AN INVESTIGATION OF THE IMPACT OF MOBILE MONEY SERVICES ON THE PROFITABILITY OF COMMERCIAL BANKS IN ZAMBIA

BY

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A Dissertation Submitted to the University of Zambia in Partial Fulfilment of the Requirements for the Award of Master of Business Administration in Finance

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DECLARATION

I, ***Paul Mbunji***, do hereby declare that this work is my original work achieved through personal reading and research. This work has never been submitted to the University of Zambia or any other Universities. All sources of data used and literature on related works previously done by others, used in the production of this Dissertation, have been duly acknowledged. If any omission has been made, it is not by choice but by error.

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APPROVAL

This Dissertation by **Paul Mbunji** is approved as a partial fulfilment of the requirements for the award of the Degree of **Master of Business Administration in Finance.**

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ABSTRACT

The purpose of this study was to investigate the impact of mobile money services on the profitability of Commercial banks in Zambia. The study was guided by three objectives; (i) To examine the level of use of mobile money services in Zambia; (ii) to assess the measures of financial performance in the banking industry and (iii) to establish the relationship between the use of mobile money services and financial performance of the banking industry. The study applied both qualitative and quantitative research approaches mainly with descriptive correlation design. The target population comprised of workers in all the commercial banks, mobile money operators (MMOs) and regulators and bank experts from Zambia Information and Communications Technology Agency (ZICTA) and Zambia Institute of Bankers (ZIOB) located in Lusaka central business district. A sample of 156 respondents was chosen using purposive sampling techniques to select retail, operations, customer service and finance department employees from banks and MMOs and two experts from ZICTA and ZIOB as key informants. Data was collected using questionnaires administered via Google forms sent to WhatsApp contacts and email addresses of respondents. Data were and analyzed using SPSS statistical packages to generate descriptive statistics (mean and standard deviations) and inferential statistics (regression analysis). The findings of the study were presented in form of means, standard deviations, Pearson's linear correlation coefficient and linear regression analysis. According to the findings of the study, it was indicated that there is generally a high level of use of mobile money services in the banking industry observed from a high level of reliability and accessibility to the services (Means of 3.71 and 4.17 simultaneously). The findings also indicated that there is a high level of financial performance reflected by a high level of profitability (Mean=4.52) in the banking industry, a high level of loan supervision (Mean=3 .85) and relatively high revenue sources (Mean=4. 11) for the banks. It was also indicated that there is an insignificant relationship between mobile money services use and financial performance in terms of profitability of banking industry (Sig. Value=0.2l2). It was also indicated that there is an insignificant relationship between mobile money services use and loan portfolio management of the banking industry (Sig. value=0.605). Finally, it also indicated that there is an insignificant relationship between mobile money services use and revenue of banking industry (Sig. Value=0.435). The study thus recommends that commercial banks in Zambia which have not yet collaborated with MMOs should adopt the use of mobile money services on their platforms as it is highly reliable, accessible and reduces congestion in bank premises by customers who come to make transactions. This will help to boost financial performance in the banking industry.

Key words: Banking industry, financial performance, Mobile money, Profitability

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DEDICATION

This Dissertation is dedicated to my children and family at large.

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LIST OF ACRONYMS

MMO	Mobile Money Operators
MMPS	Mobile Money Payment Systems
MMSO	Mobile Money Service Operators
SME	Small and Medium Enterprise
SPSS	Statistical Package of Social Science

CHAPTER 1
INTRODUCTION

1.0 Introduction

The most significant and evident move in the financial advancement on the continent of Africa has probably been the mushrooming success of the mobile money services. The proliferation of mobile money, a platform has allowed people to use their mobile phones to transfer money, pay for goods and services, and conduct banking services. This has started to have a very transformative effect at a faster pace (Kulabako, 2012). Mobile money is an innovative mobile technology that has allowed mobile phone users to deposit money into their mobile phone account, transfer money to other users with a simple text message and withdraw cash at one of thousands of outlets throughout the country (Patnam, 2020).

The Zambia Information Communication Technology Authority (ZICTA) has allowed the mobile network operators to provide mobile money services to their customers as there appears to be no reprieve as competition in the financial sector is heating up to ensure their profitability. The role of this institution is to regulate the Information and Communication Technology, Postal and Courier Services sectors in Zambia. The regulatory functions and responsibilities of ZICTA are drawn from the Information and Communication Technology (ICT) Act No.15,2009, the Electronic Communications and Transactions Act No.21 of 2009 and the postal services Act No.22, 2009. This introductory chapter covers the background to the study, the problem statement, research objectives, hypotheses, and the study's overall scope. The study's rationale and significance are also laid out. A definition is provided for each of the essential terms that were used throughout the research.

Mobile money services have brought about a profound transformation in financial development across Africa, providing access to financial services for millions of previously unbanked individuals. One notable example is Kenya, where the introduction of mobile money service M-Pesa has revolutionised the financial landscape. Transactions through M-Pesa alone accounted for approximately 50% of the country's GDP, underscoring its widespread adoption and significant impact on the economy. This surge in mobile money usage reflects a broader trend across Sub-

Saharan Africa, where over 21 million unbanked individuals gained access to financial services between 2014 and 2019, according to a report by the GSMA.

Moreover, studies have shown that mobile money services have not only increased financial inclusion but also contributed to economic growth and poverty alleviation. For instance, research by Jack and Suri (2014) revealed that access to M-Pesa in Kenya led to higher per capita consumption levels and lifted an estimated 2% of households out of poverty. This underscores the transformative potential of mobile money services in improving livelihoods and socioeconomic conditions, particularly in regions with limited access to traditional banking infrastructure. One of the key strengths of mobile money services lies in their ability to reach remote rural areas where traditional banking services are often unavailable. For example, in Tanzania, Vodacom's M-Pesa service has penetrated even the most remote regions, providing financial services to previously underserved populations. This expansion of financial access has not only empowered individuals but also facilitated business transactions, as merchants in both urban and rural areas increasingly accept mobile money payments, reducing reliance on cash transactions and improving overall efficiency.

The link between mobile money services and financial development in Africa is evident in various ways. Research by Cull and Demirguc-Kunt (2012) indicates that the convenience and accessibility offered by these platforms have encouraged greater participation in formal financial systems, fostering savings, investments, and access to credit among previously excluded populations. Furthermore, studies such as the one conducted by Suri and Jack (2016) have shown that mobile money services have a long-term impact on poverty reduction and gender equality by facilitating savings and investments. Additionally, according to the GSMA (2019), mobile money services have played a crucial role in facilitating government disbursements and aid distribution, thus contributing to financial inclusion. Moreover, the Mastercard Foundation (2018) highlights how mobile money services have strengthened e-commerce in Africa, further enhancing the financial ecosystem in the region. Overall, the transformative effect of mobile money services underscores their crucial role in advancing financial inclusion and development across Africa.

The integration of mobile money services into the financial landscape has brought about transformative changes, prompting an urgent need to assess its impact on the profitability of

commercial banks. This introductory chapter delves into the background, statement of the problem, objectives, research questions, scope, significance, and limitations of the study to comprehensively investigate this critical issue.

1.1 Background of the Study

The introduction of Mobile Money Services (MMSs) in Zambia by the mobile network operators namely, Airtel, MTN and Zamtel to their customers has become a way of gaining competitive advantage through diversification, maintaining customer loyalty and increasing the market share in order to grow their profitability and improve their financial position. Zambia has recorded a significant increase in the number of mobile cell phone subscribers from 2.6 million in 2007 to 10.9 million in 2015 (ZICTA, 2016) and 17.2 million in 2019 due to the increased investment in the sub-sector by mobile service providers (Statista, 2020). Thus, a well-developed financial system helps in efficiency and effectiveness of the commercial banks and is an important concept in operation of the banks in a highly competitive environment. The high competition has led firms to embrace the concept of mobile money to develop a competitive edge and stay in the market. The mobile money platform is a financial innovation that could have effects on commercial banks' profitability. This is due to the fact that all the people who have mobile cell phones can access the mobile money services. For instance, Zambia has an estimated population of about 19,065,005 million people, according to World Population Review (2021), out of which 17.22 million people are mobile cell phone subscribers according to Statista (2020).

The challenges for many of the people to access financial services from commercial banks are the mandatory Know Your Customer (KYC) compliance documents that are required to open an account with banks. The reason being that not all of them are willing to spend time filling in forms and attach numerous mandatory KYC compliance documents. Some of them just want to urgently send money to a parent, child, relative, friend, worker, and supplier (Ky, Rugemintwari and Sauviat, 2018).

As a result, the commercial banks branches are slowly getting de-congested and losing customers. This generation is busier than any generation preceding it. The younger demographics of this generation are less patient and more inclined towards quicker or faster solutions. It is this microwave-quick generation that forms the majority of prospective clients for the mobile financial

service providers. The Commercial Banks are important to Zambia's competitiveness on the global market. As they play an important role in supporting economic growth by channeling money to different sectors of the economy and ensure a smooth operations of these sectors. Yet, many people in Zambia do not have access to financial services offered by the banks due to conditionalities for an individual to open a bank account. Sixty percent (60%) of the Zambian population do not have access to financial services offered by the commercial banks (Ministry of Finance, 2018).

Furthermore, it is very cardinal to note that the penetrating of mobile money services in the market has an impact on the financial institutions, which has led them to come up with strategies such as introduction of agency banking and internet banking so that the impact of mobile money services can be neutralized (Siame, 2019). Therefore, this study was intended to investigate the impact of mobile money services on the profitability of traditional banking services that are offered by the commercial banks in Zambia.

The financial services landscape has, over the years, undergone a massive shift in both structure and how the services are being packaged and delivered. As regards packaging and delivery, the confluence of financial services and internet-enabled technology (FinTech) has quickened the pace of the shift thereby posing a serious threat to traditional methods (Jayawardhena & Foley, 2000; PwC, 2016; Maino, et al., 2019). Either through their internal technology units or in partnership with technology companies, commercial banks (major providers of financial services) have leveraged on technology to deliver products that have appealed to changing consumer needs. In revelation of the benefits associated with technology in financial services, an excess of USD 466 billion, nearly 7% of Africa's real GDP in 2019, was invested in the FinTech space at global level between 2017 and 2020 (KPMG, 2020). While commercial banks in the developing world have not been left behind in the digital banking shift (IFC, 2017a), impressive results have more so come from outside the commercial banking sector. In Sub-Saharan Africa, disruptive innovation has particularly arrived in form of mobile money services offered by Mobile Network Operators (MNOs) and the region has become a global leader in both adoption and usage on this front (Maino, et al., 2019).

In Zambia, the advent of mobile money services dates back to two decades ago when the now unlicensed (on allegations of fraudulent activities and operational challenges) Celpay launched a mobile payment product in 2002 before being joined by Zoona years later in 2009 (Cooper, et al.,

2019). Although Zoona built a strong brand and became a mobile money household name, the entry of Mobile Network Operators (MNOs) in the names of Airtel, MTN and Zamtel in 2011, 2012 and 2017 respectively, massively hurried the pace of adoption mirroring paths of Kenya and Uganda on the continent (Kabala & Seshamani, 2016; GSMA, 2019; Cooper, et al., 2019). At the end of 2019, the number of registered mobile money accounts increased more than 9-fold to over 41 million from 1.4 million in 2012 while the number of active mobile money agent outlets per 1000 square meters jumped to 98 from 2 over the same period. As a result, the volume and value of transactions have grown exponentially over the years. Payments data from the Bank of Zambia (BoZ) indicate a surge in volumes to 750.5 million in 2020 from 17.4 million in 2012 with corresponding value figures rallying over 9000% to ZMW 105.82 billion from ZMW 1.16 billion. Actually, the value of payments made via mobile money surpassed the figure for check settlements in 2018 (ZMW 22.19 billion vs ZMW 12.42 billion).

Just like everywhere else where success has been recorded, mobile money has generated a range of socio-economic benefits for Zambia. For example, increased uptake in mobile money services has resulted in improved levels of financial inclusion (Boz, 2020), is a source of employment for many especially young people working as booth operators (Kabala & Seshamani, 2016), has encouraged the culture of saving (Cooper, et al., 2019) while also being an enabler of entrepreneurial practice for SMEs. While the contribution to GDP by the mobile money sector in Zambia may currently be unquantified, the above cited benefits imply that it is hard to ignore the increasingly growing importance of the subsector to the overall economy. The above success story of mobile money services and a plethora of associated benefits notwithstanding, questions on whether the emergence and immense scale of mobile money services is a threat to commercial banks have arisen elsewhere. Largely, these concerns are emanating from the fact that mobile money accounts almost function as a typical bank account in that people can deposit/withdraw money as well as make payments more efficiently and conveniently so than online banking services in some cases (Kubuga & Konjaang, 2016; GSMA, 2017).

Besides, central banks have moved into this space with healthy regulation and therefore, these platforms have won the trust and confidence of consumers (Cooper, et al., 2019; Muthiora & Bahia, 2020). Literature on whether mobile money services are a competition for commercial

banks does not indicate consensus. On one hand, the emergence of mobile money services has been found to be limiting the ability of banks to mobilize deposits/savings thereby having a negative effect on banks' liquidity positions in Uganda (Kamukama & Tumwine, 2012), has caused a decrease in commercial banks' capital adequacy and liquidity ratios in Kenya (Samuel & Wamalwa, 2019) while a reduction in the commercial bank deposit account penetration has been observed in Uganda (GSMA, 2019). On the other, and by encouraging formal savings and bringing the previously unbanked and underserved populations into the mainstream financial sector, the exponential growth in mobile money services has been viewed as helping in deposit mobilization therefore credit extension by commercial banks (Mbiti & Weil, 2011; Nampewo, et al., 2016; Bank of Ghana, 2017; Ky, et al., 2019).

Recent data indicates a significant surge in both mobile phone subscribers and mobile money users globally. According to the International Telecommunication Union (ITU), as of 2022, there were approximately 5.8 billion unique mobile subscribers worldwide, representing around 70% of the global population (International Telecommunication Union, 2021). Furthermore, the GSMA Intelligence Report highlights that mobile money accounts surpassed the 1 billion mark in 2021, with over 300 mobile money deployments across 95 countries (GSMA, 2021). This growth in mobile phone subscribers and mobile money users is driven by several factors, including increasing smartphone penetration, expanding access to mobile internet services, and the convenience and accessibility offered by mobile money platforms for financial transactions. However, traditional banking services face numerous challenges in adapting to this evolving landscape. One significant challenge is the competition posed by mobile money providers, particularly in regions with underdeveloped banking infrastructure. Mobile money services often provide simpler account opening processes, lower transaction fees, and greater accessibility, attracting individuals who were previously unbanked or underbanked.

Additionally, traditional banks struggle with the cost of maintaining physical branches and ATMs, especially in rural or remote areas where population density is low. This can lead to financial exclusion for communities located far from bank branches. Furthermore, cybersecurity concerns are a pressing issue for traditional banks in the digital era. As more financial transactions move online or through mobile channels, banks face increased risks of data breaches, identity theft, and

fraud. According to a report by Deloitte, the financial services sector is one of the most targeted industries for cyberattacks, with attacks becoming more sophisticated and frequent (Deloitte, n.d.). Moreover, regulatory challenges also impact traditional banking services' ability to innovate and compete with mobile money providers. Compliance with stringent regulations, such as Know Your Customer (KYC) and Anti-Money Laundering (AML) requirements, can be costly and time-consuming for banks, constraining their ability to onboard new customers swiftly.

While the growth of mobile phone subscribers and mobile money users presents significant opportunities for financial inclusion and innovation, traditional banking services must address various challenges to remain competitive in the digital age. These challenges include competition from mobile money providers, the cost of maintaining physical infrastructure, cybersecurity risks, and regulatory compliance burdens. Failure to adapt to these challenges could result in further disruption to the traditional banking sector. In addition to the above controversy in empirical findings in countries, published studies on mobile money in Zambia have largely concentrated on drivers behind increasing adoption (Mintz-Roth, 2018; Njele & Phiri, 2021), influence on financial inclusion (Kabala, et al., 2018) and recently impediments on greater adoption (Chipa & Mwanza, 2021). In view of the foregoing, it remains empirically unclear on what the effect of continuously flourishing mobile money services is on profitability of commercial banks in Zambia.

1.2 Statement of the Problem

Mobile money was primarily responsible for the Zambia's 10.1 percentage point improvement in financial inclusion, which saw it rise from 59.3 percent in 2015 to 69.4 percent (Fin scope, 2020). In contrast to the volume of transactions in the first half of 2021, the value of mobile money transactions showed a declining trend in the first half of 2022. In particular, there was a 33.7 percent decrease in the value of transactions from ZMW 76.0 billion in the first half of 2021 to ZMW 50.4 billion in the same period in 2022. In a similar vein, the number of transactions decreased by 22.6 percent, from 358 million in the first half of 2021 to 277 million (Banda, 2022). The primary cause of the decline in mobile money volumes and values was the advent of near alternatives, such as the expanding agency banking network that most commercial banks have implemented. By providing a variety of financial services via their networks, mobile phone service providers have, in this sense, further integrated mobile money services into the financial industry.

In Zambia, the proliferation of mobile money services has profoundly impacted the profitability of commercial banks. The accessibility and affordability of mobile money have led to a significant shift in consumer behaviour, with individuals and businesses increasingly opting for mobile money transactions over traditional banking services (Kim, 2022). This trend is primarily attributed to lower transaction fees associated with mobile money services compared to traditional banking channels, resulting in a decline in fee-based income for commercial banks. Moreover, the convenience offered by mobile money has facilitated financial inclusion, leading to a rise in the number of unbanked or underbanked individuals relying solely on mobile money for their financial needs (Avom, Bangake and Ndoya, 2023). Consequently, commercial banks are experiencing a reduction in deposit balances as customers switch to mobile money platforms for their banking transactions. The emergence of mobile money operators offering savings and credit services has intensified competition for deposits, compelling banks to innovate their product offerings and customer engagement strategies. Despite the potential for collaboration through partnerships between commercial banks and mobile money operators, regulatory challenges and compliance costs pose additional hurdles for banks navigating this evolving financial landscape (Demirgüç-Kunt, Klapper, Singer & Ansar, 2022). In response, commercial banks in Zambia must adapt their business models to remain competitive amidst the disruptive influence of mobile money services.

The successful deployment of mobile money in sub-Saharan Africa coupled with the leading role played by mobile network operators (MNOs) in the delivery of mobile money services (Pelletier et al., 2020; Sy et al., 2019) raises an important policy question about whether mobile money complements existing traditional financial services in relation to firm performance such as bank profitability. Empirical evidence in this regard is limited as most studies focused on the firm-level implications of either traditional financial services or mobile money (Islam & Muzi, 2020; Islam et al., 2018) without testing for bank profitability. There is evidence showing that mobile money and traditional financial services coexist (Mwange, 2022), but it is not known how the interplay between these two financial services affects banking sector profitability productivity. There are mixed results from the few studies that demonstrate how mobile money affects commercial banks' profitability in different countries, despite this significant advancement. In addition to the above controversy in empirical findings in countries, published studies on mobile money in Zambia have largely concentrated on drivers behind increasing adoption (Mintz-Roth, 2018; Njele & Phiri,

2021), influence on financial inclusion (Kabala, et al., 2018) and recently impediments on greater adoption (Chipa & Mwanza, 2021). In view of the foregoing, it remains empirically unclear on what the effect of continuously flourishing mobile money services is on profitability of commercial banks in Zambia. This investigation was carried out to fill up this knowledge gap.

1.3 Purpose of the Study

The main purpose of the study was to assess the effect of mobile money services on the financial performance of the banking industry in Zambia.

1.4 Specific Objectives

The study was guided by the following specific objectives:

i. To examine the level of use of mobile money services in Zambia.
ii. To assess the measures of financial performance in the banking industry.
iii. To establish the relationship between mobile money services and financial performance of commercial banks.

1.5 Research Questions

The research questions included the following:

i. What is the level of use of mobile money services in Zambia?
i. What are the measures of financial performance in the banking industry?
ii. What is the relationship between mobile money services and financial performance of commercial banks?

1.6 Significance of the Study

The stakeholders who will benefit from the study on the impact of mobile money services on the profitability of commercial banks in Zambia can be categorized into various groups. Commercial banks in Zambia are directly impacted by the proliferation of mobile money services. Understanding how these services affect their profitability can help banks refine their strategies,

such as adjusting service offerings, pricing models, and distribution channels to remain competitive and profitable in the evolving financial landscape.

Telecommunication companies providing mobile money services stand to gain insights into their role in the financial ecosystem and how they can collaborate with or compete against traditional banks. Understanding the impact of their services on banks' profitability can inform their business strategies and partnerships.

Government agencies and regulatory bodies responsible for overseeing the banking and telecommunications sectors can utilize the study findings to formulate policies and regulations that foster innovation, competition, and financial inclusion while safeguarding the stability and profitability of commercial banks.

Organizations and individuals advocating for financial inclusion can benefit from understanding the interplay between mobile money services and commercial banks. The study findings can guide efforts to promote inclusive financial services that cater to the needs of underserved populations in Zambia.

Investors and shareholders of commercial banks and telecommunication companies operating in Zambia can use the insights from the study to assess the potential impact on investment decisions, risk management strategies, and shareholder value.

Researchers, scholars, and students interested in the fields of finance, economics, and technology can benefit from the study findings as a valuable source of empirical evidence and insights for further research and academic discourse.

Concrete examples of how the study findings could be used in policy development include:

Regulatory Framework Enhancement: Based on the findings indicating the impact of mobile money services on banks' profitability, regulatory authorities can adjust existing policies or develop new frameworks to ensure a level playing field for both traditional banks and mobile

money operators. This may involve revising licensing requirements, capital adequacy standards, or transaction regulations.

Financial Inclusion Promotion: If the study identifies positive effects of mobile money services on financial inclusion, policymakers can design incentives or mandates to encourage banks and telecommunication companies to expand their offerings to underserved areas or populations. This could include targeted subsidies, tax incentives, or regulatory support for branchless banking initiatives.

Consumer Protection Measures: Insights from the study regarding consumer behavior, preferences, and vulnerabilities in the context of mobile money services can inform the development of consumer protection regulations. This may involve measures to ensure transparency, privacy, and security in mobile financial transactions, as well as mechanisms for resolving disputes and addressing fraud.

Promotion of Innovation and Competition: Policymakers may use the study findings to foster a conducive environment for innovation and competition in the financial sector. This may include promoting open banking initiatives, facilitating interoperability between different payment systems, and supporting fintech startups and digital financial service providers through regulatory sandboxes or incubation programs.

Overall, the study on the impact of mobile money services on the profitability of commercial banks in Zambia can provide valuable insights for various stakeholders and contribute to informed decision-making, policy formulation, and industry development efforts.

1.7 Scope of the Study

The study only focused on investigating the impact of MMS on the profitability of traditional banking services offered by commercial banks in Zambia. Contextually, the first objective was to examine the level of use of mobile money services in Zambia. This objective was addressed through a comprehensive analysis of the adoption and usage patterns of mobile money services in

Zambia. This objective was chosen to provide a baseline understanding of the current level of adoption and usage of mobile money services in Zambia.

The second objective was to assess the measures of financial performance in the banking industry. This objective involves an in-depth evaluation of various financial performance indicators used to assess the health and profitability of commercial banks in Zambia. This objective is essential for establishing a baseline understanding of the financial health and performance of commercial banks in Zambia.

The third and final objective was to establish the relationship between mobile money services and financial performance of commercial banks. This objective involves analysing the correlation and causation between the adoption and usage of mobile money services and the financial performance of commercial banks in Zambia. This objective is central to the study as it directly addresses the research question regarding the impact of mobile money services on the profitability of commercial banks in Zambia. By establishing a clear relationship between mobile money usage and bank financial performance, researchers can provide actionable insights for banks, regulators, and policymakers to optimise strategies, mitigate risks, and leverage opportunities associated with the adoption of mobile money services.

Geographically, the study was only conducted in Lusaka District and focused on all commercial banks, ZICTA and MMOs with offices in the study area. The choice of Lusaka District as the focus area for this study is justified by several key factors that make it a compelling setting for examining the impact of mobile money services on the profitability of commercial banks in Zambia.

Firstly, Lusaka serves as the capital city and the largest urban center in Zambia. As such, it represents a hub of economic activity and financial services, making it an ideal location to study the dynamics between traditional banking institutions and emerging mobile money services. The concentration of both commercial banks and telecommunication companies offering mobile money services in Lusaka provides a rich environment for data collection and analysis.

Secondly, Lusaka District exhibits a diverse socio-economic landscape, with a mix of urban, peri-urban, and rural communities. This diversity allows for a nuanced understanding of how mobile money services impact different segments of the population, including urban dwellers, rural migrants, and underserved communities. By studying Lusaka District, the research captured variations in usage patterns, preferences, and access to financial services across different demographic groups.

Furthermore, Lusaka District offers accessibility and logistical advantages for conducting fieldwork and gathering primary data. Its well-developed infrastructure, including transportation networks, communication facilities, and research institutions, facilitates data collection efforts such as surveys and interviews. Additionally, the presence of regulatory agencies, industry associations, and academic institutions in Lusaka provides opportunities for collaboration and engagement with key stakeholders throughout the research process.

In terms of the study's methodological context, a mixed-method approach was employed to comprehensively assess the impact of mobile money services on bank profitability. This approach involved both quantitative analysis of financial data and qualitative research methods to capture insights from stakeholders.

Quantitative analysis included collecting financial performance metrics from commercial banks operating in Lusaka, such as profitability ratios, transaction volumes, and market shares, before and after the introduction of mobile money services. This data was analyzed using statistical techniques to identify correlations and trends related to the adoption of mobile money services and changes in bank profitability.

Qualitative research methods involved conducting interviews with representatives from commercial banks, telecommunication companies, regulatory authorities, consumer groups, and other relevant stakeholders in Lusaka District. These qualitative insights provided a deeper understanding of the mechanisms driving the observed trends, including consumer behavior, market dynamics, regulatory influences, and industry strategies.

By combining quantitative analysis with qualitative insights gathered from Lusaka District, the study aimed to generate comprehensive findings that contribute to a nuanced understanding of the impact of mobile money services on the profitability of commercial banks in Zambia.

1.8 Limitations of the Study

Addressing and mitigating limitations in the study is crucial to ensuring the reliability and validity of the findings. One potential limitation could be the sample size and representativeness of the data collected, particularly if the study relies on a limited number of commercial banks and mobile money operators in Lusaka District. To address this, efforts were made to ensure a diverse and representative sample by including a range of banks and telecommunication companies with varying market shares, service offerings, and customer demographics. Additionally, data validation techniques such as cross-referencing multiple sources and triangulating data from different sources were employed to enhance the robustness of the findings. A limited or non-representative sample may affect the generalizability of the study findings beyond the specific context of Lusaka District. While the findings may provide valuable insights into the dynamics between mobile money services and bank profitability in Lusaka, caution should be exercised when extrapolating these findings to other regions or contexts with different market structures, regulatory environments, or socio-economic conditions.

Another potential limitation relates to the quality and reliability of the data collected, particularly if the data sources are incomplete, inaccurate, or subject to bias. To mitigate this, rigorous data validation procedures were implemented, including data cleaning, verification, and validation checks. Moreover, multiple data sources were utilized to cross-validate findings and ensure consistency and reliability. Despite efforts to ensure data quality and reliability, there may still be inherent limitations or biases in the data collected, which could influence the accuracy and validity of the study findings. The researcher acknowledged these limitations and interpreted the findings with caution, taking into account potential biases or uncertainties that might affect the robustness of the conclusions drawn.

As a cross-sectional study, the research may have been susceptible to temporal factors or external events that could impact the relationship between mobile money services and bank profitability

over time. To address this, longitudinal data analysis techniques will have to be employed for the future to examine trends and patterns over an extended period, allowing for the identification of long-term effects and mitigating the influence of short-term fluctuations or external shocks.

In conclusion, addressing and mitigating limitations in the study is essential for enhancing the reliability and validity of the findings. While efforts were made to address potential limitations such as sample size, data quality, and temporal factors, researchers should acknowledge the inherent uncertainties and biases that may affect the study's conclusions. By adopting robust methodological approaches and acknowledging the potential limitations, researchers can ensure that the study findings provide valuable insights into the impact of mobile money services on bank profitability in Lusaka District while acknowledging the broader context in which these findings are situated.

1.9 Structure of the Dissertation

The dissertation comprises five chapters structured as follows:

1. Introduction: This chapter provides an overview of the research topic, its significance, and objectives. It sets the context for the study and outlines the methodology employed to address the research questions.

2. Literature Review and Theoretical Framework: Chapter Two offers a comprehensive review of existing literature related to the study topic, focusing on identifying gaps in current knowledge. It also presents the theoretical and conceptual framework guiding the research, synthesizing relevant theories and concepts that underpin the study.

3. Research Methodology: Chapter Three details the research methodology employed in the study, including the research design, data collection methods, and data analysis techniques. It provides a clear description of how the data was collected and analyzed to address the research objectives.

4. Data Analysis and Findings: Chapter Four presents the analysis of the data collected and the findings derived from the analysis. It provides a detailed exploration of the empirical findings in relation to the research questions, supported by relevant tables, figures, and descriptive statistics.

5. Discussion of Findings: Chapter Five presents a discussion of results by linking primary findings with literature review. It provides a comparison with prior research on the subject.

6. Summary of Findings, Conclusion, and Recommendations: Chapter Six summarizes the key findings of the study, drawing conclusions based on empirical evidence and theoretical insights. It also offers recommendations to relevant stakeholders for implementation or further study based on the study findings and implications.

By following this structured approach, the dissertation aims to provide a coherent and rigorous investigation into the impact of mobile money services on the profitability of commercial banks in Zambia, while offering valuable insights for future research and policymaking in the field.

1.10 Chapter Summary

This introductory chapter sets the foundation of this research study. It sets out the background to the noted problem and goes on to give the problem statement for the study to provide a solution and contribute to the body of knowledge. The study aims, objectives and research questions are clearly pointed out in coming up with tentative solutions to the stated problem. Additionally, the significance of the study and study format are highlighted. The next chapter reviews relevant literature to the study.

CHAPTER 2
LITERATURE REVIEW

2.0 Introduction

This cchapter provides a review of relevant literature that emerged from studies that have been conducted by other researchers at global, continental and local levels. The chapter further deals with the study theoretical foundation. Another section of the chapter looks at how mobile money growth affects the banking industry, customer preferences between banks and mobile money services, and how banks will remain effective in the face of mobile money growth. The chapter ends by outlining the study conceptual framework.

2.1 The Concept of Mobile Money

In Sub-Saharan Africa, a new phenomenon known as mobile money (M-money) has gained popularity. Many authorities have defined it, some of which are included below. Tobbin (2011) asserts that, "mobile money can be said to include all the various initiatives covering long distance remittance, micro-payments and informal airtime bartering schemes aimed at bringing financial services to the unbanked using mobile technology." Mobile money transfer is an invention to transfer money via the ICT infrastructure of the MNO, claims Mbiti (2011), quoted in Mutong' Wa et al. (2014). Jenkins (2008) agreed that mobile phones are used to access and use mobile money, pointing out that mobile subscribers in African countries are starting to use mobile money for a variety of domestic and international transactions and services. According to Mazambani and Madzikanda (2014), conducting banking functions on a mobile device is what mobile money entails. In light of the aforementioned definitions, it has been noted that mobile money transfer services is an invention that allows for payments, money transfers, and carrying out of transactions using a mobile device with the assistance of a mobile network operator's infrastructure or system, such as Near Field Communication (NFC) technology or Short Message Services (SMS), to name a few. This allows for previously unreachable citizens to now have access to financial services.

A variety of financial services made available via mobile phones and other portable devices are referred to as mobile money. These services can include: (i) person-to-person money transfers, such as domestic and international remittances, (ii) person-to-business payments for a variety of goods and services, and (iii) mobile banking, which enables users to access their bank accounts,

make deposits and withdrawals, and pay bills (Dolan, 2009). According to Desai (2011), a service qualifies as mobile money if it satisfies the following requirements: (i) It must provide at least P2P transfers, bill payments, bulk payments, and value storage; (ii) It must utilize a network of transactional agents outside bank branches for cash in or cash out; (iii) It must provide an interface for initiating transactions for customers and agents; and (iv) Customers must be able to use the service. Desai (2011) and Dolan (2009) concur with Esselaar (2011) that mobile money transfer includes everything from person-to-person (peer-to-peer) transfers, airtime purchases, bill payments, salary payments, bank balance inquiries, and mobile finance. The most frequent mobile money transfer transactions in developing countries are peer-to-peer transfers, in which people transmit money over vast distances, either domestically or internationally, to family members or friends. The program makes it easier to send money from one person to another, pay bills, and transfer money from the government to an individual (Mazambani and Madzikanda, 2014).

2.2 Performance of the Banking Sector Globally

Numerous studies have been conducted in the past to analyse the determinants of local and foreign banks' performance. In Malaysia, empirical studies on the analysis of profitability of foreign and local banks showed marked differences.

Employing Generalised Least Squares (GLS) with unbalanced panel data on seventeen Islamic banks, Muda et al. (2013) compared the determinants of profitability of domestic and foreign Islamic banks operating in Malaysia. The study found that domestic Islamic banks were more profitable than foreign Islamic banks. The results of the study also indicated that determinants of profitability of domestic Islamic banks were different from those of foreign Islamic banks, citing overhead expenses, loans, efficiency, gross domestic product growth rate and bank size as having significant effect in determining the profitability of domestic Islamic banks, while gross domestic product per capita was the driver of profitability of foreign Islamic banks.

In a related study, Azam and Siddiqui (2012) analysed and compared the profitability of domestic and foreign banks based on quarterly data, with a sample of 36 commercial banks in Pakistan during the period 2004 and 2010. The sample was split into three categories, namely domestic

banks under Government control, domestic banks under private control, and foreign banks. They found that foreign banks were more profitable than both types of domestic banks put together.

Awdeh (2015) analysed the differences in the profitability determinants of domestic and foreign banks operating in Lebanon between 2003 and 2013. The study noted that foreign banks are more profitable than all domestic banks despite operating on the same market. In addition, domestic banks and the determinants of the profitability of foreign banks have been noted to be different. The study also shows that foreign banks are less affected by the local macroeconomic factors than domestic banks.

Azam and Siddiqui (2012) analysed and compared the profitability of domestic and foreign banks based on a quarterly data sample of 36 commercial banks in Pakistan during 2004 and 2010. The sample was divided into three categories: domestic banks under Government control, domestic banks under private control and foreign banks. They found that foreign banks were more profitable than both types of domestic banks. Their results also showed that domestic and foreign banks had different determinants of profitability. In other words, the factors that are important in determining the profitability of domestic banks are not necessarily important for foreign banks. But it is the opposite situation in the developed countries where local banks are more profitable than foreign banks.

Ali et al. (2013) explored the profitability of commercial banks with the help of return on asset (ROA) and return on equity (ROE) models. It was found that, the efficient asset management and economic growth established positive and significant relation with profitability measured by ROA and ROE. It was also noted that, the high credit risk and capitalisation led to lower profitability measured by ROA. The operating efficiency tended to exhibit a higher profitability level as measured by ROE.

2.3 Performance of the Banking Sector in Zambia

As at 31st December 2022, there were 19 licensed commercial banks operating in Zambia. Out of these, eight were subsidiaries of foreign banks, seven were locally owned private banks, and three were partially owned by the Government. In its 2018 Annual Report, the Bank of Zambia reported that foreign banks had a commanding share of the industry's profitability, averaging 82.6%

between 2016 and 2018, meaning the local banks only enjoyed 17.4% of the industry's profits, resulting in huge externalisation of the financial sector's profits. Key findings of empirical analysis suggest that foreign-owned banks tend to outperform domestic banks in terms of profit efficiency in Sub-Saharan Africa (Kiyota, 2011). Generally, in Africa, 'where private ownership involves foreign ownership, this does seem to have a positive effect on bank performance' (Figueira, et al., 2006). However, in Kenya, ownership identity was found to have an insignificant impact on financial performance (Ongore & Kusa, 2013).

Further in the Middle East, a study in Saudi Arabia found that domestic banks were more profitable than foreign banks (Alyousfi, et al., 2017). On face value it would seem a reasonable expectation that domestic financial institutions ought to be in a position to have a competitive edge over their international counterparts. However, the current body of research reveals that domestic financial institutions are up against extreme competition from international financial institutions and that they occasionally come out on the losing end in some categories, such as technical and service portfolio innovation (Parker, 2010).

According to Sturm and Williams (2004), it is abundantly obvious that domestic financial institutions are not very adept at making sensible use of the physical resources of production at their disposal. In addition to this, in comparison to their international competitors, local financial institutions are far less effective at earning money. For instance, foreign-owned banks in Zambia have consistently outperformed local banks, as shown by other indicators in the Bank of Zambia 2018 Annual Report (distribution of the Assets, Loans, Deposits, and Profit, by ownership type, 2016-2018). This is because foreign-owned banks have access to relatively more favourable capital markets that local banks do not.

2.4 The Level of Use of Mobile Money Services

Mobile money services are electronic accounts that may be accessed with a mobile phone (Siasulingana & Haabazoka, 2024). Mobile money services provide a secure and simple way for both banked and unbanked individuals to send and receive money using mobile phones, whether they are at home or abroad, at any time. The application includes functionalities such as a digital wallet, mobile money transfers, airtime top-ups, and mobile banking services. A mobile wallet allows users to receive, store, transmit, or make payments from any location at any time. Money transfer options refer to the ability to transmit money from a mobile money account to another subscriber at any location and time. This is similar to airtime transfer, which allows the purchase

and sending of airtime to another subscriber inside the same network. Mobile banking collaborates with financial institutions to offer banking services to mobile money users (Bagudu, Mohd Khan & Roslan, 2017). The utilization of mobile phones for financial transactions commenced with the advent of prepaid mobile phone services, which specifically catered to low-income individuals seeking greater anonymity compared to post-paid phone subscribers. Prepaid users have the convenience of being able to easily buy modest amounts of airtime from a shop and use it to make calls without any additional steps or requirements.

This particular group of mobile phone users quickly grew to a significant size, making them an ideal audience for micro-payment capabilities, as most of them had little or no access to banking services. Duncan and Eliot (2004) identified the primary reason for the attention given to this segment and the necessity to create financial services specifically for them. This was motivated by the goal of establishing a cashless transaction environment, which offers benefits such as decreased fraud, decreased untraceable criminal activities, decreased cash handling costs, and decreased reliance on cash-in-hand when necessary. Katema and Lungu (2019) attribute the emergence of mobile money and its global ubiquity to the swift and extensive adoption of mobile phones, which began in 1999. Mobile phone enabled commerce, often known as m-commerce, may have originated in 1997 with the introduction of Coco Cola vending machines and mobile phone banking services in Finland.

Duncan and Eliot (2004) delineated African networks that facilitated mobile commerce (m-commerce), encompassing MTM banking, Celpay, Fundamo, and M-pesa. However, the number of networks has substantially increased since then. MTM banking was a partnership between Standard Bank of South Africa and the mobile operator MTM. Celpay was a collaborative system created by Celtel and First Rand Bank of South Africa.
Fundamo was a South African company that specialized in providing software for mobile commerce (m-commerce). The number of mobile users is growing because to increased competition among the five Mobile Network Operators in Uganda: MTN Uganda, Orange Uganda, Uganda Telecom, Wand Telecom, and Airtel Uganda. Currently, the total number of mobile phone subscribers across all Mobile Network Operators is approximately 9.9 million.

Approximately 600,000 of these devices were introduced in the first quarter of 2010, contributing to an increase in mobile network usage to 31.4 lines per person. This is somewhat lower than the national tele-density of 32.2 lines throughout the whole telecommunications industry. Voice

communication continues to dominate network traffic, particularly within the Mobile Network Operator's network. This is largely due to the success of promotions such as Warid's Pakalast and Pepeya, Zain's kika, and Orange's Gyekiri (Kithaka, 2014). These promotions offer unlimited calling within networks for specific time periods, ranging from an hour to a week, in exchange for a fixed fee. In the first quarter of 2010, the number of SMS messages increased by 28% to around 176 million, compared to 138 million in the fourth quarter of 2009. This growth can be attributed to the efforts of mobile network providers, who are promoting SMS usage through marketing and offering free services such as missed call notifications and call me back (Muisyo, Alala & Musiega, 2014).

The proliferation of mobile internet access can be attributed to the intensifying rivalry in data services among Mobile Network Operators. The decreasing cost of data services is being driven by the combination of cheaper bandwidth provided by underwater cables and the expanding coverage of 3G networks. Furthermore, Mobile Network Operators have established collaborations with social networking platforms such as Facebook to offer complimentary mobile connectivity (Morgun, Ibraimova, Haabazoka & Makhmudov, 2021). The mobile money implementation known as M-Pesa, offered by Safaricom (a subsidiary of Vodafone) in Kenya, is widely considered to be the most renowned at present (Mungai, 2019). Although M-Pesa was not the initial large-scale implementation, its quick adoption sets it apart from Smart money or G-Cash from the Philippines (Mwiya et al., 2017). Mwiya and his team have conducted thorough research on M-pesa, a service mostly utilized for domestic financial transactions across several regions of the country (Pickens, 2009).

Some of the additional features include international money transfers and the integration with Equity Bank to offer Mkesho, a bank account that is connected to M-pesa, allowing users to move money between the two platforms (Equity Bank, 2010). Additionally, it was seen that users have started utilizing M-pesa as a means of saving money, as highlighted by Phiri (2020). Vodafone has successfully implemented M-pesa in Afghanistan, Tanzania, and most recently in South Africa. Two pioneering mobile money offerings in the Philippines are Smart Money from Smart Communications, released in May 2003, and G-Cash from Globe Telecom, launched in October 2004 (Popkova & Haabazoka, 2019). Although there are no recorded user studies, the two offerings have served as a valuable platform for learning about mobile money implementations worldwide. They have demonstrated contrasting models of collaboration that can exist between

the banking and telecommunications sectors, which are both crucial in this context. The distinctive function of international remittances in the Philippines has had a significant impact on their growth. This has compelled them to seek international collaborations that facilitate the inflow of money, which is then distributed extensively within the country.

G-Cash has formed partnerships with rural communities in the Philippines on the home front (Yankovskaya et al., 2021). Wizzit in South Africa distinguishes itself from other mobile money services by being independent from any Mobile Network Operator (MNO). This independence allows Wizzit to operate freely across all networks, similar to Smart Money. Additionally, Wizzit is linked to a bank account and debit card, which enables the service to make use of existing financial infrastructure such as ATMs and bank branches, in addition to Wizzit agents. In a study conducted by Ivatury and Pickens (2009), 215 Wizzit users were examined. The findings revealed that although a significant number of users had low incomes, they were comparatively more affluent than the average impoverished individuals in South Africa. Additionally, these users showed a higher level of technological proficiency.

2.5 Measures of Financial Performance in the Banking Industry

The performance of the banking sector is considered to be a reflection of the economic activities carried out in an economy. The financial stability of a bank is crucial not just for its depositors but also for its stakeholders and the overall economy. Hence, financial analysts and economists have consistently made attempts to assess the financial robustness and operational effectiveness of banks, and thereafter take appropriate measures to manage them (Athansasoglou, 2012). The CAMELS model is widely favored by regulators for its high level of efficacy. Gaytan and Johnson (2012) asserted that this approach is extremely suitable for evaluating a bank's performance. In a study conducted by Veni (2014), it was discovered that North American bank authorities have implemented the CAMELS technique to assess the financial and managerial dependability of commercial lending organizations. This model evaluates the comprehensive state of the bank, including its strengths and shortcomings. (Avkiran, 2010) highlighted the significance of the CAMEL model in evaluating the overall performance of a bank. In his study, Dahiyat (2012) thoroughly analyzed each component of the CAMELs system, which includes capital adequacy, asset quality, management quality, earnings, liquidity, and sensitivity to market risks. This analysis was conducted through a comprehensive review of relevant literature and empirical studies, as

well as interviews with key individuals from the Jordan Securities Commission and brokerage firms.

Ahmed (2012) provided an explanation of the CAMELS rating method utilized by bank examiners and regulators. The study reveals a positive correlation between banks with high efficiency scores and strong CAMELS ratings. Veni (2014) attempted to use the CAMEL grading system to assess the challenges encountered by banks and conduct a comparison analysis of the performance of different banks. Capital adequacy refers to the assessment of a bank's overall capital situation, which serves to safeguard depositors against potential losses that a bank may experience (Gaytan, 2012).

According to Johnson (2012), the mix of commercial banks' assets reflects the level of concentration of loans and advances. The substantial concentration of loans and advances highlights the susceptibility of assets to credit risk, particularly given the huge proportion of non-performing assets. Management soundness is the crucial prerequisite for the strength and growth of any financial institution. Management quality indicators are essentially distinctive to each individual institution (Gaytan & Johnson, 2012). The earnings and profitability of a bank are indicative of its capacity to sustain current and future operations. More precisely, this refers to the ability to withstand losses by establishing enough capital, funding its growth, and distributing satisfactory dividends to its shareholders (Veni, 2011).

Grier (2007) emphasized that management is the most crucial factor in the CAMEL rating system since it greatly influences a bank's success. In his study, Muhammad (2011) asserted that the overall strength of a bank is determined by the strength of its CAMEL factors. Bernanke (2007) conducted an empirical investigation in which he examined the United States. The Federal Reserve conducted on-site bank examinations to assess the safety and stability of financial institutions, utilizing the CAMEL rating model for support.

Veni (2014) emphasized the significance of capital adequacy requirements and the strategies employed by banks to increase their capital ratios. In their study, Gupta and Kaur (2008) utilised the CAMEL model to evaluate the performance of Indian private sector banks. They ranked the top five and bottom five banks based on their assessment.

Al-Tamimi (2010) conducted a study using a rating model to examine the factors that affect the performance of Islamic and conventional banks in the United Arab Emirates (UAE) from 1996 to

2008. The study found that liquidity and concentration were key factors affecting the performance of conventional banks, while the performance of Islamic banks was heavily influenced by factors such as cost and the number of branches. Traditionally, the financial performance of banks and other financial institutions has been assessed through the utilization of financial ratio analysis, benchmarking, evaluating performance versus budget, or a mixture of these methods (Avkiran, 2010). In essence, a significant portion of the existing literature on bank performance characterizes the goal of financial organizations as achieving satisfactory returns while minimizing the risks associated with earning those returns.

Bosi (2011) demonstrated in their study that previous research on company performance evaluation primarily concentrates on operational efficiency and effectiveness, which can directly impact a company's ability to survive. The study utilized a novel two-stage data envelopment analysis approach to determine that a company's superior efficiency does not necessarily translate to superior effectiveness.

Duncan and Eliot (2004) said that there is a favorable correlation between customer service quality scores and various financial performance measures such as interest margin, return on assets, and capital adequacy.

Avkiran (2012) examined the progress and achievements of both domestic and foreign banks in Arab Gulf countries. The study revealed that banks from both local and foreign origins have demonstrated strong performance in these nations in recent years. In addition, he stated that the banks in these economies have sufficient capital, and the banking system is highly developed, with fierce competition among the banks.

Efficiency is typically defined as the ratio between the outputs of a system and the inputs utilised to produce them. In the literature on financial efficiency, efficiency is considered a relative metric that indicates the deviations from the highest possible output for a given input level (Yousof, 2018). However, there have been various studies that have analyzed the efficacy of financial institutions. In Muhammad's study from 2011, data envelopment analysis was employed to assess the technical efficiency of US banking. The analysis focused on distinguishing between pure technical efficiency and scale efficiency.

2.6 Relationship between Mobile Money Services and Financial Performance of Commercial Banks

Mobile banking has altered the way people in the developing world transfer money, and it is ready to offer more sophisticated banking services which might make a genuine impact to people's lives. Banks have a crucial function in the economy. Specifically, banks have a dual responsibility to fulfil: The services include accepting deposits and making investments on behalf of investors. Bank liabilities, often known as claims on deposits, enable transactions with other entities (Bodla, 2011). In addition to these fundamental duties, depositing money in a bank significantly mitigates the danger of loss or theft. Literature in economics has consistently emphasized the significance of agents having access to banking services, which encompasses a wide range of financial services. This essentially aims to enhance the performance of commercial banks.

In Zambia, for a partnership to be established between mobile money operators and banks, a formal agreement must be reached between the financial institution and the mobile money operator. This agreement stipulates the construction of an escrow account in a financial institution where funds are put prior to the production of e-value. The primary focus of the Bank of Zambia (BOZ) has been to protect clients' digital currency, which they acquire by exchanging cash with mobile money agents (BOZ, 2015). The BOZ permits mobile money operations only in collaboration with a regulated financial institution, with the total value of mobile money sold to customers being comparable. Consequently, mobile phone operators, who lack the necessary financial licenses, are prohibited from directly managing the funds they have collected through mobile money transactions. It is necessary for the parties to be capable of harmonizing the amounts in the escrow account and the mobile money accounts. This could perhaps facilitate the promotion of the bank indirectly (BOZ, 2015). Conventional banks may not always meet the needs for payment and transactional services effectively due to difficulties and high costs associated with implementing a comprehensive banking services package (Higgins, Kendal & Lyon, 2012).

Mobile money transfer services offer a cost-effective, efficient, and dependable way to enhance corporate growth and efficiency. These services utilize trustworthy money service support systems that minimize the reliance on cash transactions and mitigate associated hazards. According to Veni (2014), literature indicates that the mobile money transfer service is characterized by greater speed, lower cost, increased reliability, and enhanced safety. The advantages of cashless transactions, such as reduced chances of fraudulent and illegal activities, as well as the use of mobile money

technologies (Higgins, 2012), have led to higher rates of adoption (Mbogo, 2010). Mobile banking provides banks with various chances to enhance their earnings. These include capitalizing on the worth of customer insights, providing enhanced immediate availability to products and services, and executing focused marketing efforts based on the consumer preferences that banks gather. Prior studies on branchless banking have recognized the significant contribution of mobile phones in certain models (Ivatury & Mas 2008; Lyman et al. 2008). Their consistency aligns with the potential of electronic money to enhance efficiencies and decrease transaction costs. In theory, mobile money services are anticipated to have a favorable impact on financial performance. This is because mobile banking services generate additional profits for banks through commission incomes and lead to a progressive decrease in overhead expenses, particularly related to staff and marketing.

According to Ndung'u (2011), mobile banking has brought about a revolution in the money transfer industry in Kenya. It has also led to the development of new innovations that have reduced transaction costs for banks and customers. This evolution of the money transfer industry has resulted in increased revenues and profits for banks. This validates Uganda's prominent position in the international arena for mobile money transfer services. Mobile banking's potential has led to its replication in other countries, posing a challenge to established money transfer systems such as the check system. A significant shift has occurred in Uganda where a large number of retail transactions are now being conducted using mobile phones. Bank customers have the ability to transfer funds between their bank accounts and their e-money accounts, as well as between their e-money accounts and their bank accounts. The enhancement of mobile money services has bolstered the speed and flow of money inside the country, leading to increased profits for banks through commission revenues. Financial institutions that have struggled to offer lucrative services to impoverished clients through traditional methods view mobile banking and mobile payments as a type of branchless banking that reduces the expenses associated with serving low-income consumers (Ivatury & Mas, 2008). Mobile money services are now considered the fifth channel of banking, separate from online banking, and are seen as having their own connection with the core banking system.

2.7 Review of Related Studies

This section presents scholarly work done on the effect of mobile money on the performance of the banking sector.

Nnandhi (2012) conducted a survey on mobile money usage in daily life and its effect on low-income users' saving practices in Delhi, India. Using a sample of 160 clients and 20 agents, it was found that EKO collaborated with a network of agents that provided banking services to persons without access to official bank accounts. EKO had a larger customer base by 2011.

Using OLS regression analysis on quarterly data from Q2, 2007 to Q4, 2014, Kamboh and Lighari (2016) investigated the impact of cashless payment systems on the financial performance of the Pakistani banking sector. The findings showed that POS and mobile payments are significantly positively correlated with ROE, whereas ATM transactions are significantly negatively correlated with profitability. This result contrasts with that of Zu et al. (2019), who found in their study on the effects of payments system technology on the performance evidence of electronic banking in Africa that ATMs have a favourable impact on banks' profitability while POS and internet payments have a negative impact. Numerous studies demonstrate how payments system changes affect banks' operating results.

Suleymanov et al. (2019) used cross-country panel data to analyse data from 23 developed and developing nations between the years of 2008 and 2018, looking at the effects of electronic payments innovations on bank performance. Apart from POS and Iinternet services, which had a negative influence on profitability, the study found that all payment system channels in the study had an impact on profitability. Additionally, Akhisar et al. (2015) used data from 23 developed and developing nations for the years 2005–2013 to examine the effect of electronic payment technologies on bank performance. The results showed that, apart from POS and internet payment, payment innovations had a favourable impact on profitability.

Yao et al. (2018), from China's developing economy study third-party payment (TPP) data from 2007 to 2014 used the Vector Auto-Regression impulse model to examine the effect of payment technology on the financial performance of China's banking industry. The results showed that TPP

boosts financial sector revenue growth and improves money turnover. The findings clearly show that advancements in payment technology support industry synergy in China's financial industry development. Additionally, Dong et al. (2020) examine how web finance affects Chinese commercial banks' performance. The study ingeniously combines data from several sources to create a web account list that includes information from Internet search queries and online money transfers. The findings demonstrate that the development of Internet finance significantly impacts banks' benefit, security, and development while, conversely, having a negative impact on their liquidity. The examination also revealed that web finance has increased China's banks' ability to conduct extensive corporate operations.

In their analysis of mobile payment choices, Dahlberg, Mallat and örni (2004) created a trust-enhanced technology-enhanced model by combining the traditional TAM model (Davis, 1989) and the integrated TAM model (Venkatesh et al., 2002). Both internal and extrinsic motivation were taken into consideration in the integrated strategy. Both willingness to trust and perceived trust were taken into account by the new trust-enhanced model. The study did not take into consideration the use of mobile money services or their implications on how the banking sector functions.

Muisyo et al. (2014) examined the effects of mobile money services on the performance of banking institutions in Kakamega town, Kenya and concluded that provision of mobile money services by various service providers has a positive impact on the performance of the banking institutions.

Similarly, Nyaga (2017) investigated the influence of mobile money services on SME performance and documented that mobile money usage has made a major beneficial contribution to the SME sector since it is preferred by the majority of traders over the official banking sector for daily transactions. A similar thought is shared by Nyathira (2012) who argues that mobile money, as a financial innovation, contributes favorably to profitability of commercial banks.

Kirui and Onyuma (2015) added to the body of knowledge by investigating the impact of mobile money transactions on SME sales turnover in Nakuru Town. Using a descriptive cross-sectional survey approach to target 21,139 registered SMEs in Kenya’s Nakuru Town Sub-Counties, the results from their regression unveiled that mobile money transactions has a positive significant relationship with SME sales turnover.

In a related study, Ahmed and Wamugo (2018) found that financial innovations such as agency banking, mobile banking, internet banking, and ATM banking have a positive and significant impact on commercial banks' performance in Kenya via a variety of channels, including increased

profitability, reduced banking and other infrastructure costs, increased productivity and efficiency, increased customer outreach and customer relationship management, and increased accessibility. A similar outcome was obtained by Harelimana (2017) who analyzed the effect of mobile banking in financial performance of Unguka Bank Limited, Rwanda from the period spanning from 2012 to 2016.

Likewise, Kisaka et al. (2015) investigated the link between mobile banking deepening and commercial bank financial performance in Kenya. The study used a descriptive research design to cover six communications service providers and 43 commercial banks operating in Kenya. The authors found that there was a positive relationship between the total number of mobile banking users and the value of mobile banking transactions although the study found a weak negligible positive relationship between mobile banking deepening and commercial bank financial performance. This is in line with a study by Kithaka (2014).

In Douala, Cameroon, Talom and Tengeh (2020) examined the impact of the mobile money payment and receipt services on financial performance. The researchers concluded that the adoption of Mobile Money services exerted a significantly positive effect on the financial performance (i.e., sales turnover) of SMEs.

On the other hand, Kamukama and Tumwine (2012) find that increased use of mobile money services is associated with lowered bank deposits by clients, which negatively affected commercial banks' liquidity position, using an Ordinary Least Square (OLS) cross sectional and quantitative research design on 345 respondents from 23 commercial banks in Uganda. The authors also report that commercial banks' liquidity positions were deteriorating, with mobile money services accounting for 36.7 percent of the variation in commercial bank liquidity. A similar conclusion was obtained by Iheanachor and Ozegbe (2020) who investigated the causal link between mobile money and bank performance in Nigeria by applying the Autoregressive Distributed Lag (ARDL) model and Wald causality for a quarterly time-series data from 2014 to

2018. The study revealed that despite a steady increase in the volume and value of mobile money transactions empirical evidence from the analyses showed that mobile money variable hinders rather than helps banks' profitability. The authors also show that mobile money does not make a major contribution to the financial institutions' current assets base.

Additionally, Muisyo et al. (2014) studied how mobile money affected the efficiency of banking institutions in the Kenyan town of Kakamega. The results of a correlation analysis and self-administered questionnaire on 115 participants demonstrated that the introduction of mobile money services had improved the financial performance of banks. Despite temporary technical difficulties, convenience and dependability boosted client pleasure and loyalty.

Notwithstanding, an empirical investigating as to whether mobile money transaction has aided the performance of the Ghanaian banking sector is non-existent in the literature. The argument follows from fact that Ghana's financial sector is not effectively executing its development mandates especially following recent reforms by the Bank of Ghana to clean up defunct banks and as such and it is currently not in a position to fulfil its potential as a dependable driver of economic growth and development. The closest to this scholarly material in the case of Ghana is the study by Opare (2018) who only provides an essay on merits and demerits of mobile money on the profitability of the Ghanaian banking industry without any empirical framework. The contention of this paper is that the omitted variable bias, technique(s) adopted and, more specifically, the context under consideration could be responsible for the inconsistent nature of many of the results reported by previous researchers. These concerns necessitate the present study. Thus, the current study fills this gap by providing rigorous econometric analysis within scope of the study, although outside Ghana.

A study by Katusiime (2021) found that the advent of mobile money services has transformed the landscape of the financial market in developing countries, and increased competition among the financial services providers. In Africa, mobile money has 26 times the reach of ATMs and 58 times the reach of commercial bank branches. The mobile network operators have networks that reach further and deeper into rural areas historically marginalized and in turn they increase their customer base compared to the commercial banks. This study further found that the scale of the mobile money services in Africa continues to grow, with more than 481 million registered mobile money accounts in 2019.

With regards to the impact of mobile money on the use or ownership of bank accounts, Myeni, Makate and Mahonye (2020) found from a 2014 Fin Scope data on Estwani that individuals who use mobile money are more likely to have a bank account at a formal financial institution. This largely contradicts the findings from an earlier study by Batista and Vicente (2018) who through a field experiment in rural Mozambique found that there was a tendency for mobile money to

substitute traditional alternatives for savings and remittances. Batista and Vicente's (2018) results are in line with those of Fanta et al. (2016).

Using FinScope data from 11 countries within the Southern African Development Community, Fanta et al. (2016) showed that bank account ownership; access to formal banking tools (such as Automated Teller Machine, mobile banking and internet banking) as well as access to informal financial tools are inversely related to mobile money account ownership. The inverse relationship is largely corroborated by Johnson's (2016) study on Kenya, which analyzed the social relational dimensions of engagement with banks in contrast with mobile money services, and concluded by questioning policy expectations that mobile money will seamlessly facilitate people's engagement with the formal financial sector.

From the Sub-Saharan African country of Cameroun, Ngwa (2020) in his study on electronic banking transactions and their effect on financial performance of some selected commercial banks in Cameroon, using econometric techniques of descriptive analysis, and adopting regression analysis on quarterly data of four commercial banks from 2012-2018 to examines the effect of mobile payment, ATM, prepaid cards (PPV), and DTF on return on assets of banks. The findings revealed that mobile money transfer, Domestic Transfer Fund equivalent of RTGS transaction and Electronic Point Terminal via all have positive impacts on return on assets, however Prepaid cards such as ATM. Debit cards have negative impacts on the return on assets of the banks. Specifically, the overall finding indicated that e-payment transactions have significant effect on the financial performance of banks in Cameron.

While in Kenya, Vekya (2017) adopting a descriptive research design on data from 43 commercial banks to investigate the impact of electronic banking on the financial performance of banks in Kenya, established positive significant relationship between ATM transactions and bank profitability. This finding corroborated with Muisyo et al. (2014) findings on their study on the impact of mobile payment on the financial performance of banks in Kakamega Town of Kenya, which revealed that mobile payments have contributed positively to the performance of banking institutions. Similarly, Cherotich et al. (2015) conducted a study on the impact of payments system innovations on the financial performance of banks in Kenya, using a secondary data of a five-year period from 2009 to 2015 from a population of 43 commercials banks operating in Kenya as at End-December, 2013. The findings revealed that financial performance proxies by electronic fund

transfers (EFTs), cheque and RTGS revealed a positive impact on return on equity of commercial banks in Kenya.

In Nigeria, some researchers have examined the payments system technology and the commercial banks' performance relationship. For instance, Frank and Binaebi (2019) examined the impact of electronic payments system implementation on the financial performance of Nigerian's commercial banks. The research uses annual data ranging from 2009 to 2018 and adopts the ordinary least square regression technique. Four measures of payments system technology namely, ATM transactions, POS transactions, internet payments, and mobile payments were used with aggregated asset base used as the measure of performance of commercial banks. The empirical results of the study provided that an implementation of payments system innovations has had a mixed effect on the financial performance of banks in Nigeria. ATM, internet payment, and mobile payments have a positive effect on the financial performance of banks, while POS terminals have a negative effect on the bank performance.

On the same pattern of investigation, Orji et al. (2018) in their study on electronic banking innovations and some selected banks in Nigeria using a SURE model to analyzed data from six selected banks in Nigeria ranging from 2007-2016 revealed that ATM, POS, mobile payment and bank size have positive and significant effect on the banks' financial performance.

Also, Nwakoby et al. (2020) examined the effects of electronic payments on the performance of nine selected banks out of 15 quoted in the Nigerian stock exchange. The research work implemented the OLS regression technique of analysis using ATM transactions, POS transactions, and mobile payments as measures of electronic banking with return on equity as a measure of banks' profitability. The findings revealed that ATM transactions have a negative effect on return on equity of DMBs. While both POS and mobile payment has a positive impact on return on equity of DMBs in Nigeria.

However, Akwam and Yua (2021) conducted research on effects of e-money products on the financial performance of some commercial banks in Nigeria using volume of POS, mobile payments and ATM transactions as proxies of financial products and return on assets, return on equity and earning per share as proxies of banks performance. A time series annual data from 2005-2019 of mobile payment, POS and ATM were employed to determine their impact on ROA, ROE and earnings per share, respectively. The findings revealed that Mobile payment and POS

have significant positive effect on ROA and ROE, respectively. Also, ATM transactions have a significant positive effect on earnings per share.

The above results corroborated with the findings of Muotolu and Nwadialor (2019) in their studies on cashless policy in Nigeria and its impact on the financial performance of commercial banks, using volumes of ATM, POS, internet payment, NEFT and NIP as proxies of cashless policy, and return on asset as proxy of bank performance. The research work adopts a panel data from 14 banks ranging from 2012 to 2017, which were analyzed using descriptive statistics, multicollinearity test, correlation testing, and heteroscedasticity testing. The findings indicated that volume of ATM transactions has significant positive impact on ROA of banks in Nigeria, however, Volume POS, internet, NEFT and NIP have insignificant positive impact on ROA of banks in Nigeria.

A study by Kumangkem and Konjaang (2016) investigated mobile money as a potential threat to banks in sub-Saharan Africa. They focused on the emerging trend of the use of mobile devices to facilitate the payment of goods and services. This study found that the commercials banks may lose minimally in a short term as the mobile money service is actually more complementary and it will only fast track the achievement of the goal of a cashless economy. People generally perceive mobile money as an easy-to-use service, although the platform has technical challenges. People's attitude towards mobile money use is generally positive. Mobile money services are popular mainly for its convenience. The mobile money is predominantly used for remittances and safe keeping of money.

According to Chironga, Grandis and Zouaoui (2017), Africa is one continent across the globe that leads in mobile money services, which has become a backbone of Africa's financial stance. These operators have dominated this segment in the last years. Not long ago, FinTech formed a well sustainable market, and a number of financial institutions are into serious competition for the mobile banking client. While other commercial banks have decided to stand alone, other players have decided to merge forces and form partnerships that will enable them to reach a wider base of customers. Markets in Africa for mobile money have drastically expanded in the past years.

In well stable markets, financial regulators have permitted a number of mobile money providers to have some sort of competition across financial institutions that provide similar services. For instance, Safaricom had close to 80% share of customers when M-Pesa was officially launched in Kenya, while on the other hand, the banking sector in both Tanzania and Kenya remain disjointed

with an estimated number of about 40 commercial banks and each at least with less than 15% customer base for Kenya's biggest commercial bank. In most growing and maturing markets, it is noticeable that mobile money business is indeed taking sharp. These mature markets do have regulators allowing them to operate and encourage partnerships and discourages agents exclusively as a case in Malawi. These service providers in these markets have heavily invested in their operations in building their sustainable scale. For instance, in Cote d' Ivoire', Orange launched orange money in 2008 and only witnessed a positive shift in terms of their customer base in the year 2012 (Chironga et al., 2016).

From the findings of the above empirical studies on the impact of payments system innovations on the performance of commercial banks, the results are inconsistent and in some cases contradictory, due largely to inadequate data and the methodology adopted. Therefore, this study seeks to investigate the effect of payments system innovations on the financial performance of commercial banks in Nigeria using quarterly data from Q1 2007 to Q4 2020 obtained from economic reports and statistical bulletin of Central Bank of Nigeria.

A study conducted by Siame (2019) found that the introduction of mobile money Services by various mobile money service providers to customers has become a way of gaining competitive advantage through diversification, maintaining customer loyalty and increasing the market share in order to grow their profitability and improve their financial position. In addition, this study found that the penetration of mobile money services in the market had an impact on the financial institutions, which has led the commercial banks to come up with strategies such as introduction of agency banking and internet banking so that the impact of mobile money services can be neutralized.

According to Nyati (2017), before the advent of mobile money, providing financial services, money transaction in Zambia was mainly a preserve for people that held bank accounts while those that did not, relied on those with bank accounts to receive money on their behalf. But the introduction of mobile money platforms by MMOs has resulted in more people opening accounts with the service providers and accessing financial services with ease due to scanty requirements as opposed to the handful paperwork required by the traditional banking system. To open an account with Airtel Mobile Money, MTN Money or Zamtel Money the only necessary requirement is ones' National Registration Card (NRC) as opposed to the numerous requirements by commercial banks. Like conventional banking, MMOs are providing domestic person-to-person

transactions, cash-in and cash-out transactions, airtime top-ups, bill payments, bulk payments, international remittances and digital loans, thus making them popular.

According to a report on the state of the digital financial services market published by the United Nations Capital Development Fund (UNCDF, 2017), of the total active accounts in 2017, MMOs accounted 62 percent from 60 percent recorded the previous year, while commercial banks accounted for only 34 percent, which was a decrease from the 39 percent recorded the previous year. In terms of transaction volumes, commercial banks accounted 44 percent of the total 41.5 million transactions compared to 32 percent share by MMOs. Despite commercial banks recording the larger chunk, it is clear that MMOs are up to the challenge and are projected to grow as evidenced by the increasing numbers of people accessing the platform (Nyati, 2017). The mobile money platforms have continued to record steady growth with transactions growing monthly. In terms of transactions, Airtel is on average posting over 20 percent growth monthly. Airtel had exceeded the 20 percent month-on-month growth, indicating that the product was growing and had been accepted on the market. The company, which had rolled out 10,000 booths, creating about 10,000 jobs was upbeat of the future of mobile money platforms.

About 40 percent of the total 5.5 million subscribers are on the Airtel Money platform with plans to grow the base further (Nyati, 2017). Commercial banks in the country are in close collaboration with MMOs and FinTech and creating platforms, which enable the interoperability and movement of funds from each other's platforms – this is all working towards expanding financial inclusion levels in the country. Tapping into the huge customer base currently using mobile payment transactions will facilitate and revolutionise the uptake of digital financial services in the country. With most banks partnering with MMOs and deploying mobile payment solutions on their platforms and enabling customers to pay bills, service and transfer funds using their mobile phones, it is envisioned that both players will continue being partners in development as opposed to being competitors.

2.8 Knowledge Gap

The empirical literature on mobile money appears skewed towards explaining adoption and diffusion across households and countries. There are two strands of this literature; one explores the issues from macro and regulatory perspective (Peruta, 2018; Burns, 2018) while the other deals with the micro underpinnings of adoption (Jack & Suri, 2011; Mothobi and Grzybowsk, 2017; Myeni, Makate & Mahonye, 2020). There are, however, themes common to both strands. In

particular, legal and institutional bottlenecks and infrastructural gaps are often cited as challenges to the adoption of mobile money services within and across communities and countries. These studies have contributed towards the understanding of the factors affecting diffusion and the pattern of adoption, but they do not directly state what the high adoption means with regards to how mobile money has facilitated access to various financial services. Some empirical studies directly examining the impact of mobile money on access to other financial services have started to emerge although this literature is generally less visible compared with the literature on adoption and diffusion. The focus has largely been on the impact of mobile money on savings or saving behavior including ownership of bank accounts. Further, the lack of consensus among the international studies on the impact of mobile money services on the profitability of commercial banks creates a research gap worth further investigation, hence the need for additional study on the subject.

2.9 Lessons Learnt

Based on the above literature it's evident that a lot of studies are being done on mobile money. The majority of the studies on financial innovation were of a descriptive nature, and most often deal with issues like effects of financial innovation in regulation and technological change on innovation, profitability of specific innovations, determinants of financial innovation and challenges of financial innovation in implementation. Since financial innovation is a critical issue within any financial institution, dealing based on a few studies may lead to inadequate conclusions. Despite this fact, commercial banks in Zambia have been engaged in numerous financial innovations in the past largely on mobile money. In addition to the ever-changing business environment, the innovations also change. These changes affect the performance of financial institution positively and negatively. From the literature review done, all the studies have hardly focused on how mobile money is currently affecting the performance of commercial banks and this could be attributed to the very competitive environment witnessed in the commercial banking sector. This study will seek to address the effect of mobile money as a variable on the banks' financial performance through the banks data and other publications, an area literature has so far not clarified. Therefore, with the continuous developments, this study will concentrate on focusing on how mobile money has affected the financial performance of commercial banks which is an area that has been studied in Zambia but with mixed findings, and mobile money concept is growing and changing rapidly.

2.10 Theoretical Framework

This section reviews the theory related to mobile money and financial innovation and will help guide the study. One relevant theory that supports an investigation into the impact of mobile money services on the profitability of commercial banks is the Theory of Disruptive Innovation, popularized by Clayton Christensen (Christensen, Raynor & McDonald, 2015).

The Theory of Disruptive Innovation posits that new technologies or innovations often emerge at the low end of the market or in new market segments, initially serving the needs of underserved or overlooked customers. Over time, these innovations may improve in performance and reliability, eventually displacing established products or services and disrupting existing market structures.

In the context of mobile money services and commercial banks, this theory provides a framework for understanding how the introduction and adoption of mobile money technologies can disrupt traditional banking models and impact bank profitability. Mobile money services, initially targeted at unbanked or underbanked populations, have the potential to transform the way financial services are accessed and delivered, particularly in emerging markets like Zambia.

As mobile money services gain traction and evolve, they may attract customers away from traditional banking channels, leading to changes in revenue streams, customer preferences, and competitive dynamics within the banking sector. Moreover, mobile money services can enable new business models and distribution channels, potentially altering the traditional roles and functions of commercial banks.

By applying the Theory of Disruptive Innovation to the study of mobile money services and commercial banks in Zambia, researchers can analyze how these innovations reshape the financial landscape, identify potential threats and opportunities for commercial banks, and develop strategic responses to navigate the changing market dynamics.

Previous studies on the impact of mobile money services on commercial banks provide empirical evidence that supports the relevance of the Theory of Disruptive Innovation in this context. These studies highlight how mobile money services have reshaped the financial sector landscape and affected the profitability of traditional banking institutions.

For example, research by Mas and Radcliffe (2010) on the effects of mobile money on financial inclusion in Kenya found that mobile money services, such as M-Pesa, facilitated greater access to financial services for previously unbanked or underbanked populations. By providing a convenient and affordable alternative to traditional banking, mobile money services attracted a significant number of customers who had previously been excluded from the formal financial system. This expansion of the customer base through mobile money adoption corresponds to the disruptive innovation framework, where new technologies initially target underserved segments before penetrating the mainstream market.

Furthermore, studies by Jack and Suri (2014) in Kenya and Dabalen et al. (2016) in Uganda found evidence of a shift in consumer behavior away from traditional banking channels towards mobile money platforms. These studies observed a decline in bank deposits and an increase in mobile money transactions among individuals and businesses, indicating a potential threat to the revenue streams of commercial banks. This shift in customer preferences and usage patterns aligns with the theory's notion of disruptive innovation, where incumbent firms face competition from new entrants offering more accessible and convenient alternatives.

Moreover, research by Kshetri (2017) on the impact of mobile money on banking profitability in developing countries found mixed results regarding the effect on banks' financial performance. While some studies suggested a negative impact on bank profitability due to increased competition from mobile money operators, others found evidence of complementary relationships between banks and mobile money services, leading to improved financial inclusion and overall sector growth. These findings underscore the complexity of the relationship between mobile money services and bank profitability, reflecting the dynamic interplay between disruptive forces and incumbent responses within the financial ecosystem.

In summary, previous studies provide empirical support for the relevance of the Theory of Disruptive Innovation in understanding the impact of mobile money services on the profitability of commercial banks. By analyzing the patterns of adoption, changes in consumer behavior, and competitive dynamics within the financial sector, researchers can gain insights into how disruptive innovations like mobile money reshape traditional banking models and influence banks' financial performance.

2.11 Conceptual Framework

The conceptual framework for the study on the impact of mobile money services on the profitability of commercial banks in Zambia serves as a theoretical lens through which to understand the complex interplay between various factors influencing bank profitability in the context of mobile money adoption. The framework integrates key concepts and theoretical perspectives to guide the analysis and interpretation of the study findings. Building upon Clayton Christensen's Theory of Disruptive Innovation, the framework acknowledges the disruptive potential of mobile money services on traditional banking models. Mobile money is seen as a disruptive force that challenges established banking practices, potentially reshaping revenue streams, customer relationships, and competitive dynamics within the banking sector.

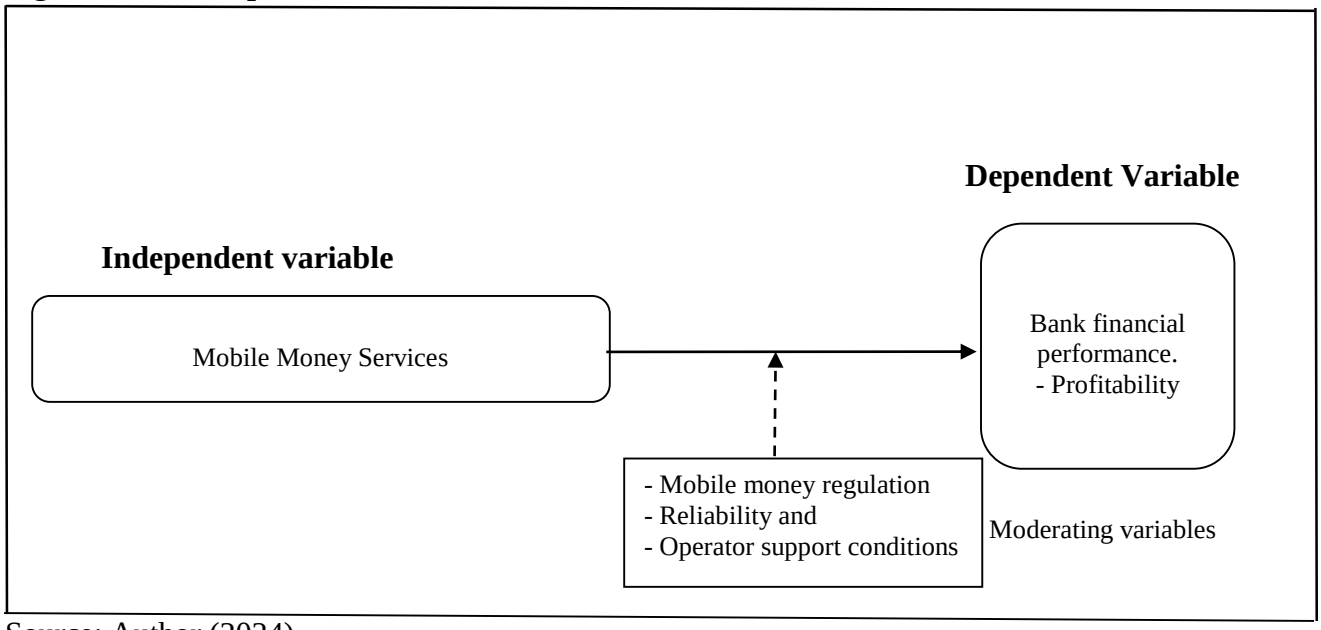
The regulatory environment plays a critical role in shaping the adoption and impact of mobile money services. The competitive landscape and operational strategies of commercial banks and mobile money operators are influenced by regulatory frameworks that control mobile money licensing, interoperability, consumer protection, and anti-money laundering measures. Understanding customer behavior and preferences is essential for assessing the impact of mobile money services on bank profitability. Factors such as convenience, security, transaction costs, and trust influence individuals' choices between traditional banking channels and mobile money platforms.

Finally, the conceptual framework considers broader economic and socio-cultural factors that may influence the adoption and usage of mobile money services. Income levels, education levels, infrastructure development, and cultural norms shape the demand for financial services and the uptake of mobile money solutions. By synthesizing these theoretical perspectives and concepts, the conceptual framework provides a comprehensive lens for analyzing the multifaceted dynamics underlying the impact of mobile money services on the profitability of commercial banks in Zambia. It guides the formulation of research hypotheses, the selection of variables for analysis, and the interpretation of study findings within a coherent theoretical framework.

This framework as said was used to help to fully understand the way the mobile money services influence the financial performance of commercial banks due to less time taken to transact, easy accessibility to money, minimal transaction costs and increased efficiency of the service. The requirements that are needed by the service providers were used as the intervening variables of the study. The present study had used these variables to investigate how the mobile money services

provided by Airtel, MTN and Zamtel have impacted the profitability of the commercial banks in Zambia.

Figure 2.0: Conceptual Framework



Source: Author (2024)

Following the conceptual framework above, the hypotheses below were generated:

H_0: Mobile money services have no effect on the financial performance of commercial banks.
H_1: Mobile money services have an effect on the financial performance of commercial banks.

2.12 Operationalisation of Variables

2.12.1 Mobile money services as independent variable

Operationalising MMS as an independent variable involves defining specific dimensions and indicators that capture various aspects of mobile money usage and adoption. One key dimension is mobile money transaction volume, which quantifies the total volume of financial transactions conducted through mobile money platforms within a specified period. This includes deposits, withdrawals, transfers, bill payments, and purchases made using mobile money services. By

measuring transaction volume, researchers can assess the overall level of activity and engagement with mobile money services among customers.

Another important dimension is the mobile money customer base, which represents the number of unique customers or subscribers registered for mobile money services. This metric reflects the reach and penetration of mobile money services among the population and can be quantified as the total number of active mobile money accounts or users. Understanding the size and composition of the customer base provides insights into the market share and competitive positioning of mobile money service providers.

Additionally, researchers may consider variables such as mobile money transaction value, which measures the total monetary value of transactions processed through mobile money platforms. This includes remittances, bill payments, and merchant transactions, providing a comprehensive view of the economic impact of mobile money services. Other dimensions, such as the mobile money agent network and usage patterns, capture the distribution, accessibility, and frequency of mobile money transactions, as well as the technological features and user experience of mobile money platforms.

Operationalising MMS involves collecting data on these dimensions and indicators from various sources, including transaction records, customer databases, regulatory reports, and market surveys. Researchers can then analyse the relationship between MMS metrics and the financial performance of commercial banks using statistical techniques such as regression analysis, correlation analysis, and trend analysis. By systematically examining how different aspects of mobile money usage and adoption influence bank profitability, researchers can provide valuable insights for strategic decision-making and policy formulation in the banking industry. The social impact as adopted by Jayasingh and Eze (2009) is also acknowledged. According to the conceptual framework, clients who have a better understanding of the aforementioned MMS adoption determinants will use MMS more frequently themselves.

2.12.2 Financial performance of the banking sector as the dependent variable

To operationalize the financial performance of the banking sector as the dependent variable in the study investigating the impact of mobile money services, it requires defining specific dimensions and indicators that capture various aspects of a bank's financial health, profitability, and efficiency. One crucial dimension is Return on Assets (ROA), which measures the profitability of a bank relative to its total assets. Calculated as the ratio of net income to total assets, ROA indicates the

efficiency with which a bank generates profits from its asset base. A higher ROA suggests better financial performance and asset utilization by the bank, reflecting positively on its profitability. Similarly, Return on Equity (ROE) serves as another important indicator, measuring the profitability of a bank relative to its shareholders' equity. ROE, calculated as the ratio of net income to shareholders' equity, indicates the return generated for equity investors. A higher ROE signifies higher returns for shareholders and reflects the bank's ability to generate profits with shareholder funds, indicating strong financial performance and shareholder value creation.

Net Interest Margin (NIM) is also critical, as it measures the difference between a bank's interest income and interest expenses relative to its interest-earning assets. NIM reflects the profitability of a bank's core lending and borrowing activities, showing the spread between the interest rates earned and paid by the bank. A higher NIM indicates stronger profitability from interest-earning activities, highlighting the bank's efficiency in managing its interest rate risk and optimizing its interest income. Efficiency Ratio is another dimension that measures the efficiency of a bank's operations by comparing its operating expenses to its revenue. It indicates the proportion of revenue consumed by operating expenses, with a lower efficiency ratio signifying higher operational efficiency and cost-effectiveness by the bank. A more efficient bank can allocate resources effectively, enhancing its overall financial performance and competitiveness. Asset Quality is also crucial, measuring the quality of a bank's loan portfolio and the level of credit risk it faces. Metrics such as the non-performing loan (NPL) ratio, loan loss reserves, and credit provisioning are indicators of asset quality. A lower NPL ratio and adequate loan loss reserves indicate better asset quality and risk management practices, which contribute to overall financial stability and performance.

Lastly, Capital Adequacy Ratio (CAR) measures the sufficiency of a bank's capital relative to its risk-weighted assets and liabilities. It indicates the bank's ability to absorb losses and meet regulatory capital requirements, with a higher CAR signifying greater financial stability and resilience to adverse shocks, thus impacting the bank's overall financial performance positively. Collecting data on these dimensions and indicators from various sources like financial statements, regulatory reports, and industry benchmarks enables researchers to analyse the relationship between mobile money service metrics (independent variable) and banking sector financial performance (dependent variable). By systematically examining how mobile money services

impact the profitability, efficiency, and risk profile of commercial banks, researchers can provide valuable insights for strategic decision-making and policy formulation in the banking industry.

Table 2.0: Operationalisation of variables

Objective	Variable	Indicator	Measurement	Scale	Data collecting method	Data analysis
To examine the level of use of mobile money services in Zambia.	**Independent variable** Characteristics of MMS	Reliability and accessibility	Number and total volume of MMS	Ordinal	Questionnaire	Mean, Percentage, Standard deviation, Regression
To assess the measures of financial performance in the banking industry.	**Independent variable** Profitability	Profit, loan portfolio management and revenue resources	ROA, ROE, NIM	Ordinal	Questionnaire	Mean, Percentage, Standard deviation, Regression
To establish the relationship between mobile money services and financial performance of commercial banks.	**Independent variable** MMS	Direction of relationship between MMS & profitability of banks	Cause-effect of MMS on profitability	Ordinal	Questionnaire	Mean, Percentage, Standard deviation, Regression

2.13 Chapter Summary

This chapter analyzed the literature by other scholars relating to the studies where the effect of mobile money services on the financial performance of the banking industry has been reviewed. The chapter also outlined the Theory of Disruptive Innovation, as the theory underpinning the study. The variables of interest which were highlighted in the conceptual framework included mobile money service as the independent variable and bank performance as the dependent variable. Mobile money regulations and operator support regulations were the moderating variables that were considered. The next chapter discusses the methodology applied in the study's quest to answer the research questions in Chapter One.

CHAPTER 3
RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents and explains the research design, the parameters and composition of the target population, describes the sample size, research instruments, sampling procedures and data collection methods and data analysis and the ethical considerations. Therefore, the research methodology serves as the roadmap of this study in the whole process of data collection, data analysis and presentation.

3.1 Research Design

The research design is a plan and structure of investigation that was used by the researcher to obtain the evidence to answer the research questions (Walliman, 2006). This research is designed in such a way that it employed a descriptive research design involving both the qualitative and quantitative techniques. This study combined both quantitative and qualitative types of research methods so as to get numerical information as well as description of people's perspective, opinions and experiences. The mixed method approach involved a closed-ended questionnaire and an interview guide administered to different sets of respondents (Bank and MMO employees and regulators respectively). The choice of this design is supported by Silverman (1995) who says that "depending on theories, hypothesis and research questions, methods from both approaches can be used in the same research project." The qualitative data was used because of the intention to gather information which could not be expressed in numbers and to enable the researcher to investigate the impact of mobile money services on the profitability of commercial banks in depth in Zambia.

3.2 Target Population

Measurement samples are drawn from a group of people, objects, or things that share a characteristic (Kombo and Tromp, 2011). According to Mugenda and Mugenda (2003: 21), "a population is a group of people or things with a common observable characteristic." The target population of this study included senior managers/executives in retail banking, customer services, operations and finance departments from all the 16 commercial banks in Zambia and MMOs while key informants were drawn from ZICTA and Zambia Institute of Bankers (ZIOB) as regulators and professionals with the knowledge about MMOs and commercial banks respectively. The study

population for this study was said to be 1,020 employees from the targeted institutions according to estimates from the Human Resource Departments of the 16 banks and the other regulatory institutions.

3.3 Sampling Procedure

Bryman (2008) states that, sampling is a method used to select a sample from the target population of study. In addition, the sampling procedure involved purposive and simple random sampling because identification of respondents was used among the sampled commercial banks. According to Röling (1989), purposive sampling is used in cases where the specialty of an authority can selects a more representative sample that can bring more accurate results than by using other probability sampling techniques. The process involved purposive selection of individuals from commercial banks, MMOs, ZICTA and ZIOB based on the researcher's knowledge and judgement.

3.4 Sample Size

The sample of the study was 287 respondents as determined below. The sample size was established using De Vaus' (2016) formula as follows:

$X=n/(1+n(e)^2)$

X=Sample size, n=total population, e=level of error which is 5% at 95% confidence level.

Therefore, the calculation for sample size in this study is as follows:

$= 1020/(1+1020(0.05)^2)$

$= 1020/(1+1020(0.0025)$

$= 1020/(1+2.55)$

$= 1020/(3.55)$

$= 287$ respondents

The calculated sample size of 287 respondents were from commercial banks, MMOs, ZICTA and ZIOB and were determined with 95% confidence level and margin of error of 0.05. This was the number of individuals that was selected purposively from among the target population.

3.5 Validity and Reliability

According to Kothari (2010), validity can also be conceived of as the extent to which an instrument measures what it is intended to measure. That is the degree to which variation detected in the measuring device replicates actual variation among the subjects that have been examined (Kothari, 2004). Using a content validity test, the validity test was conducted to ensure that the tool was accurate and relevant. Certain items were altered, and others that lacked consistency were rejected. The researcher sought an expert opinion to determine whether the questions accurately reflected the study's concept.

As a measure of an item's error-freeness and ability to produce consistent findings, reliability is defined as the stability or consistency of scores across time (Mugenda & Mugenda, 2003). With a number ranging from 0.00 (showing no reliability) to +1.00 (representing excellent reliability), the researcher sought to determine the internal consistency and reliability co-efficients. Using the Pearson Product Moment Correlation Coefficient of the full test, the odd numbered scores for each item were associated with the even numbered scores. A coefficient of 0.798 was obtained which according to Gay (2003) is considered adequate.

Table 3.0: Reliability of transformed data

Objective	Number of Items	Cronbach's Alpha value
Level of MMS use	8	0.807
Measures of financial performance	15	0.763
Relationship between MMS and financial performance	7	0.824
Overall Cronbach's Alpha	**30**	**0.798**

3.6 Data Collection Method

This research cannot be complete without raw unpublished data being collected from the field. It is important to this study because the data was unique and answers specific research questions. This raw unpublished data was collected using quantitative and qualitative data collection tools used were questionnaire and interview guide. Questionnaires included closed-ended questions in order to collect quantitative data and also focused on a bit of open-ended questions in order to collect qualitative data. These were administered to all the respondents in person. Among the reasons for choosing questionnaires is because they allow responses to be gathered in a

standardized way, they are relatively fast in collecting data and easy to analyze. In addition, respondents had enough time to respond to the questions. The study employed two research instruments namely, questionnaires with selected respondents from the commercial banks and MMOs.

Another data collection tool that was used was the in-depth interview guide for regulatory institutions. In-depth interviews were used in order to gain deeper understanding with the participant and gain more knowledge and insight and to provide much more detailed information. In-depth interviews are more appropriate to collect complex information. They facilitate collection of complete information with greater understanding, more personal and allows a high response rate (Hudelson, 1994). In this study, the researcher ensured reliability by standardizing the instrument. The research tool was tested before conducting the main study using a pilot study in an environment with similar characteristics as the environment in which the main study was to be conducted. This was done in order to determine the stability of the data collection tool.

3.7 Data Analysis Procedure

The quantitative primary data were analysed using SPSS package to generate descriptive and inferential statistics. The strength and connection between the independent factors and financial performance were evaluated using Pearson's correlation method. ANOVA (Analysis of Variance) and regression of coefficients were used in the analysis, and regression analysis was also used to evaluate the model's fitness (R-square). Tables and figures were used to present the data. The degree to which all of the independent variables together predict financial performance was explained by the model's fitness. Using the standard threshold of significance of 0.05, ANOVA statistics explained the model's overall significance.

Qualitative data that were collected using the interview guides with the key informants were analysed qualitatively through revelation themes that emerged from the collected data. Qualitatively, the researcher transcribed all the interview responses from key informants to make descriptive representations of study findings that emerged from this study.

3.8 Ethical Considerations

Saunders et al. (2012:121) note that researchers frequently think about protecting the rights of participants when ethics are addressed in research design. To ensure that the principles of research ethics were maintained, the researcher did the following: The researcher ensured that participants had informed consent in the cover letter of Appendix I. The researcher further ensured that participants were encouraged by asking them to participate without coercion. Indication of the names of the respondents on the questionnaire was made optional. This was done to protect the rights of the respondents to participate. With no disclosure of the respondent's identity, the researcher managed all the information collected from the respondents confidentially. This was done to guarantee that the respondents had the freedom to express themselves during the data collection procedure. It was made clear to the participants that the sole motivation behind the conduct of this research was academic, but they were informed that the findings may be useful in the process of changing policies.

3.9 Chapter Summary

This chapter has defined and explained the chosen research design which was used in this study. It also explained the population and sampling design. It further specifies and shows the population size and it also defines and explains the chosen sampling design that is, the sampling frame, the sampling technique and the sample size. The chapter helps to understand the data collection methods, the research procedures and the data analysis techniques. The next chapter presents the results and findings in relation to the specific objectives of the study.

CHAPTER 4

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.0 Introduction

This chapter's major thrust is to convey the data analysis results and their interpretation in light of the study objectives. Using the appropriate statistical analysis, the data have been presented so as to prevent deviation from the original goals. By their very nature, statistics have the potential to complicate interpretation and lead to incorrect application of fundamental principles.

4.1 Response Rate

A total of 287 questionnaires were administered using Google forms via WhatsApp contacts and email addresses. From the total questionnaires sent to respondents in 12 banks out of the 16, and all three MMOs, only 156 questionnaires were returned, representing a 54% response rate as in Table 4.1. Interviews were conducted with two key informants from ZICTA and ZIOB out of the targeted interviewees. The SPSS version 16.0 program was used for data analysis of questionnaire responses. The data presentation was categorized in sections and for each section, both interview and questionnaire responses were documented.

Table 4.1: Response rate

Banks	**Distributed questionnaires**	**Returned**
First Capital	15	13
Invest rust	15	8
ABSA	22	10
Indo Zambia	15	11
Stanbic	15	12
Atlas Mara	15	15
Access	15	12
FNB	15	10
ZANACO	25	15
Standard Chartered	15	14
UBA	15	10
AB Bank	15	6
Total	**197**	**135**
Mobile Money Operator		
Airtel	30	9
MTN	30	7
Zamtel	30	5
Total	**90**	**21**
Grand total	**287**	**156**

Source: Field data (2023)

4.2 Demographic Characteristics

The study considered four demographic characteristics of the respondents among which included Gender, age, education level and the department each respondent represented. The gender of the respondent was categorized as male and female. Age groups were used to categorize the age of the respondents and four different age groups were developed for the study, these included 20-30, 31-40, 41-50, and 50 above years. For the education level of the respondents, four categories were used that is to say certificate, diploma, degree and Postgraduate. The departments for the respondents were categorized into four, Retail, Operations, Finance and Customer Service. The statistics of the demographic characteristics are provided in Table 4.2.

Table 4.2: Demographic characteristics of the respondents

Profile	Category	Frequency	Percentage
Gender	Female	39	25
	Male	117	75
	Total	156	100
Age	20-30	15	9.6
	31-40	66	42.3
	41-50	60	38.5
	Above 50	15	9.6
	Total	**156**	**100.0**
Level of education	Certificate	12	7.7
	Diploma	51	32.7
	Degree	87	55.8
	Postgraduate	6	3.8
	Total	**156**	**100.0**
Department/Unit	Retail	72	46.2
	Operations	51	32.7
	Finance	9	5.8
	Customer Service	24	15.4
	Total	**156**	**100.0**

Source: Field data (2023)

From the Table 4.2 above, majority of the respondents at 75% were males compared to the females at 25%. This means that more males were sampled compared to females. Concerning the age of the respondents, 9.6% of the respondents were between 20-30 years, 42.3% were between 3l-40, 38.5% were between 41 to 50 and 9.6% were above 50. This implies that the majority of the workforce is still young, energetic, hardworking and readily available to execute both short- and long-term goals of the study organizations as regards to improving the financial performance of the banks and MMOs while the respondents between 20-30 are willing and much more eager to

learn from the older one in terms of financial transactions. In terms of education, 7.7% of the respondents were at certificate level, 32.7% at Diploma level, 55.8% had under degrees, 3.8% held postgraduate qualifications.

The majority of respondents held first degrees while the ones at postgraduate degree were few. This implies that the workplace (Banks and MMOs) had well educated and skilled workers who have a better understanding of how mobile money services affect the financial performance of commercial banks. Finally, in the respondent departments, 5.8% were in the Finance department, 46.2% in retail, 32.7% in operations and 15.5% in customer service department. The retail department comprises the highest percentage because it caters for the needs of the majority of individual account holders who are mostly mobile money users.

4.3 Level of Use of Mobile Money Services in Zambia

The first objective of the study sought to establish the level of use of mobile money services in Zambia. To understand deeply the level of use of different mobile money services available in Zambia, descriptive statistics were computed in terms of means, standard deviations and rankings. The descriptive statistics provided knowledge on the level of mobile money services available in the banking industry. Means were used as a basis for determining the level of reliability and accessibility of mobile money services while ranks were used to identify the factors that were most rated and least rated by participants.

Table 4.3: Reliability of mobile money services

Factors	Mean	Std Dev.	Rank	Interpretation
Mobile money services have improved the financial performance of commercial banks.	4.40	0.721	1	Very high
Most companies have tried to develop their own mobile money service platforms.	4.37	0.687	2	Very high
Mobile money services affect the financial performance of commercial banks.	4.02	1.038	3	High
Most customers use both mobile money services and banking services simultaneously.	3.62	1.207	4	High
Mobile money service charges are cheap compared to bank charges.	2.12	0.878	5	Low
Overall mean	**3.71**			**High**

Source: Field data (2023)

Table 4.3 shows the leve1 of reliability of mobile money service in the banking industry in Zambia. Six (6) items were used to measure the reliability of mobile money services where participants were asked to rate the items on a 5-point Likert scale. The findings from the analysis revealed that the reliability on mobile money services in the banking industry is generally high observed from an overall mean of 3.71. This is supported by the fact that mobile money services have highly improved the financial performance of commercial banks (Mean 4.4, Std. dev. = 0.721, Rank=l) implying that bank customers can use both services in making transactions. A high level of reliability on mobile money services is also explained by a very high level at which most companies have tried to develop their own mobile money service platforms (Mean = 4.37, Std. dev. = 0.687, Rank=2) implying that most companies have taken the liberty to develop their own mobile service platforms where the customers can access their bank details using their phones.

Further still, a high level at which mobile money services affect financial performance implied by a high mean response of 4.02 and standard deviation of 1.03 also significantly reflected the high reliability on mobile money services. This is from the fact that many people use mobile money to make transactions from or to the bank saving them from incurring transport tariffs of moving to the banks.

Similarly, a high level was indicated by the findings in relation to whether most customers use both mobile money services and banking service simultaneously (Mean=3.62, Std. Dev. = 1.207, Rank=4). This finding implies that most bank customers use both mobile money services and banking services simultaneously because all of them help in one way or the other. However, despite the fact that there is high reliability on mobile money services, a low level was indicated by the findings in relation to whether mobile money services are cheap compared to banking services (Mean=2.12, Std. Dev. = 0.878, Rank=5). This is from the fact that mobile money service charges become very high when dealing with huge transactions.

From Table 4.4, it was observed that the level of accessibility to mobile money services in the banking industry is high indicated by a general mean of 4.17. This was supported by a very high level at which mobile money services are available at commercial banks in Zambia, this being ranked the first in the construct with a mean response of 4.83 and a very small standard deviation

of 0.43, implying that the availability of mobile money services in the bank is very high making most customers familiar to the service. The findings also show that there is a very high level at which mobile money services enable customers to receive, send, or pay for utilities anywhere at any time (mean 4.63, Std. Dev.=O.525, Rank=2). Therefore, customers do not need to travel to their bank branches to make payments or withdraws.

Table 4.4: Accessibility of mobile money services

Factors	Mean	Std Dev.	Rank	Interpretation
Mobile money services are available at all banks	4.83	0.430	1	Very high
Mobile money services enable customers to receive, send or pay for any utilities anywhere at any time.	4.63	0.525	2	Very high
Your organization adopted any mobile money services.	4.54	0.670	3	High
Mobile money services are more easily accessible than banking services.	4.50	0.672	4	High
Overall mean	**4.63**			**Very high**
Table 4.3 & Table 4.4				
General mean (Reliability + Accessibility)	**4.17**			**High**

Source: Field data (2023)

Furthermore, a high adoption of mobile money services by banks and a very high-easy accessibility of the services than the bank service as it is indicated from the mean responses also testify of the high level of accessibility of the mobile money service in the banking industry. Generally, reflecting to the study's 1st objective which aims at establishing the level of use of mobile money services in the banking industry in Zambia, it was observed from the general mean of 4.17 that there is generally a high level of use of mobile money services in the banking industry in Zambia.

4.4 Measures of Financial Performance in the Banking Industry

The second objective of the study sought to assess the measures of financial performance in the banking in industry. Financial performance according to Bodie, Kane and Marcus (2005) is the level of performance of a firm over a specific period of time and expressed in terms of the overall profits or losses incurred over the specific period under evaluation.

Table 4.5: Profitability of commercial banks

Factors	Mean	Std Dev.	Rank	Interpretation
Much of banks' profits are from customers deposits	4.73	0.528	1	Very high
Banks earn a lot of profits from their customers	4.69	0.579	2	Very high
Giving out too much loans generate more profits	4.67	0.550	3	Very high
Loans, mortgages and bank charges provide banks with high margins	4.50	0.754	4	Very high
The size of the bank affects its profits	4.02	1.146		High
Overall mean	**4.52**			**Very high**

Source: Field data (2023)

In this section of the study, financial performance is measured in terms of profitability, loan supervision and revenue sources of the commercial banks. And in order to address the study's second objective, 5-Likert scale questions were employed where mean responses were computed, and conclusions made based on general means as presented in the following tables.

Table 4.5 shows the level of profitability as a measure of financial performance in the banking industry in Zambia. According to Table 4.5, profitability was used to measure how banks earn their profits from their operations. Based on these items, respondents were asked to rate appropriately the measures using a 5-point Likert scale. It was thus observed from the overall mean that there is a very high level of profitability in the banking industry indicated by an overall mean of 4.52. This was due to the fact that much of the banks' profits are from customers' deposits (Mean= 4.73, Std. Dev= 0.528), ranked the highest in the construct. This implies that the deposits received by the banks from the customers are used to offer out loans and used for investments that generate the banks with high profits. The findings also indicate that banks highly earn a lot of profits from their customers (Mean = 4.69, Std. Dev=0.579, Rank=2). This high profit mainly comes from the bank charge on transactions, balance inquiries, interests and so on. Similarly, it was indicated from the findings that banks get high profits from giving out much loans, mortgages and bank charges. Further, the size of the bank highly affects its profit level as this was ranked last with a mean response of 4.02 and standard deviation of 1.146. This draws an implication that small banks make small profit margins than the bigger ones.

Table 4.6: Loan portfolio management

Factors	Mean	Std Dev.	Rank	Interpretation
Banks put pressure on the borrowers to retire the loan from earning.	4 63	0.687	1	Very high
The loan will customarily be accompanied by written covenant of the borrower to conduct activities in a way agreed upon by Very high the bank.	4.48	0.779	2	Very high
Substantial credit is advanced for a period of more than one year	4.40	0.799	3	Very high
Commercial banks are able to meet their long-term obligation such as loans from the central bank.	3.35	1.327	4	Medium
Banks are quick to sell off property that is given to them as collateral.	2.40	1.125	5	Low
Overall mean	**3.85**			**High**

Source: Field data (2023)

Table 4.6 shows the mean responses of respondents regarding the level of loan supervision by commercial banks. According to the table, it was indicated from the overall mean that there is a high level of loan supervision in the banking industry observed from an overall mean of 3.85. This was due to the fact that, Banks put much pressure on the borrowers to retire the loans from earning (Mean=4.63, Std. dev =0.687), as this was ranked the highest in the construct implying that the loans retired from customers is ventured in other business which help to stimulate financial performance. Also, accompanying loans with written covenants by banks to their customers to conduct business in a way agreed upon supports the high level of loan portfolio among banks. This was observed from a high mean response of 4.48, low standard deviation of 0.779 and a rank of 2.

Similarly, it was indicated that banks highly advance substantial credit for a period of more than one year implied by a mean response of 4.40 and standard deviation of 0.779. Furthermore, the high level of loan supervision among banks was observed from the fact that the banks are able to meet their long-term obligation such as loans from the central bank and that banks are not so quick to sell off the property that is given to them as collateral.

Table 4.7: Revenue sources

Factors	Mean	Std Dev.	Rank	Interpretation
Banks receive revenue from interests	4.65	0.556	1	Very high
Revenue that is earned by banks is got from. investments that the bank is involved in (e.g. securities)	4.54	0.699	2	Very high
Banks aim to grow revenue by expanding their customer base.	4.46	0.699	3	Very high
Banks have a lot of liquid assets at their disposal, i.e. assets that can be easily turned into cash.	4.08	1.064	4	High
Banks are able to meet their short-term obligations.	2.83	1.133	5	Medium
Overall mean	**4.11**			**High**
Table 4.6 & Tbale 4.7				
General mean	**4.16**			**High**

Source: Field data (2023)

Evidence from the findings of the analysis revealed in Table 4.7 shows that the level of bank revenue is generally high implied by an overall mean response of 4.11. This high level is attributed by the fact that banks receive very much revenue from interests, this was ranked 1st with a mean response of 4.65 and a lower standard deviation of 0.556 interpreted as very high meaning that the interests put on loans given out by banks generate a lot of income. Also, the high income earned from investments that the bank is involved in testifies the high revenue levels of the banks. This was ranked second with a mean response of 4.54 and standard deviation of 0.669. Concerning whether banks aim to increase revenue by expanding their customer base, it was revealed to be ranked 3rd with a mean of 4.46 and standard deviation of 0.699 interpreted as very high meaning that in order for banks to increase revenue, they always come up with strategies that bring in customers to them. Finally, looking at banks having a lot of liquid assets at their disposal, it was indicated to be high as observed from a mean response of 4.08 and standard deviation of 1.064 implying that banks have assets that can easily be turned into cash to help them finance other projects.

In general, the study's second objective aims at establishing measures of financial performance in the banking industry in Zambia. It was thus observed from the general mean (4.16) indicated in Table 4.6 that there is a relatively high level of financial performance in the banking industry. This is because of a very high level of profitability in the banking sector implied by an overall mean of 4.52 as indicated in Table 4.5, also a high level of loan portfolio management by banks evidenced by an overall mean response of 3.85 in Table 4.6 and similarly a high level of revenue reflected by an overall mean of 4.11 as indicated in Table 4.7.

4.5 Relationship between Mobile Money Services and Financial Performance of Commercial Banks

The third objective of the study was to establish the relationship between the level of use of mobile money services and the financial performance of commercial banks. Pearson correlation coefficients were computed to determine the strength of the relationships between the different measures of use mobile money services and those of financial performance.

Table 4.8: Pearson's Correlation Co-efficient

Covariates (Predictors)	Reliability of mobile money services	Accessibility of mobile money services
Profitability	**Pearson Correlation**	
	-0.149 (0.292)	0.197 (0.161)
Loan portfolio	0.132 (0.350)	-0.052 (0.712)
Revenue	-0.021 (0.884)	0.182 (0.198)
(**)= p. values and Correlation is significant if p. value <0.05		

Source: SPSS Output (2023)

The correlation coefficient between reliability of mobile money services and profitability was -0.149 with a p-value of 0.292. This implies that there is a very weak negative relationship between reliability in mobile money services and profitability of the banking industry. Also, the p-value suggests that the relationship is not statistically significant at 5% and 1% levels of significance. Similarly, the correlation coefficient between reliability and loan supervision was indicated by r=0.132 with a p-value of 0.350. This signified a very weak positive relationship between reliability of mobile money services and loan supervision. The p-value indicated that the relationship is not statistically significant at both 5% and 1% levels of significance since it is greater than 0.05 and 0.01 respectively. Looking at the reliability of mobile money services and revenue of the bank, it was indicated from r=0.021 that there is a very weak positive relationship between the two indicators. Also, the p-value of 0.884 suggested that the relationship is not statistically significant at both 5% and 1% levels of significance.

Relative to the relationship between reliability and the different measures of performance of banks, it was also indicated from the r value (0.197) and p-value of 0.161 that there is a very weak positive and insignificant relationship between the accessibility of mobile money services and profitability of banks. Furthermore, it was observed from r = -0.052 and value of 0.712 that a weak negative

and insignificant relationship exists between accessibility to mobile money services and loan supervision of banks. Lastly, the relationship between accessibility and revenue of banks was indicated to be weak, positive and insignificant at 5% and 1% levels of significance as observed from the r. value of 0.182 and p-value of 0.198.

In general, it was observed that all measures of use of mobile money services are not significant at both 5% and 1% and that they have weak relationships with financial performance of commercial banks. This could be because most bank customers do not use the services provided on mobile money due to high charges and also the distribution of bank branches around the country also makes customers easily access banks in their localities and has reduced congestion in banks.

Table 4.9: Multiple regression analysis

Model	**Unstandardised Coefficients**	**Standardised coefficients**	**Std. Error**	**t. value**	**Sig. value**
	B	**Beta**			
(Constant)	3.886		1.167	3.159	0.003
Profitability					
Reliability	-0.133	-0.150	-1.083	-0.025	0.284
Accessibility	0.244	0.198	1.429	1.278	0.159
F. value = 1.601, R. Square = 0.061, overall sig. value=0.212 and df~= 2					
Loan portfolio					
Reliability	**0.147**	**0.133**	**0.157**	**0.937**	**0.353**
Accessibility	**-0.082**	**-0.053**	**0.219**	**-0.375**	**0.709**
F. value = 0.508, R. Square = 0.020, overall sig. value=0.605 and df~ 2					
Revenue of the banking industry					
Reliability	-0.021	-0.021	0.132	-0.152	0.880
Accessibility	0.238	0.182	0.182	1.293	0.202
F. value = 0.8471, R. Square 0.033, overall sig. value=0.435 and di~= 2					

Source: SPSS Output (2023)

From the findings in the table, the F. value of the model is 1.06 1, overall sig. value = 0.212 and R squared value 0.061. This implied that the relationship between the use of mobile money services and profitability of commercial banks is not statistically significant observed from the overall sig. value, which is greater than 0.05 and a relatively a very small F-value. The R squared value indicated that there is 0.061 (6.1%) variability between the use of mobile money services and profitability of the banking industry. The unstandardized coefficient for reliability as presented in the table is -0.133, t-value = -1.083, and sig. value = 0.284. Therefore, as it is observed that the

sig. value is greater than 0.05, level of significance and the magnitude of t-value is less than 2, then this implies that reliability of mobile money services is not statistically significant. However, it was observed from the coefficient that a negative relationship exists between reliability on mobile money services and profitability of the banking industry.

Similarly, the unstandardized coefficient for accessibility 13 =0.244, t-value =1.429, and sig. value= 0.159. Since the sig. value is greater than c~=0.05 and t-value is small then this implies that accessibility of mobile money services is not significant at 5%. But as indicated from the 13 value of 0.244, a positive relationship exists between accessibility of mobile money services and profitability and as accessibility increases by a unit, profitability of the banks increases by 0.133 (13.3%).

4.5.1 Loan portfolio and use of mobile money services

From the findings in the table, the F-value of the model is 0.508, overall sig. value = 0.605 and R squared value = 0.020. This implied that the relationship between the use of mobile money services and loan supervision of the banking industry is not statistically significant observed from the overall sig. value which is greater than 0.05 and a relatively a very small F-value. The R squared value indicated that there is 0.0.02 (2%) variability between the use of mobile money services and loan supervision of the banking industry. The unstandardized coefficient for reliability as presented in the table is 0.147, t-value = 0.937, and sig. value = 0.3 53. Therefore, as it is observed that the sig. value is greater than 0.05, level of significance and the magnitude of t-value is less than 2, then this implies that reliability of mobile money services is not statistically significant. However, it was observed from the coefficient that a negative relationship exists between reliability on mobile money services and loan supervision of the banking industry.

Similarly, the unstandardized coefficient for accessibility is β-0.082, t-value -0.375, and sig. value 0.709. Since the sig, value is greater than α=0.05 and t-value is small then this implies that accessibility of mobile money services is not significant at 5%. But as indicated from the β value of -0.082, a negative relationship exists between accessibility of mobile money services and loan supervision and as accessibility increases by a unit, loan supervision of the banks increases by 0.147 (14.7%).

4.5.2 Revenue and use of mobile money services in the banking industry

From the findings in the table, the F-value of the model is 0.847, overall sig. value = 0.43 5 and R squared value = 0.033. This implied that the relationship between the use of mobile money services and revenue of the banking industry is not statistically significant observed from the overall sig. value which is greater than 0.05 and a relatively a very small F-value. The R squared value indicated that there is 0.033 (3.3%) variability between the use of mobile money services and revenue of the banking industry. The unstandardized coefficient for reliability as presented in the table is -0.021, t-value = -0.152, and sig. value 0.880. Therefore, as it is observed that the sig. value is greater than 0.05, level of significance and the magnitude of t-value is less than 2, then this implies that reliability of mobile money services is not statistically significant. However, it was observed from the coefficient that a negative relationship exists between reliability on mobile money services and revenue of the banking industry.

Similarly, the unstandardized coefficient for accessibility is β =0.238, t-value =1.293, and sig. value= 0.202. Since the sig. value is greater than α=0.05 and t-value is small then this implies that accessibility of mobile money services is not significant at 5%. But as indicated from the β value of 0.238, a positive relationship exists between accessibility of mobile money services and revenue and as accessibility increases by a unit, revenue of the banks increases by 0.020 (2%).

From the summary of the analysis, therefore, the regression models on the use of mobile money services and financial performance is derived from the coefficients and is given by:

Profitability = 3.886 - 0.133REL + 0.244ACC
Loan supervision = 3.688 + 0.147REL - 0.O82ACC
Revenue = 3.086 - 0.O2OREL + 0.238ACC

Where:
REL = Reliability of mobile money services
ACC = Accessibility of mobile money services

The value 3.886 shows the level of profitability of the banking industry given no use of mobile money services.

The value 3.688 shows the level of loan portfolio of the banking industry given no use of mobile money services.

The value 3.086 shows the level of revenue of the banking industry given no use of mobile money services.

4.6 Interview Results

The study solicited views from key informants from ZICTA and ZIOB about the effects of mobile money services on the financial performance of commercial banks. One key informant stated as follows:

> "Partnership with MMO has helped banks in bringing financial services closer to the people like e-wallet for example allow one to send money to a non-bank account holder provided they are connected to any mobile network of their choice. To add more, in an absence of an ATM Machine, a recipient can still withdraw from any agent dotted across communities.

Another key informant indicated that:

> "The partnership with MMO like Airtel Zambia has enhanced banks' services to its customers by providing fast and efficient services to its clients such as cash out facility, bill payments where one can pay for services like DSTV, Water bills, Electricity etc. I would also like to mention that very soon this branch will introduce a facility where I can deposit money from his or her mobile account to his or her bank account. This is possible because currently commercial banks services like I mentioned earlier on are readily available to the people through MMO".

One respondent added that:

> "Commercial banks have benefited heavily from the partnership with MMOs as it has helped the bank's customers to access financial services like a balance inquiry, payments, transfers, withdraws (cash out) and so on. I must mention that our bank had relatively good profit from 2020 to 2021 owing to massive Mobile Money utilization which was also coupled with the advent of the corona virus in which people were advised to utilize a cashless facility.

Interview results revealed that Mobile Money Payment offers services such as funds transfers, mobile to bank transfers, balance inquiry, statements, and mobile withdraws, deposits, bill payments, talk time purchase, e-wallet withdraws on third parties, mobile withdraws, block account if fraudulently attacked, bills payments and school fees payment. The interviews indicated that commercial banks also offered most of mobile banking services offered by MMOs with exception of small loans and MMO to bank transfers. It was noted, however, that commercial banks provided more services, some of which were not provided by the MMOs such as school fees payments, statements and e-wallet withdrawals on third parties. While the MMOs provided funds transfers between MMOs whilst commercial banks provided bank-to-bank transfers using mobile services. Respondents were asked about some of the strategies that can be put in place to optimize profitability. One respondent indicated that:

> "These commercial banks have embarked on providing flexible facilities such as the transfer of funds from one bank to another within few hours unlike long time when funds would only reflect after 48 hours. These commercials have also reduced slightly maintained charges on mobile money payments below a certain threshold to encourage low value transactions from our mass customers."

Another respondent two said that:

> "As you can see, commercial banks have come up with innovate products that will capture the mass market such as quick mobile loans, increased number of express agents' booths in the townships, compounds and squatters".

4.7 Summary of the Findings

The findings of the study have been presented and examined in this chapter. The first portion presented a study of the respondents' demographic data, and the three four sections dealt with information on the effects of mobile money services on the financial performance of the banking sector. The discussions of the study are summarized in Chapter Five, by comparing and contrasting findings of previous research against the current study findings.

CHAPTER 5
DISCUSSION OF RESULTS

5.0 Introduction

The study set out to investigate the impact of MMS on the profitability of commercial banks in in Zambia. Mobile money is an integral and important part of mobile commerce. The findings according to the level of use of mobile money services, level of financial performance and the relationship between use of MMS and financial performance are discussed in this section.

5.1 Discussion of Results

The important findings are discussed in this section based on the study objectives. The specific goals covered here are closely related to the variables under investigation, including the level of usage of MMS, measures of financial performance in the banking sector and the relationship between mobile money usage and the financial performance of commercial banks.

5.1.1 Level of Use of MMS in the banking Industry

The findings revealed that there is generally a high level of use of mobile money services in commercial banks. This is attributed by the fact that there is high reliability on services provided by mobile money evidenced by a mean response of 3.71 and the services being highly accessible to customers indicated by a mean response of 4.63. Also, MMS' fast efficiency does not require standing in queues when making transactions, as it is in the banking industry. This in other words saves banks from crowds that would flow in to make elementary transactions like paying school fees, paying electricity, and water and TV bills. This finding is further explained by the study carried out by Yao et al. (2018) on the effect of mobile banking on financial performance, which asserted that mobile devices, especially smart phones, are the most promising way to reach the masses and to create "stickiness" among current customers, due to their ability to provide services anytime, anywhere, high rate of penetration and potential to grow. Also, Dong et al. (2020) in their study on the impact of mobile money services on performance of commercial banks revealed in the findings a significant increase in awareness and use of mobile money services.

The findings according to Harelimana (2017) indicated that while the MMS have enormous potential to enhance financial inclusion, it would require an open business model that involves all

stakeholders to establish a truly national solution. He furthermore stated that the initial contribution of MMS to financial inclusion was in improving money transfer by lowering the transaction costs for small volumes. As a way forward, the regulatory authorities need to establish a legal framework that does not stifle innovation but ensures safety for customers' savings.

5.1.2 Measures of financial performance in the banking industry in Zambia

From the analysis of the findings, it was revealed that the main measures of financial performance in relation to mobile money and bank performance were revenue, loan portfolio and profitability. There was a high level of profitability in the banking industry as it was indicated by an overall mean of 4.52, a high level of loan supervision observed from a mean response of 3.85 and relatively high revenue indicated by a mean response of 4.11. This is explained by the dominance of very few top banks in the banking sector implying that despite having a market driven banking industry, the industry is oligopolistic in nature, dominated by few and short of competitiveness efficiency advantage.

To a great extent, the market behavior of interest rates is influenced by these top banks. They become market price setters and the clients who desperately crave for bank loans are price takers. The study finding is also supported by the 2016 report released by Business Times (2023) concerning the best and worst performing banks in Zambia which indicated that the number of banks making the top five in profitability had ROA ranging from 24% to 43%. The report further noted that despite the heavy macro-economic headwinds of 2019-2022, the banking sector largely continued to register growth. However, Kairye (2016) reported that on the overall, the performance of the banking sector in Uganda in 2015 alone does not illustrate sizeable concerns but the medium-term trend posture was worrying. He, therefore, noted that not only measures to reduce high operational expenses of banks but also promote further financial intermediation and measures to boost private sector credit were needed.

5.1.3 Relationship between level of use of MMS and financial performance of Commercial banks

From the findings of this study, it was indicated that the relationship between the reliability on mobile money services and profitability in the banking industry was generally a weak, negative and insignificant one observed from a small correlation coefficient of r= -0.149. This was similar to the relationship between accessibility of MMS and profitability as it was also indicated to be weak, however, a positive and insignificant relationship was observed from a correlation coefficient of r = 0.197. When a regression analysis was performed on the reliability, accessibility of MMS and profitability of commercial banks, it was also indicated that the use of MMS was still insignificant at 5% as indicated by a sig value of 0.212.

From the findings of this study, it was also indicated that the relationship between the reliability on mobile money services and loan supervision in the banking industry was generally a weak, positive and insignificant one observed from a small correlation coefficient of r =0.132. This is similar to the relationship between accessibility of MMS and loan portfolio management as it was indicated to be a weak negative and insignificant relationship observed also from the correlation coefficient of r = -0.052. Regression was also performed on the reliability and accessibility of MMS with loan supervision in the banking industry and it indicated that the use of mobile money services was still insignificant at 5% as indicated by a sig value of 0.605.

Finally, the findings also indicated that the relationship between the reliability on mobile money services and revenue in the banking industry was generally a weak, negative and insignificant one observed from a small correlation coefficient of r = -0.021. This is similar to the relationship between accessibility of Mobile Money services and revenue as it was indicated to be a weak and positive and insignificant relationship observed also from the correlation coefficient of r =0.182. Regression was also performed on the reliability and accessibility of Mobile Money services with revenue in the banking industry and it indicated that the use of mobile money services was still insignificant at 5% as indicated by a sig value of 0.435.

These findings are in line with the findings of Opare (2018). In his study about mobile banking and financial performance of commercial banks in Ghana, he concluded that there is a weak direct

relationship between mobile banking and financial performance. In his study, the Pearson correlation coefficient stood at 0.79. In his study on the impact of mobile money services on performance of commercial banks, Muisyo et al. (2014) explained that Kenyan commercial banks have experienced both a decline in profitability and liquidity in recent years as being attributed to the growth in use of mobile money services. He further recommended that commercial banks should partner or enter into joint ventures with mobile money operators. With such partnerships, banks would have effective models to expand their physical reach into poor and rural areas. This arrangement would deliver the required level of proximity and low transaction costs, which are essential in increasing client deposits, a source of liquidity. More so, commercial banks should take advantage of the products that are not provided by mobile operators. For example, credit or loan facilities and insurance services where banks have competitive advantage over mobile operators.

It is hoped, therefore, that this will build a strong bond between the client and the bank which guarantees regular flow of cash in or cash out transaction. However, this study's finding is contrary to the findings of Iheanachor and Ozegbe (2020) in their study about the effect of mobile money on the financial performance of commercial banks in Nigeria. Their findings contend that, the MMS had steadily increased over the five year period (2009 to 2013) and also the commercial banks' financial performance had steadily increased over the same period. They, therefore, concluded that mobile money positively affected the financial performance of the commercial banks in Nigeria. Mobile money which is a part of financial innovation has an effect on the commercial banks' profitability and achievement of their objectives where customer's satisfaction is achieved, easy access to the banks, saves time and costs and enables banks to increase competitiveness and ensure sustainable profit (Katusiime, 2021).

5.2 Summary of the Findings

A summary of the findings of the study is presented in this chapter, along with a discussion of how the findings compare to those described in the existing body of literature. The significance of the findings is evaluated and interpreted in light of what is already known about the topic of the investigation. In the following Chapter Six, the conclusion and recommendations of the study, as well as areas that might require future research are outlined.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the conclusion and recommendations of the study. The study's major goal was to investigate the impact of MMS on the profitability of commercial banks in Zambia. The chapter concludes with a section on recommendations for future research considering the gaps found after the analysis of the current study.

6.1 Conclusion

6.1.1. Level of MMS use

There is a high level of use of MMS in Zambia due to the reliability, accessibility and convenience of the services. Various studies point to the vital role MMS can play in improving the flow of resources in emerging economies of Africa. This potential lies in the ability that MMS must allow money to flow electronically rather than physically, thereby eliminating or reducing the spatial and temporal barriers to money transfer.

6.1.2 Measures of financial performance

There is a high level of financial performance implied by high profitability, high loan portfolio and revenue sources. These were the financial performance measurement indicators adapted and consequently interrogated with the various respondents.

6.1.3 Relationship between MMS and financial performance of the banking sector

A weak positive and insignificant relationship between the use of MMS and financial performance of commercial banks was the major study finding. While the study findings indicated that the MMS have a weak positive effect on financial performance, it would require an open business model that involves all stakeholders to establish a truly national solution. Furthermore, the contribution of MMS to financial performance is in improving money transfer by lowering the transaction costs for big volumes. In addition, mobile money accounts do not necessarily increase the number of account holders in the banks making their contribution to financial performance limited to improving payments and money remittances.

6.2 Recommendations

Arising from the study findings, the following recommendations have been considered:

i. Free training and refresher training should be provided for staff of the financial institutions and if possible, to customers to equip them with skills in the ever-changing technology.
ii. Commercial banks in Zambia should provide toll free lines to enable query resolutions as the MMOs are currently doing, in case of any problem that deserves attention of the banking institution.
iii. Agency banking should take a center stage in the banking institutions' short-term strategic plans to deepen financial services further and ensure inclusion of the unbanked and the under banked as this is a huge market that remains a priority focus of the mobile money service providers.
iv. If possible, banks should target recruiting as many agents as mobile money service providers have done as well as reduce agency banking fees to make their services affordable to the low-income earners.
v. Commercial banks which have not yet entered partnerships in sharing platforms with MMOs should urgently collaborate with MMS providers to forge synergies for sustainable competitiveness.

6.3. Suggestions for further Research

Since this study explored the impact of mobile money services on the profitability of commercial banks in Zambia, the study recommends that; similar studies should be done in other countries for comparison purposes and to allow for generalization of findings on the effect of mobile money on the financial performance of commercial banks. The study recommends further research on the causes of the inconvenience associated with mobile money and reasons why cross network transactions between MMOs are not popular. Further follow-up studies on the same topic could identify changes over time, especially with the expectation that mobile money services may become the primary platform for cashless transactions rapidly gaining popularity. A more detailed study can be conducted to establish whether the adoption of financial innovations contributed to financial deepening in Zambia.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

"AN INVESTIGATION OF THE EFFECT OF MOBILE MONEY SERVICES ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN ZAMBIA"

Dear Respondent,

I am a student at the University of Zambia in my final stage pursuing an MBA in Finance. As partial fulfilment for the award of a master's degree, I am conducting a study on:

"***Investigating the Impact of Mobile Money Services on the Financial Performance of Commercial Banks in Zambia"***

You have been purposefully sampled to provide information for the topic indicated above. The information being collected is purely for academic purposes and as such, it will be treated with maximum confidentiality. Subsequently, you are not supposed to indicate your name or any personal information that can lead to the revealing of your identity. Your co-operation will be greatly appreciated.

For more information or any queries, kindly get in touch with the following:
Project Supervisor: Mr. Benjamín Kaira (kbenmav1979@gmail.com

Sincerely,

Paul Mbunji
Student Researcher
096 8220322

APPENDIX II: QUESTIONNAIRE

(For Commercial Bank and Mobile Money Operator Employees)

General Instructions

A. Please indicate your answer for general information by ticking (√) in the box/bracket provided or write in the spaces given.

B. Please indicate your answer by ticking (√) in the appropriate box for the rest of the questions.

C. Please select only one among the options given in the Likert scale questions (1 - Strongly Disagree (SD); 2 – Disagree (D); 3 – Neutral (N); 4 – Agree (A); 5 - Strongly Agree (SA).

Section A: **General information**

1. Gender: Male [ ] Female [ ]

2. Age: a) 20-30 [ ] b) 31-40 [ ] c) 41-50 [ ] d) Above 50 [ ]

3. Level of education

High school [ ] Tertiary Certificate [ ] Diploma [ ]

Bachelor's Degree [ ] Postgraduate [ ] others [ ]

4. Name of Organisation/Department/Unit……..

5. Position in your Organisation:

Manager [ ] Departmental Head [ ] Supervisor [ ]

Subordinate Staff [ ]

<u>Section B: Levels of Mobile Money Usage in Zambia</u>

6. In the table below, what is your level of agreement on the following statement relating to mobile money services? Use 1=Strongly disagree 2=Disagree 3=Not Sure 4=Agree 5= Strongly agree.

7.

Reliability	**1**	**2**	**3**	**4**	**5**
Mobile money services have improved the financial performance of commercial banks.					
Most companies have tried to develop their own mobile money service platforms.					
Mobile money services affect the financial performance of commercial banks.					
Most customers use both mobile money services and banking services simultaneously.					
Mobile money service charges are cheap compared to bank charges.					
Accessibility					
Mobile money services are available at all banks					
Mobile money services enable customers to receive, send or pay for any utilities anywhere at any time.					
Your organization adopted any mobile money services.					
Mobile money services are easily accessible than banking services.					

Section C: Measures of Financial Performance in the Banking Industry

8. In the table below, what is your level of agreement on the following statement relating to measures of financial performance in the banking industry? Use 1=Strongly disagree 2=Disagree 3=Not Sure 4=Agree 5= Strongly agree.

Profitability	**1**	**2**	**3**	**4**	**5**
Much of banks' profits are from customers deposits					
Banks earn a lot of profits from their customers					
Giving out too much loans generate more profits					
Loans, mortgages and bank charges provide banks with high margins					
The size of the bank affects its profits					
Loan portfolio management	**1**	**2**	**3**	**4**	**5**
Banks put pressure on the borrowers to retire the loan from earning.					
The loan will customarily be accompanied by written covenant of the borrower to conduct activities in a way agreed upon by Very high the bank.					
Substantial credit is advanced for a period of more than one year					
Commercial banks are able to meet their long-term obligation such as loans from the central bank.					
Banks are quick to sell off property that is given to them as collateral.					
Revenue sources	**1**	**2**	**3**	**4**	**5**
Banks receive revenue from interests					
Revenue that is earned by banks is got from. investments that the bank is involved in (e.g. securities)					
Banks aim to grow revenue by expanding their customer base.					
Banks have a lot of liquid assets at their disposal, i.e. assets that can be easily turned into cash.					
Banks are able to meet their short term obligations.					

Section D: Relationship between Mobile Money Services and Financial Performance Of Commercial Banks

9. In the table below, what is your level of agreement on the following statement relating to measures of financial performance in the banking industry? Use 1=Strongly disagree 2=Disagree 3=Not Sure 4=Agree 5= Strongly agree.

Statements	**1**	**2**	**3**	**4**	**5**
Mobile money services highly reduce on the profile margins of commercial banks.					
Mobile banking requires a highly effective banking system at any commercial bank.					
I am satisfied with the mobile money services that a bank may offer me.					
There is a relationship between mobile money services and the financial performance of commercial banks.					
Commercial banks must offer more innovative services to their customers to improve their financial performance					
There is a positive and strong relationship between mobile money services and financial performance.					
Mobile money services may be improved for the efficient financial performance of commercial banks.					

Thank You for Your Time and Responses

APPENDIX III: INTERVIEW GUIDE FOR BANK EXECUTIVES

1. Name of the organisation……
2. Position in the organisation …….
3. How long have you worked in the banking sector?.....
4. Have you as a commercial bank partnered with Mobile Money service operators?.....
5. Are the objectives for the commercial bank in line with the partnership with Mobile money service operators if yes, pleases explain……..
6. How has the partnership with MMSO brought financial services to people?
7. Has the partnership with MMSO has enhanced commercial bank services to its customers?
8. Would you say that Mobile Money Payment system has increased the profitability of commercial Banks?
9. Would you say Mobile Money Payment system has affected number of clients vising commercial banks
10. Propose any other strategies that can be used by commercial banks in Zambia to optimize its profitability from Mobile money services.
11. What measures can be put in place to ensure the proposed strategies in Question 10 to live a test of time

Thank you for your cooperation

APPENDIX IV: INTERVIEW GUIDE FOR ZIOB AND ZICTA

Adoption of mobile money services

1. In your opinion, how has mobile money service been adopted by the banks?

……

……

2. How are banks responding to the financial products and services that are offered by Mobile Network Operators in form of mobile money?

……

……..

Strategies that banks have put in place towards mobile money services

3. What strategies has your bankers put in place towards mobile money services?

i. ……

……

ii. ……

……

iii. ……

……

iv. ……

……

v. ……

……

4. Any specific suggestions on how Banks and mobile money operators can complement each other.

……

……....

.....

Thank You for Your Time and Responses