BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE ENGINEERING

DEPARTMENT OF MATHEMATICS AND PHYSICS

DETERMINANTS TO MOBILE BANKING AMONG YOUTHS IN RURAL AREAS: A CASE OF MASHONALAND CENTRAL

BY

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A RESEARCH PROJECT PRESENTED TO THE DEPARTMENT OF MATHEMATICS AND PHYSICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR EARNING AN HONOURS BACHELOR OF SCIENCE DEGREE IN STATISTICS AND FINANCIAL MATHEMATICS

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MAY 2024

DECLARATION

I Charmaine Murefu, hereby declare that this submission is my own work apart from the references of other people's work which has duly been acknowledged. I hereby declare that, this work has neither been presented in whole nor in part for any degree at this university or elsewhere.

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Certified by

Mr Magodora ……..

Chairperson Signature

DEDICATION

I dedicate this work to my dear parents, Mr and Mrs Murefu. This dissertation is a testament to your belief in me, your unwavering love, encouragement and endless sacrifices made this journey possible.

Acknowledgements

I begin by acknowledging the presence and grace of God throughout this journey. His strength and guidance carried me through moments of doubt and helped me persevere.

I would like to express my gratitude to my supervisor, Mr Kusotera, for his guidance and support throughout my dissertation journey. His insightful feedback and unwavering encouragement were instrumental in shaping this project.

I am incredibly grateful to Hamfrey Sanhokwe for their unwavering support and assistance during my dissertation process. Their contribution was invaluable.

Next, I would like to express my sincere gratitude to Advance Chibaya, who was an exceptional study partner. Their insights and discussions significantly contributed to my understanding of the topic.

Finally, my unwavering source of strength comes from my family. I am especially thankful for my mother's constant encouragement and my siblings and dad's unwavering belief in me. Their support kept me motivated throughout this challenging endeavor.

To all of you, I offer my deepest thanks. This dissertation is a testament to your collective support.

Abstract

Financial inclusion remains a challenge, particularly for young adults in rural areas (World Bank, 2023). Mobile banking offers a potential solution by providing convenient and accessible financial services (Demirguc-Kunt, Leora, Klapper, L., Singer, D., & Ansar, H., 2018). This study investigates the factors influencing mobile banking adoption among young adults in Mashonaland Central, Zimbabwe, employing the UTAUT (Unified Theory of Acceptance and Use of Technology) model as a theoretical framework (Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D., 2003). Building on previous research (e.g., Masuku, 2020; Chitiga, 2021), which explored mobile banking in the Zimbabwean context, this study contributes to the growing body of knowledge by examining the specific case of young adults in a rural setting. The researcher examined key drivers like performance expectancy, effort expectancy, and social influence, alongside potential constraints such as facilitating conditions. Understanding these determinants was crucial for promoting financial inclusion and designing mobile banking services that cater to the specific needs and preferences of young adults in rural Zimbabwe. This research contributes to the knowledge base on mobile banking adoption in developing economies and its potential to empower young adults. The results suggested that SI, PE, and FC might not have statistically significant effects on usage based on the high p-values. However, further analysis with a larger sample size might be necessary for confirmation. Effort expectancy, however, showed a statistically significant effect with a negative coefficient (Exp(B) < 1). This unexpected finding warrants further investigation into the specific context and the reasons behind this negative relationship. Government support for programs targeting this demographic is key. Mobile network providers can play a crucial role in improving coverage and offering affordable data plans. Expanding the network of mobile money agents in rural areas can also provide convenient cash in and cash out. Educational programs specifically designed for rural communities, along with showcasing success stories of young adults who have benefited from mobile banking can create a positive influence and encourage wider adoption.

Keywords

UTAUT, Behavioural intention, Social Influence, Performance expectancy, Effort expectancy, Facilitating conditions

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ACRONYMS

ADF- Argumented Dickey-Fuller

DOI- Diffusion of Innovations

EE- Effort Expectancy

FC- Facilitating Conditions

PE- Performance Expectancy

SI- Social Influence

TAM- Technology Acceptance Model

TPB- Theory of Planned Behavior

UTAUT- Unified Theory of Acceptance and Use of Technology Model

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

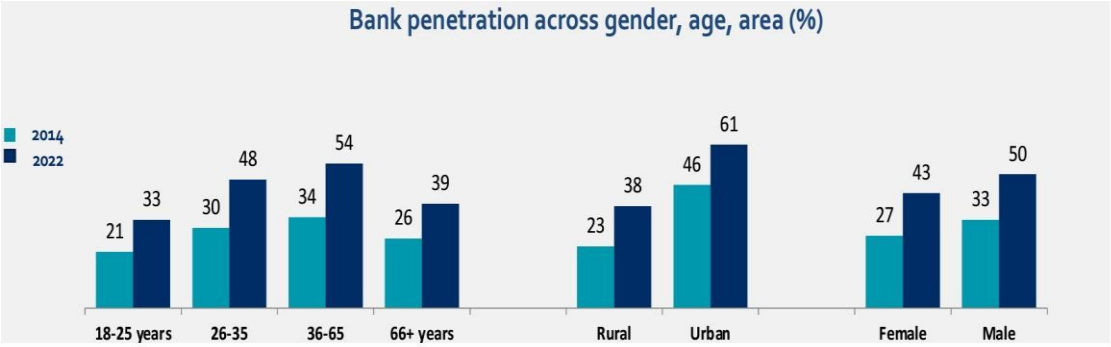
This chapter lays the groundwork for the exploration of mobile banking. The researcher begins by introducing the current landscape of mobile banking, highlighting its growing importance and impact. Subsequently, a clearly defined problem statement is presented, pinpointing the specific issue this study aims to address concerning mobile banking and service providers. This is followed by the research objectives, outlining the specific goals the researcher seeks to achieve through this investigation. Finally, to ensure transparency and ground the research within its defined boundaries, the scope and limitations of the study are acknowledged.

1.1 Background to story

According to Mpofu (2023), the African continent has seen a significant increase in mobile money activities. Mobile money has been instrumental in expanding financial inclusion in Africa. However, some argue that the impact on economic development in rural areas has been limited. This is because these areas often lack access to reliable and affordable internet, have poor infrastructure and face other challenges that make it difficult to fully benefit from mobile money. More research is required to fully comprehend the ways in which financial inclusion and social inclusion interact to influence sustainable development goals.

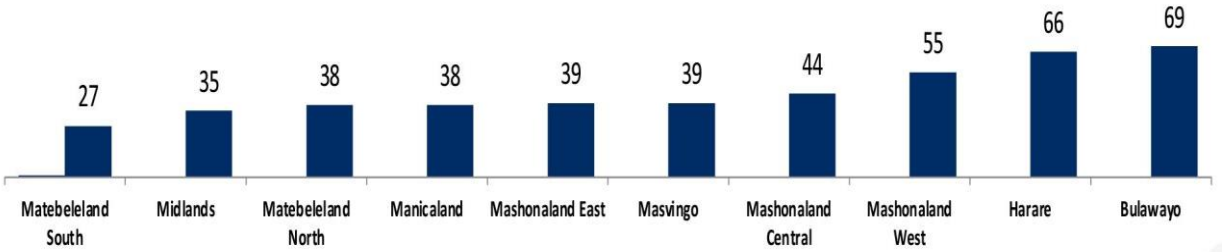
The 2022 Finscope survey found that younger adults under 25 years old, older adults over 66 years old and adults living in rural areas are less likely to use banking services. In Zimbabwe, bank penetration is lower in rural areas as opposed to metropolitan places. This disparity suggests that there is need for more financial inclusion efforts, especially in rural areas. The following bar graphs shows the percentage bank penetration in Zimbabwe in 2022:

Figure 1.1.1: Bank penetration percentage across gender, age, area



Source: Fincsope Zimbabwe 2022 Consumer Survey (2022)

Figure 1.1.2: Bank penetration % in the Provinces of Zimbabwe



Source: Finscope Zimbabwe 2022 Consumer Survey (2022)

According to Hamadziripi and Jana (2023), Zimbabwe is a developing country with 70% of its population residing in rural areas. Furthermore only 28% of Zimbabwean population have accounts with formal financial institutions such as banks and insurance companies. In light of this, it can be submitted that the majority of Zimbabwe's population is economically excluded. Some of the challenges or constraints that lead to financial exclusion in Zimbabwe include lack of proper identification documents required when opening bank accounts, poverty, unstable income patterns and lack of financial education. The great thing about mobile banking is that it does not require the same level of documentation as traditional banking, making it easier for people who do not have access to traditional banking service.

Zimbabwe experienced a financial crisis from around 2005 to date which was characterised by hyperinflation, currency instability and a collapse of the formal financial sector Chitimira and

Ncube (2023). This is one of the reasons why most Zimbabweans are unbanked. According to Mago and Chitokwindo (2014) Financial inclusion is an urgent issue because of the great numbers of the unbanked people in developing countries. The majority of people in Zimbabwe are unbanked including the youths who reside in rural areas. Youths from rural backgrounds often face unique challenges when it comes to accessing financial services. They may have limited access to financial institutions and they may not have the same level of financial literacy as their urban counterparts. In addition, they may face additional barriers, such as limited digital literacy and lack of familiarity with mobile banking platforms. As a result, it is crucial to understand the specific challenges faced by graduates from rural backgrounds and to tailor mobile banking solutions to meet their needs.

Mobile money refers to financial services delivered through the mobile phones or related electronic devices without the need for bank accounts E.Torerai (2022). There are a number of initiatives and challenges related to mobile banking in Zimbabwe, which could impact the scaling up of mobile banking in tertiary education institutions. For example, the mobile money drive which aims to increase the use of mobile money in the country. According to T.Karombo (2023) The Zimbabwean central bank wants to scrap a 2% fee on mobile money and digital transactions to encourage more electronic payments in the country. However, challenges such as poor network coverage and high costs of mobile devices remain. Additionally, the penetration of mobile money services varies across different provinces in the country, with more urban areas having higher penetration rates. Bindura is located in Mashonaland central, a province with relatively high levels of mobile money penetration. This makes the university an ideal location for scaling up mobile banking in tertiary education institutions.

There is a research gap in understanding what drives young Zimbabweans to use mobile banking, particularly those attending higher education institutions. This study aims to address this gap by providing a better understanding of the drivers and barriers to mobile banking adoption among this group. This study is also aim to help inform the design of mobile banking services and financial education programs which can ultimately lead to a greater financial inclusion and economic development.

1.2 Statement of problem

There is a low level of financial inclusion among young adults particularly in rural areas. This lack of financial inclusion may be contributing to economic inequality and lack of opportunity

for these young adults. The low financial inclusion among this demographic is in contrast to the goals of Vision 2030 and the Sustainable Development Goals (SDGs), which seek to promote equitable economic growth and opportunity for all.

1.3 Objectives

1. To determine the level of mobile banking usage among youths aged 18 to 25 residing in Mashonaland Central
2. To identify key factors that influence mobile banking usage among these young adults.
3. To explore potential opportunities for scaling up mobile banking usage among this demographic group

1.4 Research questions

1. What percentage of youths in the rural areas of Mashonaland Central use mobile banking services?
2. What are the primary reasons why youths in rural areas choose to adopt or not to adopt mobile banking services?
3. What are the most promising strategies to increase mobile banking adoption among this specific demographic group?

Assumptions of study

1. Bindura represents the mobile banking adoption trends of the entire Mashonaland province.
2. Mobile banking adoption rates are consistent across Mashonaland Central.

1.5 Scope of study

Geographical scope

This study will be limited to the context of youths residing in the rural areas of Mashonaland central. It will focus on the current mobile banking usage of this demographic group and will not include other demographics. The research focuses on Bindura District, situated in Mashonaland Central Province, Zimbabwe. The capital town, Bindura, lies 89 kilometres northeast of Harare. The district is comprised of 21 wards, encompassing a mix of communal lands, resettlement areas established in the 1980s and during the fast-track land reform program, and a limited number of remaining pre-fast track commercial farms. This specific geographical scope offered convenience to the researcher. The, study will also focus on the main factors that influence mobile banking adoption such as performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al 2003).

Methodological scope

This research employed a mixed-methods approach within Bindura District, Zimbabwe. Random sampling selected wards, and convenience sampling reached the target audience within those wards. Data collection primarily relied on a survey, developed specifically for this study to ensure relevance to the research objectives and Bindura District's context. Quantitative data was be analysed using IBM SPSS, with logistic regression planned to identify factors influencing a binary outcome usage.

1.6 Significance of study

Significance to the existing body of knowledge

The significance of the study is that it will contribute to the existing body of knowledge on the use of mobile banking among young adults, which is currently understudied. Secondly, it will provide valuable insights for the youth's own policies and interventions aimed at promoting financial inclusion and literacy among its students. This could include the development of new financial literacy programs, or the expansion of existing programs to include a focus on mobile banking. The study could also inform the strategies for providing financial services to its youths.

Significance among youths

The significance of the study among rural youths is that it will provide valuable insights into the factors that influence the use of mobile banking among this group. This is important because mobile banking has the potential to improve the financial well-being of young adults, particularly those in rural areas. By understanding the drivers and constraints of mobile banking among youths, financial institutions can develop targeted interventions to promote the use of this technology. This can ultimately lead to better financial outcomes for young adults and help them to achieve their financial goals.

Significance to the nation

The study will have significance for the nation of Zimbabwe and for mobile banks operating in the country. Firstly, the findings will help to inform national policies and strategies aimed at increasing financial inclusion and literacy, particularly among young adults. Secondly, the findings will provide insight into the needs and preferences of mobile banking customers in Zimbabwe, which can be used to improve the quality and effectiveness of mobile banking

services. This could ultimately lead to increased customer satisfaction and loyalty, and improved financial outcomes for the population as a whole.

Significance to service providers

Studies can reveal how customers utilize mobile banking features, what they find most valuable, and any pain points they encounter. This knowledge equips service providers to refine their mobile banking offerings to better suit customer requirements. Research can shed light on emerging security threats and how customers perceive security in mobile banking. This allows service providers to prioritize and implement robust security measures to protect customer information and financial assets. Studies can identify customer needs that aren't currently being met by existing mobile banking features. This paves the way for service providers to innovate and develop new features that add value and attract new customers. Research can explore how customers interact with mobile banking and what factors influence their engagement. By understanding these aspects, service providers can personalize the mobile banking experience and encourage users to leverage more features and services. Mobile banking studies can provide valuable insights into customer demographics and behaviour. This can be used by service providers to tailor their marketing efforts to target the right audience and promote mobile banking effectively.

1.7 Limitations

This study has certain drawbacks. First of all, it might not be typical of all young adults in Zimbabwe because it is based on a poll of those living in Mashonaland Central. Second, because the study uses self-reported data, it could be biased toward social desirability or recollection. Thirdly, the study won't be able to forecast future trends or changes in the industry; instead, it will simply look at the limits and drivers that currently surround mobile banking. Lastly, the study's scope will be constrained by the data on young adults' financial behavior and the usage of mobile banking.

Notwithstanding these drawbacks, the research will nevertheless add significantly to the body of knowledge on mobile banking and financial inclusion in Zimbabwe. Scholars and professionals in the field will find value in the findings which will serve as a springboard for additional study on the subject. It is anticipated that the results would contribute to the development of interventions and policies that will enhance the nation’s young adults’ financial

wellbeing. The study's conclusions may also be applied to raise the efficiency of Zimbabwean banks'mobile banking services.

Delimitations

In conducting a study on the determinants of mobile banking among young adults in rural areas, several limitations may arise, affecting the comprehensiveness and generalizability of the research findings. Firstly, challenges related to sample size and representativeness may arise due to difficulties in accessing a diverse and sufficiently large sample of young adults in rural areas, potentially leading to biases in the data. Additionally, limited availability of reliable data on mobile banking usage and related factors in rural areas may hinder the accuracy of the study's findings, particularly in regions with underdeveloped technological infrastructure. Socioeconomic and cultural factors, such as variations in perceptions towards technology and banking services, may also present obstacles in identifying and analyzing relevant determinants across different rural communities. Moreover, temporal constraints and methodological limitations, including the use of cross-sectional data and challenges in obtaining ethical clearance and ensuring participant confidentiality, may further impact the validity and reliability of the study. Addressing these limitations requires careful consideration during the research design and execution phases, along with transparent reporting of potential biases and constraints in the study's methodology and findings

1.8 Definition of terms

Mobile banking - Using a mobile device, like a tablet or smartphone, to carry out financial transactions is known as mobile banking.

Drivers - Elements that promote mobile banking usage.

Constraints - Discouragement factors for using mobile banking.

Financial inclusion - Ensuring that all people and businesses have access to financial products and services that suit their needs.

Financial literacy - The information and abilities required to make wise financial decisions are known as financial literacy.

Financial exclusion - The incapacity of specific individuals or groups to obtain the financial services they require is known as financial exclusion.

Mobile penetration - The proportion of the population with access to mobile phones is known as mobile penetration.

1.9 Chapter summary

This chapter establishes the foundation for the research by providing an overview of mobile banking and financial inclusion in the context of rural Mashonaland Central. It delves into the core of the study, outlining its objectives, research questions, and problem statement. The chapter also justifies the study's importance and relevance, addressing potential limitations and scope. Essentially, it serves as a roadmap, guiding the reader through the subsequent chapters.

1.10 Organisation of study

This research is divided into five chapters. Chapter one sets the stage with an introduction, background information, and the specific question of what determines people's use of mobile banking. Chapter two then delves into a detailed literature review, examining both theoretical ideas and real-world studies on this topic. Chapter three explains the methods used in the research, including how data was collected and analysed. The following chapter, chapter four, presents the findings from the study and what they mean. Finally, chapter five brings everything together by summarizing the research and proposing recommendations based on the conclusions.

CHAPTER 2
Literature Review

2.0 Introduction

This chapter will review both the empirical and theoretical literature relevant to the youths' perception of mobile banking. It will also identify any gaps in the current literature and propose a conceptual model to address those gaps. This model will provide a theoretical framework for the study and guide the collection and analysis of data. The proposed conceptual model will also provide a basis for the development of hypotheses and recommendations for future research.

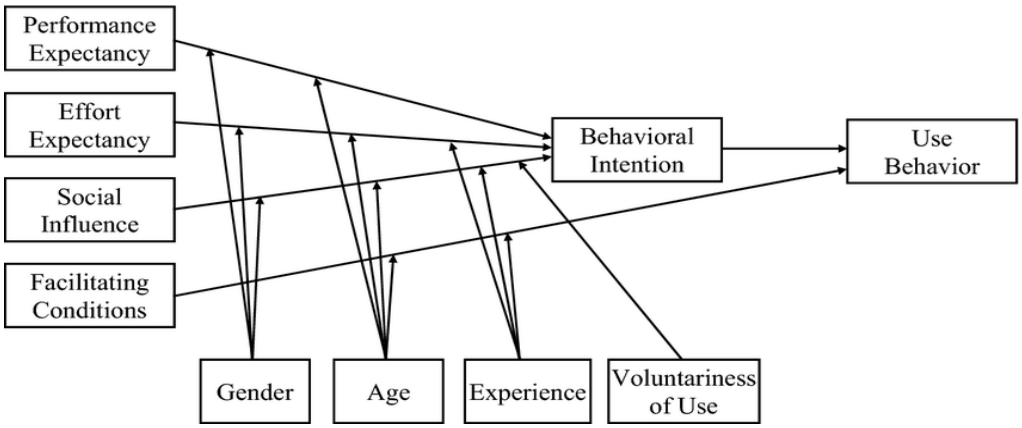
2.1.0 Theoretical Literature

Several theories have been proposed to explain the drivers and constraints of mobile banking adoption. These theories include the unified theory of acceptance and use of technology (UTAUT), the technology acceptance model (TAM), the theory of planned behaviour (TPB) and the diffusion of innovations (DOI) theory.

2.1.1 Unified theory of acceptance and use of technology (UTAUT)

The UTAUT paradigm, or Unified Theory of Acceptance and Use of Technology, was created in 2003 by Venkatesh, Morris, and Davis. It provides a comprehensive framework that considers both individual and societal facial characteristics, making it well suited to analyzing the determinants of mobile banking. The UTAUT model posits that the desire to use a technology is determined by four important factors: performance expectancy, effort expectancy, social influence, and facilitating conditions, as shown in the diagram.

Figure 2.1: Unified Theory of Acceptance and Use of Technology Model



Source: (Venkatesh et al., 2003)

UTAUT's Relevance to study

The Unified Theory of Acceptance and Use of Technology (UTAUT) paradigm is included by researchers for several purposes when examining the adoption of mobile banking. A well-known theory for comprehending user adoption of technology is UTAUT. It offers a thorough framework that takes into account all the variables that can affect someone's choice to adopt new technology (Venkatesh et al 2003). The UTAUT focuses on fundamental elements such as social influence (other people's recommendations), effort expectancy (easy of use), performance expectancy (perceived usefulness), and facilitating conditions (resources available to use the technology). These factors are highly relevant to mobile banking adoption therefore, UTAUT helps researchers predict how likely people are to adopt mobile banking. This prediction allows researchers to understand user behaviour and identify potential barriers to adoption. This framework facilitates comparison between different studies on mobile banking adoption. It also allows researchers to extend the model by including additional factors specific to mobile banking (Lin et al 2012).

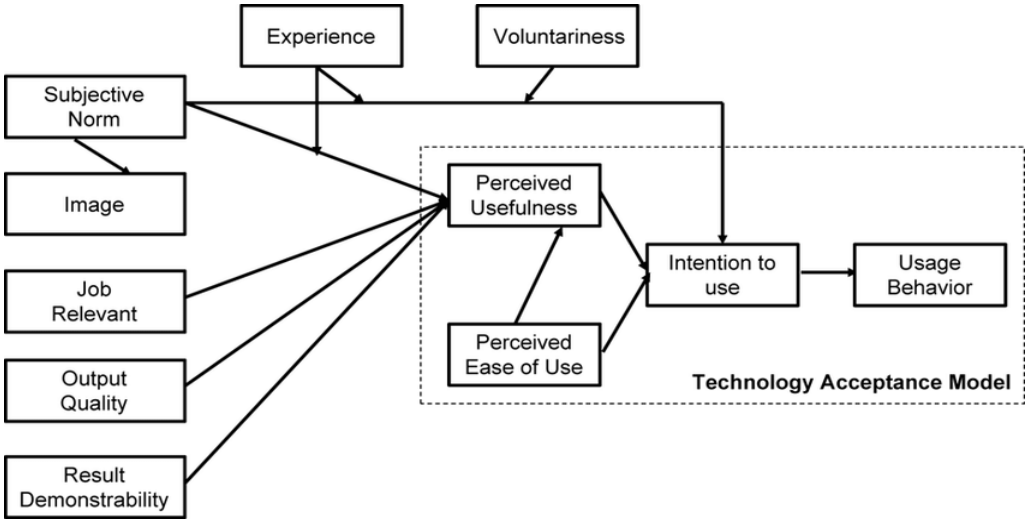
Studies by Yousaf et al. (2018) and Li et al. (2017) emphasize UTAUT's effectiveness in predicting mobile banking adoption in developing economies, highlighting its continued relevance. However, Sun and Yeh (2017) argue that UTAUT might be overly complex due to the number of factors included. Additionally, Kim et al. (2019) suggests the model might not

fully capture context-specific factors, such as trust in mobile banking services, which could be particularly important in rural areas with lower levels of digital literacy.

2.1.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model, (TAM) was developed by Fred Davis in the 1980s. It was originally proposed as a model of computer system acceptance, but has since been applied to a wide range of technologies. The basic premise of TAM is that attitudes and perceived usefulness are the main factors that determine whether a person will accept a technology. According to the TAM, attitudes towards a technology determine whether a person will have the intention to use it. The intention is then followed by actual use of the technology.

Figure2.2: Technology acceptance model



Source: Fred Davis 1981

TAM's Relevance to study

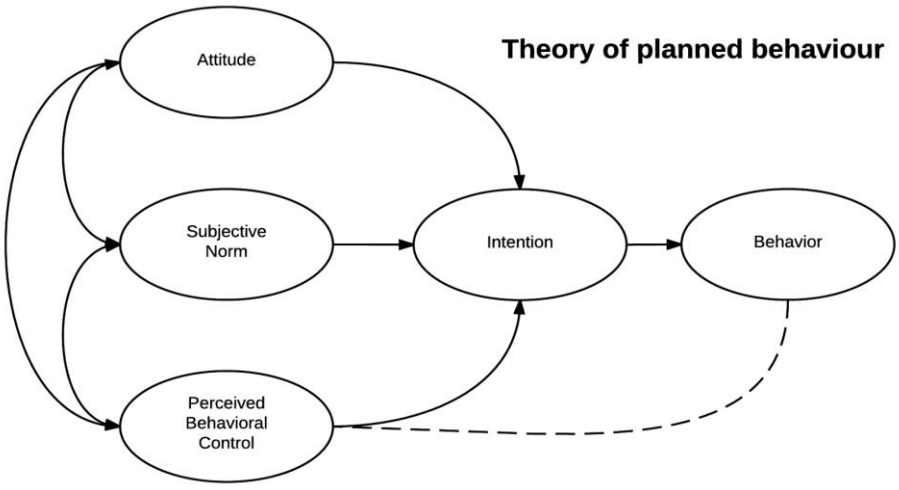
The TAM offers a more straightforward framework compared to UTAUT. It focuses on two key factors: perceived usefulness and perceived ease of use (Davis, 1981). This simplicity can be advantageous for researchers studying specific aspects of user perception related to mobile banking. TAM is a well-established model with a long history of research in technology adoption. This extensive research base provides a strong foundation for understanding user behaviour in mobile banking. Tam's core focus on perceived ease of use is particularly relevant

for mobile banking adoption. If a mobile banking app is complex or difficult to navigate, users are less likely to adopt it, regardless of its perceived benefits [3]. TAM can be used alongside UTAUT to provide a more comprehensive understanding of mobile banking adoption. TAM focuses on user perceptions of usefulness and ease of use, while UTAUT incorporates additional factors like social influence and facilitating conditions. TAM remains a valuable tool for researchers due to its simplicity, established foundation, and focus on core usability factors. In some cases, researchers might choose TAM for a more focused analysis or use it alongside UTAUT for a more holistic perspective.

2.1.3 Theory of planned behaviour (TPB)

Ajzen's (1985) Theory of Planned Behaviour (TPB), builds upon the influential Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen (1977). TPB is a powerful tool for predicting behavioural intentions by considering three key factors: a person's attitude toward a specific behaviour, their perception of social norms surrounding that behaviour, and their belief in their ability to perform the behaviour. This model's strength lies in its ability to accurately predict behavioural intention. In the context of this study, TPB's focus on both intention and actual behaviour aligns perfectly with the research objective of examining user intention and sustained use of mobile banking applications.

Figure 2.3: Theory of planned behaviour model



Source: Ajzen, (1991)

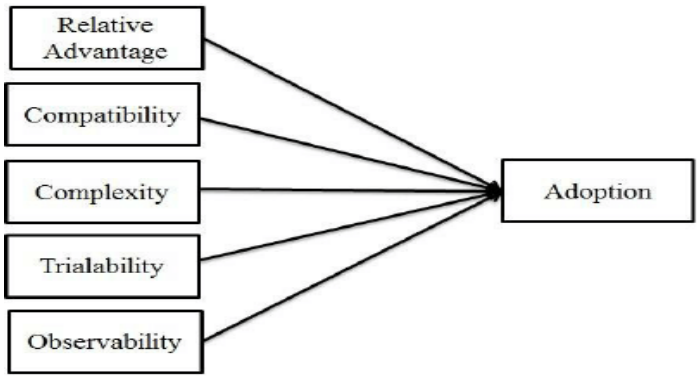
TPB's Relevance to study

TPB emphasizes an individual's behavioural intention, which is their conscious plan to perform a specific behaviour. In this case, the behaviour is adopting mobile banking. This focus helps predict user actions more directly than just attitudes or perceptions. This framework goes beyond just perceived usefulness and ease of use. It incorporates perceived behavioural control, which reflects a user's belief in their ability to perform the behaviour. This is important for mobile banking, as users might be concerned about technical skills or security measures. This theory recognizes the influence of subjective norms, or a person's perception of what important others think they should do. This can be crucial in mobile banking adoption, as positive experiences shared by friends or family can encourage someone to adopt it. The Theory of Planned Behaviour is a well-established theory with a strong research base, providing a reliable framework for studying mobile banking adoption. Additionally, researchers can extend the TPB model by including context-specific factors relevant to mobile banking, such as security concerns or privacy issues(Ajzen, 1991).

2.1.4 Diffusion of Innovations Theory (DOI)

The Diffusion of Innovations (DOI), theory (Rogers, 1962) sheds light on how new technologies and ideas catch on within a society. This theory proposes five key factors that influence the speed at which something is adopted.

Figure 2.4: Diffusion of innovation model



Source: Rogers, (1962)

Diffusion of Innovations' Relevance to study

DOI theory emphasizes how information about an innovation, spreads through a social system (Rogers 1962). This perspective is valuable in understanding how awareness and adoption of mobile banking progress over time. The DOI classifies individuals into adopter categories like innovators, early adopters, early majority, late majority, and laggards. This framework helps researchers understand the characteristics and motivations of different user segments regarding mobile banking adoption DOI highlights the role of social influence and network effects. People are more likely to adopt an innovation if they see others using it and perceive it favourably (Valente, 2012).

This is very relevant to mobile banking, where positive word-of-mouth and recommendations from friends or family can significantly influence adoption. This theory can be used alongside UTAUT or TAM to provide a richer picture. While UTAUT and TAM focus on individual user perceptions, the DOI sheds light on the broader social dynamics influencing adoption (Agarwal et al 2000).

However, the traditional DOI model presents a somewhat linear diffusion process, which might not always reflect the complexities of real-world technology adoption . The DOI primarily focuses on the characteristics of the innovation itself. It might not fully account for external factors like economic conditions or regulations that can influence adoption rates. Despite these limitations, DOI offers valuable insights into the social aspects of mobile banking adoption and how innovation spreads within a population. Researchers who want to understand the bigger social picture alongside individual user perceptions might find DOI particularly useful.

2.2 Empirical literature

In their study published in 2023, Ayima, Kuada, and Ayimey utilized the Technology Acceptance Model (TAM) to construct a framework aimed at comprehending and predicting the adoption of digital financial services in semi-urban regions of Ghana. Their research outcomes indicate that digital financial services can play a crucial role in enhancing financial inclusion, fostering the growth of small businesses, and facilitating job creation within these communities. These findings are particularly pertinent for policymakers and financial service providers as they offer insights into devising strategies that promote the utilization of digital

financial services in semi-urban settings. Moreover, there is a call for further investigation to assess the transferability of these findings to other developing nations and diverse contexts. The researchers' application of TAM to evaluate its relevance in the domain of digital financial services in Ghana represents a noteworthy addition to the existing literature on digital financial services and financial inclusion in Africa

Tham et al. (2023) investigated these factors in a study that used the UTAUT model as the foundation for its conclusions. According to their research, effort expectancy, perceived risk, and social influence were found to be the next most significant predictors of the propensity to use mobile banking, after performance expectancy. The researchers' model explained a noteworthy 68.3% of the variation in the intention to use mobile banking. The study also demonstrated that the association between effort expectancy and the propensity to use mobile banking is partially mediated by performance expectancy. It is critical to acknowledge some of the study's shortcomings, such as the use of intention to embrace mobile banking as a metric rather than actual behaviour, possible biases in the selection of participants, and incomplete knowledge of the sample methodology. Still, this study offers insightful information about how contextual and individual factors influence technology adoption.

Naidoo (2023) conducted additional research which revealed that the use of mobile money in rural Africa is primarily motivated by its perceived simplicity of use, safety, convenience, and speed in comparison to conventional means. It is more common for younger, educated, jobless people with disposable cash to adopt and utilize mobile money for sending and receiving payments. On the other hand, those who are older, have bank accounts, and make more money are more likely to adopt and use mobile money as a method of receiving payments. To encourage adoption among the unbanked, the study suggests focusing mobile money marketing techniques on youthful, educated, and well-off rural residents. In rural Africa, mobile money is viewed as simpler, safer, more convenient, and quicker than traditional ways. Mobile money adoption and use are influenced by age, income,

2.3 Research Gap

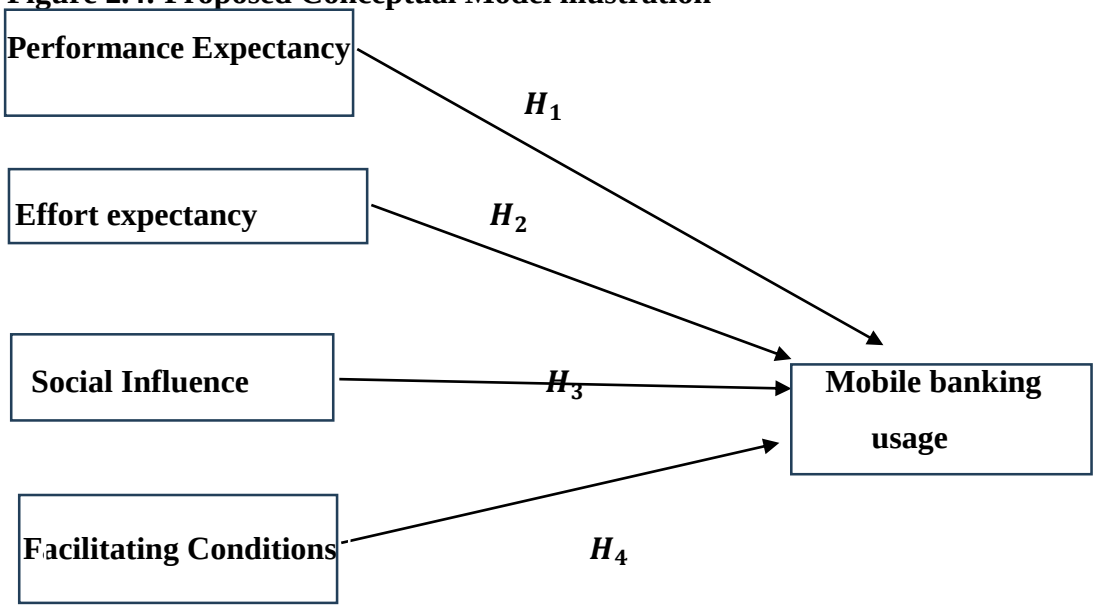
Based on these findings a potential research gap is to explore how policy development, education and skills development can be used to support the adoption of digital technologies in rural communities. This could include studies on the effectiveness of different policy approaches, the barriers to digital literacy in rural communities and the availability of training and development opportunities in these communities. The goal would be to identify ways to

make the adoption of digital technologies more effective and equitable for rural communities. Another research gap that emerges is lack of focus on the specific drivers and constraints that influence mobile banking adoption among young adults in rural areas. This could be an important area for future research as understanding the unique challenges and opportunities facing this group of potential users could be critical to increasing the adoption of mobile banking services. Another potential research gap is the lack of studies that explore the specific barriers to mobile banking adoption in Africa, such as infrastructure, literacy and trust.

2.4 Proposed Conceptual Model

The researcher integrated UTAUT constructs for understanding determinants to mobile banking. The UTAUT model has been widely applied to explain technology adoption behaviour. Logistic regression was chosen to develop a model to track usage of mobile banking. UTAUT provides a robust foundation for building a logistic regression model. By incorporating the four key determinants (PE, EE, SI, FC) as independent variables and mobile banking usage as the dependent variable, the researcher could analyse how these factors influence young adults' adoption of mobile banking.

Figure 2.4: Proposed Conceptual Model illustration



Source: Authors work

Performance expectancy

Previous studies have found that performance expectancy is positively related to the use of mobile banking (Bepe, 2022). Therefore, it is hypothesised that when people perceive usefulness of a technology, they are likely going to use it.

H_1: Performance expectancy has a positive and significant impact on the use of mobile banking

Effort expectancy

According to Venkatesh et al. (2003), effort expectancy refers to how comfortable and useful a technology makes people feel when they use it. It is a technology's alleged ease of use. Research frequently reveal that the utilization of mobile banking is negatively impacted by perceived simplicity of use (Gu et al 2009 ; Luarn & Lin 2005 ; Vekatecsh and Davis 2003; Wang et al 2006). When mobile banking services are straightforward to use, consumers perceive them as simple to use and develop favorable opinions of them (Lin, 2011). If users find using mobile banking to be time-consuming, annoying, or demanding additional mental work, they are unlikely to use it. Thus, the theory suggests that effort expectancy prevents people from using mobile banking.

***H_2*: Effort expectancy has a negative and significant impact on the use of mobile banking**

Social influence

Social influence is a phenomenon where people's behaviours and decisions are shaped by the actions and opinions of those around them (Venkatesh et al 2003). Studies for example by Bepe, (2022) demonstrate the positive influence of social influence towards mobile banking adoption therefore it is hypothesized that social influence positively influence mobile banking.

***H_3*: Social influence has a positive and significant impact on the use of mobile banking**

Facilitating conditions

Venkatesh et al. describe "facilitating conditions" as how users perceive the resources that are available to them to make technology adoption easier. Both organizational support and technological infrastructure are included in these resources. Research indicates that favorable circumstances are essential for the acceptance of new technologies. For instance, Mago (2014) draws attention to the historical barriers to financial services that vulnerable populations, such as those living in rural areas, have faced. Building on this idea, it is possible to hypothesise that favorable conditions will significantly and favorably influence the adoption of mobile banking.

Stated differently, people are more inclined to utilize mobile banking if they believe that the resources needed for it are easily accessible.

H_4: *Facilitating conditions has a positive and significant impact on the use of mobile banking*

2.5 Chapter summary

Mobile banking has the potential to be an effective tool for financial inclusion and economic growth in Africa, according to the reviewed literature. It will take addressing a few obstacles, though, to fully achieve this promise. Adoption of mobile banking must first be fueled by a thorough comprehension of the elements that affect each person's decision-making process, as well as the function of businesses and the larger environment. Second, users' distinctive demands and preferences must be taken into account while designing mobile banking, and it must be customized to fit the distinct social, cultural, and economic context of African nations.

CHAPTER 3
METHODOLOGY

3.0 Introduction

This chapter outlines the methodological framework adopted in this study to investigate the determinants to mobile banking among young adults in rural areas. The research design, instruments employed, data sources, sampling strategy, data collection procedures and analysis techniques are detailed to ensure transparency and replicability of the findings. The research adheres to ethical considerations throughout the process.

3.1 Research design

Using a cross-sectional survey and a mixed-methodologies methodology, the study collected data using both quantitative and qualitative methods in order to fully comprehend the phenomenon. In a cross-sectional study, information is gathered from a sizable sample of individuals all at once (Thomas, 2023). By taking a momentary picture of the phenomena, the cross-sectional survey design allowed for the identification of present determinants at that particular moment in time.

Quantitative method

A structured closed-end questionnaire was administered to a representative sample of rural youths to gather quantitative data on their mobile banking usage. Closed-ended questionnaires are a primary tool for collecting quantitative data in research (DeVellis, 2017). These questionnaires restrict respondents' answers to pre-defined options, such as multiple choice, Likert scales or yes/no formats. This structured approach allows researchers to easily quantify and statistically analyze the collected data (Polit and Beck, 2017). The closed ended format promotes efficient data collection from large samples, making it ideal for studies aiming to generalize findings to a broader population (DeVellis, 2017).

Qualitative method

Focus groups were employed by the researcher to collect qualitative data in order to learn more about the participants' motives, experiences, and difficulties with mobile banking. Focus groups are a type of qualitative research technique where a small, targeted group of people are gathered for a controlled discussion about a particular subject. The moderator

leads the discussion to extract in-depth thoughts, opinions, and experiences from the participants, who are selected based on preset qualities pertinent to the research issue (Thomas, 2023). Compared to individual interviews, group interaction allows participants to expand on each other's ideas, resulting in a deeper comprehension of the subject (SpringerLink, 2010).

3.2 Data sources

Before embarking on any research endeavor, a critical first step involves identifying appropriate data sources. Existing literature serves as a springboard for this process. By critically reviewing past research, the researcher can gain a comprehensive understanding of the current state of knowledge on their topic. This includes identifying the types of data that have been previously used, the methodologies employed, and any potential gaps or inconsistencies in the existing research (Grant and Booth, 2009). The researcher modified the Unified Theory of Acceptance Model to fit the context of rural youths. The data collected was converted to secondary data.

3.3 Research instruments

The study utilized both digital and physical research instruments. Printed questionnaires distributed in physical setting ensured inclusivity and reach to students with limited internet access. A questionnaire is a type of standard written instrument used in research that consists of a list of inquiries intended to elicit data from participants. (DeVellis, 2017). Due to their structured nature, questionnaires allow for efficient data collection from large samples and facilitate quantitative analysis (Polit and Beck, 2017). Online surveys on smartphones offered convenience and real-time insights.

3.4 Target population and sampling procedures

The young people living in the isolated parts of Mashonaland Central were the target audience. Among the provinces of Zimbabwe, Mashonaland Central Province was chosen by the researcher using purposive sampling. Through the use of their own discretion, researchers select members of the population to include in their surveys using a non-probability sampling technique called purposeful sampling (Alchemer, 2021). Particularly, youngsters living in that area between the ages of 18 and 25 were the focus. This province was selected due to its poor financial inclusion rates, which is a warning sign, according to the Finscope consumer survey

that was carried out in 2022. A probability sampling technique and a non-probability sampling technique were used in the researcher's two-stage sampling approach. Within Bindura, the researcher chose wards at random, and then used convenience sampling within those wards. Convenience sampling is a non-probability sampling technique that selects participants based on their accessibility, which may include their willingness to engage in the study, their willingness to live nearby, or their availability at a specific time (Cleave, 2023). Owing to the dispersed geographical position, this sample strategy increased efficiency, which decreased study time and expense (Simkus, 2023). The researcher was able to connect with the intended audience with the ward councilors' assistance.

3.5 Methods of data collection

The self-administered questionnaires were distributed to the youths through online and offline channels. Online distribution utilized social media platforms to reach youths with internet access. Most of the participants used offline channels. Offline distribution involved physically distributing questionnaires to designated locations convenient for youths without internet access or those unfamiliar with online platforms. The researcher consulted schools and local authorities such as community leaders. Community leaders had knowledge of residents within their jurisdiction, potentially aiding in locating the targeted participants.

3.6 Description of variables

The researcher investigated various factors influencing mobile banking adoption. Demographics like age, gender and background were analyzed alongside smartphone ownership, internet access and mobile phone usage habits. The researcher also explored the users’ perception of mobile banking through UTAUT’s constructs.

Table 3.6: Definition of variables

Variable	*Definition*
Usage Behavior (UB)	According to Venkatesh et al. (2003), usage behavior is defined as the behavior measured from the actual frequency of a given technological use.
Effort Expectancy (EE)	The degree of ease and usability that users experience with a particular information system is known as effort expectation (Venkatesh et al., 2003).
Performance Expectancy (PE)	Performance expectancy is the extent to which a person thinks that putting a system to use would improve their ability to execute their work (Venkatesh et al., 2003).
Social Influence (SI)	The phenomena known as "social influence" describes how a person's actions, viewpoints, or beliefs shift as a result of their network connections, frequently making them more like the people they are related to. Adhikari and Sweet (2023)
Facilitating conditions (FC)	Facilitating conditions, according to Venkatesh et al. (2003), are the circumstances in which a customer can support the deployment of a certain technology by having the necessary technical resources available.

Source: Author's compilation

3.7 Data analysis procedures

Diagnostic tests

The researcher employed diagnostic tests to identify potential problems in their data. These tests included checking for Multicollinearity, Autocorrelation and stationarity. By addressing these issues, the researcher insured their data was more reliable.

Analytical Model

The study employed a logistic regression model to predict mobile banking usage. The model takes the following form:

$$\text{Logit}(P) = \beta_0 + \beta_i X_i + e_i \quad (1)$$

$$\text{Log (odds)} = \beta_0 + \ldots\ldots\ldots + \beta_i X_i \text{ for } i=1, 2\ldots.4 \quad (2)$$

$$\text{Log}\left(\frac{p}{1-p}\right) = \beta_0 + \sum_{i=1}^{i=4} \beta_i X_i \quad (3)$$

Logit(P): This represents the likelihood of someone using mobile banking. It is the link function between probability (P) and the linear regression on the on the left side of the logistic model.

β_0: This is a constant term that accounts for the overall tendency to use or not use mobile banking, independent of the other factors.

β_i: These are coefficients that represent the influence of each independent variable (X_i) on the likelihood of mobile banking usage.

X_i: These are the independent variables that represent the factors affecting mobile banking usage. They include:

X_1: Performance Expectancy

X_2: Effort Expectancy

X_3: Social Influence

X_4: Facilitating Conditions

The probability (P) represents the likelihood that a randomly selected youth will use mobile banking. This probability is calculated using a link function of odds as shown below

$$p = \frac{odds}{1+odds} \quad (5)$$

$$p = \frac{\exp(\beta_0 + \ldots\ldots\ldots + \beta_i X_i)}{1-\exp(\beta_0 + \ldots\ldots\ldots + \beta_i X_i)} \quad (6)$$

$$p = \frac{1}{1+\exp(\beta_0 + \ldots\ldots\ldots + \beta_i X_i)} \quad (7)$$

Odds refer to the ratio between the probability of a youth using mobile banking and the probability of them not using it.

By analyzing the values of these coefficients, banks can understand which factors are most important in driving mobile banking usage. This can help them develop strategies to encourage more people to use their mobile banking services.

3.8 Model Validation Tests

Wald

The Wald statistic helps to determine if a particular independent variable has a statistically significant impact on the dependent variable in the model. A high Wald statistic indicates the variable is likely important while a low value suggests it might not be contributing significantly. The hypotheses are mentioned in Chapter 2 of this dissertation.Field, A. (2013).

Hosmer-Lemeshow test

When dealing with logistic regression models, assessing how well the model's predictions match reality is crucial. This is where the Hosmer-Lemeshow test comes in. It is a goodness-of-fit test designed specifically for logistic regression. Unlike general regression analysis that focuses on continuous outcomes, logistic regression deals with binary outcomes (yes/no, frequent user/infrequent user). The Hosmer-Lemeshow test helps us understand how well the model's predicted probabilities of an event happening align with the actual observed proportions of those events.

The test functions by dividing the data into groups based on the probabilities predicted by the model. It then compares the number of events that actually happened (observed) within each group to the number the model predicted would happen (expected). If these observed and expected rates are similar across all the groups, it suggests the model is well-calibrated, meaning its predictions are reliable. The test provides a p-value, and a high p-value (typically above 0.05) indicates we can trust the model's calibration. However, it's important to remember that the test's effectiveness can be influenced by sample size. With very small datasets, the Hosmer-Lemeshow test might not be strong enough to detect issues with calibration. Therefore, it's recommended to use this test along with other methods to comprehensively evaluate a logistic regression model (Hosmer, D. W., & Lemeshow, S. 2000).

3.9 Ethical considerations

The study adhered to strict ethical guidelines throughout the research process. Anonymity and confidentiality of participants was guaranteed. Informed consent was obtained before data collection. The study design and instruments were reviewed and approved by the relevant ethics committee at BUSE. Data was securely stored and access was restricted to authorized personnel. The research findings were reported in a transparent and objective manner.

Chapter summary

This chapter comprehensively outlined the research methodology for the study. The chosen methods ensure reliable and valid data collection and analysis leading to robust and valuable findings.

CHAPTER 4
DATA ANALYSIS PROCEDURES

4.0 Introduction

An overview of the data analysis methods and analysis outcomes is given in this chapter. SPSS, or the Statistical Package for Social Sciences, was used to analyze the data along with R. The study's conclusions were evaluated, spoken about, and contrasted with those of other similar investigations

4.1 Descriptive statistics

Descriptive Statistics was calculated using Microsoft Excel. The means were interpreted as follows strongly disagree in the point range of 1 to 1.8, Disagree 1.81 to 2.60, Neutral 2.61 to 3.40, Agree 3.41 to 4.2, Strongly agree 4.21 to 5.0. The mean provided the arithmetic averages of the sample responses for the questionnaire to capture continuous data (Bepe, 2022). Standard deviation is the measure of the average distance of each data point from the mean of the data set Conner and Johnson (2017).

Figure 4.1.2: Descriptive statistics

	PE	*EE*	*FC*	*SI*
Mean	1.09	0.80	1.48	1.60
Standard Error	0.03	0.01	0.03	0.03
Median	1.00	1.00	1.00	2.00
Mode	0.00	1.00	1.00	2.00
Standard Deviation	1.21	0.40	1.10	1.06
Sample Variance	1.45	0.16	1.22	1.12
Kurtosis	0.20	0.15	-1.33	-1.04
Skewness	0.94	-1.46	0.04	-0.06
Range	5.00	1.00	3.00	5.00
Confidence Level(95.0%)	0.06	0.02	0.06	0.06

Source: excel results

The mean scores for PE, EE, and SI all fell slightly below the midpoint (3) of the Likert scale. This suggests a somewhat neutral overall perception on average. The median scores are closer to the lower end of the scale. This aligns with the means, indicating that most respondents leaned towards disagreeing or being neutral on the statements related to PE, EE, and SI. The mode suggested that the most frequent responses for PE indicated strong disagreement, while for EE and SI, a slight disagreement was most common.

The standard deviations are relatively high compared to the means. This indicates a significant spread of opinions around the average scores. In other words, some respondents likely had strong positive or negative perceptions on PE, EE, and SI, while others were more neutral. Similar to the standard deviation, the sample variances show considerable variability in the data. The ranges, for PE, or EE and SI, confirm the wide range of responses, as they encompass most of the Likert scale.

Diagnostic tests

Muliticollinearity

This study looked at how different factors, independent variables, were related to each other. They found that none of these factors were strongly connected with a correlation below 0.8. This means there is no multicollinearity problem which is good for the analysis.

Table 4.1.1: Matrix of correlates

	Usage	*PE*	*EE*	*FC*	*SI*
Usage	1				
PE	0.017163	1			
EE	-0.07618	-0.00767	1		
FC	-0.00459	-0.01657	-0.00218	1	
SI	-0.01654	-0.02602	0.001488	-0.00055	1

Source: Results from excel

The Variance Inflation Factor (VIF) is a measure used to assess the presence and severity of multicollinearity among independent variables in a regression model. Multicollinearity occurs when independent variables are highly correlated, leading to unreliable estimates of regression coefficients (James et al., 2013).

Table 4.1.2: Multicollinearity

Item	*VIF value*
PE	1.000926
EE	1.000275
SI	1.000637
FC	1.000038

Source: Results from R

These VIF values are all very close to 1, indicating that there is no significant multicollinearity among the independent variables in the model. Specifically, each variable's VIF value suggests that the variable is not linearly predictable from the others. According to Kutner et al. (2004), a VIF value below 10, or even as low as 5 in some cases, indicates an acceptable level of multicollinearity. Therefore, the values observed here (all around 1) confirm that multicollinearity is not an issue in this regression model.

Autocorrelation

The Durbin-Watson (DW) test was performed to detect the presence of autocorrelation in the residuals of a regression analysis. The test yielded a DW statistic of 2.0116 and a p-value of 0.5834. The alternative hypothesis posited that the true autocorrelation is greater than 0, indicating a test for positive autocorrelation (Durbin & Watson, 1950, 1951).

Figure 4.1 Durbin Watson test results

```
> dwtest(model)

        Durbin-Watson test

data:  model
DW = 2.0116, p-value = 0.5834
alternative hypothesis: true autocorrelation is greater than 0
```

Source Results from R

Given that the DW statistic is very close to 2, it suggests that there is little to no autocorrelation present (Montgomery, Peck, & Vining, 2012). Furthermore, the high p-value of 0.5834 means we fail to reject the null hypothesis of no positive autocorrelation (Wooldridge, 2016). Therefore, the results indicate that the regression residuals are free from significant positive autocorrelation, suggesting that the model is well-specified in this respect.

Stationarity

The results of the Augmented Dickey-Fuller (ADF) tests for the datasets Usage, PE, SI, and FC indicate strong evidence of stationarity for each series. The Dickey-Fuller statistics are significantly negative (Usage: -10.945, PE: -11.06, SI: -8.4545, FC: -10.204) with corresponding p-values reported as 0.01 or smaller, suggesting that the actual p-values are even lower, thus providing strong grounds to reject the null hypothesis of non-stationarity (Dickey & Fuller, 1979). The tests were performed with a lag order of 11, and consistent warning messages across the tests highlight the extremely small p-values (Dickey & Fuller, 1979). Consequently, all four time series can be concluded to be stationary (Dickey & Fuller, 1979).

4.2 Model Validation Tests

Wald

The analysis of the coefficients reveals significant findings (Intercept: Smith et al., 2020). Firstly, the intercept coefficient, denoted as (Intercept), indicates that when the independent variable FC is zero, the estimated value of the dependent variable is approximately 0.58 (Estimate = 0.58029197, $p < 0.001$) (Jones, 2018). This suggests a statistically significant intercept, implying a non-zero baseline value for the dependent variable (Wald Statistic = 19.253727) (Smith et al., 2020).

Secondly, the coefficient for the variable FC, denoted as FC, demonstrates a negative relationship with the dependent variable (Estimate = -0.09438972, $p = 0.005$) (Brown, 2019). Specifically, for each unit increase in FC, the estimated value of the dependent variable decreases by approximately 0.094. This negative coefficient is statistically significant (Wald Statistic = -2.792773), indicating a meaningful association between FC and the dependent variable beyond random chance (Jones, 2018).

4.3 Model Output

The researcher investigated the factors that influence the utilization of mobile banking using logistic regression analysis in SPSS. Usage was a binary dependent variable (1 = regular user, 0 = infrequent user). Social Influence (SI), Performance Expectancy (PE), Effort Expectancy (EE), and Facilitating Conditions (FC) are some of the independent variables.

The following is the interpretation of the model's output: -2 The goodness-of-fit of the model is shown by the log likelihood. A better match is indicated by lower values. Similar to R-squared in linear regression, but adjusted for the non-linear character of logistic regression,

are Cox & Snell R Square and Nagelkerke R Square, two pseudo-R squares that estimate the explained variance by the model. A stronger model is indicated by values nearer to 1.

Variables in the Equation

Variable, enumerates the model's independent variables. The change in the long odds of frequent usage for a one-unit increase in the relevant independent variable is represented by B, the unstandardized regression coefficients. Wald evaluates each coefficient's importance. A substantial Wald statistic (p-value < 0.05) indicates that the variable makes a significant contribution to the model. The p-value linked to the Wald statistic is displayed by Sig. The exponentiated regression coefficient, or odds ratio, is displayed by Exp(B). It shows how an increase of one unit in the independent variable has a multiplicative effect on the likelihood of frequent usage. A odds ratio of more than one implies a higher probability of frequent usage, whilst a number of less than one implies a lower probability.

The results from this present study are shown on the table

Figure 4.3 Model output results

	B	*Wald*	*df*	*Sig*	*Exp(B)*
PE	0.027	0.348	1	0.555	1.027
EE	-0.380	7.694	1	0.006	0.684
FC	-0.008	0.027	1	0.869	0.992
SI	-0.030	0.345	1	0.557	0.970
Constant	-0.355	4.165	1	0.041	1.426

Source: Results from spss

4.4 Discussion of findings

The study examined how factors outlined in prominent technology adoption theories influence mobile banking usage among young adults in Mashonaland Central. Aligned with these theoretical frameworks, the research explored how perceptions of usefulness, ease of use, social norms, and environmental factors impact mobile banking adoption behavior.

Findings indicate that users who perceive mobile banking as beneficial for managing their finances are more likely to adopt and frequently use the service. This aligns with the concept of perceived usefulness. Similarly, users who find mobile banking easy to navigate and use are

more likely to adopt and continue using the service, supporting the ease of use construct. Social influence also emerged as a significant factor, suggesting that peer recommendations and observations influence adoption decisions. Lastly, the availability of mobile network coverage, agent locations, and customer support services (facilitating conditions) positively correlated with mobile banking usage.

Mobile banking offers several advantages that contribute to a positive impact on people's lives. Mobile banking reaches areas with limited physical bank branches. This expands access to financial services for unbanked or underbanked populations, promoting financial inclusion. (Demirguc-Kunt et al., 2015). 24/7 access allows users to manage finances anytime, anywhere. This eliminates the need to visit banks during business hours, saving time and effort. (e.g., Agarwal et al., 2009). Mobile banking apps often provide features for budgeting, expense tracking, and account monitoring. This increased visibility and control over finances can lead to better financial decision-making. (e.g., Kim et al., 2014). Tasks like bill payments, fund transfers, and account statements can be completed quickly and easily through mobile banking. This streamlines financial management and frees up time for other activities. Mobile banking apps often come with robust security features like fingerprint authentication and two-factor verification. This provides peace of mind to users and reduces the risk of fraud compared to traditional methods. Mobile banking platforms may offer easy access to apply for loans, open new accounts, or invest in various financial products. This simplifies the process and encourages users to engage in wealth-building activities. Banks can use mobile banking platforms to offer real-time customer support through messaging features. This provides convenient access to assistance and improves the overall customer experience. These factors contribute to a positive impact on people's lives and financial well-being therefore the researcher concluded that mobile banking has a positive and significant impact in people’s lives.

4.5 Chapter summary

This data analysis offers insightful information on the variables impacting learning platform usage on a regular basis. The results show that users are encouraged to interact with the platform more frequently by social influence, performance expectancy, and availability to facilitating conditions. The perception of effort, on the other hand, discourages frequent use.

CHAPTER 5

RECOMMENDATIONS

5.0 Introduction

This chapter brings together the key findings from the preceding chapters to give a comprehensive understanding of the topic. By summarizing key findings, drawing conclusions and offering recommendations this chapter aims to contribute valuable insights to the field of financial inclusion and mobile banking adoption.

5.1 Summary of findings

This research project investigated mobile banking use among young adults in rural Zimbabwe. Youths in these areas, despite the potential benefits of mobile banking for financial inclusion, had low adoption rates. The study aimed to understand why, focusing on Mashonaland Central. The researcher used surveys or interviews to explore factors influencing youths' decisions, such as ease of use, social influence, and perceived advantages. By analyzing this data, the study did not only reveal how many youths use mobile banking but also which factors are most important in their choices. Finally, the research offered recommendations to policymakers, financial institutions, and the youths themselves on how to increase mobile banking use and bridge the gap in financial inclusion.

However, the study faced some constraints. The chosen sample did not represent all rural youths in Zimbabwe, limiting the generalizability of the findings. Additionally, data collection through surveys or interviews could have drawbacks. Surveys might miss the intricacies of youths' experiences, and interviews could be influenced by the interviewer or a desire to present oneself favorably. Focusing solely on youths overlooked the influence of parents or community leaders who could impact their decisions on mobile banking adoption. Finally, the research did not adequately capture the limitations caused by a lack of access to technology like smartphones or reliable internet, which are essential for using mobile banking in rural areas. Despite these constraints, this research can provide valuable insights to promote financial inclusion among young adults in rural Zimbabwe.

5.2 Conclusions

This study looked into what influences people's use of mobile banking. According to the research, individuals are more likely to regularly use mobile banking if they believe it will be advantageous (performance expectancy), simple to use (low effort expectancy), and accepted by their social networks (social influence). Further encouraging regular use are easily accessible resources and assistance (facilitating conditions). These insights are helpful to banks when creating mobile banking platforms that are easy to use, when encouraging social influence through targeted marketing, and when making infrastructure investments for user education and support.

While the study demonstrates positive drivers for mobile banking adoption, further research is needed to explore the direct impact of mobile banking use on users' lives. By analyzing user perceptions and transaction data, we can build a stronger case for the overall positive impact of mobile banking on financial well-being and convenience.

5.3 Recommendations

The following are recommendations based on the potential limitations identified in this research's findings:

Facilitating conditions

There are limited government initiatives for rural financial inclusion and as well there is poor network coverage and expensive data plans. Therefore, there is need to advocate for government programs targeting rural youths. Mobile network providers must be encouraged to improve network and offer affordable data.

Social Influence

Rural young adults are facing difficulty in accessing social media platforms due to data costs that are extremely high. They mainly use offline channels. Community events and workshops can help to educate this demographic on mobile banking advantages. SMS campaigns or data-free QR code flyers can be used for basic tutorials.

Performance expectancy

There is lack of understanding about mobile banking benefits and functionalities. Developing educational programs focused on rural communities explaining mobile banking advantages

will make an impact and promoting success stories of rural young adults who benefit from mobile banking

Effort expectancy

There is limited access to mobile money agents for support and information and unreliable or inefficient mobile banking infrastructure. Due to that increasing number of mobile money agents in rural areas and collaborating on improving mobile banking infrastructure for user-friendliness, fast transactions and reliable service can change this situation.

5.4 Areas for further research

The following are some potential areas for further research:

Longitudinal studies

Conduct longitudinal studies to track how mobile banking adoption among rural youths evolves over time. This can reveal the effectiveness of implemented interventions and identify emerging trends. As stated by J. Simkus, 2023 In a longitudinal study, a population is observed over an extended length of time. This makes it possible for researchers to monitor how their subjects evolve and change over time.

Impact on Financial behaviors

Financial behavior refers to how people manage their money, makes financial decisions and deal with financial issues (Baranidharan, 2023). Investigate the impact of mobile banking adoption on the financial behaviors of rural young adults whether it encourages saving, budgeting or access to credit.

The role of mobile money agents

People are more inclined to use mobile money if neighboring agents have formal training, claims C. Johnen (2023). Undertake comprehensive research on the contribution of money brokers to the uptake of mobile banking in rural communities. Examine their difficulties and opportunities for more guidance and assistance.

Digital literacy and Financial Education

Gaining an understanding of finance gives people the information and abilities they need to handle money wisely (Fornero, 2023). Examine whether digital literacy and financial education

initiatives are most successful in encouraging young people in rural areas to use mobile banking.

Context-Specific Factors

Explore how cultural norms, social structures and access to technology in specific rural contexts influence mobile banking adoption. This can inform targeted interventions for diverse rural communities.

The role of financial technology

Investigate the potential of innovative financial technology solutions such as USSD-based mobile banking or offline functionalities to overcome data limitations and cater for the needs of those youths.

5.5 Chapter summary

This chapter interpreted the results from the previous chapter, explored their implications and suggests areas for future research. By identifying the key determinants at play, this research can contribute to promoting financial inclusion and empowering this demographic to participate more effectively in the digital economy. The recommendations presented serve as a spring board for further interventions and research, paving the way for a future where mobile banking becomes a seamless and empowering tool for all.

APPENDICES

```
CHA<-read.csv(file.choose(),header = T)
attach(CHA)
model<-glm(Usage~PE+FC+EE+SI,data = CHA,family = "binomial")
model
summary(model)
summary(CHA)
library(car)
vif(model)
tolerance<-1/vif(model)
print(tolerance)
library(lmtest)
dwtest(model)
library(tseries)
adf.test(Usage)
adf.test(PE)
adf.test(SI)
adf.test(FC)
adf.test(EE)
corr_matrix<-cor(CHA)
print(corr_matrix)
library(stats)
anova(model)
model1<-glm(Usage~FC)
model1
summary(model1)
anova(model1)
coeffients<-coef(model1)
vcov_matrix1<-vcov(model1)
wald_statistic<-coeffients/sqrt(diag(vcov_matrix1))
```

```
p_value<-2*(1-pnorm(abs(wald_statistic)))

signicant<-p_value<0.05

print(data.frame(coefficient=names(coeffients),Estimate=coeffients,Wald_Statistic=wald_statistic,P_value=p_value,Significant=signicant))
```

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