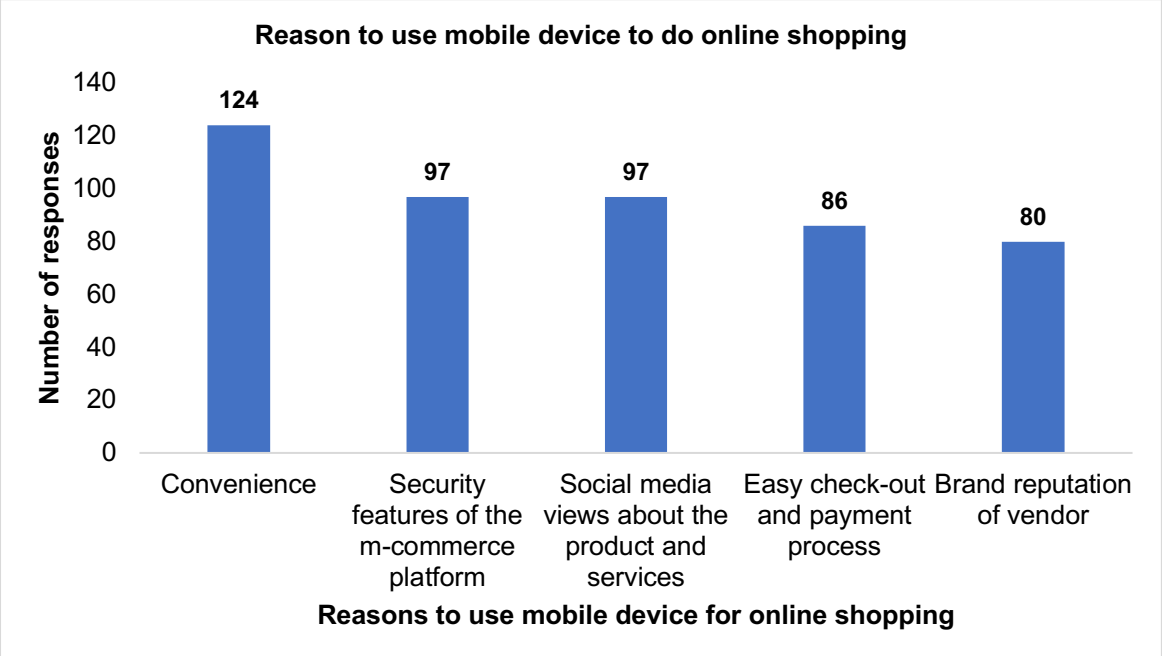
4.2.5. Intentional behaviour to adopt m-commerce

The intention to use m-commerce the respondents was determined using the Likert scale. As illustrated in Figure 15. 53% of respondents (35% - 'Probably yes' and 18% - 'Definitely yes') said they intend to use m-commerce. However, 25% of the respondents needed clarification, stating that they might or might not use m-commerce. The remaining 22% had no intention of using m-commerce, with 18% stating 'Probably not' and 8% - 'Definitely not.'.



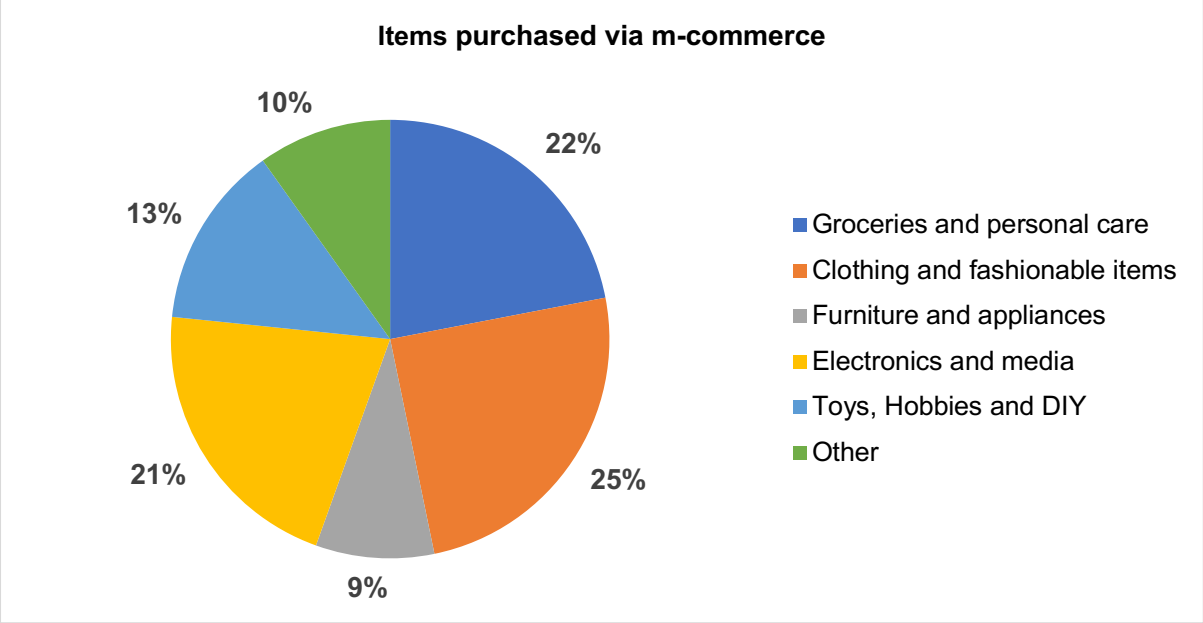
4.2.6. Reasons to adopt m-commerce platforms

Respondents were granted the opportunity to state their reasons for using m-commerce platforms; they could also select more than one of the options below, as illustrated below. Convenience ranked as the most significant reason, followed by security features of the m-commerce platform and social media views about products and services, equally ranking second. Finally, the easy check-out and payment process, followed by the brand reputation of the vendor, ranked as the last reason.



4.2.7. Items purchased on m-commerce platforms

Clothing and fashionable items accounted for the highest % of items purchased via m-commerce at 25%, followed by groceries and personal care at 22%; electronics and media ranked third at 21%, followed by toys, hobbies, and DIY (Do-it-yourself) at 13%, then others at 10%. Others comprised items not listed within the categories. Furniture and appliances ranked last with only 9%.



4.3. Data cleaning procedures

Before commencing data analysis in SPSS, the data collected via Qualtrics was cleaned to ensure that it was statistically accurate. Two hundred and twenty (220) responses were received and recorded on Qualtrics XM. From the 220 responses received, it was noted that only hundred and ninety-eight (198) responses were fully completed, with all the questions fully answered; this resulted in a 90% total response rate. Furthermore, a normality test was performed (see below) to determine whether the data was normally distributed before analysing it.

4.4. Normality testing

Normality testing is the first test performed to determine whether the data collected to test the dependent variable(s) was obtained from a normally distributed population (Tsagris & Pandis, 2021). Should the data be found not to be normally distributed, it could result in statistical errors when performing an analysis. Various methods categorize normality tests, with the most common being graphical plots and analytical test procedures (Rani Das, 2016).

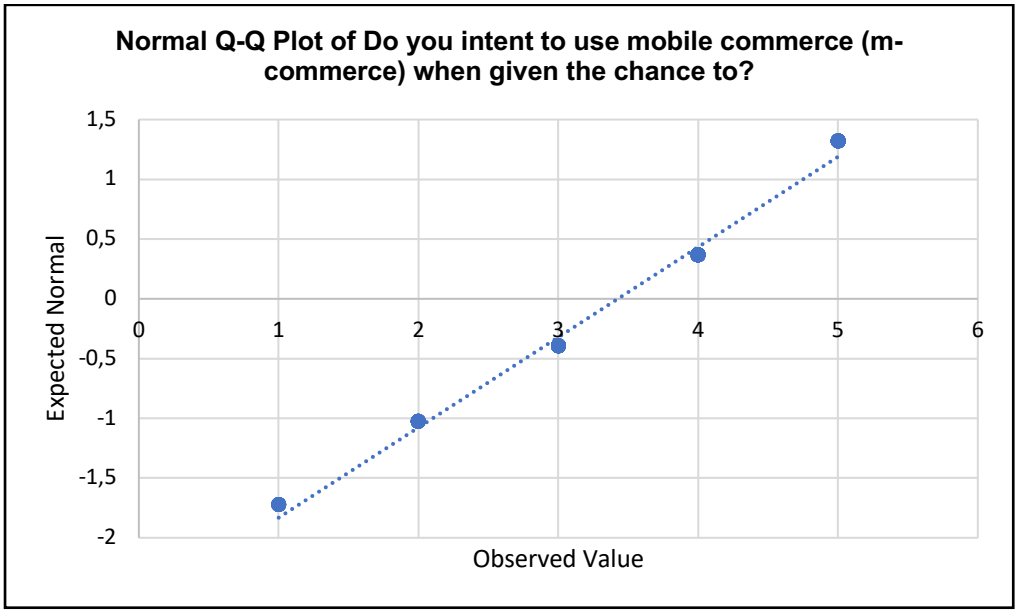
Graphical representation includes using histograms, stem-and-leaf plots, box plots, percent-percent (P-P) plots, and quantile-quantile (Q-Q) plots (Rani Das, 2016). According to Chambers et al. (1983), " Graphical methods provide powerful diagnostic tools for confirming assumptions, or, when the assumptions are not met, for suggesting corrective actions." Analytical test procedures include different types of descriptive means like moments, cumulants, coefficients of skewness and kurtosis, mean deviation, and range of the sample (Rani Das, 2016).

The graphical method and analytical test procedures were used to derive results from testing the normality of the data for this research. For this research, the dependent variable was the intention to use m-commerce, and the normality tests results are indicated as follows:

4.4.1. Graphical representation

4.4.1.1. Normal Q-Q Plot

A Q-Q plot (quantile to quantile) is a scatter plot that plots sets of quantiles against each other. Quantiles are also known as percentiles (Clay Ford, 2015). Quantiles represent a certain proportion of the data (Clay Ford, 2015); should the data have a normal distribution, then the points fall within a straight line (Clay Ford, 2015), as indicated below.



4.4.2. Analytical test procedures

4.4.2.1. Moments test (Skewness and Kurtosis)

Moments tests include skewness and kurtosis testing, which are used to determine normality testing (Jones, 1969) by indicating normality deviation (Hopkins & Weeks, 1990). Skewness is a measure of asymmetry in a distribution (Chattamvelli & Shanmugam, 2016). For skewness, if the value is greater than + 1.0, the distribution is right skewed. The distribution is left skewed if the value is less than -1.0 (Digita, 2021). Kurtosis measures the data's relative peakedness or flatness (Chattamvelli & Shanmugam, 2016). For kurtosis, if the value is greater than + 1.0, the distribution is leptokurtic. The distribution is platykurtic if the value is less than -1.0 (Digita, 2021).

Table 3: Skewness and Kurtosis testing

Do you intent to use mobile commerce (m-commerce) when given the chance to?	Statistic	Std. Error
Skewness	-0,462	0,173
Kurtosis	-0,601	0,344

Source: SPSS, version 28

As indicated in the table above, as analysed in SPSS version 28, the skewness of -0.462 is greater than -1, indicating that the data is normally distributed. Furthermore, kurtosis is -0.601, which is greater than -1 and indicates normal distribution.

4.4.2.2. Other tests of normality

Table 4: Other tests of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Do you intent to use mobile commerce (m-commerce) when given the chance to?	0,223	198	<0,001	0,896	198	<0,001
a. Lilliefors Significance Correction						

Source: SPSS, version 28

The other two normality tests performed in SPSS version 28 are the Kolmogorov-Smirnova test and Shapiro-Wilk. The Kolmogorov-Smimova is more appropriate for this research because the sample size is 198, greater than 50 samples (Gupta et al., 2019). As indicated in Table 4 above, the Kolmogorov-Smirnova value of 0,223 with a degree of freedom of 198 is the number of data points with a p-value of <0,001, thus indicating that the data is normally distributed. The Shapiro-

Wilk test is 0.896, also with a degree of freedom of 198 which is the number of data points with a p-value of <0.001, thus indicating that the data is normally distributed.

4.5. Validity testing

Validity testing was performed using factor analysis in SPSS version 28 to test the construct validity of the digital survey. MacCallum & Tucker (1997) defined factor analysis as "the study of order and structure in multivariate data ."Factor analysis aims to simplify interrelated measures to determine a pattern amongst a set of variables through mathematical calculations and procedures (Child, 2006).

According to Child (2006), factor analysis is used when the data distribution is normal. For this research, the normality of the data was confirmed. Factor analysis has two main techniques, namely Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA) (Yong & Pearce, 2013). CFA verifies hypotheses by representing variables and factors through path analysis diagrams (Yong & Pearce, 2013), and EFA tests predictions by determining complicated patterns of data collected (Yong & Pearce, 2013). According to DeCoster (1998), researchers use Exploratory Factor Analysis (EFA) to determine the number of factors that influence the variables, which sets of variables are pairable, and if the sample size is large.

The following assumptions of EFA were met (Suhr, 2006):

- The relationship between the variables are linear (as noted below).
- The data has a normal distribution (section 4.4.)

SPSS does not support CFA, so the extraction method, specifically the principal component analysis method was used in this study. Thereafter, the rotation of the data was determined using the varimax method.

4.5.1. Kaiser-Meyer-Olkin (KMO) and Barlett’s test for Sphericity

Table 5: KMO and Barlett's test for Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,943
Bartlett's Test of Sphericity	Approx. Chi-Square	4650,52
	df	465
	Sig.	0,000

Source: SPSS, version 28

Factor analysis testing in SPSS included Kaiser-Meyer-Olkin (KMO) and Barlett's test for Sphericity, as illustrated below in Table 5. In order to achieve a good factor analysis, KMO should

be greater than 0,6. Barlett's test of Sphericity was calculated to measure the strength of a relationship. Therefore, it should be less than 0,05, indicating that the data is normally distributed and can be further analysed (Pallant, 2020). KMO is 0,943, and Barlett's test is 0,000. Therefore this research has achieved a good factor analysis and indicates that the variables have patterned relationships.

4.5.2. Communalities

Table 6: Communalities

Variable	Initial	Extraction
Social media (SM)		
SM1	1.000	0,738
SM2	1.000	0,780
SM3	1.000	0,812
SM4	1.000	0,797
SM5	1.000	0,728
Perceived security (PS)		
PS1	1.000	0,687
PS2	1.000	0,647
PS3	1.000	0,700
PS4	1.000	0,757
PS5	1.000	0,632
Trust		
T1	1.000	0,691
T2	1.000	0,642
T3	1.000	0,709
T4	1.000	0,760
T5	1.000	0,632
Facilitating conditions (FC)		
FC1	1.000	0,654
FC2	1.000	0,649
FC3	1.000	0,747
FC4	1.000	0,703
FC5	1.000	0,760

Variable	Initial	Extraction
Performance expectancy (PE)		
PE1	1.000	0,712
PE2	1.000	0,661
PE3	1.000	0,683
PE4	1.000	0,749
PE5	1.000	0,679
Hedonic motivation (HM)		
HM1	1.000	0,727
HM2	1.000	0,721
HM3	1.000	0,745
HM4	1.000	0,731
HM5	1.000	0,706
Intention to adopt m-commerce		
IA1	1.000	0,639

Source: SPSS, version 28

Yong & Pearce (2013) defined communalities as the degree to which each variable correlates with other variables and whether a relationship exists. In the second column, the communality is 1; then, the third column is the communality of the final set of factors (DeCoster & Claypool, 2004). Variables with communality scores less than 0.2 are eliminated from the analysis. The variables with a score closer to 1 strongly correlate (Yong & Pearce, 2013). Table 6 illustrates that all the

variables have a communality higher than 0,2 and closer to 1, indicating a high level of communality.

4.5.3. Extraction method - Principal component analysis (PCA)

Table 7: Principal component analysis - Initial eigenvalues

Component	Total	Initial Eigenvalues	
		% of Variance	Cumulative %
1	14,88	47,983	47,983
2	2,047	6,603	54,586
3	1,751	5,648	60,234
4	1,359	4,385	64,618
5	1,226	3,955	68,573
6	1,061	3,423	71,996
7	0,761	2,454	74,45
8	0,661	2,134	76,584
9	0,614	1,98	78,564
10	0,56	1,806	80,37
11	0,534	1,723	82,093
12	0,494	1,595	83,688
13	0,461	1,488	85,175
14	0,437	1,41	86,586
15	0,408	1,317	87,902
16	0,38	1,225	89,128
17	0,356	1,149	90,276
18	0,33	1,065	91,342
19	0,3	0,969	92,31
20	0,284	0,915	93,225
21	0,263	0,85	94,075
22	0,255	0,823	94,898
23	0,236	0,761	95,659
24	0,218	0,703	96,362
25	0,201	0,648	97,011
26	0,182	0,587	97,597
27	0,179	0,577	98,174
28	0,165	0,533	98,706
29	0,153	0,492	99,199
30	0,126	0,406	99,604
31	0,123	0,396	100

Extraction Method: Principal Component Analysis,

As part of the exploratory factor analysis process, the extraction method called principal component analysis was used as part of the factor analysis process. Table 6 above indicates that 31 factors were extracted. The first 30 components are the independent variables and the last component is the dependent variable. Eigenvalues above 1 account for the total variance explained.

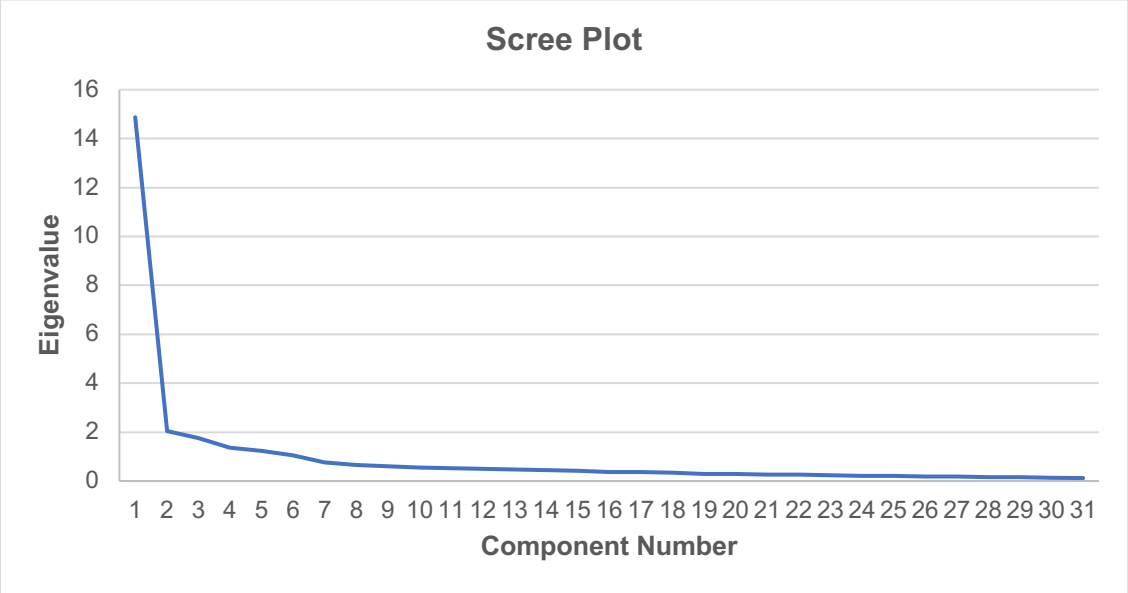
Table 8: Principal component analysis - Total variance explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14,875	47,983	47,983	14,875	47,983	47,983	6,569	21,19	21,19
2	2,047	6,603	54,586	2,047	6,603	54,586	3,673	11,849	33,039
3	1,751	5,648	60,234	1,751	5,648	60,234	3,518	11,347	44,386
4	1,359	4,385	64,618	1,359	4,385	64,618	3,412	11,005	55,391
5	1,226	3,955	68,573	1,226	3,955	68,573	2,875	9,274	64,665
6	1,061	3,423	71,996	1,061	3,423	71,996	2,272	7,33	71,996
7	0,761	2,454	74,45						
8	0,661	2,134	76,584						
9	0,614	1,98	78,564						
10	0,56	1,806	80,37						
11	0,534	1,723	82,093						
12	0,494	1,595	83,688						
13	0,461	1,488	85,175						
14	0,437	1,41	86,586						
15	0,408	1,317	87,902						
16	0,38	1,225	89,128						
17	0,356	1,149	90,276						
18	0,33	1,065	91,342						
19	0,3	0,969	92,31						
20	0,284	0,915	93,225						
21	0,263	0,85	94,075						
22	0,255	0,823	94,898						
23	0,236	0,761	95,659						
24	0,218	0,703	96,362						
25	0,201	0,648	97,011						
26	0,182	0,587	97,597						
27	0,179	0,577	98,174						
28	0,165	0,533	98,706						
29	0,153	0,492	99,199						
30	0,126	0,406	99,604						
31	0,123	0,396	100						

Extraction Method: Principal Component Analysis, *Source: SPSS, version 28*

Table 8, on the previous page, illustrates the total variance explained of 71,996% which is greater than the recommended 60% has been explained by the first 6 components. The total variance explained shows how much of the variability has been explained by extracted factors. The first three columns are similar to Table 7. Table 8 also indicates that all 31 questions to address the different constructs were accepted.

The figure below is a Scree Plot, a graphical illustration of principal component analysis generated by SPSS, indicating a significant decline in the total variance explained after component 6.



Source: SPSS, version 28

4.5.3. Varimax rotation method

Once the factor extraction process is completed, the factors are rotated. If factors are not rotated, they remain unambiguous and are therefore rotated for better interpretation (Gie & Pearce, 2013). According to Rummel (1970), rotation is performed to obtain a simple structure. The variance is explained by only a few factors while maintaining high loadings on each variable.

There are two rotation methods: orthogonal and oblique (Gie & Pearce, 2013). Orthogonal rotation is when the factors are rotated 90 ° from each other and oblique rotation is when the factors are not rotated 90 °from each other (Rummel, 1970). The orthogonal rotation consists of two methods: Quartimax and Varimax (Gie & Pearce, 2013). The Varimax rotation method was used for this research.

The rotation matrix indicates the angle of the rotation, and measures with factor loadings greater than 0,4 are published (Hadi et al., 2016).

Table 9 illustrates the results of the orthogonal rotation method using the varimax technique. The rotation converged in 7 iterations. All 31 measures were published because each had a factor loading greater than 0,4 for all the components.

Table 9: Rotated component matrix (Orthogonal rotation method)

Constructs	Measures	Component					
		1	2	3	4	5	6
Social media (SM)	SM1		0,593			0,411	
	SM2		0,758				
	SM3		0,814				
	SM4		0,846				
	SM5		0,692				
Perceived security (PS)	PS1	0,458				0,471	
	PS2						0,777
	PS3						0,799
	PS4					0,736	
	PS5					0,710	
Trust (T)	T1			0,625			
	T2			0,710			
	T3			0,753			
	T4			0,797			
	T5			0,639			
Facilitating conditions (FC)	FC1	0,534					0,530
	FC2	0,710					
	FC3	0,768					
	FC4	0,737					
	FC5	0,795					
Performance expectancy (PE)	PE1	0,695					
	PE2	0,653					
	PE3	0,572			0,521		
	PE4	0,709					
	PE5	0,637					
Hedonic motivation (HM)	HM1	0,473			0,486	0,420	
	HM2				0,638		
	HM3	0,454			0,576		
	HM4				0,786		
	HM5				0,683		
Intention to adopt	IA	0,445				0,481	

Extraction Method: Principal Component Analysis,

Rotation Method: Varimax with Kaiser Normalization, a

a, Rotation converged in 7 iterations,

Table 9 indicates the component correlation matrix before and after rotation, it is an addition to the rotated component matrix table indicated above.

Table 10: Component transformation matrix

Component	1	2	3	4	5	6
1	0,603	0,377	0,386	0,391	0,356	0,256
2	-0,683	0,59	0,228	0,07	-0,047	0,355
3	-0,158	-0,637	0,631	-0,11	0,103	0,385
4	-0,133	-0,283	-0,196	0,867	-0,308	0,129
5	0,022	-0,105	-0,602	-0,132	0,382	0,680
6	0,356	0,112	0,028	-0,246	-0,787	0,425

Source: SPSS, version 28

4.6. Reliability testing

Reliability is the "consistency of constructs derived from data collection procedures and techniques (Saunders et al., 2019). Cronbach analysis was used to determine the reliability of constructs because it is mainly used to measure internal consistency (Bhattacherjee, 2012). Cronbach's alpha of at least 0.7 is used to determine whether the collected data variables are reliable (Lim & Ting, 2012).

Table 11: Reliability statistics

Cronbach's Alpha	N of Items
0,914	7

Construct	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Intention to adopt m-commerce (IA)	19,8586	23,215	0,708	0,907
Perceived security (PS)	20,0192	25,6630	0,748	0,902
Trust (T)	19,6727	25,504	0,675	0,908
Facilitating conditions (FC)	19,8788	24,137	0,766	0,898
Social media (SM)	20,1495	23,9740	0,684	0,908
Performance expectancy (PE)	19,8414	23,5330	0,826	0,892
Hedonic motivation (HM)	20,1859	24,0560	0,808	0,894

Source: SPSS, version 28

As illustrated in Table 11, all constructs indicate a Cronbach Alpha of 0,914 and are therefore reliable. Furthermore, the correlation of each construct with all other items combined and the last column indicates Cronbach's Alpha if the given construct is deleted (DeCoster & Claypool, 2004). Therefore, the reliability of the constructs, if the given construct was deleted, is all lower than 0,914,

which indicates that all the constructs are worth including in the research (DeCoster & Claypool, 2004).

4.7. Descriptive statistics and frequencies

Table 12: Descriptive statistics and frequencies of each measure

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Social media (SM)					
SM1	198	1	5	3.47	1.305
SM2	198	1	5	3.15	1.319
SM3	198	1	5	2.94	1.279
SM4	198	1	5	2.71	1.272
SM5	198	1	5	3.32	1.308
Perceived security (PS)					
PS1	198	1	5	3.52	0.975
PS2	198	1	5	2.88	1.106
PS3	198	1	5	2.96	1.068
PS4	198	1	5	3.52	1.041
PS5	198	1	5	3.37	1.024
Trust (T)					
T1	198	1	5	3.65	1.155
T2	198	1	5	3.36	1.246
T3	198	1	5	3.62	1.159
T4	198	1	5	3.70	1.079
T5	198	1	5	3.64	1.042
Facilitating conditions (FC)					
FC1	198	1	5	2.71	1.264
FC2	198	1	5	3.36	1.174
FC3	198	1	5	3.59	1.192
FC4	198	1	5	3.80	1.175
FC5	198	1	5	3.49	1.237
Performance expectancy (PE)					
PE1	198	1	5	3.61	1.164
PE2	198	1	5	3.35	1.138
PE3	198	1	5	3.13	1.157
PE4	198	1	5	3.60	1.143
PE5	198	1	5	3.44	1.260
Hedonic motivation (HM)					
HM1	198	1	5	3.37	1.192

HM2	198	1	5	3.13	1.132
HM3	198	1	5	3.33	1.166
HM4	198	1	5	2.68	1.174
HM5	198	1	5	2.90	1.111
Intention to adopt m-commerce					
IA1	198	1	5	3.41	1.175

Descriptive statistics, which included the minimum, maximum, mean, and standard deviation, are indicated in Table 12. For each of the individual variables, descriptive statistics and frequencies were calculated in SPSS version 28, as illustrated in Table 11. A Likert scale was used to measure the variances, with 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree.

All the variables, as indicated below, have a mean of 3 and above. HM 4 (I purchase items due to spur of the moment when just browsing commercial m-commerce platforms) had the lowest mean of 2,68 rounded to 3, which means neither agree nor disagree. FC 4 (You find it easy to use new technology in your day-to-day life) had the highest mean of 3,80, rounded to 4, which means agree.

4.8. Descriptive statistics of combined variables

Table 13: Descriptive statistics of combined variables

Constructs		N	Minimum	Maximum	Mean	Std. Deviation
Social media	**SM**	198	1	5	3,1182	1,10576
Perceived security	**PS**	198	1	5	3,2485	0,82626
Trust	**T**	198	1	5	3,5949	0,91761
Facilitating conditions	**FC**	198	1	5	3,3889	0,99424
Performance expectancy	**PE**	198	1	5	3,4263	1,00623
Hedonic motivation	**HM**	198	1	5	3,0818	0,96158
Intention to adopt m-commerce	**IA**	198	1	5	3,4100	1,17500

The 30 related questions of the digital survey were combined in SPSS to obtain the six constructs below, as indicated in Table 13. The dependent variable, the intention to use, is also included in Table 12; there was only one question relating to intention to use in the survey. A Likert scale was used to measure the variances, with 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. Trust has the highest mean of 3,5949, rounded off to 4; performance expectancy has the second highest mean of 3,4263, rounded off to 3; intention to use is third with 3,4100; facilitating condition is fourth with 3,3889, rounded off to 3, which is neither agree nor disagree on the Likert scale. Perceived security followed with a mean of 3,2485, rounded

off to 3, being neither agree nor disagree. Social media has a mean of 3,1182, and hedonic motivation has the least mean of 3,0818, which rounds off to 3, which is neither agree nor disagree on the Likert scale.

4.9. Pearson correlation

Table 14: Correlations

Correlations		IA	PS	T	FC	SM	PE	HM
Intention to adopt (IA)	Pearson Correlation	1	0,598**	0,471**	0,598**	0,532**	0,659**	0,662**
	Sig. (2-tailed)		<0,001	<0,001	<0,001	<0,001	<0,001	<0,001
	N	198	198	198	198	198	198	198
Perceived security (PS)	Pearson Correlation	0,598**	1	0,634**	0,612**	0,586**	0,631**	0,637**
	Sig. (2-tailed)	<0,001		<0,001	<0,001	<0,001	<0,001	<0,001
	N	198	198	198	198	198	198	198
Trust (T)	Pearson Correlation	0,471**	0,634**	1	0,564**	0,533**	0,601**	0,602**
	Sig. (2-tailed)	<0,001	<0,001		<0,001	<0,001	<0,001	<0,001
	N	198	198	198	198	198	198	198
Facilitating conditions (FC)	Pearson Correlation	0,598**	0,612**	0,564**	1	0,561**	0,784**	0,652**
	Sig. (2-tailed)	<0,001	<0,001	<0,001		<0,001	<0,001	<0,001
	N	198	198	198	198	198	198	198
Social media (SM)	Pearson Correlation	0,532**	0,586**	0,533**	0,561**	1	0,586**	0,629**
	Sig. (2-tailed)	<0,001	<0,001	<0,001	<0,001		<0,001	<0,001
	N	198	198	198	198	198	198	198
Performance expectancy (PE)	Pearson Correlation	0,659**	0,631**	0,601**	0,784**	0,586**	1	0,760**
	Sig. (2-tailed)	<0,001	<0,001	<0,001	<0,001	<0,001		<0,001
	N	198	198	198	198	198	198	198
Hedonic motivation (HM)	Pearson Correlation	0,662**	0,637**	0,602**	0,652**	0,629**	0,760**	1
	Sig. (2-tailed)	<0,001	<0,001	<0,001	<0,001	<0,001	<0,001	
	N	198	198	198	198	198	198	198

**. Correlation is significant at the 0.01 level (2-tailed).

The strength of a linear relationship between two variables is measured via correlation (DeCoster & Claypool, 2004). Pearson correlation was performed in SPSS for this research because it assumes that the variables have a normal distribution (DeCoster & Claypool, 2004), which was proven under the Normality testing section.

The relationship's strength and nature can be obtained from correlation (DeCoster & Claypool, 2004). The range for correlations is between -1.0 and 1.0 (DeCoster & Claypool, 2004). The direction of the relationship is described by the sign of the correlation (DeCoster & Claypool, 2004). If the sign is positive, the variables move in the same direction; as one variable gets more prominent, so does the other. If the sign is negative, the variables move in the opposite direction; as one variable gets larger, the other variable gets smaller (DeCoster & Claypool, 2004).

On the next page, Table 14 indicates that the correlations of the constructs range positively from 0,471 to 0,784, which indicates that they all have significant positive relationships with each other. In more depth, the following relationships were noted:

- Intention to adopt (IA) and Trust (T) have the lowest positive correlation of 0,471; and
- Facilitating conditions (FC) and Performance expectancy (PE) have the highest positive correlation of 0,784.

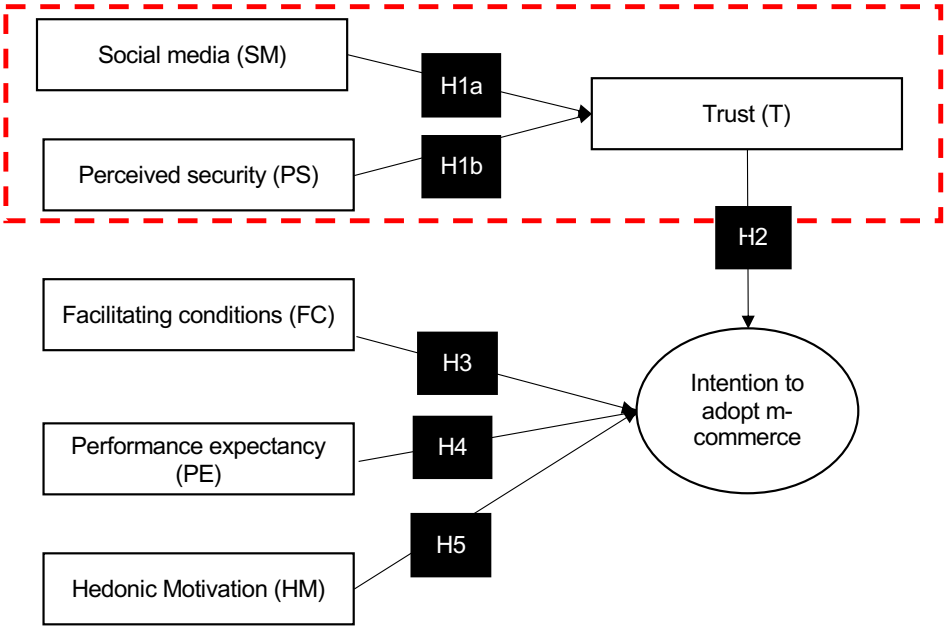
4.10. Multiple regression analysis

According to DeCoster & Claypool (2004), regression is "a statistical tool that allows you to predict the value of one continuous variable from one or more variables ."Linear regression analysis is used to analyse one independent variable resulting from inputs of one dependent variable (Tranmer et al., 2020). On the other hand, multiple regression analysis increases the number of independent variables to more than one.

4.10.1. Multiple regression analysis to determine trust (T)

As per the research model indicated below, trust (T) is both a dependent variable and is integrated into the model as an independent variable. Furthermore, social media (SM) and Perceived security (PS) are the independent variables to determine trust (T); therefore, multiple regression was performed for trust (T).

Figure 10: Part of the research model indicating trust and its independent variables



4.10.1.1. Model fit and statistical acceptance (Trust)

Table 15: Model Summary[b] (Trust)

Model	R	R Square	Adjusted R Square	Std, Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig, F Change	Durbin-Watson
1	0,664[a]	0,441	0,436	0,68931	0,441	77,051	2	195	<0,001	1,72

a, Predictors: (Constant), PS (Perceived security), SM (Social media)
b, Dependent Variable: T (Trust)

Table 15 is the Model Summary table and the indicators of how well the regression model fits the data (Tranmer et al., 2020). It includes the R, R Square, Adjusted R Square, Standard Error of the Estimate, and Change statistics.

- *'R'* is the multiple correlation coefficient and measures the quality of the prediction of the dependent variable (Laerd statistics, 2018), which is trust. The value of 0,664 indicates that SM (Social media) and PS (Perceived security) are good predictors of T (trust).

- *'R Square'* is a measurement of the proportion of the variation in the dependent variable as a result of the independent variables (Aasland, 2008). The value of 0,441 indicates that 44.1% of the variance in Trust (T) is a result of SM (Social media) and PS (Perceived security).

- *'Adjusted R Square'* means that there is more freedom with the sum of squares (Aasland, 2008). *Adjusted R Square* is generally accepted as a better indicator of a model's good fit (Aasland, 2008). According to Tranmer et al.(2020), in larger sample sizes, R Square and Adjusted R Square are very close values, as indicated in Table 14. The value of 0,436 indicates that 43.6 % of the variance in Trust (T) is a result of SM (Social media) and PS (Perceived security).

- *'Standard error of the estimate'* is "a measure of the standard deviation of the errors in a regression model" (Watts, 2022). Therefore, the value of 0,68931 is considered to be low.

- *'F Change'* is used to determine the significance of an R Square change (Zeileis et al., 2002). A significant F change of <0,001 is less than 0,05, which indicates that the regression model is statistically significant.

- *'Durbin-Watson'* is a measure of autocorrelation between variables of the model (Corporate Finance Institute, 2022). The value of 1,72, when rounded off to 2, indicates no autocorrelation (Corporate Finance Institute, 2022).

Table 16: ANOVA[a] (Trust)

Model		Sum of Squares	df	Mean Square	F	Sig,
1	Regression	73,221	2	36,611	77,05	<0,001
	Residual	92,654	195	0,475		
	Total	165,875	197			

a, Dependent Variable: T (Trust)

b, Predictors: (Constant), PS (Perceived Security), SM (Social Media)

Table 16 illustrates the Analysis of Variance (ANOVA) results indicating that the regression model is acceptable (Aasland, 2008). The F-ratio measures whether the regression model is a good fit (Laerd statistics, 2018). F(2,195) = 77,05; p <0,05 indicates that the multiple regression model to determine trust is statistically significant and a good fit. There is a significant relationship between trust (T), the dependent variable and the independent variables, social media (SM) and perceived security (PS). Both variables have p-values less than 0.001 this indicating that the null hypotheses are accepted.

Table 17: Coefficients table (Trust)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig,	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std, Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1,192	0,202		5,911	<0,001	0,794	1,590		
	SM	0,204	0,055	0,245	3,715	<0,001	0,096	0,312	0,656	1,523
	PS	0,544	0,073	0,490	7,419	<0,001	0,400	0,689	0,656	1,523

a, Dependent Variable: T (Trust)

Table 17 above indicates the coefficients of the variables, and it is analysed as follows:

- *Unstandardized coefficients (beta)* measure "how much the dependent variable varies with an independent variable when all the other independent are held constant (Laerd statistics, 2018). SM (Social media) has an unstandardized beta of 0,204, and PS (Perceived security) has a higher unstandardized beta of 0,544. PS is the most significant variable of the two variables. Both betas are positive, thus indicating that when both SM (Social media) and PS (Perceived security) increase, T (trust) also increases.

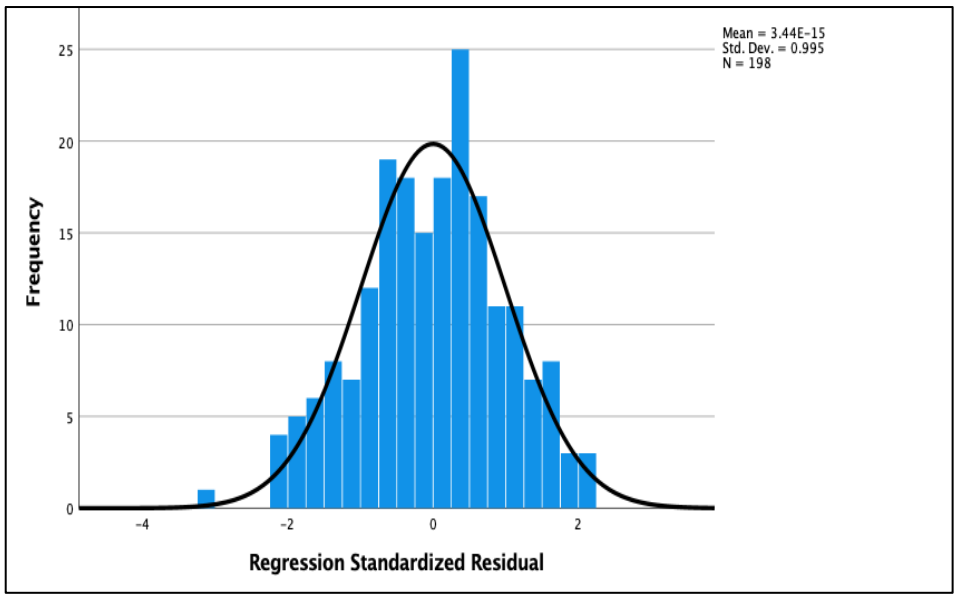
- *Standardized coefficients "*are the estimates from an analysis performed on variables that have been standardized so that they have variances of 1" (Aasland, 2008). SM (Social media) has a beta of 0,245, and PS (Perceived security) has a beta of 0,490. Both betas are positive, thus indicating that when both SM (Social media) and PS (Perceived security) increase, T (trust) also increases.

- *'t-value' and 'p-value'* test the statistical significance of each independent variable (Laerd statistics, 2018). SM has a t-value of 3,715 and p <0.001, indicating that it is statistically significant to 0. PS has a t-value of 7,419 and p < 0,001, indicating that it is statistically significant to 0.

- *Variance Inflation Factor (VIF)* - VIF measures how much of the regression estimates' variance has been increased because of multicollinearity (Trammer et al., 2020). Multicollinearity is when two independent variables are highly correlated and can be used to predict each other (Tranmer et al., 2020). If the VIF value is greater than 5, then multicollinearity exists, and one of the variables has to be removed from the model (Glen, 2015). The VIF of both SM and PS is 1,523, less than 10, indicating no multicollinearity.

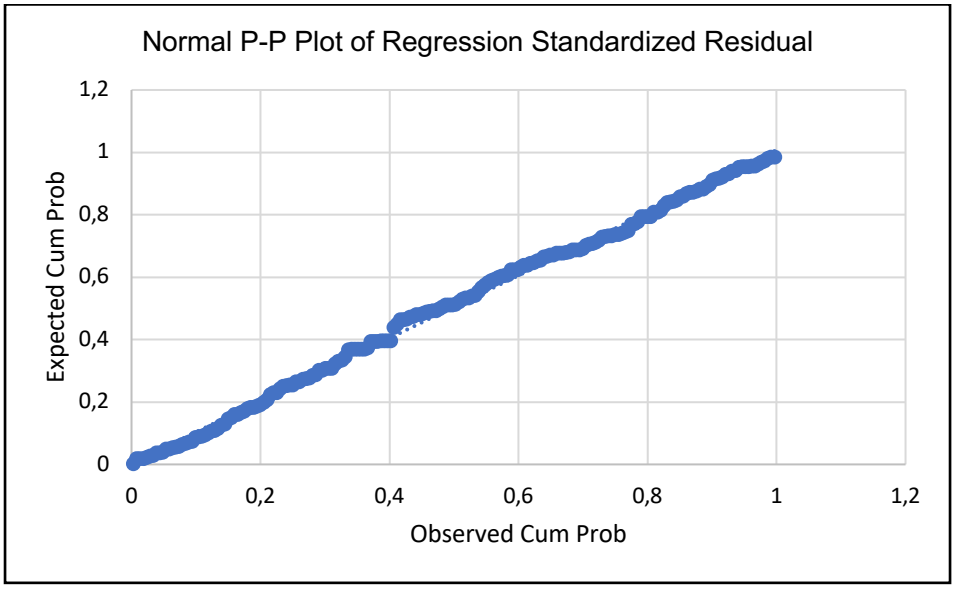
Figure 11 below is the histogram of the standardized residuals for the regression model. The residuals are normally distributed.

Figure 11: Histogram of residuals (Trust)



Source: SPSS, version 28

This figure is the Normal P-P plot of the residuals, and the linear line indicates normal distribution too.



Source: SPSS, version 28

4.10.2. Multiple regression analysis to determine the intention to adopt m-commerce platforms

Intention to adopt m-commerce platforms (IA) is the dependent variable with the following independent variables, namely, trust (T), facilitating conditions (FC), performance expectancy (PE), and Hedonic motivation (HM). Multiple regression analysis was used to determine the intention to adopt m-commerce platforms.

4.10.2.1. Model fit (Intention to adopt m-commerce platforms)

Table 18: Model Summary[b] (Intention to adopt m-commerce platforms)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,711[a]	0,506	0,496	0,834	0,506	49,385	4	193	<0,001	1,685

a. Predictors: (Constant), HM (Hedonic motivation), T (Trust), FC (Facilitation conditions) , PE (Performance expectancy)

b. Dependent Variable: Intent to adopt m-commerce platforms (IA)

Source: SPSS, version 28

Table 18 is the Model Summary table and the indicators of how well the regression model fits the data (Tranmer et al., 2020). It includes the R, R Square, Adjusted R Square, Standard Error of the Estimate, and Change statistics.

- *R* - the value of 0,711 indicates that T (trust), FC (Facilitating conditions), PE (Performance expectancy), and HM (Hedonic motivation) are good predictors of the intention to adopt m-commerce platforms (IA)

- *R Square* - the value of 0,506 indicates that 50,6 % of the variance in intention to adopt m-commerce platforms (IA) is a result of T (trust), FC (Facilitating conditions), PE (Performance expectancy), and HM (Hedonic motivation).

- *Adjusted R Square* is very close to R Square, as indicated in Table 17. The value of 0,496 indicates that 49.6 % of the variance intention to adopt m-commerce platforms (IA) is a result of T (trust), FC (Facilitating conditions), PE (Performance expectancy), and HM (Hedonic motivation).

- *Standard error of the estimate* - the value of 0,834 is considered a low standard error.

- *F Change* - a significant F change of <0,001 is less than 0,05, which indicates that the regression model is statistically significant.

- *Durbin-Watson* - the value of 1,685, when rounded off to 2, indicates no autocorrelation (Corporate Finance Institute, 2022).

-

4.10.2.2. Statistical acceptance of the model (Intention to adopt m-commerce platforms)

Table 19: ANOVA[a] (Intention to adopt m-commerce platforms)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	137,513	4	34,378	49,385	<0,001[b]
	Residual	134,351	193	0,696		
	Total	271,864	197			

a. Dependent Variable: Intent to adopt m-commerce platforms (IA)
b. Predictors: (Constant), HM (Hedonic motivation), T (Trust), FC (Facilitation conditions), PE (Performance expectancy)

Table 19 illustrates the Analysis of Variance (ANOVA) results, indicating that the regression model is acceptable (Aasland, 2008). The F-ratio measures whether the regression model is a good fit (Laerd statistics, 2018). F(4,193) = 49,385; p <0,05 indicates that the multiple regression model to determine trust is statistically significant and a good fit.

The table below indicates the coefficients of the variables and it is analysed as follows:

Table 20: Coefficients table (Intention to adopt m-commerce platforms)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0,349	0,257		1,357	0,176	-0,16	0,856		
	T	0,017	0,085	0,013	0,193	0,847	-0,15	0,185	0,574	1,741
	FC	0,186	0,098	0,157	1,887	0,061	-0,01	0,38	0,369	2,711
	PE	0,300	0,113	0,257	2,650	0,009	0,077	0,523	0,272	3,674
	HM	0,436	0,099	0,357	4,382	<,001	0,24	0,632	0,386	2,588

a. Dependent Variable: Intent to adopt m-commerce platforms (IA)

- *Unstandardized coefficients (beta)* - T (Trust) has the lowest unstandardized beta of 0,017, followed by FC (Facilitating conditions) with 0,186, PE (Performance expectancy) had a

beta of 0,300, and HM (Hedonic motivation) has the highest unstandardized beta of 0,436. All of the independent variables have positive unstandardized coefficients indicating that they move in the same direction as the dependent variable, i.e., intention to adopt m-commerce.

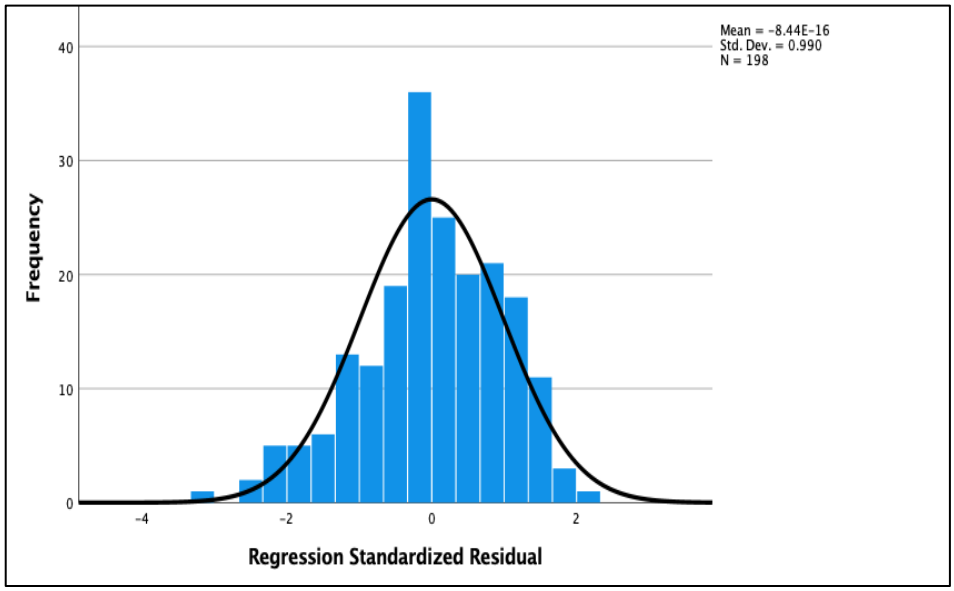
- *Standardized coefficients (beta)* - T (Trust) has a standardized beta of 0,013, FC (Facilitating conditions) followed with 0,157, PE (Performance expectancy) has the second highest standardized beta of 0,257, and HM (Hedonic motivation) has the highest standardized beta of 0,357. Same as the unstandardized beta, they also move in the same direction as the dependent variable.

- *'t-value' and 'p-value'* test - T (Trust) a t-value of 0,19 and p = 0,847, FC has a t-value of 1,887 and p= 0,061, PE has a t-value of 2,650 and p=0,009, and HM has a t-value of 4,382 and p =<0,001.

- *Variance Inflation Factor (VIF)* - The VIF of T is 1,741, FC is 2,711, PE is 3,674, and HM is 2,588, which is less than 5, indicating no multicollinearity.

From the above, it is evident that performance expectancy (PE) and hedonic motivation (HM) are significant predictors to the intention to adopt m-commerce in South African townships. However, trust (T) and facilitating conditions (FC) are non-significant and are null hypotheses. Both trust (T) and facilitating conditions (FC) have p-values higher than the significant level 0f 0.05; trust (T) - p = 0,847 and facilitating conditions (FC) - p= 0,061, this indicating that the hypotheses is accepted and supported by this research.

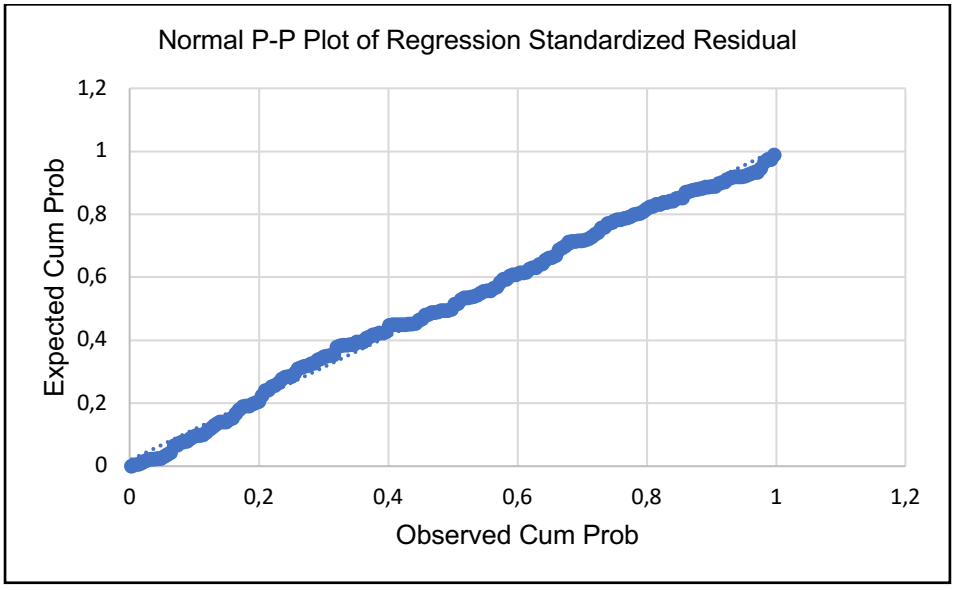
Figure 12: Histogram (Intention to adopt m-commerce platforms)



Source: SPSS, version 28

Figure 12 is the histogram of the standardized residuals for the regression model. The residuals are normally distributed.

This figure is the Normal P-P plot of the residuals, and the linear line indicates normal distribution too and a linear relationship between dependent variables and independent variables.



Source: SPSS, version 28

Table 21 below summarizes the results derived from the above testing for all the hypotheses.

Table 21: Summary of hypotheses results

Hypothesis number	Hypothesis description	Regression weights	Coefficients (beta)	Adjusted R^2	P - value	Hypothesis supported
H1a	Social media (SM) positively affects a user's trust (T) of m-commerce in South African townships.	SM ⟶ T	0,245	0,436	<0,001	Accepted
H1b	Perceived security (PS) positively affects a user's trust (T) in m-commerce in South African townships.	PS ⟶ T	0,490	0,436	<0,001	Accepted
H2	Trust (T) positively affects a user's intention to adopt m-commerce in South African townships (IA).	T ⟶ IA	0,013	0,496	p = 0,847	Accepted. Null hypothesis
H3	Facilitating conditions (FC) positively affect users' intention to adopt m-commerce in South African townships (IA).	FC ⟶ IA	0,157	0,496	p= 0,061	Accepted Null hypothesis

H4	Performance expectancy (PE) positively affects users' intention to adopt m-commerce in South African townships (IA).	PE ⟶ IA	0,257	0,496	p = 0,009	Accepted
H5	Hedonic motivation (HM) positively affects a user's intention to adopt m-commerce in South African townships (IA).	HM ⟶ IA	0,357	0,496	<0,001	Accepted

4.11. Summary of the chapter

Descriptive statistics and frequencies were used to analyse respondents' demographic information. The information was presented graphically presented. Normality testing was performed, concluding that the data collected was normally distributed.

Validity and reliability testing were performed on the data, and it was concluded that the constructs of the survey were both valid and reliable. Descriptive statistics was used to determine the mean and standard deviation of each 31 questions of the constructs. For better analysis, the questions were combined into five each to determine the mean of the independent constructs, namely: SM (Social media), PS (Perceived security), T (Trust), FC (Facilitating conditions), PE (Performance expectancy) and HM (Hedonic motivation) and the dependent construct IA (Intention to adopt m-commerce platforms) only had 1 question. Descriptive statistics was performed to determine the mean and standard deviations.

Correlation analysis was performed using Pearson's correlation, and it was concluded that the constructs were all positively correlated. Lastly, multiple regression analysis was performed for both T (Trust) and IA (Intention to adopt m-commerce platforms). The interpretation of the research findings is discussed in Chapter 5.

CHAPTER 5: DISCUSSION AND INTERPRETATION OF RESEARCH FINDINGS

5.1. Introduction

The purpose of this chapter is to interpret all the data analysed and presented in Chapter 4. The research was based on a conceptual framework based on the UTAUT2 model developed by Venkatesh et al. (2012). Although many researchers used different technology acceptance models to determine the factors that affect m-commerce adoption, it was found that minimal research focused on South African townships. Therefore, this research aimed to bridge that gap with the survey conducted in Soweto and Tembisa, two predominant townships in Gauteng.

This chapter discusses the study's main findings by interpreting the respondents' demographics, testing the study's hypotheses, and determining whether the research model developed in chapter two yielded the results anticipated for this research.

5.2. Hypotheses results

5.2.1. Hypotheses affecting trust in m-commerce

The dependent variable T (Trust) was regressed on the independent variable SM (Social media) and Perceived security (PS). Both of the hypotheses are significant predictors of the intention to adopt m-commerce by individuals in South African townships.

H1a. *Social media (SM) positively affects users' trust in m-commerce (T) in South African townships.*

The hypothesis tests if social media (SM) positively affects users' trust (T) of m-commerce in South African townships. Social media (SM) significantly predicted T (Trust), with a standardized beta of 0,245, $p<0,001$, indicating that SM (Social media) is a significant predictor of T (Trust). The research, therefore, supports the hypothesis.

The results of this hypotheses indicates that the more a user in South African townships engages in social media, the higher the user's trust (T) of m-commerce in South African townships.

Social media has become highly significant in affecting individuals buying decisions because both business and consumers are using social media platforms to advertise, provide reviews and recommendations about products and services. Majority of South African's use their mobile devices to access social media platforms (StatsCounter, 2022); this is an advantage because m-

commerce platforms are also applications on their phones, allowing them to easily access and switch between both platforms if they intend to make a transaction on m-commerce platforms due to social media influence and engagement regarding certain products and services.

H1b. *The higher the perceived security (PS), the higher the user's trust (T) of m-commerce in South African townships.*

The hypothesis tests if perceived security (PS) positively affects a user's trust (T) in m-commerce in South African townships. Perceived security (PS) positively predicted T (Trust), with a standardized beta of 0,495 and p<0,001, indicating that PS is a significant predictor of T (Trust). The research, therefore, supports the hypothesis.

The results of this hypotheses indicates that the higher the perceived security in m-commerce platforms, the higher the user's trust (T) of m-commerce in South African townships.

Perceived security is an important factor for m-commerce adoption. There are potential high risks that individuals could encounter, financial loss and fraud being one. The more the individuals are at ease sharing their personal and financial information on m-commerce platforms, the more likely they are to adopt and use them. Vendors need to ensure that their m-commerce platforms are secure, thus resulting in high engagement from individuals in South African townships.

5.2.2. Hypotheses affecting intention to adopt m-commerce platforms

The intention to adopt m-commerce by individuals in South African townships (IA) is the primary dependent variable of the research, was regressed on four independent variables, namely trust (T), facilitating conditions (FC), performance expectancy (PE), and hedonic motivation (HM). The model yielded F (4,193) = 49,385, p<0,001. The 'Adjusted R' of the regression model to determine trust is 0,496, indicating that 49,6 % of the variance in the intention of individuals in South African townships to adopt m-commerce (IA) is as a result of trust (T), facilitating conditions (FC), performance expectancy (PE) and hedonic motivation (HM).

H2. *Trust (T) does not affect a user's intention to adopt m-commerce in South African townships (IA).*

The hypothesis tests whether individuals in South African townships trust (T) m-commerce platforms. Trust (T) has a standardized beta of 0,013, p=0,847 p>0,05, this indicates that the hypothesis is null and non-significant. The null hypothesis is accepted because p>0,05.

The results of this hypotheses indicates trust (T) does not affect a user's intention to adopt m-commerce in South African townships (IA).

It has been proven in this hypothesis that trust has no effect on the user's intention to adopt m-commerce in South African townships. This indicates that individuals intent to adopt m-commerce platforms regardless of whether they trust the platform or not, meaning that they are willing to take the risk.

H3. *Facilitating conditions (FC) does not affect users' intention to adopt m-commerce in South African townships (IA).*

The hypothesis tests if facilitating conditions (FC) positively affect users' intention to adopt m-commerce in South African townships (IA). Facilitating conditions (FC) has a standardized beta of 0,157, p= 0,061 (p>0,05). Similar to trust, the non-significance of facilitating conditions (FC) indicates that it is a null hypothesis. The p-value is greater than the significance level, p=0,061, p>0,05, therefore the hypothesis is accepted.

The results of this hypotheses indicates facilitating conditions (FC) does not affect a user's intention to adopt m-commerce in South African townships (IA).

The conditions that enable m-commerce adoption and ease of use like internet infrastructure and affordability are not an affecting issue and not important to them with regards to m-commerce adoption. Majority of Soweto and Tembisa have internet infrastructure, therefore facilitating conditions is not a major factor.

H4. *Performance expectancy (PE) positively affects users' intention to adopt m-commerce in South African townships (IA).*

The hypothesis tests if performance expectancy (PE) positively affects users' intention to adopt m-commerce in South African townships (IA). Performance expectancy (PE) positively predicted the intention to adopt m-commerce with a standardized beta of 0,257, p= 0,009 (p<0,05), thus indicating that performance expectancy (PE) is a significant predictor of the intention to adopt m-commerce by individuals residing in South African townships. The research, therefore, supports the hypothesis.

The results of this hypotheses indicates that the more a user in South African townships perceives the high performance of m-commerce platforms, the more likely they are to adopt and use m-commerce platforms.

M-commerce platforms need to be user-friendly and efficient for individuals to in the townships so that they are able to save them time and grant them the flexibility rather than having to do brick n mortar shopping. Vendors need to update their apps often to enhance their performance and increase their customer base.

H5. *Hedonic motivation (HM) positively affects a user's intention to adopt m-commerce in South African townships (IA).*

The hypothesis tests if hedonic motivation (HM) positively affects users' intention to adopt m-commerce in South African townships (IA). Hedonic motivation (HM) positively predicted the intention to adopt m-commerce with a standardized beta of 0,357, $p<0,001$ ($p<0,05$), thus indicating that hedonic motivation (HM) is a significant predictor of the intention to adopt m-commerce by individuals residing in South African townships. The research, therefore, supports the hypothesis.

The results of this hypotheses indicates that the more a user in South African townships is motivated to use m-commerce platforms, the more likely they are to adopt and use m-commerce platforms.

M-commerce platforms need to be more engaging and have features that attract the individuals. Individuals need to feel a sense of adventure when using m-commerce platforms.

5.3. Findings of the study

Based on the analysis results, demographically, half of the research respondents (52%) were female. The younger generation was also the most respondents, with 78% younger than 40%. These results indicate that the younger generation in South African townships is embracing technology advancements, specifically m-commerce adoption. These results are supported by Cullen & Kabanda (2018), who concluded that mobile commerce adoption is negatively affected by the age, educational levels, and gender of an individual, meaning that the older an individual is. The less educated they are, the more likely that they will not use mobile commerce, and their gender plays a significant role too. Although South African townships still face infrastructure and technology challenges to some extent, 53% of the respondents intend to adopt m-commerce platforms.

As per the research model, perceived security and social media were indirect predictors of the intention of South African township residents to adopt m-commerce platforms. However, the research model determined whether they positively affected the trust of the individuals residing in South African townships to adopt m-commerce. Perceived security and social media were found to have a significant, positive effect on the trust of the individuals residing in South African

townships to adopt m-commerce. Perceived security is the most significant predictor of trust compared to social media.

These results of the effect of trust on m-commerce are different from literature reviewed in Chapter 2. Vasileiadis (2014), who concluded in his study that both security and trust are critical factors in adopting m-commerce using the Technology Acceptance Model (TAM). Furthermore, Armesh et al. (2010) proved that information security and privacy affect trust & trustworthiness, and loyalty in online marketing. Lastly, to support the positive effect trust has on m-commerce adoption, Hajli (2014) found that when consumers interact on social media, it increases trust and their intention to purchase products. However, Hajli (2014) also used the Technology Acceptance Model (TAM).

The intention of residents in South African townships to adopt m-commerce platforms was tested by determining which of the following factors, namely: trust, facilitating conditions, performance expectancy, and hedonic motivation, affect it.. Performance expectancy and hedonic motivation were significant predictors of the intention of residents in South African townships to adopt m-commerce platforms; trust and facilitating conditions were insignificant predictors and therefore do not effect of the intention of residents in South African townships to adopt m-commerce platforms.

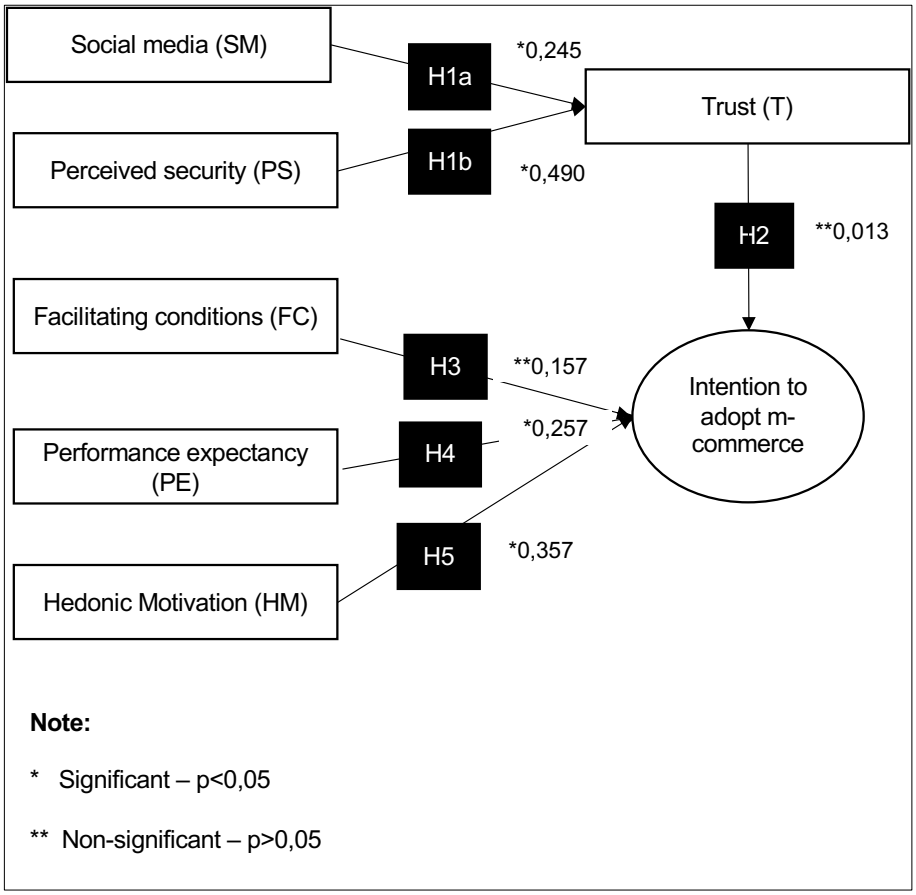
The conceptual research model was based on the UTUAT2 model. Similarly, Gharaibeh et al.(2020) used UTAUT2 as a base for their study on m-commerce adoption. They concluded that the six constructs of the UTAUT2 model and social media immensely affect the intention of consumers in Jordan to adopt m-commerce. However, similar to this research. Asastani et al. (2018) concluded that facilitating conditions and perceived cost has no significant effect on the use of m-commerce.

In his study, Dzimati (2017) added perceived security and trust as additional constructs to the UTAUT model for the study of online shopping acceptance in South African townships and concluded that performance expectancy, social influence, and perceived security. Trust is a significant factor in adopting online shopping; the only difference is that for this research, trust was not a significant factor for m-commerce adoption, and social influence was not included as a construct.

Figure 13 illustrates the hypotheses testing model, the research framework model developed in Chapter 2. It includes each hypothesis with the standard beta values indicating their significance level. H1b - Perceived security has a positive effect on the trust of user's trust of m-commerce in South African townships. PS has the highest level of significance with a standardised beta of 0,490, followed by H5 - Hedonic motivation, which has a positive effect on a user's intention to adopt m-commerce in South African townships (IA) with a standardised beta of 0,357, H4 - Performance

expectancy (PE) has a positive effect on user's intention to adopt m-commerce in South African townships) is third with a standardised beta of 0,257, H1a - Social media (SM) has a positive effect on a user's trust (T) of m-commerce in South African townships) follows with a standardised beta value of 0,245. H3 Facilitating conditions (FC) has a positive effect on the user's intention to adopt m-commerce in South African townships (IA) and has a standardised beta of 0,157, H2 (Trust (T) has a positive effect on a user's intention to adopt m-commerce in South African townships (IA)) has the least significance level with a beta of 0,013.

Figure 13: Hypotheses testing model



5.4. Contribution of the study

This research of the factors that affect m-commerce platforms adoption by individuals in South African townships can contribute academically and practically. Both of these aspects are discussed below.

5.4.1. Contribution of the study in academia

It has been identified in the literature reviewed as part of this study (Chapter 2) that there is a knowledge gap and no known literature regarding the factors that affect m-commerce platforms adoption by individuals in South African townships. This research can bridge that knowledge gap.

This research used the UTAUT2 model, together with social media and perceived security as additional constructs, as the base framework for its conceptual research model. The UTAUT2 model is the latest technology acceptance model. In the literature reviewed none of the researchers used the UTAUT2 model to study the factors that affect m-commerce adoption in South African townships.

5.4.2. Contribution of the study in practice

This research can contribute to m-commerce vendors in assisting them to understand all the factors impacting individuals in South African townships and what it is that they need to consider when developing their online platforms.

The results indicate that social media and perceived security are significant factors of trust. M-commerce vendors can improve the security of their platforms by improving the information management policies, eliminate cyber-security risks to reduce the possibilities of fraudulent activities on their m-commerce platforms and protect the information of customers. Social media has become a powerful marketing tool for businesses. Businesses should therefore use their m-commerce platforms to market their m-commerce platforms and products and to engage with customers. Social media influencers have also become reputable, and using them to engage with customers and market products can improve business and innovative ways to reach customers in South African townships.

Hedonic motivation has the most significant effect on the intention to adopt m-commerce platforms by individuals in South African townships. M-commerce vendors can leverage on this by enhancing their platforms to improve their motivational and engaging factors to customers to maximise the value customers derive from using their m-commerce platforms. Performance expectancy is also a significant factor for individuals, therefore vendors need to ensure that their m-commerce platforms are easy to use and navigate for the customers, resulting in them using m-commerce platforms instead of having to go to traditional, physical stores.

The results indicate that facilitating conditions is an insignificant factor and therefore does not have an effect on the intention to adopt m-commerce platforms by individuals in South African townships. Technological advancement and data affordability is still lagging behind in some areas of the townships. This raises a concern for vendors for m-commerce adoption in growing their businesses in these areas. Businesses should liaise with government to improve this in order to grow the economy and improve township lives.

This research can also contribute to government departments that need to understand how m-commerce adoption in South African townships and what measures they need to take to enhance

the economy and the lives of individuals in South African townships, especially regarding providing technological enhancements infrastructures to allow both business and customers to thrive.

5.5. Summary of the chapter

Chapter 5 discussed the hypotheses testing results for the research model and the study's main findings of the factors affecting the adoption of m-commerce platforms by individuals in South African townships. The research model was also included indicating the significance level of each hypothesis. Finally, the conclusion of the research, together with recommendations, is discussed in Chapter 6.

CHAPTER 6: CONCLUSION AND EVALUATION OF THE RESEARCH

6.1. Introduction

This study has been outlined in five chapters, each serving a specific purpose. Chapter 1 discussed the purpose and background of the study, Chapter 2 discussed the literature review and a research framework was developed. Chapter 3 discussed the research methodology and how the data was collected. Chapter 4 presented and analysed the data collected and Chapter 5 extended Chapter 4 by discussing the findings of the study.

The primary purpose of this chapter is to provide the final conclusion and evaluation of the study of the factors affecting the adoption of m-commerce platforms by individuals in South African townships. In this chapter, the research objectives formulated in Chapter 1 are reviewed, the relevance of the research methodology is discussed, recommendations for further studies are made, and the conclusion is made.

6.2. Review of research objectives

The main objective of this study was to determine the factors that affect the adoption of m-commerce platforms by individuals residing in South African townships. Research objectives were formulated in Chapter 1 to drive the purpose of this study. A research framework was developed in Chapter 2, and hypotheses were developed to assist in meeting the research objectives. Data was collected using a digital survey and quantitively analysed to assess whether the hypotheses were supported and on a larger scale to determine whether the research objectives were achieved. The research objectives are reviewed below as follows:

The research objectives of the study were to:

1. **Determine whether perceived security and social media affect trust to adopt m-commerce by individuals in South African townships.**

The following two hypotheses were tested to determine whether this research objective was met, namely:

- ***H1a.*** *Social media (SM) positively affects a user's trust (T) of m-commerce in South African townships.*

- ***H1b.*** *Perceived security (PS) positively affects a user's trust (T) in m-commerce in South African townships.*

The above two hypotheses were supported by the regression modelling performed. Furthermore, perceived security and social media were found to significantly affect trust to adopt m-commerce by individuals in South African townships, thus indicating that the residents of the townships deem security features and social media engagements and interactions regarding the m-commerce platforms important in order for them to trust m-commerce platforms. Therefore this research objective was met.

2. **Determine whether trust affects the intention of individuals to adopt m-commerce in South African townships.**

The following hypothesis was tested to determine whether this research objective was met, namely:

- ***H2.*** *Trust (T) positively affects a user's intention to adopt m-commerce in South African townships (IA).*

This hypothesis was tested to be a null hypothesis and was accepted. As noted above in Chapter 5, trust does not affect the intention of individuals in South African townships to adopt m-commerce. Therefore this research objective was not met.

3. **Determine whether motivation affects the intention of individuals to adopt m-commerce in South African townships.**

The following hypothesis was tested to determine whether this research objective was met, namely:

H5. *Hedonic motivation (HM) positively affects a user's intention to adopt m-commerce in South African townships (IA).*

As per the regression modelling performed in Chapter 4, hedonic motivation was deemed to have a significant, positive effect on the user's intention to adopt m-commerce platforms; this means that the residents of the townships are motivated to use m-commerce platforms and enjoy using the platforms. Therefore this research objective was met. Furthermore, the more motivated and excited the township residents are, the increased their usage of m-commerce platforms. Therefore, this research objective was met.

4. **Determine whether technological constraints and conditions affect the intention of individuals to adopt m-commerce in South African townships.**

The following two hypotheses were tested to determine whether this research objective was met, namely:

- ***H3.*** *Facilitating conditions (FC) positively affect users' intention to adopt m-commerce in South African townships (IA).*

- ***H4.*** *Performance expectancy (PE) positively affects users' intention to adopt m-commerce platforms in South African townships (IA).*

Like trust, facilitating conditions is insignificant effect on the user's intention to adopt m-commerce platforms. Facilitating conditions include the conditions that enable the users to effectively and efficiently use m-commerce platforms; these include internet accessibility and affordability of data.

Performance expectancy significantly positively affects the user's intention to adopt m-commerce platforms. Performance expectancy includes the convenience and flexibility of m-commerce platforms for the users. When the performance expectancy of m-commerce platforms is high, the usage or uptake of m-commerce platforms by the residents in South African townships increases.

6.3. Recommendations for further studies

The research solely focused on individuals residing in two South African townships, namely Soweto and Tembisa, in Johannesburg, Gauteng. The research could have been extended to include any township in South Africa because a digital survey was used to conduct the survey. Therefore, for future studies, the researcher recommends including all South African townships should the researcher want to focus solely on townships. On a larger scale, the researcher recommends that the research is not limited to South African townships but is extended to all South Africans regardless of geographical location within the country.

The research included only some of the constructs of the UTAUT2 model. Instead, a conceptual research model was developed based on the UTAUT2. The following constructs were excluded: effort expectancy, social influence, price value, and habit. The moderating factors, age, gender, and experience, were also excluded due to limited time. The researcher recommends that the full UTAUT2 model be used in the future to fully understand the effect of all the model's factors on m-commerce platforms adoption by South African townships.

The research was a cross-sectional study because it is useful when assessing attitudes, traits, and knowledge in validation and reliability studies (Kesmodel, 2018). A cross-sectional study is defined as "the collection of data at a given point in time" (Kesmodel, 2018). However, a disadvantage of a cross-sectional study is that it needs to provide factual information about cause-and-effect relationships (Institute for Work and Health, 2015). Therefore, the researcher recommends that a longitudinal study should be conducted to determine the factors affecting m-commerce platform adoption by individuals residing in South African townships. A longitudinal study is over a period of time. It allows the researcher to notice changes in the behaviours and attitudes of the targeted population (Institute for Work and Health, 2015).

The data collected was quantitatively analysed, which limited the exploration of other factors that affect m-commerce platforms by South African township residents. However, the qualitative method can be used to understand the respondents' characteristics and attitudes. Therefore, the researcher recommends applying a mixed research method, including qualitative and quantitative methods.

6.4. Conclusion of the research

This research revealed that all the constructs, as per the research model, affect m-commerce platform adoption by individuals residing in South African townships. Social media and security were significant factors in determining the trust of the individuals to adopt m-commerce platforms; however, although positive, trust is an insignificant factor affecting the adoption of m-commerce platforms by individuals in the townships. Facilitating conditions is also an insignificant factor affecting individuals' adoption of m-commerce platforms in the townships. Finally, performance expectancy and hedonic motivation were significant factors affecting individuals' adoption of m-commerce platforms in the townships.

The research, therefore, successfully identified the factors affecting m-commerce platform adoption by individuals residing in South African townships.

6.5. Summary of chapter

Chapter 6 reviewed the research objectives to conclude whether they were met via conducting the research. Recommendations for further studies were also discussed, and the conclusion of the purpose of the research was also provided.

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APPENDIX A: RESEARCH INSTRUMENT

M-commerce adoption research survey

Start of Block: INFORMATION AND CONSENT

Dear Sir/Madam,

My name is Mogau Mashishi, and I am a master's student currently studying Master of Management in Digital Business at the Wits Business School, which is part of the University of Witwatersrand. I am researching factors that influence the adoption of m-commerce platforms by individuals in South African townships under Professor Mpho Raborife.

As part of this study, I invite you to participate in answering questions as part of a questionnaire comprising three sections. It will take between 10 to 15 minutes to complete the entire questionnaire.

There will be no personal costs if you participate in this survey. You will not receive any direct benefits from participation, but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The questionnaire is confidential and anonymous, as I will not ask you for your name or any identifying information. The information you give me will be kept secure and not disclosed to anyone. The questionnaires will be destroyed after five years.

If you have any questions during or afterward about this research, feel free to contact me at the details listed below. This study will be written up as a research report. Should you wish to receive a summary of the report, I will be happy to share it with you. Please contact me at 2355972@students.wits.ac.za. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Ethics Committee.

Page Break

As a participant, I acknowledge the following:

1. The research has been explained to me and I understand what my participation will involve.
2. I agree to participate in this research project anonymously.
3. I have read this consent form and the information it contains and had the opportunity to ask questions about them.
4. I agree to my responses being used for education and research on condition that my privacy is respected, subject to the following:
5. I understand that my personal details will be used in aggregate form only, so that I will not be personally identifiable.
6. I understand that I am under no obligation to take part in this project.
7. I understand that I have the right to withdraw from this project at any stage.

- ○ Yes (1)
- ○ No (2)

End of Block: INFORMATION AND CONSENT

Start of Block: SECTION 1: DEMOGRAPHIC FACTORS

Q1 How old are you?

- ○ 18 - 24 years (1)
- ○ 25 - 30 years (2)
- ○ 31 - 40 years (3)
- ○ 41 - 50 years (4)
- ○ 51 - 60 years (5)
- ○ 60+ years (6)

Q2 What is your gender?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer not to say (4)

Q3 What is your highest level of academic qualification?

- Lower than matric (1)
- Matric (Grade 12) (2)
- Higher certificate (3)
- Diploma (4)
- Degree (5)
- Postgraduate degree/diploma (6)

Q4 How much do you earn per month?

- No income (1)
- R0 - R7 999 (2)
- R 8000 - R15 999 (3)
- R16 000 - R24 999 (4)
- R25 000 - R34 999 (5)
- R35 000 and above (6)

End of Block: SECTION 1: DEMOGRAPHIC FACTORS

Start of Block: SECTION 2A: INTENTION TO USE

Q5 Do your intent to use mobile commerce (m-commerce) when given the chance to?

- ○ Definitely not (1)
- ○ Probably not (2)
- ○ Might or might not (3)
- ○ Probably yes (4)
- ○ Definitely yes (5)

Q6 What influences whether you use your mobile device to do online shopping? (Can choose more than one)

- ☐ Convenience (1)
- ☐ Social media views about the product and services (2)
- ☐ Security features of the m-commerce platform (3)
- ☐ Easy check-out and payment process (4)
- ☐ Brand reputation of vendor (5)

End of Block: SECTION 2A: INTENTION TO USE

Start of Block: SECTION 2B: USE BEHAVIOUR

Q7 How frequently do you use your mobile device to do online shopping?

- ○ Every day (1)
- ○ Weekly (2)
- ○ Bi-weekly (3)
- ○ Monthly (4)
- ○ Other (Please specify) (5) _____

Q8 Are you an active social media user?

- ○ Yes (1)
- ○ No (2)

Q9 What do you purchase when you use your mobile phone?

- ☐ Groceries and personal care (1)
- ☐ Clothing and fashionable items (2)
- ☐ Furniture and appliances (3)
- ☐ Electronics and media (4)
- ☐ Toys, Hobbies and DIY (5)
- ☐ Other (6) _____

End of Block: SECTION 2B: USE BEHAVIOUR

Start of Block: SECTION 3

Q10 Social media

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
You buy a product/service based on positive opinions and recommendations of other social media users. (1)	○	○	○	○	○
You follow and engage with retailers and business of which you already use their products/services. (2)	○	○	○	○	○
You use social media platforms to provide ratings and reviews on products/services you bought. (3)	○	○	○	○	○
You participate in online communities and forums to share and receive information and experience on products and services. (4)	○	○	○	○	○
Social media influencers contribute whether you purchase the product/service on your mobile device. (5)	○	○	○	○	○

Q11 Perceived Security

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
M-commerce platforms have security features to protect my information. (1)	○	○	○	○	○
I feel save disclosing my personal and financial information on m-commerce platforms. (2)	○	○	○	○	○
Platforms systems are safe to share financial data. (3)	○	○	○	○	○
My identity is confirmed before processing transactions. (4)	○	○	○	○	○
M-commerce security system does not allow any unauthorized changes to transactions. (5)	○	○	○	○	○

Q12 Trust

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I trust m-commerce platforms to deliver the products on time. (1)	○	○	○	○	○
I trust m-commerce platforms with my personal information. (2)	○	○	○	○	○
M-commerce platforms are reliable and trustworthy. (3)	○	○	○	○	○
I trust m-commerce vendors to deliver and keep their promise they make. (4)	○	○	○	○	○
M-commerce platform portray the intended brand and reputation of products and services. (5)	○	○	○	○	○

Q13 Facilitating Conditions

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Data is affordable and easily accessible. (1)	○	○	○	○	○
Internet connectivity speed is sufficient for m-commerce platforms. (2)	○	○	○	○	○
Features of the m-commerce platforms are supported by mobile device (3)	○	○	○	○	○
You find it easy to use new technology in your day-to-day life (4)	○	○	○	○	○
You are continuously updating your technology infrastructure and devices to the latest models and innovations (5)	○	○	○	○	○

Q14 Performance Expectancy

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Using m-commerce saves me time. (1)	○	○	○	○	○
Using m-commerce allows me to do shopping effectively. (2)	○	○	○	○	○
M-commerce platforms are interactive allow a personal experience. (3)	○	○	○	○	○
M-commerce platforms allow me great flexibility because it's on the go. (4)	○	○	○	○	○
M-commerce is useful for me. (5)	○	○	○	○	○

Q15 Hedonic Motivation

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I enjoy using mobile online shopping. (1)	○	○	○	○	○
I enjoy browsing commercial websites and apps on my mobile device for social experiences it gives. (2)	○	○	○	○	○
I feel a sense of adventure when engaging in mobile shopping. (3)	○	○	○	○	○
I purchase items due to spur of the moment when just browsing commercial websites and apps on my mobile device. (4)	○	○	○	○	○
I find commercial websites and apps engaging and attractive. (5)	○	○	○	○	○

End of Block: SECTION 3

APPENDIX B: RESPONDENT PARTICIPATION LETTER

Dear Sir/Madam,

My name is Mogau Mashishi, and I am a Master's student, currently studying Master of Management in Digital Business at the Wits Business School, which is part of the University of Witwatersrand. I am researching factors that influence the adoption of m-commerce platforms by individuals in South African townships under Professor Mpho Raborife.

As part of this study, I would like to invite you to participate in answering questions as part of a three-part questionnaire. It will take between 10 to 15 minutes to complete the entire questionnaire. There will be no personal costs if you participate in this survey. You will not receive any direct benefits from participation, but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The questionnaire is confidential and anonymous, as I will not ask you for your name or any identifying information. The information you give me will be kept secure and not disclosed to anyone. The questionnaires will be destroyed after five years.

If you have any questions during or afterward about this research, feel free to contact me at the details listed below. This study will be written up as a research report. Should you wish to receive a summary of the report, I will be happy to share it with you. Please contact me at 23355972@students.wits.ac.za. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Ethics Committee.

Yours sincerely,

Mogau Mashishi,
Email address: 23355972@students.wits.ac.za

Supervisor: Mpho Raborife
Email address: mraborife@uj.ac.za

APPENDIX C: RESPONDENT CONSENT FORM

Title of research project:

Factors influencing the adoption of m-commerce platforms by individuals in South African townships.

Name of researcher: Mogau Mashishi

Department/research group address: Master of Management in Digital Business

Email address: 2355972@students.wits.ac.za

Nature of the research:

A quantitative research method will use data analysis of participant responses to determine the factors influencing the adoption of m-commerce platforms by individuals in South African townships.

As a participant, I acknowledge the following:

- The research has been explained to me and I understand what my participation will involve.
- I agree to participate in this research project anonymously.
- I have read this consent form and the information it contains and had the opportunity to ask questions about them.
- I agree to my responses being used for education and research on condition that my privacy is respected, subject to the following:
    - I understand that my personal details will be used in aggregate form only, so that I will not be personally identifiable.
    - I understand that I am under no obligation to take part in this project.
    - I understand that I have the right to withdraw from this project at any stage.

Name of participant: _____

Signature of participant: _____

Name of person seeking consent: _____

Signature of person seeking consent: _____

Date: _____

APPENDIX D: ETHICS CLEARANCE CERTIFICATE

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

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

Ethics Clearance Certificate

Ethics protocol number: WBS/DB2355972/971
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	Factors influencing the adoption of m-commerce platforms by individuals in South African townships
Investigator / Researcher	Ms Mogau Mashishi
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	2022-10-25
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

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

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

Mashishi
Signature

27.10.2022
Date:

APPENDIX E: TURNITIN REPORT SUMMARY

Final Research report - Mogau Mashishi (2355972) - June 2023-1.docx

ORIGINALITY REPORT

5%	5%	4%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	wiredspace.wits.ac.za Internet Source	3%
2	usir.salford.ac.uk Internet Source	1%
3	K., Yamini K.. "The Consumer Study of Drivers for B2C M-Commerce Adoption in Selected Cities in the State of Gujarat", Maharaja Sayajirao University of Baroda (India), 2023 Publication	1%
4	discol.umk.edu.my Internet Source	<1%