THE UNIVERSITY OF ZAMBIA

AN EMPIRICAL EFFECTUAL STUDY OF MOBILE PHONE BANKING ON THE LIQUIDITY SITUATION OF SELECTED NATSAVE BANK BRANCHES OF LUSAKA DISTRICT, ZAMBIA

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DECLARATION

I Ogena Anywar, declare that this research is my own and has never been submitted at any University for an award of a qualification. Acknowledgment has been made in the text and reference.

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Signature Date

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DEDICATION

I dedicate the pursuit of success in my life to my cherished wife and family, whose unwavering support and encouragement have been a constant source of inspiration. Their kind words and motivation have propelled me to surpass expectations in completing this project/study. Their steadfast belief in my capabilities holds a special significance, and much of my achievements are owed to their love and guidance. This dedication is a testament to the significant influence they have had on my path to success.

ABSTRACT

The study investigated the relationship between mobile phone banking and the liquidity of selected branches of the National Savings and Credit Bank (NATSAVE) within the Lusaka District, Zambia. The research employed the embedded mixed research design, engaging NATSAVE employees and customers in Lusaka District. A stratified purposive and simple random sampling was utilized, with a sample size of 250 respondents. Quantitative and qualitative data were collected using structured questionnaires and guided interviews respectively. Descriptive and thematic analysis techniques were employed to analyse quantitative and qualitative data within Microsoft Excel and SPSS environment.

The findings of this study showed that the mobile banking systems adopted by NATSAVE Bank consisted of services ranging from account balance checking to a more advanced functionalities such as mobile bank deposits and bill payments. Additionally, the study revealed a positive strong (r = 0.83) relationship between mobile banking and NATSAVE Bank's liquidity. The majority of respondents expressed the belief that mobile banking has no significant impact on the bank's liquidity. Regarding the solutions tailored to address the potential constraints effecting the mobile banking on NATSAVE Bank's liquidity, the findings highlighted the following: introduction of transactional limits, encouraging digital savings, offering liquidity management education, introducing dynamic fee structures during peak periods, establishing a liquidity reserve, and fostering strategic partnerships with mobile wallet providers.

The recommendations that emerged from the study were: 1. NATSAVE should adopt adaptive strategies for mobile banking by regularly evaluating and adjusting its services based on customer feedback, industry trends, and technological advancements. 2. NATSAVE should explore strategic collaborations with Fintech innovators to integrate cutting-edge technologies into mobile banking services. 3. NATSAVE should explore innovative ways to engage customers within the mobile banking ecosystem.

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NATSAVE: National Savings and Credit Bank

USSD: Unstructured Supplementary Service Data

2FA: Two-Factor Authentication

GDPR: General Data Protection Regulation

CHAPTER ONE: INTRODUCTION

Overview

Chapter one will present the background to the study, the statement of the problem, Purpose of study, Research Objectives and Research Questions. The significance of the study, theoretical framework, limitations and operational definitions will be presented as well.

1.0 Background to the Study

In the past, conducting banking transactions often meant enduring long queues at physical bank branches just to access basic services like obtaining a bank statement or checking an account balance. However, the landscape of banking has undergone a remarkable transformation in recent years, thanks to the advent of mobile banking services. Today, banking operations run seamlessly, and a simple press of a button on a mobile phone provides access to a wide array of banking services right at one’s fingertips. Mobile banking has revolutionized the way we bank by reducing transaction costs, enhancing payment systems, and sparing customers the hassle of time-consuming traditional banking processes.

The impact of technological advancement over the last decade is felt across industries worldwide, fundamentally altering not only how businesses conduct their operations but also the very essence of their functioning (Al-Jabri, 2012). The banking sector, in particular, has borne witness to significant technological innovations, ushering in the era of online banking and mobile banking. These innovations have brought about a fundamental shift in how financial institutions operate, enabling them to offer their services through online platforms and mobile applications. Customers have reaped numerous benefits from the adoption of internet and mobile banking, as financial institutions strive to enhance customer satisfaction by delivering superior products and services while reducing operational costs (Sohail & Shanmugham, 2003).

While these advancements have brought convenience to many, it’s important to acknowledge that millions of people in emerging markets, particularly in regions like Africa, still face challenges in accessing mainstream financial services. However, there is hope on the horizon. Initiatives like mobile banking are extending a lifeline to these underserved populations by granting them access to financial services through the use of cell phones (CGAP, 2006). This not only reduces the geographical and temporal barriers to accessing banking services but also allows financial institutions to cut overhead costs associated with traditional brick-and-mortar operations. Consequently, mobile banking has enabled financial institutions to reach and serve new customers, contributing to the expansion of their customer base (Lee, Lee & Kim, 2007).

Over the past decade, technological progress worldwide has not only influenced how companies conduct their operations but has also reshaped their functioning (Al-Jabri, 2012). The banking sector, in particular, has undergone significant technological advancements, introducing online banking and mobile banking services that have revolutionized how financial institutions operate. The adoption of internet and mobile banking by financial organizations has yielded numerous advantages for customers, allowing them to access banking services online and through mobile applications. The financial industry, driven by innovations in information and telecommunications technology, has experienced substantial transformations in the past decade. In this dynamic and competitive global banking environment, commercial banks have had to embrace innovation to remain competitive. They have focused on enhancing customer satisfaction, offering superior products and services, and optimizing operational costs through the implementation of new strategies, guided by the opportunities afforded by technological advancements (Sohail & Shanmugham, 2003).

While millions of people in emerging markets, such as Africa, are presented with promising solutions through mobile banking, there is still work to be done to fully integrate them into the financial mainstream. As noted by CGAP (2006), the accessibility of cell phones has opened up the possibility for individuals to access financial services, reducing geographical and temporal barriers to banking services. This accessibility not only benefits customers by making banking services more reachable but also allows banking institutions to streamline their operations, reducing overhead costs and transaction-related expenses. Consequently, mobile banking has enabled financial institutions to expand their customer base, reaching out to new clients and increasing their numbers (Lee, Lee & Kim, 2007).

Mobile banking has not only revolutionized money transfers in the developing world but also holds the potential to offer more advanced banking services that could significantly impact people's lives. This form of banking encompasses a wide array of services, including providing customers with real-time updates and transaction notifications on their mobile phones, enabling them to stay informed about their account activities. Moreover, mobile banking facilitates various transactions such as bill payments, deposits, withdrawals, transfers, airtime purchases, requests for bank statements, and numerous other essential banking tasks, all conducted conveniently through mobile devices (Denilson, 2006).

Financial institutions like NATSAVE (Buyer and Lenders, 2001) have notably embraced service delivery technology to enhance services traditionally provided by human personnel, as highlighted by Howcraft and Bacett (1996). This technological shift not only boosts the efficiency of banking operations but also extends the accessibility of financial services to a wider population, potentially revolutionizing the way banking is conducted in these markets. Standard Chartered Bank, as reported by the IDO News Service in September 2008, pioneered the world's first "rim-banking" technology, reaching out to the unbanked and advocating for the empowerment of ordinary individuals through inclusive finance. This rim-banking technology, similar to MTN (mobile money), Airtel Money, and Zamtel Kwacha (in Zambia), among others, has disrupted traditional banking, with a significant shift in transactions from banks to mobile money platforms.

In today's global banking landscape, mobile banking is an emerging and rapidly growing phenomenon that has the potential to enhance the efficiency of the banking system. It involves providing banking or financial services through mobile telecommunication devices. M-banking has gained prominence by offering customers a convenient way to conduct their banking activities. While it is not without its challenges, these obstacles are generally manageable and do not pose insurmountable issues (Gashom, 2014).

Financial performance in the banking sector refers to the financial stability where depositors' funds are secure within a stable banking system, as defined by the Bank of Uganda (BOU, 2002). The financial health of financial institutions can vary from strong to unsatisfactory, influenced by external factors such as deregulation, lack of information among bank customers, and the homogeneity of banking businesses, as noted by Mugembe (2008). The activities associated with rim-banking contribute significantly to the financial stability of commercial banks in Uganda. Useful indicators of financial performance are encapsulated in the CAMELS framework, encompassing Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity analysis, which serves as a guide for the banking sector (Madhyam, Stichele, 2010). Bank liquidity is a critical gauge of a financial institution's capacity to meet its short-term financial commitments, ensuring the prompt coverage of depositor withdrawals and daily operational expenses. The introduction of mobile banking into the financial landscape has introduced various dynamics that can have both positive and negative implications for bank liquidity. Mobile banking has emerged as a transformative force within the commercial banking sector, offering opportunities to attract deposits and streamline operations but also presenting liquidity challenges, especially when dealing with sudden and substantial fund transfers. Effective liquidity management, guided by regulatory frameworks, is imperative for commercial banks to harness the benefits of mobile banking while safeguarding their financial stability (Madhyam, Stichele, 2010).

1.1 Statement of the problem

To bolster their competitive edge and manage operational expenditures, commercial institutions are progressively embracing mobile money innovations and incorporating them into their core functions. There is a widespread belief that technological advancements have the potential to enhance operational efficiencies within commercial banks, consequently improving their financial performance, as suggested by Mbiti and Weil (2011). However, while some enhancements may occur, it is vital for the management of the banking sector to conduct a strategic analysis aimed at ensuring effective liquidity management and risk mitigation during the implementation of technological innovations. The performance of banks is unquestionably intertwined with the efficiency and effectiveness of mobile banking, necessitating the establishment of rigorous controls and standards to safeguard liquidity against the impact of mobile banking. Nevertheless, despite the widespread adoption of mobile banking by various banking institutions in Zambia, including NATSAVE, there exists a paucity of empirical evidence regarding the precise influence of mobile banking on the financial performance of these banks. Furthermore, the rapid displacement of traditional banking methods by mobile phones is sometimes viewed as a potential threat to the existence of banks in Zambia and other African nations. Therefore, this study seeks to investigate the repercussions of mobile phone banking on the liquidity status of selected NATSAVE bank branches situated within the Lusaka district of Zambia. In doing so, it endeavors to offer a more pragmatic and data-driven comprehension of the connection between mobile banking and bank liquidity, thereby addressing the concerns associated with the technological transformation in the banking sector.

1.2 Purpose of study

The purpose of this study will be to investigate the impact of mobile phone banking on the liquidity position of selected NATSAVE bank branches within the Lusaka district of Zambia.

1.3 Study Objectives

The study was guided by the following research objectives.

1.3.1 General Objective

To critically study the effectual bearing of mobile phone banking on the liquidity situation of selected NATSAVE Bank branches of Lusaka District.

1.3.2 Research Objectives

i. To identify the mobile banking systems adopted by NATSAVE Bank.
ii. To assess the relationship between mobile banking and liquidity of NATSAVE Bank.
iii. To establish solutions to the negative effects of mobile banking on NTSAVE bank's liquid.

1.4 Research Questions

i. What are the mobile banking systems adopted by NATSAVE Bank?
ii. How is the relationship between mobile banking and liquidity of NATSAVE Bank?
iii. What are the solutions to the negative effects of mobile banking on NTSAVE bank's liquid?

1.4.1 Hypothesis

The following will be the study hypothesis:

H1: NATSAVE Bank has adopted specific mobile banking systems.

H2: There is no significant relationship between mobile banking and the liquidity of NATSAVE Bank.

H3: Effective solutions exist to mitigate the negative effects of mobile banking on NATSAVE Bank's liquidity.

1.4.2 Research variables

Dependent Variable: Mobile Banking Systems Adopted by NATSAVE Bank.

Independent Variables: Various strategies, policies, and measures aimed at mitigating the negative impacts of mobile banking.

1.5 Significance of study

This study, which focuses specifically on NATSAVE Bank, is extremely important since it explores the complex relationship between mobile banking and bank liquidity. It not only clarifies this important connection, but it also serves a dual purpose by providing workable methods to reduce any negative consequences mobile banking might have on the liquidity of NATSAVE Bank. This study not only deepens our understanding of how technological advancements in banking can affect the stability of the financial system, but it also provides NATSAVE Bank and the larger Zambian banking industry with practical strategies for navigating the revolutionary world of mobile banking while maintaining stability of the financial system. This work has potential to inform regulatory strategies and contribute to the global conversation on the ramifications in addition to its local significance.

1.6 Theoretical Framework

Technological Innovation and Banking Liquidity (Resource-Based View): The resource-based view (RBV) theory will serve as a foundational element of the theoretical framework. This theory posits that a firm’s internal resources and capabilities, including technological innovations, play a pivotal role in shaping its competitive advantage and financial performance. In this context, the adoption of mobile phone banking represents a significant technological resource. The RBV perspective will help us understand how mobile banking, as an internal resource, may contribute to or affect the liquidity situation of selected NATSAVE Bank branches (Johnson, 2020).

By integrating this theoretical perspective, the study aims to provide a comprehensive understanding of the impact of mobile phone banking on the liquidity situation of selected NATSAVE Bank branches in the Lusaka District of Zambia. This approach will enable a detailed analysis that considers both internal resource dynamics and external regulatory and stakeholder influences on banking liquidity in the context of mobile banking adoption (Johnson, 2020).

1.7 Operational Definitions of terms

Mobile Banking: Mobile banking entails customers using mobile devices, such as smartphones or feature phones, to access and conduct a variety of banking transactions and services. These services encompass activities such as checking account balances, transferring funds, making bill payments, and utilizing mobile wallet features, all through the bank's mobile banking platform or application.

Financial Liquidity: Financial liquidity is concerned with a bank's financial health and its capacity to fulfill short-term financial obligations and immediate cash requirements. It involves an evaluation of the bank's accessible liquid assets, including cash reserves and easily tradable securities, in comparison to its short-term liabilities and customer withdrawal demands.

Return on Investment (ROI): Return on Investment, as described by Douglas in 2009, signifies the ratio between the net investment returns and the investment cost incurred as a result of deploying resources. A high return on investment signifies an enhancement in performance.

Asset Quality Assessment: Asset quality assessment, as defined by Smith in 2010, is a comprehensive evaluation that gauges the credit risk linked to a specific asset. These assets typically involve financial instruments such as loans that necessitate interest payments.

Electronic Fund Transfer: Electronic fund transfer denotes a digital method of transferring funds from one account to another using electronic devices such as phones, computers, iPods, and similar gadgets, as outlined by Mdashill in 2011.

Electronic Bill Payment: Electronic bill payment represents a secure online service that empowers customers to settle their bills without the need to draft physical checks and send them by mail, according to Jotham in 2009.

Account Inquiry: Account inquiry, in accordance with James in 2004, signifies a request to retrieve historical records, past payments, or any other entries related to a specific account.

1.8 Summary

The preceding chapter was dedicated to laying the groundwork for the study, encompassing the background information, problem statement, study's purpose, research objectives, significance of the study, and the introduction of relevant theoretical concept. The subsequent chapter will delve into a comprehensive review of pertinent literature in the field.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The research that are pertinent to the topic at hand will be reviewed in this chapter. The global, regional, and local (Zambian) models will be used in the literature review.

2.1 Global Perspective

2.1.1 India

The Indian financial landscape has undergone a remarkable transformation in the last decade, primarily driven by the rapid ascent of mobile banking. This evolution can be attributed to a confluence of factors, with the widespread adoption of smartphones and the government's concerted efforts towards digitalization through initiatives like Digital India and the pivotal demonetization move in 2016 playing pivotal roles. These developments have collectively propelled mobile banking to the forefront of the Indian financial sector, reshaping the way banking services are accessed and utilized. This literature review offers an insightful overview of the current state of mobile banking in India, delving into essential facets including prominent trends, existing challenges, and the burgeoning opportunities that have emerged as of my last knowledge update in September 2021.

Dr. Parul Deshwal's research in 2015 sheds light on the evolution of mobile banking in India, tracing its origins back to 2002 when pioneering transactions were conducted via SMS. Over time, mobile banking has undergone a remarkable transformation, now encompassing a wide array of financial activities that can be effortlessly carried out using computers, laptops, or smartphones. These activities range from checking account statements to settling credit and utility bills and effecting fund transfers through online channels. By 2018, virtually every bank in India had launched its mobile phone application, simplifying the process for customers who could conveniently download the app onto their Android or smartphone, thereby gaining access to a spectrum of online banking services. ICICI Bank's pioneering step in 2008 marked the inception of mobile banking in India, a milestone that catalyzed the adoption of this technology across the banking sector (Prerna, 2011).

Prerana et al. (2011) highlight the remarkable growth trajectory of mobile banking in India, with the Reserve Bank of India (RBI) reporting a consistent increase in mobile banking transactions. This surge can be attributed to a confluence of factors, including the escalating penetration of smartphones, the availability of cost-effective data plans, and the sheer convenience afforded by conducting financial transactions through mobile apps. However, despite this growth, a notable urban-rural divide persists in the adoption of mobile banking. Urban centers have experienced a swifter uptake due to their superior infrastructure and higher levels of digital literacy, underscoring the pressing need to bridge this digital divide.

In the realm of mobile banking, security concerns have loomed large, as noted by Dr. Parul Deshwal in 2015. Issues such as phishing attacks, malware, and identity theft have engendered apprehensions among users. While banks and regulatory authorities have implemented measures to enhance security, the need for user vigilance remains paramount. The Reserve Bank of India (RBI) has played a pivotal role in shaping the mobile banking landscape, introducing comprehensive guidelines and regulations to fortify the safety and security of mobile banking transactions. This regulatory framework continues to evolve in response to the dynamic landscape.

Furthermore, the ascendancy of Fintech companies has posed a disruptive challenge to traditional banking in India. Fintech firms have introduced innovative, user-friendly mobile banking solutions that often outshine traditional banking services, compelling traditional banks to innovate and forge partnerships with Fintech entities to stay competitive. Lastly, mobile banking has made substantial strides in advancing financial inclusion in India. Initiatives like the Pradhan Mantri Jan-Dhan Yojana (PMJDY) have leveraged mobile technology to bring banking services to millions of previously unbanked individuals, empowering them with financial access through their mobile devices. This multifaceted transformation in the Indian mobile banking landscape underscores the sector’s dynamism, marked by growth, security measures, technological disruptions, and strides towards financial inclusion.

Ekta Rokade’s insights in 2016 shed light on State Bank of India’s (SBI) innovative approach to mobile banking, particularly through its “Anywhere Personal” app, also known as the State Bank Freedom app. This application serves as the cornerstone for fundamental banking services provided by SBI. The app, available in both Hindi and English, offers users a wide range of functionalities, including access to deposits, withdrawals, and a concise mini-balance sheet. Notably, it features the mCash feature, enabling users to transfer funds to a mobile number or email ID swiftly. Additionally, customers can seamlessly settle utility bills, initiate and terminate fixed and recurring deposits, and schedule transactions. The app also accommodates payments for SBI Life Premium and facilitates ad-hoc payments to non-registered billers. To stay at the forefront of technology, SBI has even introduced a wearable app, enabling users to access their accounts through smart watches.

Laukkanen and Kiviniemi (2010) defined mobile banking as a pivotal platform where customers utilize devices such as phones and personal digital assistants to interact with banks. Through mobile banking, customers can conveniently monitor their account balances, execute deposit transfers, and pay their utility bills electronically. Deshwal (2015) conducted an analysis of how mobiles have played a significant role in offering financial services in India, contributing to financial inclusion at reduced costs. She emphasized that a viable approach to ensure the inclusive development of the common person is by extending mobile banking to the remotest areas of the country. Collaborative efforts among various organizations are deemed essential to broaden the reach of mobile banking, extending it from elite customers to low-end users and from major urban centers to rural areas.

In their study titled “Mobile Financial Sector in an Emerging Economy: A Preliminary Examination of Enthusiastic Indian Consumers” (2018), Priya Gandhi and Shaikh highlighted that mobile banking should be perceived as an effective, seamless, speedy, and convenient means of conducting banking transactions. They stressed that banks should leverage this opportunity to offer added value services to customers and drive the mobile financial stage.

Additionally, the study discerns a distinction between E-Wallets and Mobile Wallets. E-Wallets are a popular method commonly used for swift transfers and online shopping. They are typically linked to users’ debit or credit cards through a unique identifier. Some well-known E-Wallets include PayPal, PayTM, and Transferwise. Conversely, Mobile Wallets offer a convenient method for making payments. Instead of being linked to a debit or credit card, funds are transferred into the wallet through Immediate Payment Service (IMPS). Notable Mobile Wallets include Mobikwik, PayUmoney, and Oxigen (SAXENA, 2021).

Mobile wallets represent a digital frontier where individuals can securely store their funds, either through credit or debit cards, and subsequently utilize them for a wide spectrum of transactions. Functioning as electronic prepaid accounts, mobile wallets enable a plethora of banking activities. To access mobile wallet services, users are required to download a dedicated app from platforms like the Play Store or App Store and subsequently establish an account with the mobile wallet provider. Subsequently, funds are added to the wallet via debit or credit cards, rendering them readily available for various purposes. This method offers a convenient and secure means of conducting banking activities, replete with numerous advantages for customers. Notably, mobile wallets in India encompass various categories, including open, semi-open, semi-closed, and closed types, each tailored to specific usage and payment capabilities.

The introduction of the Unified Payment Interface (UPI) by the National Payment Corporation of India has ushered in enhanced ease and convenience in mobile banking. Mobile payment apps are directly linked to customers' bank accounts, negating the need to maintain a balance within the wallet. This enables an array of banking activities to be seamlessly executed through mobile payment apps. Money transfers to other accounts can be accomplished using Virtual Payment Addresses (VPA), phone numbers, or QR codes. Mobile payments serve as a complement to conventional cash transactions, checks, credit cards, and debit cards, facilitating various bill payments through account-based payment instruments such as electronic funds transfers, Internet banking payments, and direct debits (Vishal Goyal, Mobile Banking in India: Practices, Challenges, and Security Issues, 2012).

The concept of ubiquitous banking, facilitated by mobile banking systems, empowers customers with the ability to conduct banking activities anytime and anywhere. The utilization of computer and information technology reinforces the ubiquity of banking services. The advent of 5G mobile technology has further bolstered the authentication and security of mobile banking services, instilling greater confidence among customers to embrace mobile banking for their diverse financial transactions (Aithal P., 2021).

Deshwal (2015) underscores the pivotal role of mobile phones in providing financial services in India, contributing to economic growth while minimizing costs. She advocates for comprehensive outreach to the remotest corners of the country as a means to ensure inclusive growth. Collaboration among various organizations is deemed essential to extend the reach of mobile banking from high-end users to low-end users and from major metropolitan centers to rural areas. Deshwal also highlights the potential of advertising campaigns in enticing customers towards mobile banking.

In their study titled "Mobile Banking Adoption in an Emerging Economy: An Empirical Analysis of Young Indian Consumers" (2018), Priya, Gandhi, and Shaikh emphasize that mobile banking should be perceived as an effective, seamless, rapid, and convenient avenue for conducting banking transactions. They assert that banks should capitalize on this opportunity by providing additional value offerings to customers, thereby promoting the mobile banking platform. The study posits that error-free transactions can reshape customers' perceptions of privacy and security, motivating them to embrace mobile banking. Furthermore, the growth of the smartphone market in India presents a significant opportunity for banks to expand their mobile banking services by aligning them with customer preferences.

2.1.2 United Kingdom

The study conducted by Singh and Srivastava in 2017, focusing on the UK, presents valuable insights into increasing the adoption of mobile banking. They advocate for collaborative efforts involving various stakeholders, such as device manufacturers and service providers, to enhance security features within mobile devices. Additionally, the establishment of relevant regulations, policies, and legal frameworks is deemed crucial to bolster customer trust in mobile banking. To further improve the adoption rate, the study recommends business practitioners take initiatives to ensure privacy protection and enhance data transmission services. They emphasize the importance of providing clear and concise explanations of mobile banking services through online demonstrations and user instructions, as this would raise customer awareness, especially in a context where mobile banking is a relatively recent development and is still new to Indian customers. Hence, promotional efforts and technical support are essential to make customers feel comfortable with mobile banking.

Deb and Agrawal's 2017 study delves into the role of the government in improving facilitating conditions (FCs) to foster mobile banking adoption. They highlight the challenge of achieving financial inclusion in a country where not the entire population has access to banking services, with only 47% of Indians having such access. To address this issue cost-effectively, the study suggests providing a wider array of banking services through technologically advanced means, specifically mobile banking services. The study also recommends that the Government of India should focus on establishing facilitating conditions (FCs) and building trust among the populace. Overcoming barriers to market entry and reluctance among policymakers, as suggested in the study, would pave the way for optimal adoption of these technologically advanced channels, aligning with the government's vision outlined in the Digital India program, and contribute to India's leadership in the field of information technology.

2.2 Regional Perspective

2.2.1 Uganda

The evolution of branchless banking has given rise to a significant innovation known as "Mobile money," marking a profound shift in the operations of traditional financial institutions. Mobile money has swiftly gained momentum, transforming the financial landscape in a manner that was previously unforeseen (Kulabako, 2010). This revolutionary platform empowers individuals to utilize their mobile phones as digital wallets, facilitating money transfers, payment for goods and services, and various banking transactions. Its impact has been more rapid and far-reaching than initially anticipated.

Mobile money introduces a novel approach to the movement of funds, presenting an alternative to the conventional payment systems offered by banks, remittance companies, pawn shops, and other financial entities. Notably, mobile money stores funds on the subscriber identity module (SIM) as an identifier, distinguishing it from traditional banking, where funds are associated with account numbers (Mendes & Alampay, 2007). In conjunction with services offered by the banking sector, such as cash books, automatic teller machines (ATMs), voice mail/landline interfaces, and internet resources, the mobile platform offers a convenient additional means of managing finances without the need for physical cash (Karjahcoto, 2002).

In essence, Dahlberg (2008) highlights that mobile money services in developing regions empower users to perform three fundamental functions: (a) store currency value in an account accessible via their mobile handset, (b) seamlessly convert cash into and out of their stored value account, and (c) facilitate the effortless transfer of stored value between different accounts. This multifaceted approach underscores the transformative potential of mobile money, offering greater financial accessibility and convenience to users.

As per Sivapragasam's observations in 2010, mobile-money services encompass a range of functionalities, including but not limited to peer-to-peer (P2P) mobile money transfers and mobile or person-to-business payments for goods and services, such as bill and retail payments. These services have emerged as an innovative alternative to traditional banking, to the extent that some individuals no longer find it worthwhile to incur significant expenses or travel long distances to deposit small sums into a bank account. In response, mobile money operators have sought cost-effective models to expand their reach into impoverished and rural areas, as well as to handle the high volume of cash transactions from low-income individuals that traditional banks have neglected. This aligns with Maurer's observation in 2008, suggesting that mobile payment services are increasingly associated with lower-income population groups in developing countries, where saving levels are relatively modest. Similarly, Birch and Young (2007) note that mobile money services generally offer comparative advantages in terms of accessibility, convenience, speed, privacy, cost-effectiveness, and control for conducting financial transactions, surpassing other intermediaries like banks and traditional financial institutions. Consequently, mobile money networks hold the potential to provide the required proximity and low transaction costs.

Despite these advantages, mobile money services offer an unprecedented opportunity to significantly enhance access to financial services and streamline financial transactions within the business environment. In addition to increasing financial services accessibility, Radcliffe (2010) argues that mobile money reduces the inherent risks associated with cash handling and has demonstrated the potential to promote savings in developing countries. Customers, in this context, gravitate toward financial services that offer convenience, reliability, affordability, and the right balance of liquidity (Mas & Morawczynski, 2009). According to a World Bank report in 2009, an estimated 3.5 billion people worldwide, lacking access to formal banking services, are finding a suitable alternative in convenient and cost-effective financial services provided through mobile money. Morawczynski and Pickens (2009) further affirm that mobile money networks have been identified as potential conduits for extending financial services to the unbanked population. Moreover, mobile money services hold the potential to deliver faster and more cost-effective service delivery compared to traditional commercial banks. The substantial increase in the number of individuals using mobile money can be attributed to these inherent virtues.

The utilization of mobile money services within the informal commercial sector has triggered concerns among commercial banks, as they perceive these services as potential competitors that threaten their survival. Mobile banking, in particular, has reshaped the competitive landscape for commercial banks in the country, posing a substantial threat to their growth and even their existence, as noted by experts. While competition used to primarily involve banks competing amongst themselves, the extensive reach of mobile telecommunications companies, coupled with their dynamism and innovation capabilities, has compelled banks to strategize on how to adapt and thrive (Sturmius, 2012). There is a suspicion that the significant growth in mobile commerce has indirectly impacted the commercial banking sector by siphoning off their liquidity (Pickens, 2009). Many bank customers find it more cost-effective and convenient to use mobile money services for various payments, resulting in reduced deposits for commercial banks. The substantial decline in the number of loan transactions, by 15% between July and December 2011, in Ugandan commercial banks has been linked to this liquidity reduction (Nuwagaba, 2012). However, it’s important to note that this assertion lacks substantial empirical evidence within the banking literature.

Despite the prevalent concerns about mobile money potentially sapping banks’ liquidity and threatening their survival, empirical evidence in the existing literature is notably scarce. While some studies have explored consumer willingness to adopt mobile services (Dahlberg, 2008; Szmigin & Bourne, 1999; Hinman & Matovu, 2010), the specific influence of mobile money on bank liquidity remains largely unexamined.

2.2.2 Nigeria

The early 2000s witnessed the widespread adoption of e-banking by numerous Nigerian banks, marking a significant shift in the country’s banking landscape. Presently, the Nigerian banking industry has embraced various electronic payment tools, including ATMs, internet banking, mobile phones, and Point of Sale (POS) systems (Okoro, 2014). With the implementation of the cashless policy and advancements in technology in Nigeria, electronic forms of banking have gained substantial traction. ATMs, mobile phones, credit cards, debit cards, internet banking, and cyber cash have all become avenues for delivering traditional banking services and products (NBS, 2012). Today, all commercial banks in Nigeria have established their own networks and platforms for payment processing, encompassing credit and debit card operations as well as ATM switch networks.

Mobile banking transactions have brought about a transformation in the Nigerian banking system, effectively addressing many challenges associated with the conventional manual approach to banking transactions. Given the rapid proliferation of electronic banking innovations in Nigeria, it is somewhat surprising that there is still a scarcity of quantitative empirical evidence on the nexus between bank performance and electronic banking innovations. Consequently, this research endeavor aims to provide empirical evidence regarding the impact of e-banking innovations on the performance of both old and new generation banks in Nigeria that have adopted e-banking innovations during the research period.

Despite the overall performance of banks in the Nigerian banking sector, recent publications from the National Bureau of Statistics (2014) and the Central Bank of Nigeria (2014) utilizing the CAMELS (Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, and Risk Sensitivity) system for assessing banks' health have raised concerns. According to these reports, only four banks were categorized as strong, nine banks as satisfactory, seven banks were considered shaky, and four banks were on the verge of distress. The capital adequacy ratio (CAR) of commercial banks declined from 17.8 percent in 2013 to 15.92 percent in 2014, although it remained above the minimum capital sufficiency requirement of 10 percent. Additionally, the aggregate credits and advances in the savings money industry remained at 12.63 trillion in 2014, marking a 25.73 percent increase over 10.04 trillion in 2013. NBS (2014) further indicated that the business volume of non-performing loans in banks increased by 10.26 percent, from 321.66 billion in 2013 to 354.84 billion in 2014, while the non-performing loans to total credits ratio rose from 3.20 percent in 2013 to 2.81 percent in 2014.

A study conducted by Onyebuchi in 2016 on mobile banking adoption and challenges in Nigeria, with a focus on Enugu state, revealed that the adoption of mobile banking was relatively low among middle-aged respondents compared to the elderly, despite the growing trend of mobile banking in the region. Recommendations from the study included the vigorous pursuit of a cashless policy to encourage the use of mobile banking, extensive awareness campaigns to highlight the purpose and benefits of mobile banking, and regular checks on network reliability to enhance the adoption of mobile banking services, thanks to the convenience and accessibility they offer.

2.2.3 Kenya

Nyabera's 2017 study examined the impact of mobile banking services on customer service delivery at the Moi Avenue Branch of the Kenya Commercial Bank (KCB). It took the form of a case study with a population of 5000 respondents drawn from KCB Moi Avenue branch. Structured questionnaires were used for data collection. The study found that KCB Moi Avenue branch had extensively adopted various mobile banking services, and these services significantly contributed to improvements in various aspects of customer service delivery. While this study focused on customer service, the current research investigates how mobile banking services influence the financial performance of tier one commercial banks.

Kiprop, Ayuma, and Ambrose's 2016 investigation explored how mobile banking impacted the financial performance of commercial banks in Kapsabet Town. The study employed a descriptive survey design and included management teams, bank customers, departmental heads, and bank employees in its population. Stratified random sampling was used to select the sample. The study discovered a significant correlation between banks' financial performance and mobile banking services ($p<0.005$). It was also found that mobile platforms made sending and receiving money more accessible.

Okiro and Ndungu's 2013 research investigated how mobile and internet banking influenced the performance of financial institutions in Kenya. The study sampled 30 institutions and revealed a substantial transformation process in Nairobi's banking sector. Internet banking customers primarily used the service to inquire about their bank balances, while mobile banking was mainly used for cash withdrawals, with fewer people making purchases through their mobile phones.

Benedict's 2013 study focused on how electronic banking influenced the financial performance of deposit-taking microfinance organizations. This descriptive study had a population of nine registered deposit-taking microfinance institutions in Kenya as of June 2013. The study used questionnaires and documentary information from the institutions' annual accounts for data collection. The findings indicated that all the deposit-taking microfinance institutions had adopted e-banking technologies, which had a positive impact on their performance. However, this study did not specifically address mobile banking. The current study investigates how mobile banking services influence the financial performance of tier one commercial banks.

Njoroge's 2014 research delved into the impact of mobile banking on the performance of Kenya's commercial banks. The study employed a descriptive survey approach, aiming to identify the specific effects resulting from the adoption and increased usage of mobile banking. Using linear regression analysis, the study examined changes in various banking activities, including the volume of deposits and withdrawals, the value of loans taken, utility payments, requests for bank statements, and funds transfers. The research concluded that mobile banking was rapidly becoming an integral part of the banking landscape in Kenya and had significant potential to transform the performance of the country's commercial banks. The study primarily used primary data, focusing on the potential negative impact on commercial banks' performance.

2.3 Zambian Perspective

Zambia, like many other developing countries, has experienced a noteworthy surge in mobile banking services in recent years. This growth can be attributed to a confluence of factors that have contributed to the increased adoption of mobile banking throughout the nation. One of the primary drivers of this phenomenon is the expanding mobile phone penetration in Zambia. The proliferation of affordable smartphones has empowered a broader segment of the population to access mobile banking services. As more individuals gain access to mobile devices, the potential customer base for mobile banking naturally expands, fostering a more inclusive financial ecosystem.

According to Muyambango, L. M. (2018), another critical factor fueling the rise of mobile banking in Zambia is the marked improvement in network coverage. The country has witnessed significant infrastructure development in terms of telecommunications and data connectivity.

This has resulted in more reliable and accessible networks, enabling users even in remote areas to engage with mobile banking platforms. The combination of improved network coverage and mobile phone penetration has created an environment where individuals from various socioeconomic backgrounds can seamlessly participate in digital financial transactions.

Furthermore, the convenience offered by mobile banking cannot be overstated. Mobile banking allows users to perform a wide range of financial activities, such as checking account balances, transferring funds, paying bills, and even applying for loans, all from the convenience of their mobile devices. This level of accessibility and ease of use has made mobile banking an attractive option for both urban and rural populations in Zambia.

Several studies, including Ndhlovu (2019), have shed light on the positive impact of mobile banking in enhancing financial access and inclusion in Zambia. By providing previously underserved populations with a means to engage in formal financial activities, mobile banking has contributed to reducing financial exclusion and promoting economic participation.

Ndhlovu (2019) states that, despite the numerous advantages and positive outcomes associated with the growth of mobile banking, there remains a pressing need to examine its implications for banks' liquidity. As the volume of mobile banking transactions continues to increase, banks must adapt their liquidity management strategies to accommodate this evolving landscape. The influx of mobile deposits, withdrawals, and transfers can affect a bank's daily cash flow and liquidity position, potentially necessitating adjustments to their reserve levels and risk management practices.

Liquidity management stands at the heart of a bank's operational and financial stability. It is the process by which banks ensure they have sufficient cash and assets that can be readily converted to cash to meet their short-term financial obligations while also optimizing the use of these assets to generate returns. This aspect of banking is vital because it safeguards the bank against liquidity crises, where it may not be able to meet depositors' withdrawal demands or other financial obligations, potentially leading to a loss of confidence in the institution and systemic disruptions (Chileshe & Chisala, 2018)..

Traditional banks have developed a range of instruments and strategies over the years to manage liquidity effectively. These strategies typically involve a mix of maintaining cash reserves, investing in short-term, highly liquid assets (such as government securities), and accessing various sources of short-term funding. Banks often employ sophisticated models and techniques to forecast their liquidity needs, ensuring they have the right balance between liquidity and profitability (Chileshe & Chisala, 2018).

However, the introduction and rapid growth of mobile banking can disrupt these established liquidity management practices in several ways. First and foremost, the surge in mobile transactions can lead to significant fluctuations in a bank's daily cash flows. The ease of access to mobile banking means that customers can conduct transactions at any time, leading to unpredictable patterns in deposit inflows, withdrawals, and transfers. This unpredictability challenges the traditional liquidity forecasting models employed by banks.

Moreover, the increasing popularity of mobile banking might encourage customers to hold lower balances in their traditional bank accounts, as they can easily transfer funds to their mobile wallets or make payments directly through mobile apps. This shift can reduce the amount of stable, low-cost deposits held by banks, affecting their funding mix and potentially requiring them to rely more on short-term and potentially more expensive sources of liquidity (Banda & Mutandi, 2017),.

Research conducted by Muyambango (2018) and others underscores the importance of carefully evaluating how the proliferation of mobile banking impacts liquidity management strategies within the banking sector. It's imperative for banks to adapt to these changes by incorporating mobile banking transaction data into their liquidity models, reassessing their cash reserve policies, and exploring new avenues for liquidity generation, such as utilizing mobile channels for short-term funding or investing in mobile payment platforms.

Mobile banking has emerged as a potent tool in driving financial inclusion by expanding access to formal banking services, particularly among populations that were previously unbanked or under banked. This transformative impact stems from the fact that mobile banking significantly lowers the barriers to entry into the formal financial system. Let's delve deeper into the implications of mobile banking on deposit mobilization and its potential positive effects on banks' liquidity.

Firstly, mobile banking reaches previously underserved populations, including those residing in rural or remote areas where traditional brick-and-mortar banks have limited or no presence. By offering banking services through mobile phones, individuals who previously relied on informal or cash-based financial mechanisms can now open accounts, deposit money, and conduct transactions conveniently. This expanded reach translates into a broader customer base for banks, contributing to an increase in deposit mobilization.

Furthermore, mobile banking encourages a culture of saving and financial prudence, as it allows users to access their accounts and make transactions at their convenience. Studies, such as the research conducted by Banda & Mutandi (2017), have shown that mobile banking can stimulate regular deposits by making it easier for individuals to set aside money for savings or emergency funds. This behavior not only enhances the financial well-being of customers but also results in a steady influx of deposits into the banking system.

Additionally, mobile banking can serve as a bridge between informal and formal financial sectors. People who were previously averse to formal banking due to perceived complexities or lack of access to physical branches may find mobile banking more approachable. As they become more comfortable with mobile banking services, they are more likely to migrate their financial activities from cash-based systems to formal bank accounts. This transition can significantly increase the pool of deposits held by banks.

From the perspective of banks' liquidity management, the positive impact of increased deposit mobilization through mobile banking is noteworthy. A higher volume of deposits provides banks with a stable and cost-effective source of funding, which can reduce their reliance on more expensive forms of short-term borrowing. Moreover, the relatively stable nature of retail deposits allows banks to better plan their liquidity needs, reducing the risk of liquidity shortfalls and related disruptions (Zulu & Ndhlovu (2020).

The increasing volume of mobile banking transactions in today's digital age has significant implications for a bank's daily cash flow and liquidity position. Mobile banking encompasses a wide array of financial activities, including deposits, withdrawals, fund transfers, bill payments, and more. These transactions, when aggregated, form a substantial part of a bank's daily operations, and they can have both immediate and long-term effects on a bank's liquidity. Let's delve into how the surge in mobile transaction volumes influences a bank's liquidity management strategies and why it is a critical area of research, as highlighted in studies such as Zulu & Ndhlovu (2020).

Firstly, the sheer volume and speed of mobile transactions have the potential to impact a bank's daily cash flow in unpredictable ways. Unlike traditional banking transactions that may follow regular business hours and have relatively stable patterns, mobile banking transactions can occur around the clock and in response to various triggers, such as bill due dates or salary deposits. This variability in transaction timing and frequency can make it challenging for banks to accurately predict and manage their daily liquidity needs. For instance, an unexpected surge in withdrawal requests through mobile banking channels can quickly deplete a bank's cash reserves if not managed proactively. Conversely, a substantial influx of mobile deposits, especially during certain promotions or incentives, may require the bank to efficiently channel these funds into income-generating assets to optimize liquidity usage.

Additionally according to Tembo, (2019), the increasing volume of mobile transactions necessitates that banks maintain adequate liquidity buffers to ensure they can meet customer demands promptly. While these buffers are essential for operational resilience, they also tie up resources that could potentially be deployed elsewhere for profitability. Balancing the need for liquidity buffers with the desire for optimal asset utilization is a delicate task in today's mobile banking landscape.

According to Tembo, (2019) Liquidity management strategies must adapt to the evolving mobile banking environment. Banks may need to invest in sophisticated liquidity forecasting models that incorporate data from mobile transaction platforms. They may also explore real-time monitoring and decision-making tools to better respond to sudden shifts in liquidity requirements. Furthermore, as transaction volumes grow, banks may consider diversifying their funding sources to include more stable deposits to offset the unpredictability of mobile transactions.

Mobile banking has had a transformative impact on financial inclusion, accessibility, and economic development in Zambia. It has significantly expanded access to formal financial services, reducing financial exclusion among previously unbanked or under banked populations

(Ndhlovu, 2019). The unparalleled convenience and accessibility of mobile banking have made financial services readily available, allowing users to check balances, transfer funds, and pay bills from their mobile phones (Banda & Mutandi, 2017). Moreover, it offers cost savings by reducing the need for physical bank branches and infrastructure, lowering transaction costs and operational expenses for both banks and consumers (Chileshe & Chisala, 2018). Mobile banking empowers individuals to take control of their finances, promoting financial literacy and better money management (Tembo & Chama, 2019). It also stimulates economic growth by providing easier access to capital and financial services, especially for SMEs and entrepreneurs (Muyambango, 2018). Furthermore, it reduces reliance on physical cash, enhancing security and contributing to the formalization of the economy (Zulu & Ndhlovu, 2020). Government initiatives, such as the Electronic Voucher (e-Voucher) system, have leveraged mobile banking for efficient fund disbursement (Chileshe & Chisala, 2018). Mobile banking has spurred traditional banks to enhance services and innovate, leading to improved customer service and better financial products (Muyambango, 2018). It has extended its reach to rural areas, facilitating financial inclusion and rural development (Ndhlovu, 2019). Lastly, in times of crisis like the COVID-19 pandemic, mobile banking has provided a vital tool for financial resilience, enabling users to manage finances and access funds without in-person transactions (Tembo & Chama, 2019).

Ultimately, while mobile banking brings numerous benefits to banks and consumers alike, including expanded market reach and enhanced convenience, it also poses challenges to traditional liquidity management practices. Banks must strike a delicate balance between embracing the digital revolution and ensuring that their liquidity management strategies remain robust and capable of withstanding the new dynamics introduced by mobile banking. This balance is critical to maintaining the overall stability and resilience of the banking sector. Therefore, while mobile banking has undeniably played a pivotal role in improving financial access and inclusion in Zambia, it is essential for researchers, policymakers, and financial institutions to carefully consider how this digital revolution impacts the liquidity and overall stability of the banking sector. This ongoing examination is crucial to ensuring that the benefits of mobile banking are sustained while effectively managing any associated challenges or risks to the financial system. In conclusion, the increasing volume of mobile banking transactions has disrupted traditional liquidity management practices. The immediacy, variability, and unpredictability of mobile transactions necessitate careful consideration and proactive strategies to ensure a bank's daily cash flow remains stable. Research, such as the work conducted by Zulu & Ndhlovu (2020), plays a vital role in shedding light on the evolving dynamics of mobile transaction volumes and their impact on liquidity management. It informs banks and policymakers on the need for adaptability and innovation in liquidity management practices to navigate the challenges and opportunities posed by the mobile banking revolution.

2.4 Solutions to liquidity problems in the banking sector:

Implementing transactional limits is a prevalent strategy widely embraced by financial institutions as a proactive measure to govern the frequency and volume of financial transactions facilitated through mobile banking platforms (Smith, 2019). The essence of this approach lies in establishing predefined caps on the amount customers can transact within a specified period, with the primary goal of exercising control over potential liquidity risks linked to swift and substantial fund movements. By strategically setting limits, banks aim to curtail the possibility of sudden and significant drains on the available liquidity, thereby fostering a more predictable and manageable flow of funds within the banking system. This strategic initiative is underpinned by research findings that highlight the effect

Promoting digital savings has emerged as a key strategy for financial institutions globally, acknowledging its pivotal role in fostering financial resilience and stability (Johnson et al., 2020). This strategic shift involves actively encouraging customers to leverage mobile banking platforms for their savings, with the overarching objective of diminishing reliance on conventional, physical branches. The impetus behind promoting digital savings lies in not only aligning with the evolving preferences of customers but also in cultivating a more sustainable and modern source of deposits.

Banks place a significant emphasis on empowering their customer base through a holistic initiative known as liquidity management education, as underscored by research conducted by Brown and Williams in 2018. This strategic endeavor involves the provision of comprehensive knowledge and insights to customers, with a specific focus on responsible mobile banking practices and the intricate implications of their financial transactions on the overall liquidity of the bank. By fostering financial literacy among their clientele, banks strive to cultivate a more informed and discerning customer base. This awareness equips customers with the understanding needed to make conscious decisions, effectively mitigating the potential risk of liquidity challenges stemming from actions such as excessive withdrawals or transfers.

Financial institutions, as highlighted by Lee and Kim in 2017, respond to the dynamic nature of mobile banking activities by implementing a strategic approach known as dynamic fee structures, especially during peak periods. This strategic adaptation involves the adjustment of transaction fees in response to fluctuating demand, with the overarching objective of shaping customer behavior and optimizing transaction volumes. The mechanism entails encouraging transactions during non-peak hours while discouraging excessive activity during periods characterized by heightened demand. By dynamically adapting fee structures, banks aim to achieve a delicate balance in the flow of funds, ensuring efficiency and equilibrium in their financial transactions. This approach not only serves to influence customer behavior positively but also contributes to the overall optimization of transaction volumes, thereby enhancing the bank's ability to manage liquidity in an adaptive and responsive manner within the dynamic landscape of mobile banking.

Banks, as advocated by Garcia and Rodriguez in 2019, proactively fortify their financial resilience by adopting the strategic measure of establishing a liquidity reserve. This entails the deliberate setting aside of a predetermined amount of funds to function as a robust financial buffer, particularly during periods of heightened demand or economic uncertainties. The liquidity reserve serves as a crucial safety net, ensuring that banks possess readily available resources to effectively address unexpected liquidity needs that may arise due to unforeseen circumstances. By maintaining a liquidity reserve, banks elevate their financial flexibility and stability, thereby mitigating the potential impact of unforeseen events on their overall liquidity position. This strategic approach exemplifies a prudent and forward-thinking financial management strategy, enhancing banks' ability to navigate the intricacies of the financial landscape and effectively respond to unpredictable shifts in demand or economic conditions.

Acknowledging the evolving financial services landscape, banks worldwide actively engage in strategic partnerships with mobile wallet providers, as highlighted by Davis and Turner in 2021.

These collaborations are designed to foster interoperability and streamline transactions, ultimately enhancing the accessibility and convenience of mobile banking services for customers. By facilitating seamless fund transfers and transactions between mobile wallets and bank accounts, these strategic partnerships contribute to a more efficient and balanced flow of funds within the financial ecosystem. Research indicates that such alliances play a pivotal role in driving growth, fostering innovation, and delivering improved financial services to customers. This approach not only aligns with the changing preferences of customers but also underscores the importance of collaborative efforts between traditional banks and emerging Fintech entities in creating a synergistic and customer-centric financial landscape.

2.5 Research Gap Establishment and Analysis

While existing literature provides valuable insights, there is room for further research to comprehensively understand the long-term effects of mobile banking on banks' liquidity in Zambia. Additionally, the literature may have evolved since my last update, warranting an updated review to capture the latest developments.

2.6 Summary

The chapter has looked at various literatures of studies that have been done in various parts of the world including global perspective, regional perspective, Zambian context, comparative studies and previous studies regarding the effects of mobile phone banking on the liquidity situation of banks.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

This chapter will cover the following sections; research design, target population, sampling techniques, instruments for data collection, procedure for data collection and timeline and data analysis.

3.1 Research Design

A Research Design helped the researcher to plan and implement the study in a way that aided the researcher in obtaining intended results, thus increasing the chances of obtaining information that could be associated with the real situation (Burns & Grove, 2001). This study focused on the effects of mobile phone banking on the liquidity situation of selected NATSAVE bank branches in Lusaka District. The research employed the embedded mixed research design, engaging NATSAVE employees and customers in Lusaka District. A stratified purposive and simple random sampling was utilized, with a sample size of 250 respondents. Quantitative and qualitative data were collected using structured questionnaires and guided interviews respectively. Descriptive and thematic analysis techniques were employed to analyze quantitative and qualitative data within Microsoft Excel and SPSS environment. Burns & Grove (2001) described a qualitative approach as a systematic subjective approach used to describe life experiences and situations to give them meaning. Parahoo (1997) stated that qualitative research focused on the experiences of people as well as stressed the uniqueness of the individual. Quantitative approach to research refers to employing a set of strategies, techniques and assumptions used to study psychological, social and economic processes through the exploration of numeric patterns as well as giving identifying existing relationship between variables. Quantitative research gathers a range of numeric data to make meaning of the phenomenon under study.

3.2 Target Population

The target population is defined as the entire group of people the researcher is interested in (Saunders, 2003). In this study, the targeted population was NATSAVE employees and NATSAVE customers in Lusaka District of Lusaka Province.

3.3 Study Sample Size

In designing our research study on the implementation of a new digital banking system at NATSAVE, we carefully considered the need for both employee and customer representation. To gain insights into the internal dynamics of NATSAVE, the study opted for a sample of 10 employees, strategically selected from various departments to ensure a comprehensive understanding of the new system from both managerial and operational perspectives.

Simultaneously, recognizing the pivotal role of customer experience, the study aimed for a sample of 20 NATSAVE customers. This decision was driven by considerations of customer diversity, encompassing age groups, usage patterns, and account types. The total sample size of 30 reflects a balanced approach, aligning with Creswell's (2017) guidance, emphasizing the importance of tailoring sample size to research objectives and population characteristics. The researcher was confident that this composition hit the right balance between internal depth and external breadth for the goals of our study.

3.4 Sampling Techniques

In this research, a non-probability sampling design, specifically a purposive sampling approach, was employed. Respondents were deliberately chosen based on specific criteria to align with the desired research outcome.

This non-probability sampling method involved selecting units from the population using a subjective, non-random approach, allowing for targeted inclusion of individuals who possessed valuable insights or characteristics relevant to the study objectives.

As emphasized by Fowler (2002), this method offers a fast, easy, and cost-effective means of obtaining data, particularly suitable when a comprehensive survey frame is not required.

3.5 Instruments for Data Collection

The research employed a combination of questionnaires and face-to-face interviews with chosen participants. These questionnaires, structured and semi-structured, were designed in line with the research goals and encompassed a mix of open-ended and closed-ended inquiries. To maintain consistency in responses, all participants self-administered the questionnaires.

3.6 Procedure for Data Collection and Timeline

The distribution and collection of research instruments, including the questionnaires and interview guides, was carefully organized to ensure an efficient data collection process. Participants were given a two-week window within which they accessed, completed, and returned the questionnaires. This timeframe stroke a balance between providing participants with ample time to respond thoughtfully and ensuring the research progresses in a timely manner. During this period, clear communication channels were maintained with the participants to address any questions or concerns they had, promoting their active engagement and cooperation in the research endeavor.

3.7 Data Analysis

In this study, descriptive analysis was the primary method for processing and analyzing data, facilitating the organization of statistical information into clear tables and illustrative figures.

This approach enhanced data visualization and comprehension, fostering a more comprehensive understanding of the research findings (Davenport (2007).

Microsoft Excel and SPSS served as supportive tools for data processing, allowing for efficient manipulation and presentation of descriptive statistics.

3.8 Ethical Considerations

In this study, each questionnaire served as a transparent conduit, explicitly communicating the research objectives and the unwavering commitment to maintaining high ethical standards. The autonomy of participants is emphasized, with an invitation for voluntary participation, granting individuals the freedom to choose their level of involvement. Rooted in the principles of beneficence, the researcher is dedicated to ensuring that the study contributes positively to the well-being of participants and the broader community, with a vigilant commitment to minimizing any potential harm or discomfort.

Ethical considerations, including confidentiality, justice, and veracity, are integral to the research design. Confidentiality measures are rigorous, encompassing secure data storage, anonymized coding, and restricted access to authorized personnel. Justice is addressed through fair participant selection, equal treatment, and the acknowledgment and mitigation of potential biases. Veracity was prioritized, manifesting in honest communication about research objectives, procedures, and potential outcomes. Privacy concerns were alleviated through the provision of secure spaces for participants to complete questionnaires, with good handling of any personal information. Fidelity underscored the researcher's steadfast commitment to ethical guidelines, ensuring that promises made regarding participant anonymity and confidentiality were unwaveringly honored.

3.9 Summary

The chapter looked at the research design, target population, sampling techniques, instruments for data collection, procedure for data collection and timeline and data analysis.

CHAPTER FOUR: PRESENTATION OF FINDINGS

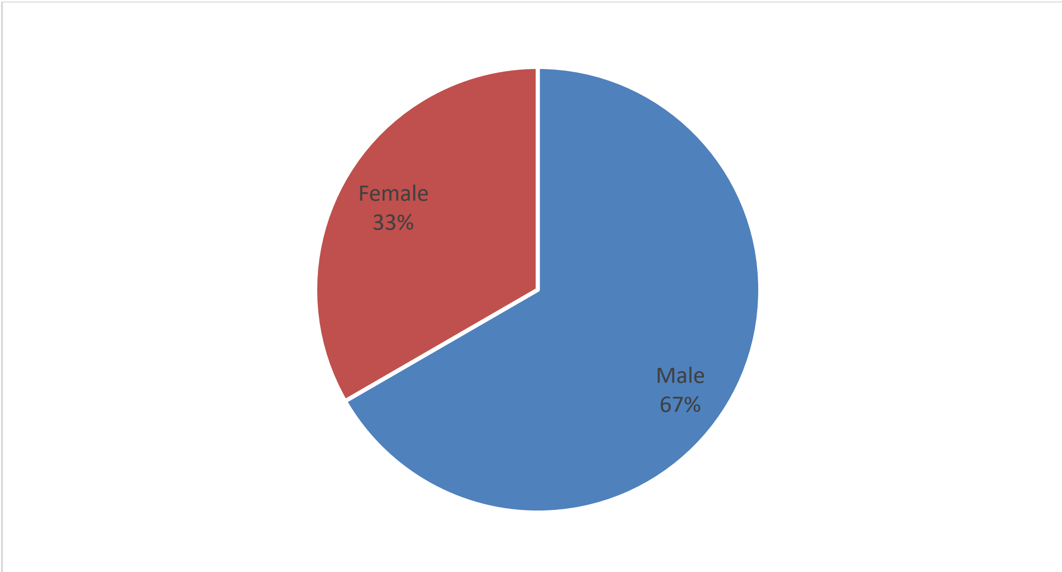
4.0 Overview

The findings of the study are presented in this chapter. The data is provided in accordance with the study's objectives. Demographic Characteristics is the first information presented in the report. The study was led by the following three Specific Objectives: To identify the mobile banking systems adopted by NATSAVE Bank, to assess the relationship between mobile banking and liquidity of NATSAVE Bank and to establish solutions to the negative effects of mobile banking on NTSAVE bank's liquid.

4.1 Presentation of results on background characteristics of the respondents

Owing to gender mainstreaming among customers and NATSAVE employees, an inquiry was made into the gender of the respondents. The findings are shown in in Figure 1 below:

Figure 1: Respondents' Gender

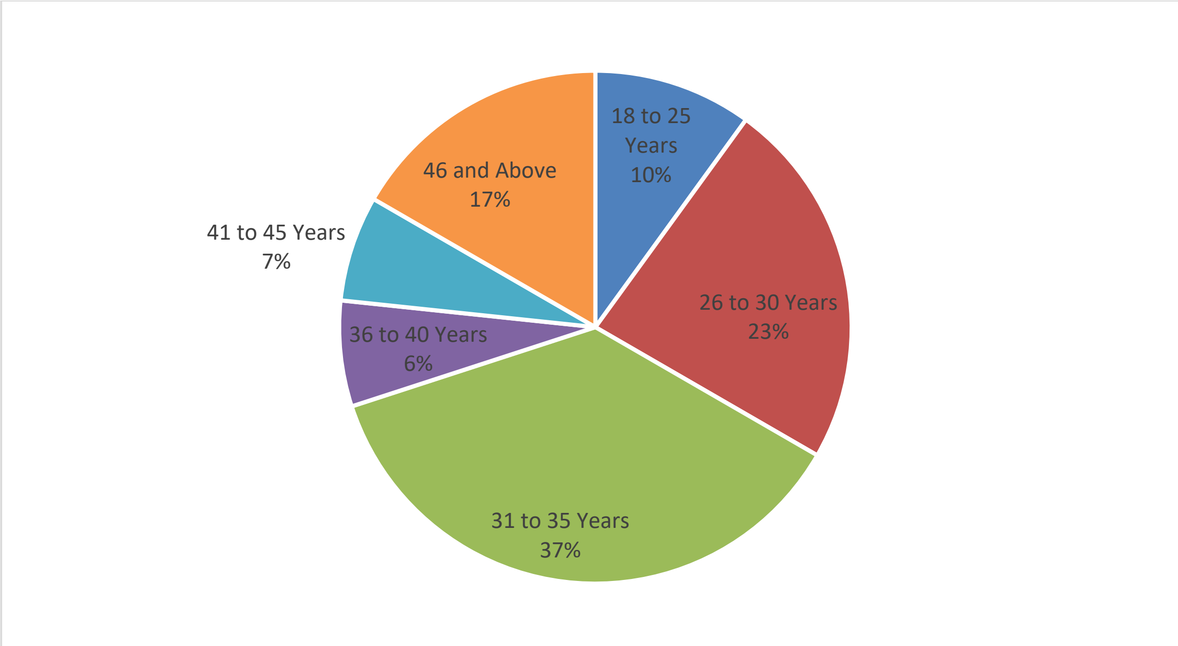


Source: Field Data (2024)

As shown from the study results in Figure1, it is indicated that majority of the participants were male at 67% while 33% were female.

The research aimed to ascertain the age groups of the participants as they hold diverse perspectives, particularly concerning mobile banking services effects on NATSAVE bank's Liquidity. To encompass opinions from various age categories, the study asked respondents to indicate their specific age group.

Figure 2: Age Distribution of respondents

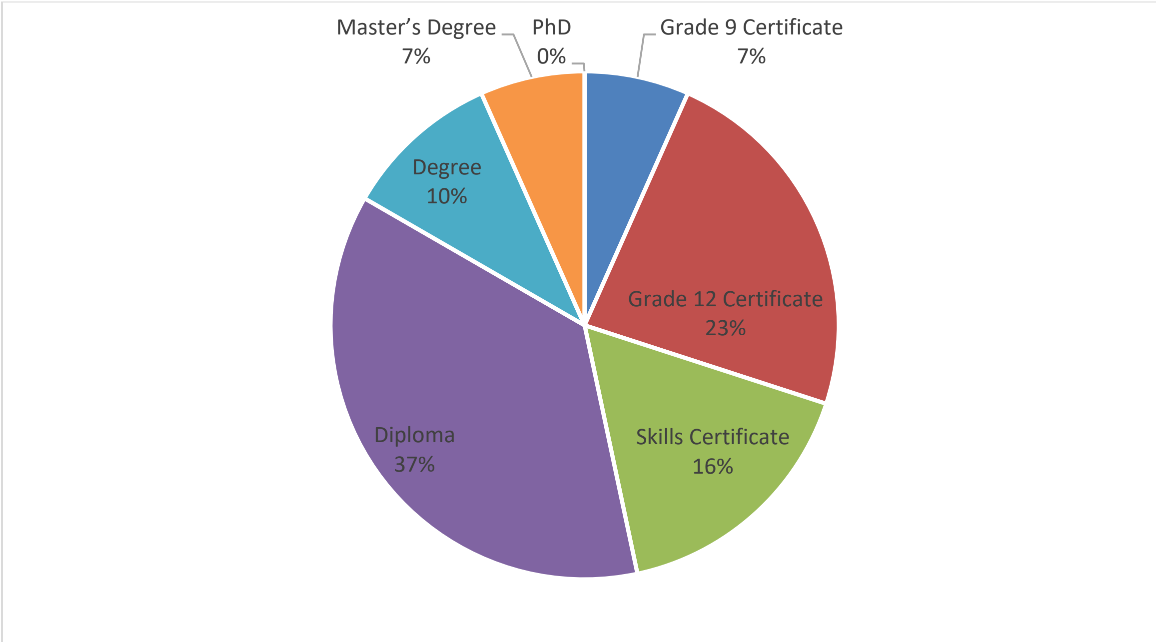


Source: Field Data (2024)

As shown in the study results presented in figure 2, the majority of respondents fell within the age category of 31 to 35 years, followed by 26 to 30 years. The third-highest age group was those above 46 years, totaling 17% respondents. The study also revealed that the age group between 18 to 25 years constituted 10%, and those aged 41 to 45 years accounted for 7%. The least represented age group was 36 to 40 years, respectively.

Figure 3: Education Level

The perspectives participants hold on various aspects of mobile banking services are influenced by their educational attainment. To gauge the respondents' capacity to address the research questions, the study sought information on their highest level of academic qualification

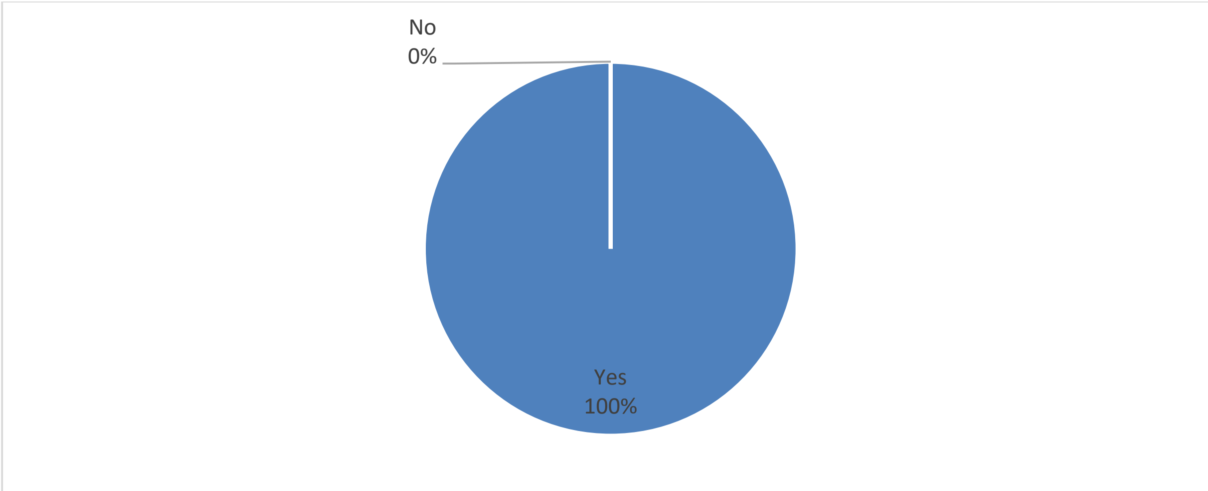


Source: Field Data (2024)

In Figure 3 above, it is evident that individuals with a Grade 9 certificate constituted 7%, those with a Grade 12 certificate accounted for 23%, and 16% held a skills certificate. Additionally, the study revealed that 37% of respondents held a diploma, 10% possessed a degree, 7% had a master's degree, and no respondents held a PhD.

Figure 4: Have you ever used Mobile Banking?

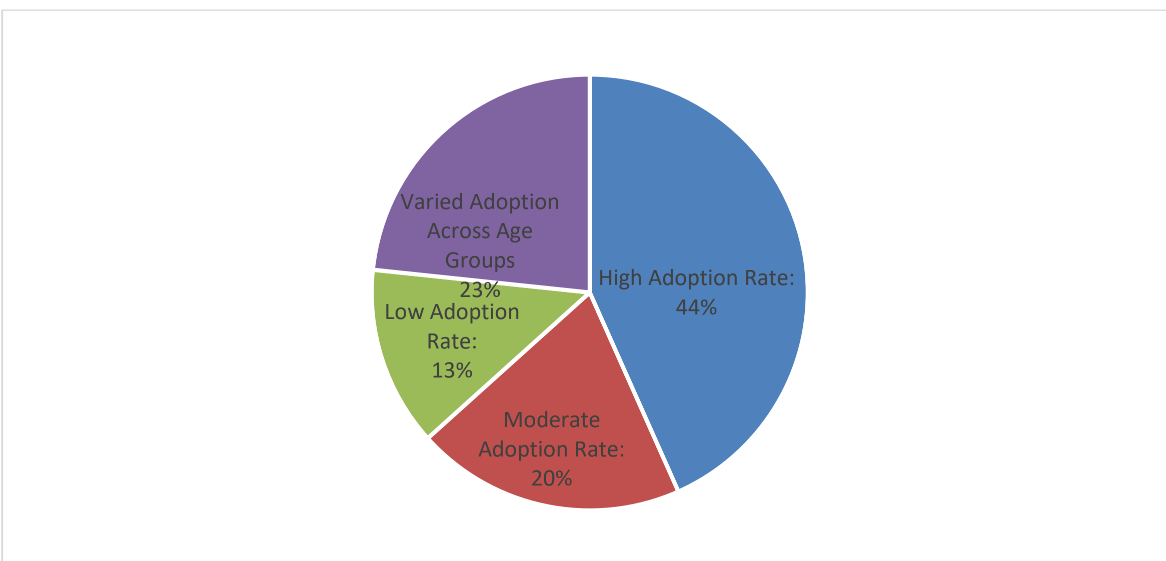
The researcher was interested in determining whether the respondents had used or are currently using mobile banking services, and the findings are depicted in the figure below:



Source: Field Data (2024)

Figure 4 above shows that 100% of the respondents have used and are currently using NATSAVE's mobile banking services.

Figure 5: User adoption patterns of mobile banking services by NATSAVE customers



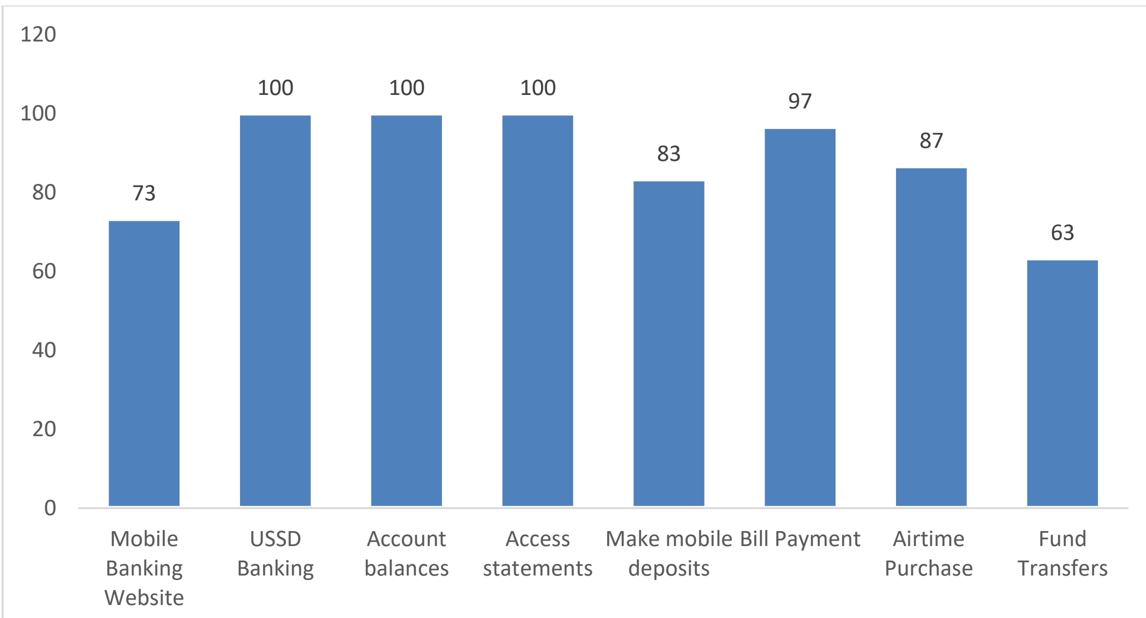
Source: Field Data (2024)

The researcher aimed to determine the user adoption rate of NATSAVE mobile banking services. The findings, as depicted in Figure 5 above, show that NATSAVE's mobile banking services were found to have a high adoption rate at 44%, while 20% indicated a moderate adoption. The study further revealed that 13% mentioned a low adoption rate for NATSAVE's mobile banking services, and 23% stated that the adoption rate varies across age groups.

4.3 Presentation of results based on a thematic area developed from objective one

(To identify the mobile banking systems adopted by NATSAVE Bank)

Figure 6: Banking services adopted by NATSAVE Bank



Source: Field Data (2024)

The researcher wanted to identify the banking services adopted by NATSAVE Bank, and the findings are depicted in Figure 6, as shown above. The results indicate that 73% of respondents mentioned that NATSAVE offers mobile banking website services, and 100% of all participants confirmed the availability of USSD code banking services. Additionally, the study found that 100% of participants mentioned that NATSAVE provides account balance checking services through mobile banking, and the same percentage (100%) stated that access to statements through mobile banking is offered. Furthermore, the study revealed that 83% of participants indicated that NATSAVE offers mobile bank deposits, 97% mentioned bill payments, and 87%

stated that NATSAVE provides Airtime purchase services through mobile banking. Lastly, 63% of participants noted that NATSAVE facilitates fund transfers through mobile banking services.

A NATSAVE customer stated that:

"The Bill Payment service at NATSAVE's mobile banking allows us customers to conveniently settle various bills through the mobile platform. I normally use services like paying for utilities like ZESCO and other regular bills. I normally initiate these transactions securely, providing a hassle-free way to manage my financial obligations directly from my mobile devices."

A NATSAVE bank employee stated that:

"Yes NATSAVE has a lot of mobile banking services such as USSD code which provide to our customers with a convenient way to perform basic banking transactions using simple mobile phones. By dialing a designated USSD code, our customers can access a menu of services, including checking account balances, transferring funds between accounts, and making utility payments. Our NATSAVE USSD Banking is particularly beneficial for users without smartphones or internet access."

A customer stated that:

"The Airtime Purchase service is another valuable feature provided by NATSAVE's mobile banking. We customers can easily recharge our mobile phone airtime directly through our mobile banking platform. This eliminates the need for separate airtime top-up transactions and adds an additional layer of convenience for us, ensuring that we stay connected without interruption."

Another participant, a bank employee stated that:

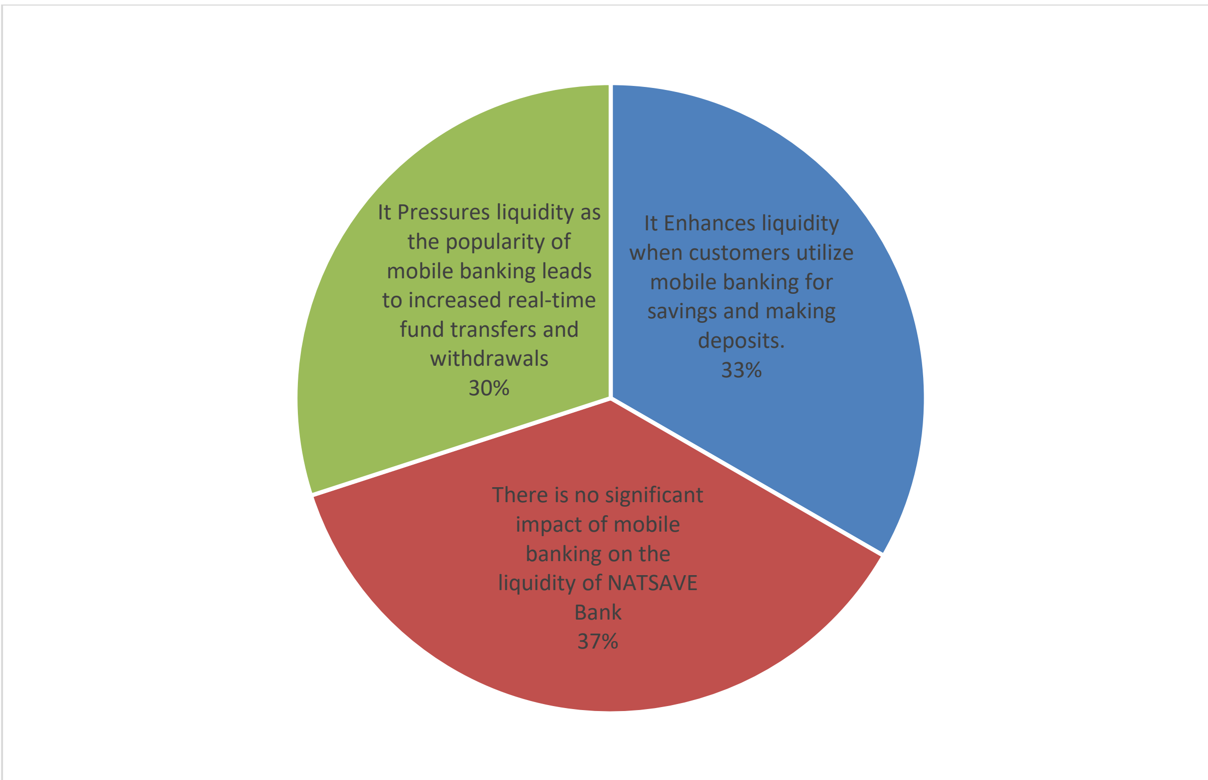
"The account balance service through NATSAVE's mobile banking platform allows our NATSAVE customers to check their account balances in real-time. This feature provides NATSAVE customers with up-to-date information on their available balances, recent transactions, and account summaries. Monitoring account balances is essential for our

customers here at NATSAVE to manage their finances, track transactions, and make informed decisions about their accounts."

4.4 Presentation of results based on a thematic area developed from objective two

(To assess the relationship between mobile banking and liquidity of NATSAVE Bank)

Figure 7: Relationship between mobile banking and liquidity of NATSAVE Bank



Source: Field Data (2024)

Figure 7 above displays findings on the relationship between mobile banking and the liquidity of NATSAVE Bank. The results indicate that 33% of participants stated that mobile banking services enhance liquidity when customers utilize mobile banking for savings and making deposits. Furthermore, 37% mentioned that there is no significant impact of mobile banking on the liquidity of NATSAVE Bank, while 30% stated that mobile banking services exert pressure on liquidity, as the popularity of mobile banking leads to increased real-time fund transfers and withdrawals.

A bank employee stated that:

“From my perspective, I believe that the utilization of mobile banking services at NATSAVE Bank does not have a significant influence on the overall liquidity of the bank. In my view, the popularity or widespread use of mobile banking, including activities such as fund transfers and withdrawals, does not exert a notable impact on NATSAVE Bank’s liquidity position.”

A customer stated that:

“In my experience as a NATSAVE customer, utilizing mobile banking for savings and making deposits contributes positively to the liquidity of NATSAVE Bank. When customers use mobile banking to save or deposit funds, it enhances the overall liquidity position of the bank. This is because the influx of funds through these transactions adds to the available liquidity, providing the bank with more resources to meet its financial obligations and operate efficiently. In essence, I see mobile banking as a facilitator for increasing liquidity by encouraging customers to engage in savings and deposit activities through a convenient and accessible platform”.

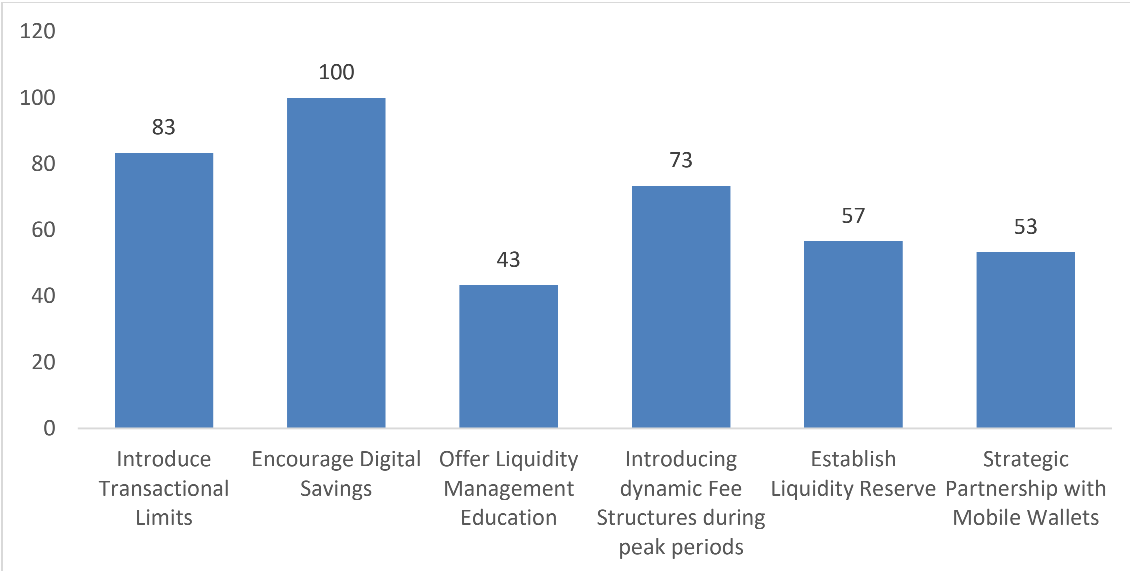
A customer stated that:

“When lots of people use mobile banking to quickly send money or take out cash, it can make the bank’s money situation a bit tight. Because everyone wants their money fast, it means the bank needs to have enough cash ready to meet all these quick requests. So, the more customers using mobile banking for speedy transactions, the more it feels like the bank has to manage its money carefully to keep up with the demand”

4.5 Presentation of results based on a thematic area developed from objective three

(To establish solutions to the negative effects of mobile banking on NTSAVE bank’s liquid)

Figure 8: Solutions to the negative effects of mobile banking on NTSAVE bank's liquidity.



Source: Field Data (2024)

Figure 8 above illustrates solutions to the negative effects of mobile banking on NATSAVE Bank's liquidity, and the findings are as follows: 83% of participants stated that introducing transaction limits can help mitigate the negative effects of mobile banking on NATSAVE Bank's liquidity. Additionally, 100% of participants emphasized that encouraging digital savings can enhance NATSAVE Bank's liquidity. Furthermore, 43% of respondents suggested that NATSAVE can mitigate the negative effects of mobile banking on its liquidity by offering liquidity management education to customers. The study also revealed that 73% of participants recommended introducing dynamic fee structures during peak periods. Another significant finding was that 57% of participants believed that establishing a liquidity reserve can contribute to NATSAVE having more liquidity. Moreover, the study shows that 53% of participants indicated that introducing strategic partnerships with mobile wallet providers can help NATSAVE enhance its liquidity.

A bank employee stated that:

"I feel introducing transactional limits means setting a maximum amount that customers can transact within a specific period using mobile banking. This solution aims to regulate the

frequency and volume of transactions, preventing a sudden drain on the bank's liquidity. By implementing transactional limits, we can manage and control the flow of funds more effectively, ensuring a balance between customer convenience and the bank's liquidity stability. It's a proactive measure to prevent any adverse impact on the bank's financial position due to excessive or rapid transactions through mobile banking".

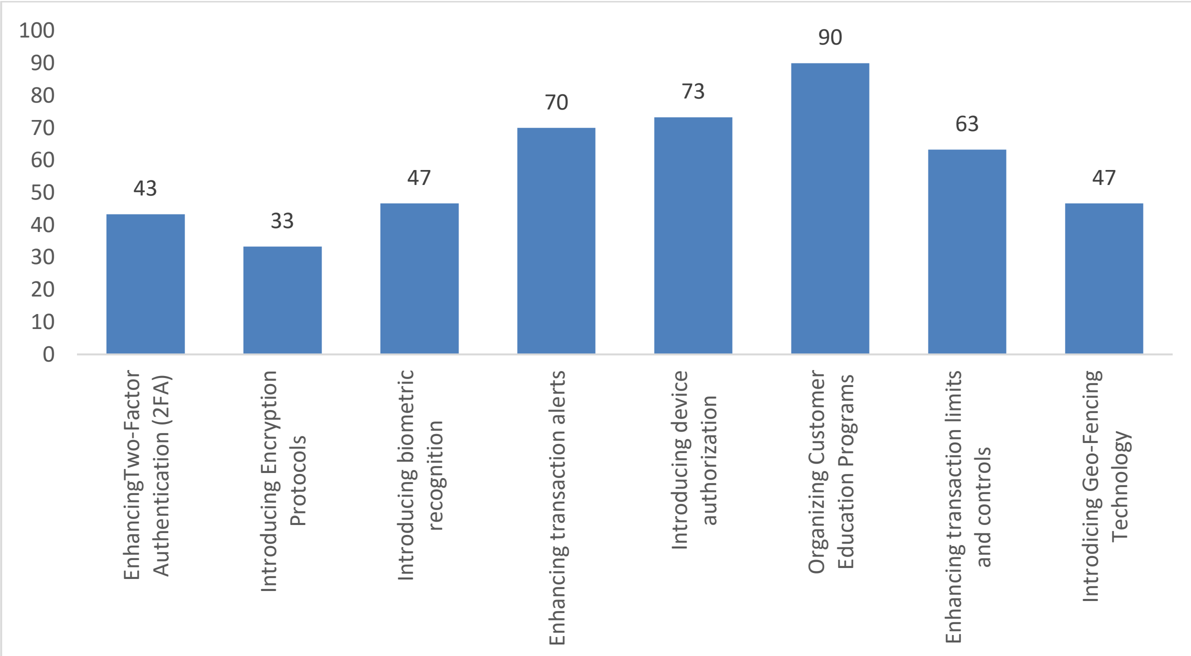
Another bank employee stated that:

"As an employee of NATSAVE, I propose a set of solutions to address the negative effects of mobile banking on the bank's liquidity. Firstly, we aim to "Encourage Digital Savings" by promoting features that facilitate digital savings, motivating customers to keep their funds within the bank, contributing to a more stable liquidity flow. Additionally, we emphasize the importance of "Offering Liquidity Management Education" to empower customers with knowledge on responsible mobile banking usage, reducing the risk of liquidity challenges associated with excessive withdrawals or transfers. Lastly, we suggest "Introducing Dynamic Fee Structures during peak periods" as a strategy to influence customer behavior by adjusting transaction fees based on demand, steering transaction flow in alignment with the bank's liquidity goals, especially during times of increased activity. These comprehensive measures collectively work towards maintaining a balanced and controlled environment, mitigating any potential adverse impact of mobile banking on NATSAVE Bank's liquidity"

Another employee stated that:

"As a NATSAVE employee, I believe that to address potential challenges related to mobile banking, it would be prudent for the bank to consider two key solutions. Firstly, "Establishing a Liquidity Reserve" is crucial. This involves setting aside a specific amount of funds to act as a safety net during times of increased demand or unexpected situations, ensuring the bank has readily available resources to maintain liquidity stability. Additionally, "Forming a Strategic Partnership with Mobile Wallets" would enhance the overall mobile banking experience. By collaborating with mobile wallet providers, NATSAVE can streamline transactions, making fund transfers between mobile wallets and the bank accounts more seamless. This not only increases the accessibility of mobile banking services for customers but also contributes to a more efficient and balanced flow of funds, positively impacting the bank's liquidity position."

Figure 9: How NATSAVE Bank protect customers when transacting through mobile banking



Source: Field Data (2024)

Figure 9 above presents the findings on how NATSAVE Bank protects customers when transacting through mobile banking. The results indicate that 43% of participants mentioned that enhancing two-factor authentication (2FA) can help protect customers during mobile banking transactions. Additionally, 33% stated that introducing encryption protocols can contribute to customer protection when using mobile banking. Furthermore, 47% of participants indicated that introducing biometric recognition can enhance customer protection when transacting through mobile banking. Moreover, 70% of participants suggested that customers can be protected through the introduction of device authorization, and 90% stated that organizing customer education programs can help protect customers. Furthermore, 63% of respondents mentioned that customers can be protected by enhancing transaction limit controls, and 47% indicated that introducing Geo-Fencing Technology can contribute to protecting customers when transacting through mobile banking.

A participant stated that:

''To enhance customer protection in mobile banking, I recommend implementing robust security measures. Firstly, ''Enhancing Two-Factor Authentication (2FA)'' adds an extra layer of security by requiring users to provide two forms of identification before accessing their accounts, minimizing the risk of unauthorized access. Secondly, ''Introducing Encryption Protocols'' is vital to safeguard customer data during transactions. Encryption ensures that sensitive information is securely transmitted, reducing the likelihood of data breaches. These measures collectively fortify the security framework, instilling confidence in customers that their transactions are safeguarded against potential threats and unauthorized access''

A participant stated that:

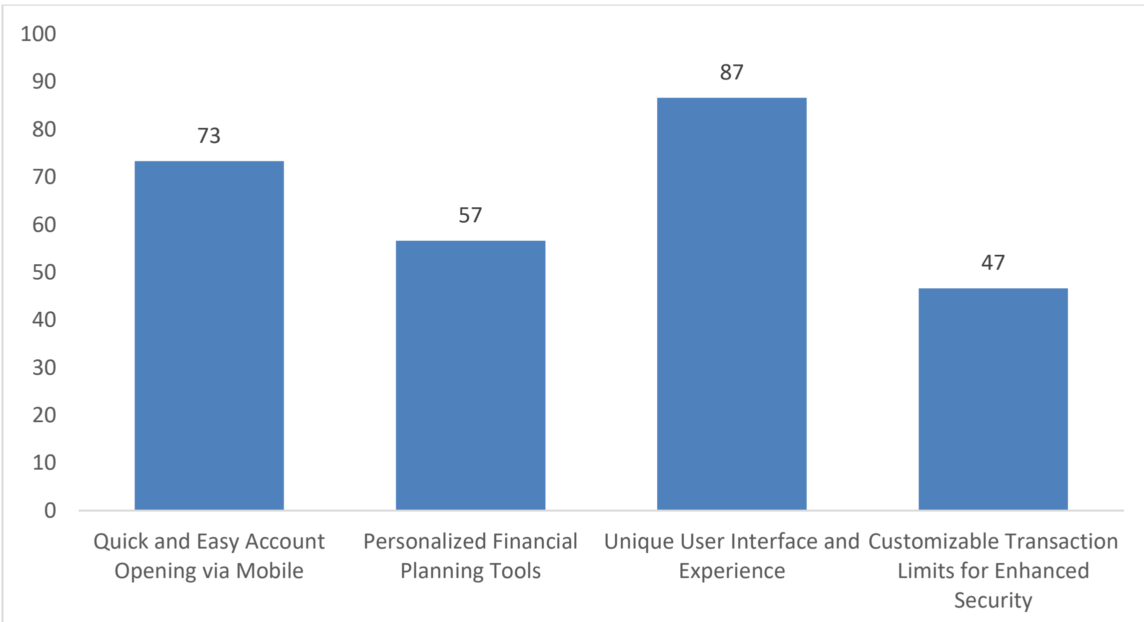
''As a dedicated employee of NATSAVE, I propose two paramount measures to ensure the protection of our valued customers in mobile banking, tailored to their unique needs. Firstly, ''Enhancing transaction limits and controls'' involves providing customers with the flexibility to set transaction limits based on their preferences, granting them greater control over their financial activities. This empowers customers to customize their security settings according to their comfort levels, enhancing their overall experience. Additionally, ''Introducing Geo-Fencing Technology'' adds an extra layer of security by restricting transactions to predefined geographical areas. This innovative technology ensures that transactions are authorized only when customers are within specified locations, further safeguarding against fraudulent activities.''

A participant stated that:

''I am a dedicated member of the NATSAVE team, and I strongly advocate for a comprehensive strategy to enhance the security of our customers in mobile banking. Firstly, the implementation of ''Biometric recognition'' serves as an advanced layer of authentication, utilizing unique biological traits like fingerprints or facial recognition to ensure secure access to accounts. Secondly, through the ''Enhancement of transaction alerts,'' we empower our customers with real-time notifications, keeping them informed about any activities on their accounts and allowing for swift responses to potential security concerns. ''Introducing device authorization'' further strengthens security by ensuring that only authorized devices can access sensitive information. Lastly, the significance of ''Organizing Customer Education Programs'' cannot be

overstated, as it equips our customers with the knowledge and skills needed to navigate mobile banking securely. These initiatives collectively demonstrate our unwavering commitment to proactive and thorough customer protection, aiming to foster trust and confidence in every mobile banking interaction."

Figure 10: NATSAVE's unique features



Source: Field Data (2024)

Figure 10 above presents the findings on NATSAVE's unique features. The results indicate that 73% of participants mentioned that NATSAVE offers quick and easy account opening via mobile banking. Additionally, 57% stated that personalized financial planning tools are also a unique offering by NATSAVE Bank. Furthermore, 87% of participants mentioned that NATSAVE has a unique user interface and experience on their mobile banking platform. Additionally, 47% indicated that NATSAVE offers customizable transaction limits for enhanced security, a feature not offered by other banks in Zambia.

Descriptive and Inferential Statistics of research Findings

Figure 11: Descriptive Summary Statistics

Mean	87.875
Standard Error	4.980094
Median	92
Mode	100
Standard Deviation	14.08583
Sample Variance	198.4107
Kurtosis	-0.50905
Skewness	-0.86502
Range	37
Minimum	63
Maximum	100
Sum	703
Count	8
Largest(1)	100
Smallest(1)	63
Confidence Level (95.0%)	11.77605

Source: Field Data (2024)

Figure 12: Descriptive Summary Statistics II

Mean	60.42857

Standard Error	7.30902
Median	63
Mode	47
Standard Deviation	19.33785
Sample Variance	373.9524
Kurtosis	-0.63076
Skewness	0.105243
Range	57
Minimum	33
Maximum	90
Sum	423
Count	7
Largest(1)	90
Smallest(1)	33
Confidence Level (95.0%)	17.88453

Source: Field Data (2024)

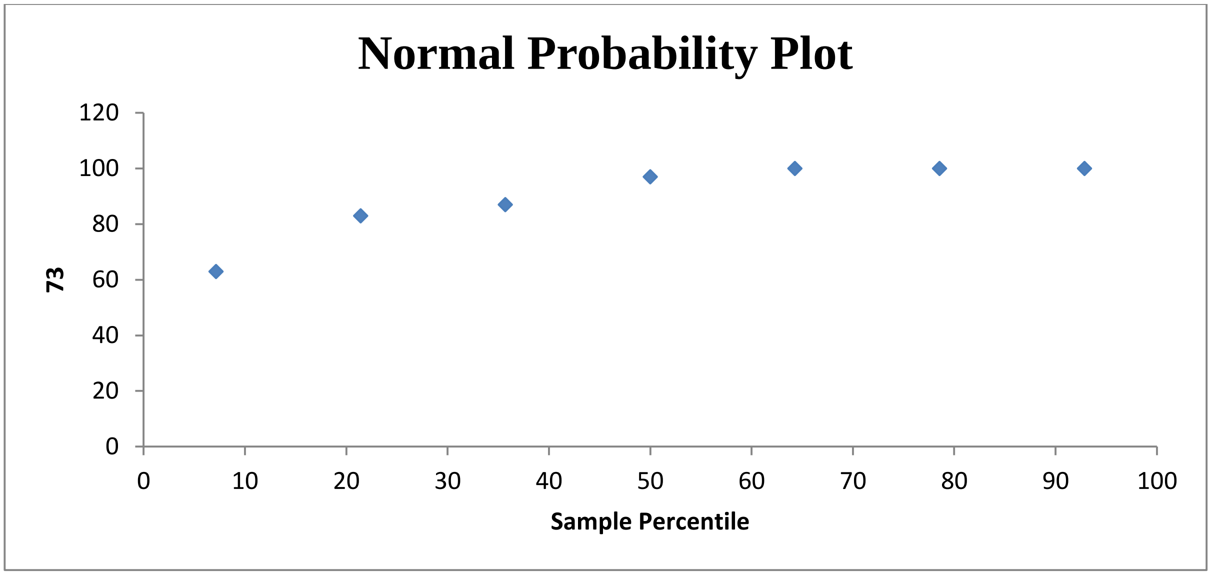
Figure 13: Inferential Summary Statistics – Regression Statistics

SUMMARY OUTPUT

Regression Statistics								
Multiple R	0.100845							
R Square	0.01017							
Adjusted R Square	-0.1878							
Standard Error	14.99631							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	11.55272	11.55272	0.051371	**0.82967**			
Residual	5	1124.447	224.8895					
Total	6	1136						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	85.66389	19.95323	4.293234	0.007765	34.37248	136.9553	34.37248	136.9553
43	0.071756	0.316593	0.226651	0.82967	-0.74207	0.885583	-0.74207	0.885583

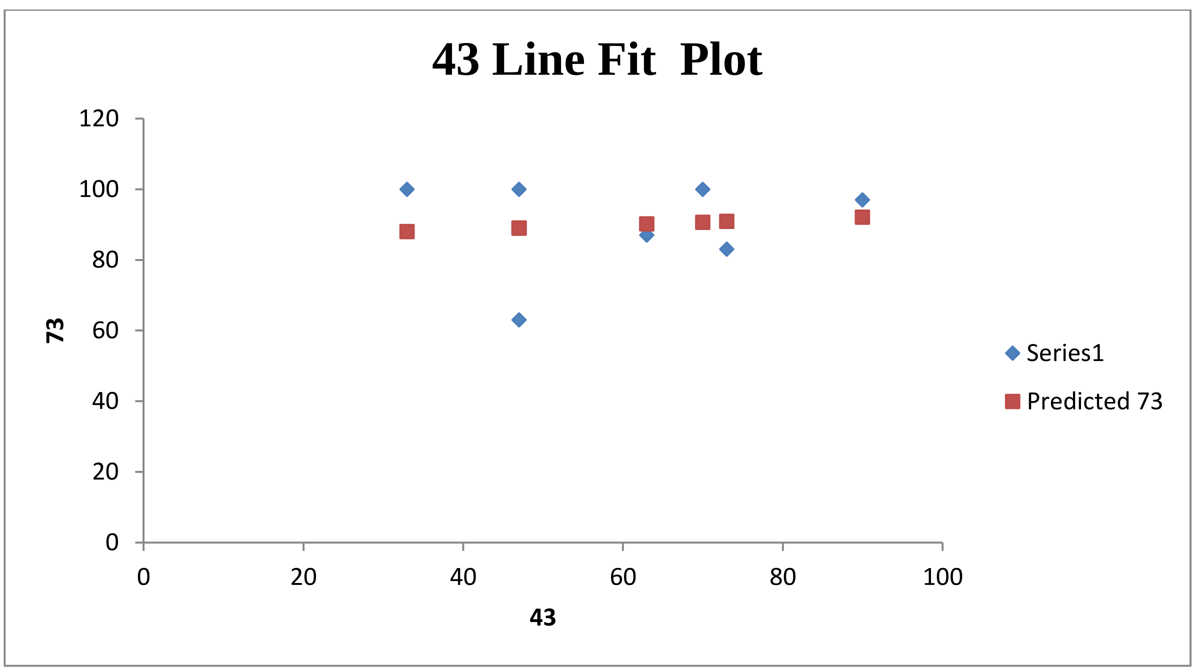
Source: Field Data (2024)

Figure 14: Inferential Summary Statistics – Normal Probability Plot



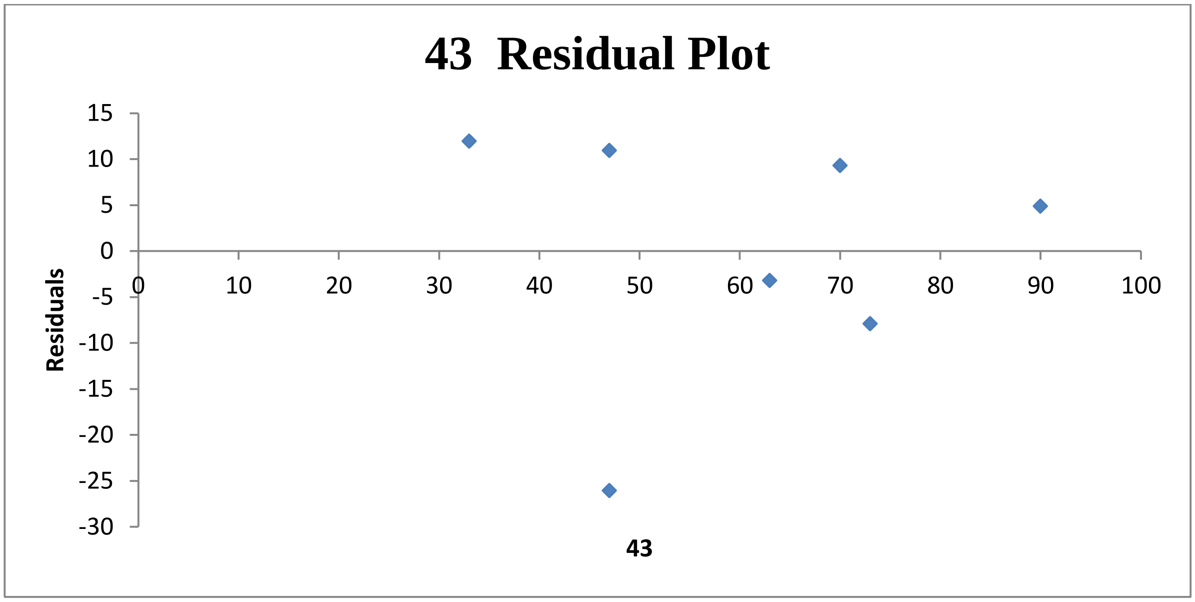
Source: Field Data (2024)

Figure 15: Inferential Summary Statistics – Line Fit Plot



Source: Field Data (2024)

Figure 16: Inferential Summary Statistics – Residual Plot



Source: Field Data (2024)

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Discussion of results based on a thematic area developed from objective one

(To identify the mobile banking systems adopted by NATSAVE Bank)

The study revealed a comprehensive range of mobile banking services adopted by NATSAVE Bank, as depicted in Figure 6. Notably, 73% of respondents were aware of NATSAVE's mobile banking website services, showcasing recognition and potential utilization. USSD code banking services, a widely accessible feature, received unanimous confirmation from all participants. Essential functionalities such as account balance checking and access to statements through mobile banking were acknowledged by 100% of participants, emphasizing the widespread usage of these fundamental services. Additionally, 83% recognized NATSAVE's provision of mobile bank deposits, while 97% and 87% acknowledged the bank's offerings in bill payments and Airtime purchase services through mobile banking, respectively. Though slightly less, 63% of participants noted the facilitation of fund transfers through mobile banking.

These findings are in line with the following literature:

The evolution of branchless banking has given rise to a significant innovation known as "Mobile money," marking a profound shift in the operations of traditional financial institutions. Mobile money has swiftly gained momentum, transforming the financial landscape in a manner that was previously unforeseen (Kulabako, 2010). This revolutionary platform empowers individuals to utilize their mobile phones as digital wallets, facilitating money transfers, payment for goods and services, and various banking transactions. Its impact has been more rapid and far-reaching than initially anticipated.

Mobile money introduces a novel approach to the movement of funds, presenting an alternative to the conventional payment systems offered by banks, remittance companies, pawn shops, and other financial entities. Notably, mobile money stores funds on the subscriber identity module (SIM) as an identifier, distinguishing it from traditional banking, where funds are associated with account numbers (Mendes & Alampay, 2007). In conjunction with services offered by the banking sector, such as cash books, automatic teller machines (ATMs), voice mail/landline interfaces, and internet resources, the mobile platform offers a convenient additional means of managing finances without the need for physical cash (Karjahcoto, 2002).

5.2 Discussion of results based on a thematic area developed from objective two

(To assess the relationship between mobile banking and liquidity of NATSAVE Bank)

The findings presented in Figure 7 shed light on the relationship between mobile banking and the liquidity of NATSAVE Bank. Among the participants, 33% expressed the perspective that mobile banking services contribute to enhancing liquidity when customers utilize mobile banking for savings and making deposits. This suggests a positive impact, where the digital nature of mobile banking may encourage customers to engage in activities that contribute to the overall liquidity of the bank. Contrarily, 37% of respondents indicated that there is no significant impact of mobile banking on the liquidity of NATSAVE Bank. This viewpoint suggests a neutral stance, where mobile banking, according to this segment of participants, does not notably influence the liquidity situation. In contrast, 30% of participants believe that mobile banking services exert pressure on liquidity. They argue that the popularity of mobile banking, especially concerning increased real-time fund transfers and withdrawals, places strain on the bank's liquidity.

The above findings are in line with the following literature:

Liquidity management stands at the heart of a bank's operational and financial stability. It is the process by which banks ensure they have sufficient cash and assets that can be readily converted to cash to meet their short-term financial obligations while also optimizing the use of these assets to generate returns. This aspect of banking is vital because it safeguards the bank against liquidity crises, where it may not be able to meet depositors' withdrawal demands or other financial obligations, potentially leading to a loss of confidence in the institution and systemic disruptions (Chileshe & Chisala, 2018).

However, the introduction and rapid growth of mobile banking can disrupt these established liquidity management practices in several ways. First and foremost, the surge in mobile transactions can lead to significant fluctuations in a bank's daily cash flows. The ease of access to mobile banking means that customers can conduct transactions at any time, leading to unpredictable patterns in deposit inflows, withdrawals, and transfers. This unpredictability challenges the traditional liquidity forecasting models employed by banks.

Moreover, the increasing popularity of mobile banking might encourage customers to hold lower balances in their traditional bank accounts, as they can easily transfer funds to their mobile wallets or make payments directly through mobile apps. This shift can reduce the amount of stable, low-cost deposits held by banks, affecting their funding mix and potentially requiring them to rely more on short-term and potentially more expensive sources of liquidity (Banda & Mutandi, 2017).

5.3 Discussion of results based on a thematic area developed from objective three

(To establish solutions to the negative effects of mobile banking on NTSAVE bank's liquid)
The findings provided by Figure 8 present a comprehensive exploration of potential solutions to counter the negative effects of mobile banking on NATSAVE Bank's liquidity. A notable 83% of participants advocate for the introduction of transaction limits as a means to mitigate these adverse impacts. This strategy reflects a consensus among respondents that limiting transaction volumes can contribute to stabilizing and preserving the bank's liquidity. Encouragingly, 100% of participants underscore the role of promoting digital savings in enhancing NATSAVE Bank's liquidity, emphasizing the potential positive impact of encouraging customers to utilize digital savings channels. Furthermore, 43% of respondents suggest that NATSAVE can address the challenges by offering liquidity management education to customers, indicating the importance of customer awareness and education in managing liquidity-related issues. The study also reveals that 73% of participants recommend introducing dynamic fee structures during peak periods, showcasing a strategy to adapt to fluctuating demand and maintain liquidity levels. Another noteworthy finding is that 57% of participants believe that establishing a liquidity reserve can contribute to NATSAVE having more liquidity, emphasizing the importance of having a financial buffer to address liquidity challenges. Additionally, 53% of participants indicate that introducing strategic partnerships with mobile wallet providers can be a valuable avenue to enhance NATSAVE's liquidity, highlighting the potential benefits of collaborative ventures in mobile banking and liquidity management.

The above findings are in line with the following literature review: Traditional banks have developed a range of instruments and strategies over the years to manage liquidity effectively. These strategies typically involve a mix of maintaining cash reserves, investing in short-term, highly liquid assets (such as government securities), and accessing various sources of short-term funding. Banks often employ sophisticated models and techniques to forecast their liquidity needs, ensuring they have the right balance between liquidity and profitability (Chileshe & Chisala, 2018).

Implementing transactional limits is a prevalent strategy widely embraced by financial institutions as a proactive measure to govern the frequency and volume of financial transactions facilitated through mobile banking platforms (Smith, 2019). The essence of this approach lies in establishing predefined caps on the amount customers can transact within a specified period, with the primary goal of exercising control over potential liquidity risks linked to swift and substantial fund movements. By strategically setting limits, banks aim to curtail the possibility of sudden and significant drains on the available liquidity, thereby fostering a more predictable and manageable flow of funds within the banking system. This strategic initiative is underpinned by research findings that highlight the effect promoting digital savings has emerged as a key strategy for financial institutions globally, acknowledging its pivotal role in fostering financial resilience and stability (Johnson et al., 2020). This strategic shift involves actively encouraging customers to leverage mobile banking platforms for their savings, with the overarching objective of diminishing reliance on conventional, physical branches. The impetus behind promoting digital savings lies in not only aligning with the evolving preferences of customers but also in cultivating a more sustainable and modern source of deposits.

TESTING THE HYPOTHESES

Hypothesis 1

To test the first hypothesis which stated that NATSAVE Bank has adopted specific mobile banking systems, the following are the findings:

Mobile App	Frequency	Percentage
Mobile Banking Website	22	73%
USSD Banking	30	100%
Account balances	30	100%
Access statements	30	100%

Make mobile deposits	25	83%
Bill Payment	29	97%
Airtime Purchase	26	87%
Fund Transfers	19	63%

Source: Field Data (2024)

The study on hypothesis 1 showed that NATSAVE Bank has implemented a wide range of mobile banking platforms to the range of its services. During the research process the researcher found out a mobile banking web site with the aim to provide customers a convenient opportunity, whenever they want to access their accounts and perform different operations. Furthermore, the Bank has options to check balances, check statements, conduct mobile deposits, initiate bill payments, purchase airtime, and transfer funds, signify the flexibility and far-reaching nature of NATSAVE Bank's mobile banking facility. Through such observations, it can be concluded hypothesis 1 that the bank has deployed many mobile banking systems. The results indicated that the H1 is accepted.

Hypothesis 2

To test the second hypothesis which stated that there is no significant relationship between mobile banking and the liquidity of NATSAVE Bank.

Relationship between mobile banking and liquidity	Frequency	Percentage
It Enhances liquidity when customers utilize mobile banking for savings and making deposits.	10	33%
There is no significant impact of mobile banking on the liquidity of NATSAVE Bank	11	37%
It Pressures liquidity as the popularity of mobile banking leads to increased real-time fund transfers and withdrawals	9	30%

Source: Field Data (2024)

The research on hypothesis 2 showed that there is no relation between the adoption of mobile banking by NATSAVE bank and its liquidity. While the customer base has demonstrated significant use of mobile banking, the assessment of the bank's liquidity indicators does not show any substantial effects associated with the introduction of mobile banking. Thus, this discovery makes hypothesis 2 acceptable.

Hypothesis 3

To test the third hypothesis which asked for existing solutions to mitigate the negative effects of mobile banking on NATSAVE Bank's liquidity? The following were the specific solutions: Introduce Transactional Limits

Solutions or strategies do you believe NATSAVE	Frequency	Percentage
Introduce Transactional Limits	25	83%
Encourage Digital Savings	30	100%
Offer Liquidity Management Education	13	43%
Introducing dynamic Fee Structures during peak periods	22	73%
Establish Liquidity Reserve	17	57%
Strategic Partnership with Mobile Wallets	16	53%

Source: Field Data (2024)

The study of research on hypothesis 3 is that the establishment of transaction limitations provides a practical tool, to control cash withdrawals, and keeping optimum levels of cash liquidity in circulation, is a matter of fact. Promoting digital savings is one of such proactive approaches as it gives the users an opportunity to transfer the borrowings to the more stable financial sources at the same time elevating the level of financial inclusion. In addition, specialized liquidity education not only provides customers and bank staff with the necessary knowledge and skills for effective liquidity risk management. The representation of dynamic fee structures by reducing the trading capacities during the peak periods Rewards with balanced volumes as users will be more discouraged during the peak periods; hence liquidity strain will be averted in periods of high-demand. Setting up a fund to be a liquidity reservoir gives a cushion that can absorb any shocks to the availability of liquid funds. Moreover, working in tandem with mobile wallet providers is another way of strengthening the liquidity management through sharing the external sources and networks. Hypothesis 3 showed that NATSAVE has solutions to mitigate the negative effects of mobile banking on NATSAVE Bank's liquidity.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.0 Overview

This chapter unveils the study conclusions and proposed recommendations derived from the extensive research conducted throughout this study.

6.1 Conclusion

In conclusion, the findings of this study on identifying the mobile banking systems adopted by NATSAVE Bank are that the Bank has successfully implemented a comprehensive suite of mobile banking services, covering essential features like account balance checking and statement access to more advanced functionalities such as mobile bank deposits and bill payments. Additionally, the assessment of the relationship between mobile banking and NATSAVE Bank's liquidity revealed a noteworthy finding. The majority of respondents expressed the belief that mobile banking has no significant impact on the bank's liquidity. On the solutions to address the potential negative effects of mobile banking on NATSAVE Bank’s liquidity, findings are that the introduction of transactional limits, encouraging digital savings, offering liquidity management education, introducing dynamic fee structures during peak periods, establishing a liquidity reserve, and fostering strategic partnerships with mobile wallet providers are solutions to NATSAVE Bank’s liquidity.

6.2 Recommendations

NATSAVE should amplify its efforts in educating customers about the full spectrum of mobile banking services it offers. This includes organizing workshops, webinars, and promotional campaigns to raise awareness and promote the benefits of different features.

To further instill confidence in customers, NATSAVE should invest in and implement advanced security measures for mobile banking transactions. This may involve exploring biometric authentication, encryption protocols, and continuous cyber security training for customers.

NATSAVE should adopt adaptive strategies for mobile banking by regularly evaluating and adjusting its services based on customer feedback, industry trends, and technological advancements. This ensures the bank remains agile and responsive to changing market dynamics.

NATSAVE should explore strategic collaborations with Fintech innovators to integrate cutting-edge technologies into mobile banking services. Partnering with industry leaders can provide access to innovative solutions and keep NATSAVE at the forefront of technological advancements.

NATSAVE should explore innovative ways to engage customers within the mobile banking ecosystem. This may include gamification, loyalty programs, or personalized financial planning tools to enhance the overall customer experience.

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APPROVAL OF STUDY

IORG No. 0005376
HSSREC IRB No. 00006464
REF NO. HSSREC-2024-APR-001

23rd April, 2024

Mr. Ogena Anywar Musonda
The University of Zambia
P.O. Box 32379
LUSAKA

Dear Mr. Musonda

RE: **"AN EMPIRICAL STUDY OF MOBILE BANKING ON THE LIQUIDITY SITUATION OF SELECTED NATSAVE BANK BRANCHES OF LUSAKA DISTRICT".**

Reference is made to your submission of the protocol captioned above. The HSSREC resolved to approve this study and your participation as Principal Investigator for a period of one year.

REVIEW TYPE	**ORDINARY REVIEW**	**APPROVAL NO. HSSREC:- 2024- APR – 001**
Approval and Expiry Date	Approval Date: 23rd April, 2024	Expiry Date: 22nd April, 2025
Protocol Version and Date	Version - Nil.	22nd April, 2025
Information Sheet, Consent Forms and Dates	☐ English.	To be provided
Consent form ID and Date	Version - Nil	To be provided
Recruitment Materials	Nil	Nil
Other Study Documents	Questionnaire.	
Number of Participants Approved for Study		

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

CONDITIONS OF APPROVAL

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to HSSREC within 5 days.
- All protocol modifications must be approved by HSSREC prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to HSSREC within 5 working days.
- All recruitment materials must be approved by HSSREC prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. HSSREC will only approve a study for a period of 12 months.
- It is the responsibility of the PI to renew his/her ethics approval through a renewal application to HSSREC.
- Where the PI desires to extend the study after expiry of the study period, documents for study extension must be received by HSSREC at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Documents received within 30 days after expiry will be labelled "late submissions" and will incur a penalty fee of K500.00. No study shall be renewed whose documents are submitted for renewal 30 days after expiry of the certificate.
- Every 6 (six) months a progress report form supplied by The University of Zambia Humanities and Social Sciences Research Ethics Committee as an IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.
- When closing a project, the PI is responsible for notifying, in writing or using the Research Ethics and Management Online (REMO), both HSSREC and the National Health Research Authority (NHRA) when ethics certification is no longer required for a project.
- In order to close an approved study, a Closing Report must be submitted in writing or through the REMO system. A Closing Report should be filed when data collection has ended and the study team will no longer be using human participants or animals or secondary data or have any direct or indirect contact with the research participants or animals for the study.
- Filing a closing report (rather than just letting your approval lapse) is important as it assists HSSREC in efficiently tracking and reporting on projects. Note that some funding agencies and sponsors require a notice of closure from the IRB which had approved the study and can only be generated after the Closing Report has been filed.
- A reprint of this letter shall be done at a fee.

- All protocol modifications must be approved by HSSREC by way of an application for an amendment prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address or methodology and methods. Many modifications entail minimal risk adjustments to a protocol and/or consent form and can be made on an Expedited basis (via the IRB Chair). Some examples are: format changes, correcting spelling errors, adding key personnel, minor changes to questionnaires, recruiting and changes, and so forth. Other, more substantive changes, especially those that may alter the risk-benefit ratio, may require Full Board review. In all cases, except where noted above regarding subject safety, any changes to any protocol document or procedure must first be approved by HSSREC before they can be implemented.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of HSSREC, we would like to wish you all the success as you carry out your study.

Yours faithfully,

DR. J. I. Ziwa
CHAIRPERSON
THE UNIVERSITY OF ZAMBIA HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE - IRB

cc: Director, Directorate of Research and Graduate Studies
Assistant Director (Research), Directorate of Research and Graduate Studies
Assistant Registrar (Research), Directorate of Research and Graduate Studies

Appendix Questionnaire & Interview Guide A

THE UNIVERSITY OF ZAMBIA IN COLLABORATION WITH ZIMBABWE OPEN UNIVERSITY

INSTITUTE OF DISTANCE EDUCATION

DEPARTMENT OF POST GRADUATE STUDIES

Dear Participant,

Thank you for agreeing to participate in my research study on mobile banking at NATSAVE Bank. Your responses are valuable to me and will contribute to my **Understanding of mobile banking systems and their impact on NATSAVE Bank's liquidity**. Please answer the following questions to the best of your knowledge.

SECTION A: DEMOGRAPHIC VARIABLES

1. What is your gender

Male	Female

2. What is your Bracket?

Age Bracket	Option
18 to 25 Years	
26 to 30 Years	
31 to 35 Years	
36 to 40 Years	
41 to 45 Years	
46 and Above	

3. What is your highest level of education completed?

Qualification	Option
Grade 9 Certificate	
Grade 12 Certificate	

Skills Certificate	
Diploma	
Degree	
Master's Degree	
PhD	
Others (specify)	

4. Have you ever used Mobile Banking?

Yes	No

5. What are the user adoption patterns of mobile banking services among customers at selected NATSAVE Bank branches?

Adoption Rate	**Tick 1**
High Adoption Rate	
Moderate Adoption Rate	
Low Adoption Rate	
Varied Adoption Across Age Groups	

SECTION B: SPECIFIC OBJECTIVES

6. What mobile banking systems or platforms are currently adopted and offered by NATSAVE Bank?

Mobile App	**Option**
Mobile Banking Website	
USSD Banking	
Account balances	
Access statements	
Make mobile deposits	
Bill Payment	

Airtime Purchase	
Fund Transfers	
Others (Specify)	

7. How is the relationship between mobile banking and liquidity of NATSAVE Bank?

Relationship between mobile banking and liquidity	**Tick 1**
It Enhances liquidity when customers utilize mobile banking for savings and making deposits.	
There is no significant impact of mobile banking on the liquidity of NATSAVE Bank	
It Pressures liquidity as the popularity of mobile banking leads to increased real-time fund transfers and withdrawals	

8. Are there any negative effects of mobile banking on NATSAVE Bank's liquidity that you have observed or encountered? (If yes, please specify)

Yes	No

9. What solutions or strategies do you believe NATSAVE Bank should consider implementing to address or mitigate the negative effects of mobile banking on its liquidity?

i. ______________________________

ii. ______________________________

iii. ______________________________

iv. ______________________________

v. ______________________________

vi. ______________________________

vii. ______________________________

viii. ______________________________

10. How can NATSAVE Bank protect customers when transacting through mobile banking?

How to Protect Mobile Banking Customers	Tick
Enhancing Two-Factor Authentication (2FA)	
Introducing Encryption Protocols	
Introducing biometric recognition	
Enhancing transaction alerts	
Introducing device authorization	
Organizing Customer Education Programs	
Enhancing transaction limits and controls	
Introducing Geo-Fencing Technology	

11. What unique features or strategies do you believe differentiate NATSAVE Bank's mobile banking services from those offered by competitors? Please provide specific details or examples.

____

____

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____

____

THANK YOU FOR YOUR TIME

INTERVIEW GUIDE

1. Have you ever used mobile banking at NATSAVE Bank?
2. Can you share your experience with mobile banking at NATSAVE Bank?
3. Regarding the adoption patterns of mobile banking services among customers at NATSAVE Bank branches. How would you describe the adoption patterns? Do you notice any differences across age groups?
4. Could you tell me which mobile banking systems or platforms are currently adopted and offered by NATSAVE Bank?
5. What is your perception of the relationship between mobile banking and NATSAVE Bank's liquidity?
6. Have you observed any negative effects of mobile banking on NATSAVE Bank’s liquidity? If so, could you please specify?
7. In your opinion, what solutions or strategies should NATSAVE Bank consider implementing to address or mitigate the negative effects of mobile banking on its liquidity?
8. How do you think NATSAVE Bank can protect customers during mobile banking transactions?
9. What unique features or strategies do you believe differentiate NATSAVE Bank’s mobile banking services from those offered by competitors? Can you provide specific examples or details?

Appendix Budget B

Activity	Item	Unit cost	Total cost (K)
Purchase of Stationery	Plain Papers Pens Clippers	300 100 150	550.00
Field Visits	4 trips	300	1200.00
Food			1500.00
Printing and Binding			2000.00
Journal Article Publication			2900.00
Sundries			340.00
Total			**K6,990.00**

Appendix Gant Chart C

Activity	Time Schedule								
Week	1	2	3	4	5	6	7	8	9
Preparation of Research Proposal									
Submission of Proposal									
Incorporation of Comments from Supervisor									
Pre-testing and adjustments of Data Collection Instruments and									
Field-work (Data Collection)									
Data Analysis & Preparation of First Draft									
Submission of First Draft									
Incorporation of Supervisors Comments and Final Submission.									

Appendix Letter of Consent D

Topic: An effectual study of mobile phone banking on the liquidity situation of selected NATSAVE Bank branches of Lusaka District, Zambia.

Dear respondent,

My name is Ogena Anywar, a student at the University of Zambia.

You have been identified as one of the respondents to participate in this research. Participation in the Study is completely voluntary. You have the right to withdraw at any time without explanation. However, we hope you will participate in the Study since your views are important.

I would like to ask you questions on the effects of Mobile Banking on the Liquidity situation of NATSAVE Branches in Lusaka District. This information will also help NATSAVE Bank come up with services that will impact both the bank and its customers positively. You are therefore asked to answer the questions provided in the questionnaire.

Whatever information you will provide will not be shown to other persons, it will be kept strictly confidential to the extent permitted by Law.

If you need clarity, feel free to contact my supervisor Prof. William Phiri Abwino – PHD. School of Post Graduate Studies, University of Zambia in collaboration with Zimbabwe Open University.

Appendix Information Sheet E

You are being asked to participate in this research study. The study is being conducted by Ogena M, Anywar at the University of Zambia. The research study is one of the requirements for the Degree of Master of Business Administration.

Purpose of study

The purpose of this study will be to investigate the impact of mobile phone banking on the liquidity position of selected NATSAVE bank branches within the Lusaka district of Zambia.

Procedure

If you agree to participate in this study, you will be subjected to a number of questions in the one on one interview to be conducted, and further questions will be given by means of a questionnaire that will be undertaken with a number of other qualified staff members of the company who agree to participate. The questions will align with investigating the effects of mobile banking on the liquidity situation of the Lusaka NATSAVE branches.

Potential risks and discomforts

The research will offer no risks to the participants before, during and after the full research.

Potential benefits to participant

This study focuses specifically on NATSAVE Bank, is extremely important since it explores the complex relationship between mobile banking and bank liquidity. It not only clarifies this important connection, but it also serves a dual purpose by providing workable methods to reduce any negative consequences mobile banking might have on liquidity of NATSAVE Bank branches in Lusaka District.