

**EFFECTS OF MOBILE BANKING ON FINANCIAL PERFORMANCE OF
MICROFINANCE INSTITUTIONS IN KENYA**

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DECLARATION

This research project is my original work and has not been submitted for any award in any University.

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This research project I is submitted for examination with my approval as University supervisor.



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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Financial performance is the ultimate goal of any financial institution as it allows them to maximize the wealth of their shareholders (Karamoy & Tulung, 2020). Better financial performance contributes towards financial intermediation endeavors of the financial institution which is an important function towards the growth of any economy (Iqbal, Nawaz & Ehsan, 2019). The role played by mobile banking when it comes to financial performance cannot be underscored (Kumar, Dhingra, Batra & Purohit, 2020). Mobile banking allows customers to carry out financial transactions like making deposits and payment of bills using the bank accounts via their mobile phones (Farah, Hasni & Abbas, 2018). Thus, a positive nexus is anticipated and predicted between mobile banking and financial performance. It is expected that the adoption of mobile banking can contribute towards better financial performance of the financial institution.

Theoretically, the interplay between mobile banking and financial performance can be illustrated by the financial intermediation theory (FIT) and the transaction cost theory (TCT). Developed by Gurley and Shaw (1960), the FIT recognizes financial institutions as intermediaries responsible for mobilizing deposits (from surplus units) which they loan out to borrowers (deficit economic units). These loans are expected to contribute towards investments which are critical as far as the growth of the economy is concerned. It is therefore anticipated that the adoption of mobile banking platforms would allow the financial institutions to fully execute their intermediation which in turn would increase the net interest incomes that are critical for their financial performance (Gurley & Shaw, 1960). The TCT by Coase (1937) and Hicks and Niehans (1983) argues that the adoption of mobile banking allows financial institutions to reduce the transactions costs incurred by customers which in turn contributes to the interest income thus better financial performance. It then follows that financial institutions are motivated by the need to reduce the transaction costs in the adoption of mobile banking (Hicks & Niehans, 1983).

In Kenya, the microfinance institutions (MFIs) are financial institutions that are regulated by the Central Bank of Kenya and they are allowed to accept deposits from customers and advance loan facilities. Presently, there are 14 licensed MFIs in Kenya (appendix I). However, financial performance has remained a key challenge for these institutions for a significant period of time.

For example, within the financial years 2018, 2019 and 2020, these institutions reported losses in terms of their net profit after tax of Kshs (1,192) million, Kshs (309) million and Kshs (2,120) million respectively (CBK, 2020). It is against this backdrop that the proposed study seeks to delve further into this concerning trend in financial performance of the DT-MFIs while seeking to establish the missing link with mobile banking.

1.1.1 Mobile Banking

Mobile banking (m-banking) is the ability of customers of the financial institution to leverage their mobile phones to carry out financial transactions like payment of bills, withdrawals and making deposits among other activities (Baabdullah, Alalwan, Rana, Kizgin & Patil, 2019). M-banking is the ability of the financial institution to provide and avail financial and banking services leveraging mobile communication device (Sharma & Sharma, 2019). M-banking is mostly conducted using short message services (SMS), the internet as well as Unstructured Supplementary Service Data (USSD) and the mobile application programs that customers can download and install in their mobile phones (Malaquias & Hwang, 2019). The mobile service providers that have greatly contributed towards the growth of mobile banking in Kenya include Safaricom (Mpesa) and Airtel (Airtel Money) as well as Telkom (T-cash).

Literature provides a number of indicators with regard to mobile banking which can be categorized as qualitative or quantitative. These indicators include accessibility, transaction costs and flexibility as well as convenience of m-banking services (Malaquias & Silva, 2020). The other indicators that can be used to measure m-banking include the number and value of transactions moved by customers through their mobile phones, number of mobile sub-scribers, mobile penetration as well as the number of mobile money agents (Elhajjar & Ouaida, 2019). The present study will use the ratio of number and the value of m-banking transactions.

1.1.2 Financial Performance

Financial performance can be viewed in terms of the utilization of assets or equities to generate revenues and thus maximize the wealth of the owners (Tien, Anh & Ngoc, 2020). Profit is the underlying goal of the financial institution and thus all the actions and activities done in the institution are aimed at enhancing this goal. Financial performance results are important as they can allow industry comparison to gauge the financial soundness of the firm relative to other players

(Karamoy & Tulung, 2020). Financial performance information is also critical to lenders in case the firm is seeking acquire funds for long term projects (Nufus, Supratikta, Muchtar & Sunarsi, 2020).

There are several measures available in literature with regard to financial performance including returns on equities (ROE) as well as assets (ROA) and the net interest margin (NIM) (Iqbal, Nawaz & Ehsan, 2019). ROE is a financial ratio that reflects on the profits the firm can generate against the total equities invested by the shareholders. A firm with more ROE has greater capability to generate cash internally (Hameedi, Al-Fatlawi, Ali & Almagtome, 2021). On the other hand, ROA is the degree which an institution is able to generate income by leveraging assets in place. It reflects in the efficiency at which the available resources in the firm are utilized to generate revenues (Galdeano, Ahmed, Fati, Rehan & Ahmed, 2019). In the present study, ROA will be adopted as a measure of financial performance.

1.1.3 Mobile Banking and Financial Performance

From a theoretical point of view, a positive relationship is predicted between mobile banking and financial performance of the financial institution. The TCT predicts that the adoption of m-banking allow financial institutions to reduce transactions which has potential to grow the revenues generated and thus better financial performance (Hicks & Niehans, 1983). Similarly, the FIT argues that adopting mobile banking allows financial institutions to effectively realize their financial intermediation role in the economy which would in term results into better financial performance (Gurley & Shaw, 1960).

Empirically, Bochaberi and Job (2021) noted that mobile banking significantly influence financial performance. Gathu and Njenga (2021) argued that mobile banking is positively associated with financial performance. According to Isabwa (2021), m-banking is a significant predictor of financial performance. On the contrary, Usman (2020) established that m-banking has no significant positive implication on financial performance. Mugane (2020) shared that m-banking and financial performance is positively linked with each other. Asiimwe (2019) observed that m-banking has positive implication on financial performance of the firm. Kathuo Rotich and Anyango (2015) argued that financial institutions that have adopted m-banking have increased their customer outreach to a great extent resulting into better financial performance.

1.1.4 Microfinance Institutions in Kenya

MFIs in Kenya are regulated by the CBK and they engage in activities like acceptance of deposits from clients as well as providing loan facilities. These institutions came into existence in 2006 after the Microfinance institutions Act had been endorsed by the parliament. MFIs are expected to play an instrumental role towards financial deepening especially with their ability to mobile savings and advance credit facilities to the under-served and financially excluded customers in rural areas. Funding of most of these institutions is done through concessionary loan facilities obtained from internationally established development institutions.

Over the recent periods, these MFIs have been encountering challenges with regard to their financial performance. These challenges include stiff competition from other industry players like the Savings and Credit Cooperatives SACCOs) as well as consistent reporting of losses in respect to their net income after taxes. For instance, within the financial years 2018, 2019 and 2020, these institutions reported losses in terms of their net profit after tax of Kshs (1,192) million, Kshs (309) million and Kshs (2,120) million respectively (CBK, 2020). This trend has raised unfilled gap and provides the motivation of the present study that seeks to empirically establish the nexus between mobile banking and financial performance of these DT-MFIs.

The Kenyan microfinance sector began in the late 1960s with a few NGOs that set up pilot programs providing donor funded credit services. Some of these organizations have evolved over time to become commercialized, self-sustaining and hugely profitable institutions. Microfinance is rapidly becoming Kenya's most accessible and affordable financial service. From the years 1970s to date, there has been high increase and growth of microfinance institutions (MFIs) in Kenya. Many have grown fast and their levels of efficiency greatly increased until some have been converted into leading banks in Kenya for example the Equity bank and the Family bank among others. In Kenya, the microfinance market penetration rate is estimated at around 10.4 percent and loan portfolio by end of 1999 at around KShs 2.3 billion (Aleke Dondo, 2001).

The Kenyan microfinance marketplace has evolved at a very rapid pace with new entrants, new products and practice, a rise in movement between multiple memberships of financial institutions; and a more demanding and discerning clientele. This has significant implications for the many and various financial service providers operating in this increasingly competitive microfinance market

(Dondo, 2001). This increasingly competitive and varied marketplace is beginning to be reflected in a growing number of players. This represents an important change, since until the early 1990s most MFIs did not have to worry about competition. This period of low competition allowed MFIs the freedom to focus single-mindedly on making the breakthroughs in methodology and management necessary for growth and sustainability. However, recent years have seen competition among MFIs growing in leaps and bounds in Kenya. Moreover, donors have questioned the need for continued subsidies, resulting in the recent focus on institutional sustainability' in the MF sector.

1.2 Research Problem

Financial performance is the main objective that guides existence and operation of the financial institutions (Hameedi et al., 2021). Better financial performance requires institutions to embrace technologies like m-banking that are key when it comes to reduction of transaction costs for customers (Iqbal et al., 2019). As observed by the TCT, institution is driven by the need to lower the transaction costs in the adoption of m-banking (Hicks & Niehans, 1983). The financial intermediation theory predicts existence of a positive nexus between m-banking and financial performance by arguing that m-banking allow financial institutions to realize their financial intermediation role (Gurley & Shaw, 1960). However, the link empirical link between m-banking and financial performance is mixed and inconsistent.

The DT-MFIs in Kenya have consistently reported losses for a significant period of time. For instance, For instance, within the financial years 2018, 2019 and 2020, these institutions reported losses in terms of their net profit after tax of Kshs (1,192) million, Kshs (309) million and Kshs (2,120) million respectively (CBK, 2020). The government and policy makers expects these MFIs to be important tools for poverty alleviation because of their potential to provide financial services to the most vulnerable and poor members of the society that had previously been financially excluded. As such, it may not be possible for the government to realize poverty alleviation with this poor trend in financial performance of this institution and hence the need to delve on some of the possible issues occasioning this picture.

The available literature from a global perspective includes Malaquias and Silva (2020) who focused on Brazil to explore the adoption of m-banking in rural areas. It was observed that

perceptions with regard to usefulness and the ease of use and trust are key predictors of adoption of m-banking in remote areas. A study in Uganda by Asimwe (2019) focused on m-banking and financial performance among commercial banks and established a positive nexus. Usman (2020) adopted case study to analyze the link between m-banking and financial performance in Nigeria with reference to United Bank of Africa and an insignificant relationship was noted. In a study by Chiinze (2017), a case of Central Africa Building Society was adopted to provide the nexus between the adoption of m-banking and financial performance where a positive link was registered.

Locally in Kenya, Bochaberi and Job (2021) did an appraisal of m-banking and its link with financial performance and noted existence of significant interplay. Gathu and Njenga (2021) did a study whose focus was on m-banking and financial performance with the adoption of a case of Co-operative Bank of Kenya and a positive nexus was noted. Isabwa (2021) conducted a study whose focus was on m-banking and financial inclusion among Kenyan commercial banks where a significant interaction was registered. Mugane (2020) looked at the m-banking services and their implication on financial performance of Kenyan banks and a positive effect was noted.

The reviewed studies like Malaquias and Silva (2020) were done in contexts like Brazil and not Kenya and it covered m-banking in isolation without linking the same with financial performance. Other studies like Isabwa (2021) create conceptual gap by focusing on financial inclusion and not financial performance as the dependent variables. Ratemo (2004) carried a study on USAID strategy for development of MFIs in Kenya and the expectations of funded institutions. Ogindo (2006) carried a study on an assessment of performance of MFIs in Kenya. Wanjohi (2008) investigated competitive strategies and positioning within a changing business environment adopted by MFIs in Kenya. Mwindi (2002) studied the relationship between interest rates charged by MFIs and performance of micro and small enterprises in Nairobi. Onzere(2013) studied the influence of mobile banking on growth of micro finance institutions in Kenya There are other studies like Usman (2020), Chiinze (2017) and Gathu and Njenga (2021) that create methodological gap by adoption of case study methodology. There are few existing studies that have been done to find out the influence of using mobile banking on the financial performance of these MFIs. This study will seek to fill this gap by investigating the effect of mobile banking on the financial performance in Kenya and determine whether mobile banking affects Microfinance

financial performance. Against the identified gaps, the present study seeks to establish answers to the following research question: what are the effects of mobile banking on financial performance of microfinance institutions in Kenya? Explain the conceptual, methodological and contextual gaps motivating the study

1.3 Research Objective

The objective of the study is to determine the effects of mobile banking on financial performance of microfinance institutions in Kenya

1.4 Value of the Study

The study is expected to allow the management of the MFIs in Kenya to increase the adoption and enhancement of the m-banking platforms. Through this study, it is expected that the managers of the MFIs will put in place relevant mechanisms of preventing further erosion in their financial performance position. This will allow them to effectively realize their financial intermediation role that is critical for the growing economy like Kenya.

The policy makers working among the MFIs are expected to leverage the findings of the study as guideline and basis of formulating policies that will contribute to better financial performance of these institutions. The policies makers at CBK are expected to benefit from this study as they formulate generate industry standards and guidelines as well as policies to promote financial stability of these institutions. The policy makers in the government are expected to leverage this study to put in place relevant policies for realization of Vision 2030. The study is expected to guide the formulation of poverty eradication policies with a focus on MFIs as one of the tools.

The study is expected to contribute to the available literature and theories regarding mobile banking and financial performance. This literature will then be reviewed by future scholars as they conduct related studies. The study is expected to agree or disagree with the established theories which are used to underpin the variables.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter is a review of literature covering the theories on m-banking and financial performance. The determinants of financial performance of DT-MFIs are reviewed and the past empirical studies are also studied. The gaps from the reviewed studies and the conceptual framework are presented.

2.2 Theoretical Review

The financial intermediation theory and the transaction cost theory will be used to underpin the variables of the study.

2.2.1 Financial Intermediation Theory

The financial intermediation theory was developed by Gurley and Shaw (1960) and it argues that financial intermediaries exist so as to mobilize savings and deposits that are loaned out to those people in need. The theory raises a number of issues that explain the existence of financial intermediaries; these include high transaction costs and availability of inadequate information (Cai, 2018). Financial intermediaries play a key role in the economy through reduction of the costs that customers incur as they channel funds (Molnár, 2018). The key contribution of the intermediaries is their ability to facilitate steady flow of funds from units with deficit to those having surplus (Okello, Munene, Mpeera and Akol 2018). The key role of the financial intermediary is the creation of specialized financial instruments and commodities (Drissi & Angade, 2019). They are the imperfections in the market that results into existence of financial intermediaries in a financial system (Ratnawati, 2020).

In markets that are highly perfect characterized by in absence of transaction and information costs, financial intermediaries would be nonexistent (Havrylchyk & Verdier, 2018). There is high pronouncement of information asymmetry in financial markets. At the same time, there exists asymmetry of information between lenders and the borrowers. Those lending funds may not have accurate information on collaterals and integrity of the borrowers (Greenbaum, Thakor & Boot, 2019). Thus, the moral hazards in financial markets act as hindrances towards effective and proper transfer and sharing of information between the people participating in financial markets which

would in turn affect the financing of suitable projects (Boot, Hoffmann, Laeven & Ratnovski, 2020).

2.2.2 Transaction Cost Theory

This theory was proposed by Coase (1937) and later on developed by Hicks and Niehans (1983) and its main argument is that the need to reduce transaction costs provides the strong incentive for managers to embrace financial innovations like m-banking. The main focus of the theory is how transaction costs can be saved, an analysis of each specific transaction as a unit on its own and having a distinction of the attributes of different transactions (Koker, 2021). The theory argues that transaction costs are those expenses that need to be incurred in order to retain market related information that is accurate (Rindfleisch, 2020). Such costs are characterized by ambiguity and have an effect on economically undertaken decision. These transaction costs include the expenses that are incurred to search for information, negotiate, contract, manage compliance and handling the breach of contractual agreement (Cuypers, Hennart, Silverman & Ertug, 2021).

Transaction costs arise because of market failure that is occasioned by interplay of a number of factors that are humanly related. The interaction of these factors complicates the way a transaction takes place (Lu & Wung, 2021). According to Hicks and Niehans (1983), the most outstanding aspect of financial innovation is the need to lower the transaction costs. The ability of lowering transaction costs leads to high degree of innovation in the financial system (Arora, 2020). The contribution of this TCT to the present study is that adoption technologies like m-banking would lessen the exchange costs of the financial institutions as there is proper coordination and utilization of information and data (Zylbersztajn, 2018). This lowering in transaction costs is likely to enhance financial performance. Thus, a positive nexus is predicted between m-banking and financial performance under this TCT. 2.2.3 Conventional Theory of Financial Deepening.

The theory was proposed by Shaw (1973) and highlights the importance of credit access on growth of SMEs. The theory is based on the view that financial deepening is a necessary pre-condition for economic growth. It rests on premises that financial deepening enhances credit access which offers the necessary financing to firms in the economy and hence economic growth.

This theory contends that well-functioning financial sector promotes overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources

from traditional (non-growth) sectors to the more modern growth inducing sectors, and also promote a competent entrepreneur response in these modern sectors of the economy (Shaw,1973, and Mohan, 2006). Supporting the same view Srikanth (2013) argues that Inclusive finance, including safe savings, appropriately designed loans for poor and low-income households and for micro, small and medium-sized enterprises, and appropriate insurance and payments services can help people to enhance incomes, acquire capital, manage risk, and come out of poverty. Furthermore, access to financial services contributes to higher production and social protection, as the financial sector – through stored 14 savings, credit and insurance – serves as a measure of crisis mitigation as postulate by the works of McKinnon (1973).

2.2.3 Economic Theory

Economic theory suggests that financial markets and intermediaries exist mainly because of two types of market frictions: information costs and transaction costs. These frictions lead to the development of financial intermediaries and financial markets, which perform multiple functions. These functions include assisting in the trading, hedging, diversification, and pooling of risk; providing insurance services; allocating savings and resources to the appropriate investment projects; monitoring managers and promoting corporate control and governance; mobilizing savings efficiently; and facilitating the exchange of goods and services. Economic theory proposes that a strong institutional environment exists to alleviate information and transaction costs. According to Economic outlook (2011), financial intermediation and financial markets contribute directly to increased economic growth and aggregate economic welfare through their effect on capital accumulation (the rate of investment) and on technological innovation. First, greater financial development leads to greater mobilization of savings and its allocation to the highest-return investment projects. This increased accumulation of capital enhances economic growth as well as allocating capital to the right investment projects and promoting sound corporate governance. In addition financial development increases the rate of technological innovation and productivity growth, further enhancing economic growth and social welfare. Access to financial markets not only beneficial to both consumers and producers but also reduces poverty as the poor have access to banking services and credit. Access to credit allows consumers to smooth consumption over time by borrowing and/or lending; in addition, it stabilizes consumer welfare in the presence of temporary shocks to wages and income (Levine, 1998).

2.3 Determinants of Financial Performance among Microfinance Institutions

2.3 Determinants of Financial performance

Factors that determine financial performance of MFIs include firm's size, liquidity position, level of leverage and its operating efficiency. These are explained in detail below:

2.3.1 Size

Firm size can be measured in many forms including as a factor of its total assets, total revenue, geographical presence and number of employees. The most commonly used measures for investment bank size include the level of equity capital, revenues, total assets and customers numbers (Schildbach, 2017). In most of finance literature read while undertaking this research, the proxy for firm size is its total assets and is commonly expressed a natural log. of its assets (Bikker & Hu (2002), Goddard et al. (2004), Cull et al., (2007) and Molyneux & Thornton (1992)). Bigger institutions are better positioned for harness economies of scale that goes to enable them to record higher profits. Resulting from this, the relation of firm size and its profits is mostly a positive one. Alkhazaleh & Almsafir (2014) argued that large banks have a stronger bargaining power arising from their specialization and that they enjoy economies of scale they have. In addition, empirical evidence indicates that size of a bank impact's its profitability in a positive manner mostly because of confidence investors have in it, its cost of raising capital is significantly lower (Tariq et al., 2014).

2.3.2 Liquidity

Liquidity is all the cash that a firm has left after considering all obligations relating to the current financial period. When external financing is not available to a firm, liquid assets can be used to finance operations and investments.

2.3.3 Leverage

Leverage is the debt - equity mix that defines the firm's capital structure. Van Horne (2002) sees capital structure as the mix of long-term sources of capital employed by a firm. Traditional theory by Modigliani and Miller (1963) posit that high leverage is advantages to a firm because it forms a tax shield since interest expense is tax deductible. The main motivation of a firm using leverage is to maximize shareholder value under certain favorable economic conditions such as during prolonged periods of low interest rates. Financial leverage will enhance shareholder returns as long as the interest paid for its long-term loans is much below the return rate on net assets that the firm has. The mix of equity and debt used by a firm is however directly related to its bankruptcy risk

(Pandey, 2005). An optimal capital structure is therefore crucial in an investment banks effort to manage both financial and business risk, achieve a favorable tax position, as well as respond with agility to growth opportunities. A high degree of leverage means that slight movement in turnover translates into big change in profitability (ROE). Based on a study of 72 companies in five industries involving over 2,000 tests in various time periods, Murphy (1968) found that there was no likelihood for firms with high level of leverage to outperform others in terms of rates of return on common equity.

2.3.1 Mobile Banking

The TCT predicts that adoption of m-banking help financial institutions to lower the transaction costs which would then see an increase in both number and volume of transactions (Ahluwalia, Mahto & Guerrero, 2020). This is likely to enhance financial performance (Ahluwalia, Mahto & Guerrero, 2020). Similarly, the financial intermediation theory predicts that the adoption of m-banking is an important step that can allow financial institution to enhance their financial intermediation role in the economy. This also may also have a positive contribution towards financial performance of the financial institution (Gyeke-Dako, Agbloyor, Turkson & Baffour, 2018). However, Usman (2020) established contradictory evidence suggesting that m-banking has no positive and significant implication on financial performance.

2.3.2 Asset Quality

The profitability of the financial institution is highly affected by the asset quality. There are several categories of assets in the institutions ranging from current and non-current ones to investments (Kathuo Rotich S & Anyango, 2015). Loan is the main asset that generates interest income to a financial institution. Financial performance of the financial institutions is determined to a great extent by the quality of the loan portfolio (Mabwai, 2016). The losses that arise from delinquent loan is predict the financial performance of the financial institution. The widely adopted measure of asset quality is non-performing (NPLs) which is measured by NPLs against total loans of the financial entity.

2.3.3 Operational efficiency

Operational efficiency is the extent which the financial institution provides specific service with the least possible cost (Adhikary, 2014). It is a measure of how well the financial institution has

streamlined the operations and utilizes the input costs and the price of the outputs. Efficiency in management of the expenses in the institution ensures that loan resources are effectively utilized. The widely adopted measure of operational efficiency is the operating efficiency ratio (OER) where lower resultant ratio is preferred over higher ones (Dufera, 2010).

2.3.4 Liquidity Risk

Liquidity is the probability that financial institution would be in position to meet the customer demand for their deposits. Liquidity risk arises in the event that the financial institution is not in position to meet the demands of the customers (Mwange, 2013). A financial institution facing liquidity constraints may find it hard to access funds in the capital markets which are needed as capital for lending purpose. This may in turn have a negative implication on financial performance of the institution. Adhikary (2014) provides loans against total assets as a widely available proxy for measuring liquidity risk of the financial institution.

2.4 Empirical Review

Usman (2020) used a case of United Bank of Africa in Nigeria to determine the nexus between m-banking and financial performance. The adopted methodologies included the use of survey in obtaining evidence from the participants. Information was gathered from first hand sources. It emerged that no positive and significant link exists between m-banking and financial performance. Asimwe (2019) conducted a study in Uganda among commercial banks with focus on m-banking and financial performance. The adopted variables in this study included fund transfer, bill payment and account inquiry. It emerged from analysis that m-banking and its proxies were significant predictors of financial performance.

Chiinze (2017) used the case of CABS to predict the link between the adoption of m-banking and financial performance. The variables of the study revolved around m-banking associated risks and the determinants of m-banking adoption. The design adopted in this study was descriptive where 28 participants were sampled and included. It emerged from analysis that the adoption of m-banking is positively and significantly connected with financial performance. Harelimana (2017) did a study in Rwanda whose focus was on appraising the link between m-banking and financial performance and a single microfinance bank was covered. Information was sought from first and

second hand sources. It was observed that the m-banking services that were offered include fund transfer, payment of utility bills and mobile money.

Bochaberi and Job (2021) did a study whose emphasis was on m-banking and the role it plays as far as financial performance of commercial banks was concerned. Descriptive design was embraced and participants of the inquiry were purposively selected. A five year time horizon of 2011-2015 was embraced for gathering of information from auxiliary sources. It emerged that customers felt m-banking had high level of reliability, safety and affordability as well as efficiency. Gathu and Njenga (2021) did a study that focused on m-banking and the role it plays as far as performance of Co-operative Bank of Kenya was concerned. The adopted variables include m-banking revenues, lending, adoption by customers and the operational costs. Quantitative study design was embraced with information being gathered from auxiliary sources. The analyzed evidence confirmed that m-banking is positively and significantly linked with financial performance.

Mohamed (2019) focused on m-banking and the role it plays as far as financial performance of commercial banks in Kenya was concerned. The adopted variables include access to m-banking, M-banking loans m-banking risks. In total, 43 banks were targeted and information was gathered through questionnaire. It was shown that the adoption of m-banking is an important step towards enhancing financial performance of the institution. Remulo (2018) conducted an analysis of m-banking and the implication on profitability of Kenyan commercial banks. A casual design was adopted in this study covering the period 2010-2016 and information was sought from secondary sources. It emerged from the results that m-banking has a moderate but significant interplay with financial performance. Mageto, Muturi and Abuga (2017) undertook a study that focused on m-banking and financial performance among banks in Kisii. The adopted variables included perceptions on security, ease of accessibility and transaction costs. Leveraging from information gathered from primary sources, it emerged that M-banking and its proxies are significant predictors of financial performance.

According to a recent Consultative Group to Assist the Poor (CGAP) survey which involved 152 MFIs, it was realized that Sub-Saharan Africa, South Asia and East Asia and the Pacific have the greatest number of MFIs using manual systems and spread sheets (roughly 20%). Banks and Rural Banks reported to mostly using manual systems (roughly 10%). The remaining systems are off-

the-shelf or custom built. This lack of branch network can potentially increase costs for MFIs (CGAP, 2009)

You should review more relevant and current local and global studies

2.5 Summary of Literature and Research Gaps

In this chapter, the focus has been on reviewing the financial intermediation theory and the transaction cost theory. Besides the theories, literature has also been reviewed on key issues that determine financial performance of banks. More specifically, literature is reviewed on mobile banking being the main independent variable and asset quality, operational efficiency and liquidity as the control variables. Past empirical studies have also been reviewed linking m-banking and financial performance. The gaps from the reviewed studies were established and summarized as shown in Table 2.1.

Table 2.1 is a summary of the reviewed literature and the gaps.

Author & year	Study	Key finding	Knowledge gap	Focus of present study
Bocha beri and Job (2021)	m-banking and the role it plays as far as financial performance of commercial banks was concerned	customers felt m-banking had high level of reliability, safety and affordability as well as efficiency	The study exclusively relied on information from auxiliary sources	The present study will utilize secondary data
Gathu and Njenga (2021)	-banking and the role it plays as far as performance of Co-operative Bank of Kenya was concerned	m-banking is positively and significantly linked with financial performance	A case study methodology was applied	The present study will be cross sectional in nature
Usman (2020)	used a case of United Bank of Africa in Nigeria to determine the nexus between m-banking and financial performance	no positive and significant link exists between m-banking and financial performance	A case study methodology was applied	The present study will be cross sectional in nature
Hareli mana (2017)	did a study in Rwanda whose focus was on appraising the link between m-banking and financial performance	M-banking services that were offered include fund transfer, payment of utility bills and mobile money.	A single microfinance bank was covered	The present study will focus on 14 MFIs

2.6 Conceptual Framework

Mugenda & Mugenda define conceptualization (2003) as a metric that has different values for different persons (2003). A research methodology that explains the theory between two interactions constitutes a set and direction of the interactions. Variables are characteristics with varying values based on the subject. They are a reasonable way of expressing a particular trait in a person. Independent variables, according to Kombo et Tramp, (2016) are measures that the researcher manipulates to determine their impact on the dependent variable. Organizational performance is the dependent variable, while mobile banking, is the independent factor. The control variables are asset quality, operational efficiency and liquidity risk. The conceptual organization of the investigation is depicted in Figure 2.1 describe the conceptual framework in greater detail

Figure 2.1 is the conceptual framework of the study:

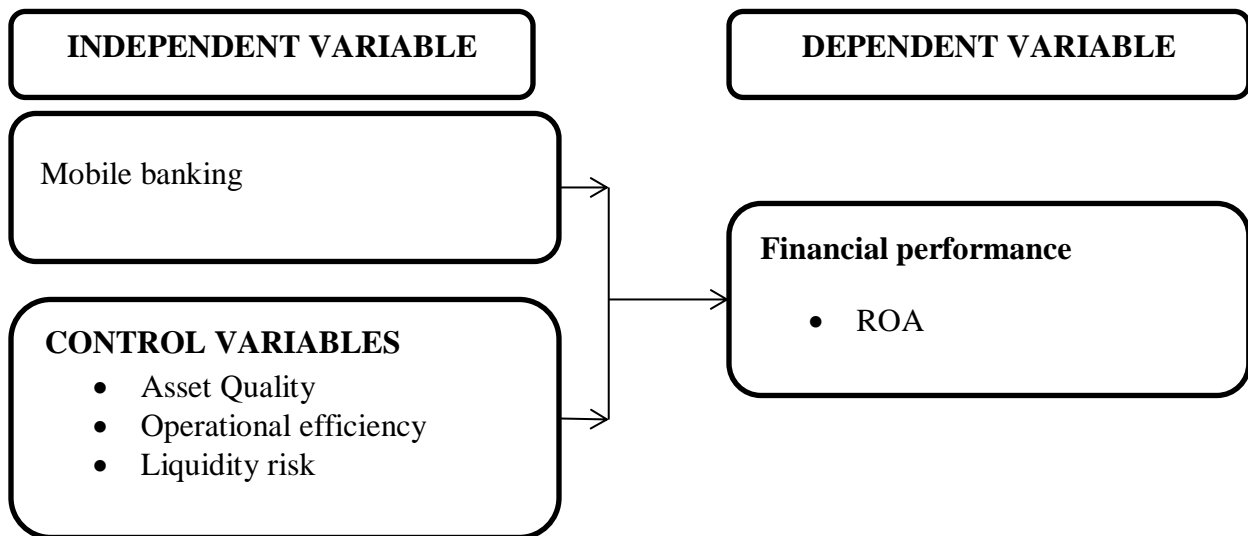


Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the research methodologies in terms of research design and population of the study. Data collection and analysis methods are also outlined.

3.2 Research Design

The study adopted descriptive survey research design that will be quantitative in nature. The study was based on MFIs in Kenya and it gathered information from secondary sources. Descriptive survey design helped in determining the present state of affairs with regard to mobile banking and financial performance of these institutions. This helped to address the formulated research objective.

3.3 Population of the Study

The study involved all the registered MFIs in Kenya . Polit and Hungler (1999) refer to the population as an aggregate or totality of all the objects, subjects or members that conform to a set of specifications or an entire group of persons or elements that have at least one thing in common. A research population is also known as a well-defined collection of individuals or objects known to have similar characteristics.

3.4 Data Collection

The study gathered secondary data on a period of 5-years (2017-2021). The period was selected because it is believed to be more current and thus complete data is expected to be available. The study gathered data on net income, total assets, total loans, NPL;s, operating income and operating costs. This information was obtained from publications by the CBK and the respective MFIs. The information was gathered on annual basis.

3.5 Data Analysis

The gathered data was analyzed through SPSS version 26 guided by means and standard deviations, correlation and regression analysis. The following is the regression model that were adopted during the analysis of the findings:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Financial performance (ROA=Net income/Total assets)

$\beta_1, \beta_2, \beta_3$ and β_4 = Coefficients of employee empowerment practices

X_1 = Mobile banking (number of m-banking transactions/ value of m-banking transactions)

X_2 = Asset quality (NPLs/Total loans)

X_3 = Operational efficiency (operating expenses/operating income)

X_4 = Liquidity Risk (Loans/Total assets)

ε = Error term

Table 3.1 is a summary of the variables and their operationalization:

Table 3.1: Operationalization of Variables

Variable	Indicators	Measurement	Scale of measurement
Financial performance	Net income\total assets	Net income/Total assets	Ratio scale
Mobile banking	number of m-banking transactions value of m-banking transactions	number of m-banking transactions/ value of m-banking transactions	Ratio scale
Asset quality	NPLs Total loans	NPLs/ Total loans	Ratio scale
Operational efficiency	Operating expenses Operating income	Operating expenses/ Operating income	Ratio scale
Liquidity risk	Loans Total assets	Loans/Total assets	Ratio scale

3.5.1 Diagnostic Tests

The study was tested for normality, multicollinearity and Heteroscedasticity test. Shapiro-Wilk will be used to test for normality; Variance of Inflation Factors (VIF) were conducted to test multicollinearity and Levene test for Heteroscedasticity. The resultant statistics from these tests were interpreted appropriately in light of the existing literature and rules of thumb.

3.5.2 Tests of Significance

The study interpreted the result a p-values from regression analysis at 5% level of significant. T-test were to be used where the t-values were interpreted at 1.96. The value of R-square were determined and interpreted to signify the fitness of the regression model.

CHAPTER FOUR DATA ANALYSIS RESULTS AND DISCUSSIONS

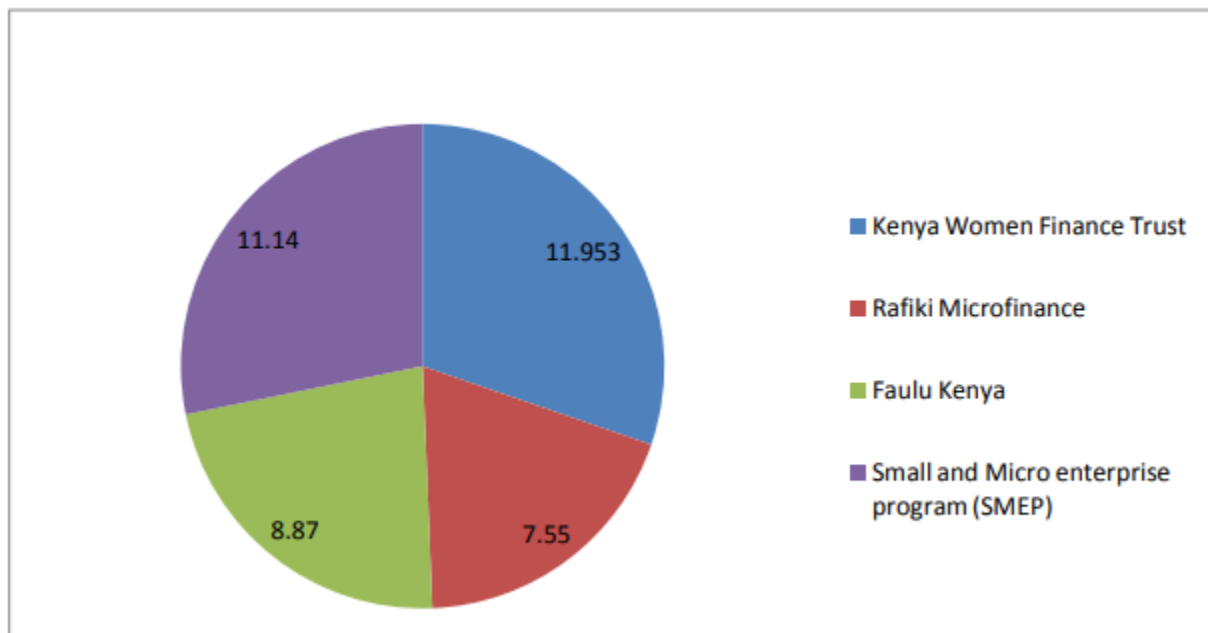
4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research objective and research methodology. The study findings are presented on the effects of mobile banking on the financial performance of microfinance institutions in Kenya. The data was gathered exclusively from the secondary source which included the records at Central Bank of Kenya (CBK).

4.2 Number of Mobile Banking Users

The study sought to establish the developments in the average number of mobile banking users in millions among the four microfinance institutions between the year 2017 to 2021. The findings were as shown in the figure 4.1 below

Figure 4.1 Number of Mobile Banking Users



Source: (Research Findings, 2022)

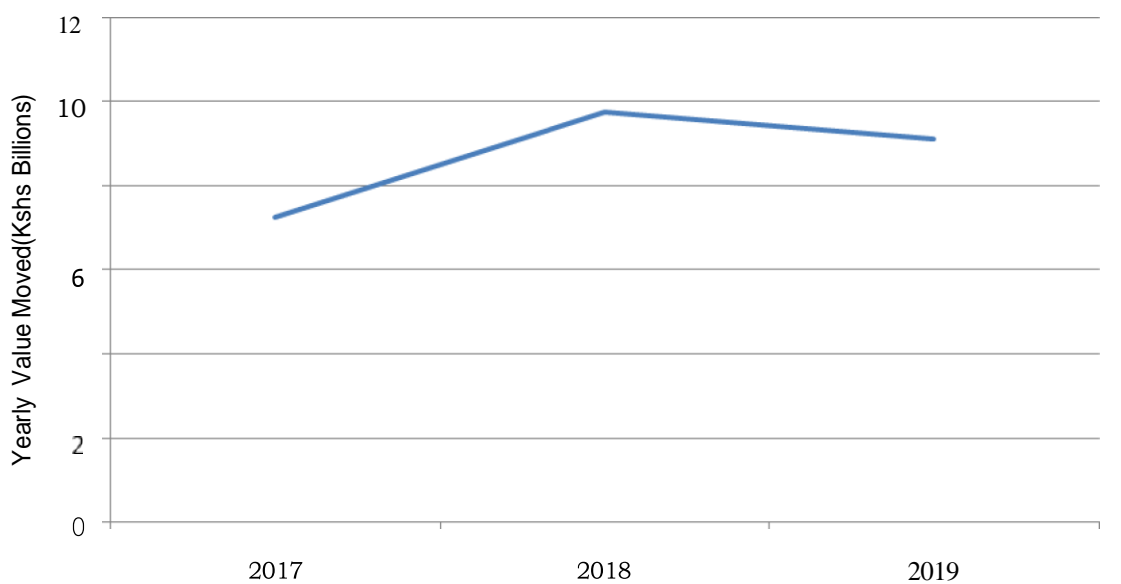
From the research findings the number of users of mobile banking in Kenya women Finance Trust increased from the year 2017, 2018 and 2019 from 8.76, 12.1 and 15 million respectively. This averaged 11.953 within the three years.

Number of users of mobile banking in Rafiki Microfinance increased from the year 2017, 2018 and 2019 from 4.87, 7.98 and 9.8 million respectively. This averaged 7.55 million within the three years. Number of users of mobile banking in Faulu Kenya increased from the year 2017, 2018 and 2019 from 4.56, 10.98 and 11.09 million respectively. This averaged 8.876 million within the three years. Number of users of mobile banking in SMEP increased from the year 2017, 2018 and 2019 from 10.24, 12.98 and then reduced to 10.02 million respectively. This averaged 11.14 million within the three years. These findings show that as time lapsed, the number of mobile banking users increased.

4.3 Yearly Value Moved Through Mobile Banking

The study sought to establish the Yearly Money value moved through mobile banking during the study period. The findings were as indicated in the figure 4.2 below.

Figure 4.2 Yearly Money Value Moved



Source: (Research Findings, 2022)

From the research findings the amount moved in Kenya women Finance Trust increased from the year 2017, 2018 and 2019 from 10.24, 13.43 and 14.34 billion Kenya shillings respectively. This averaged 12.67 billion Kenya shillings within the three years.

Number of users of mobile banking in Rafiki Microfinance increased from the year 2017, 2018 and 2019 from 4.39, 6.45 and 7.95 billion Kenya shillings respectively. This averaged 6.2633 billion shillings within the three years.

Number of users of mobile banking in Faulu Kenya increased from the year 2017, 2018 and 2019 from 11.90, 12.09 and 4.01 billion shillings respectively.

This averaged 9.333 billion shillings within the three years. Number of users of mobile banking in SMEP increased from the year 2017, 2018 and 2019 from 2.45, 7.02 and then increased to 10.12 million respectively. This averaged 6.53 billion shillings within the three years. These findings show that as time lapsed, the

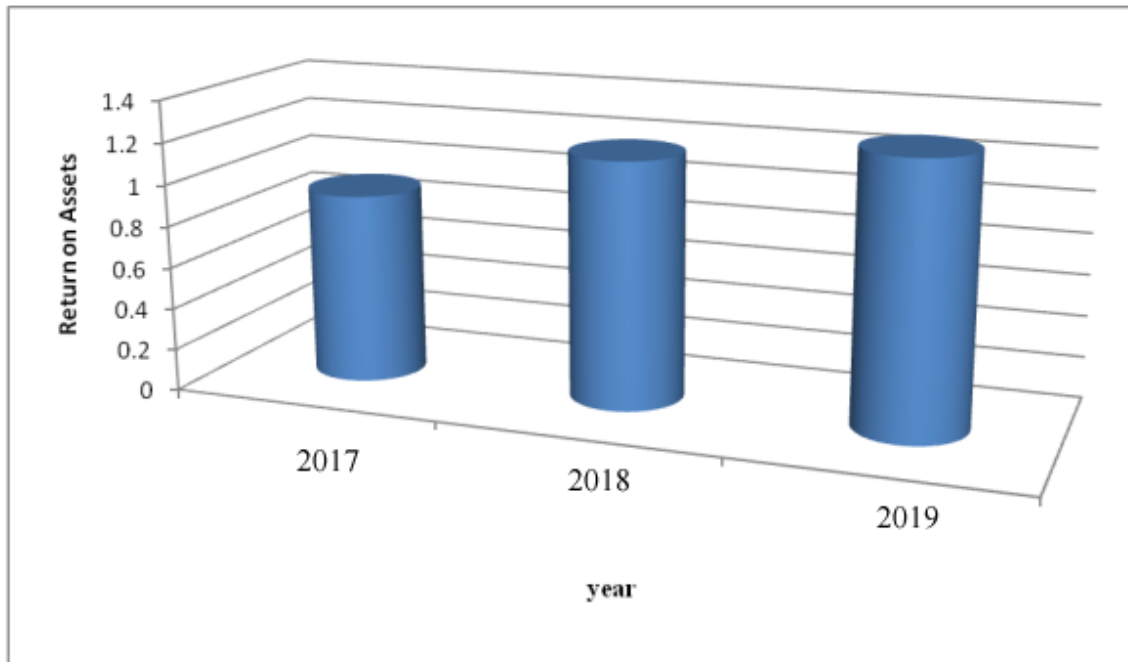
amount moved increased.

During the year 2019, the number of companies offering mobile money transfer had increased to six, namely; Safaricom (M-Pesa), Airtel Networks (Airtel Money), Essar Telcom (Yu Cash), Orange Telkom (Orange Money), Mobile Pay (Tangaza) and Mobikash (Mobikash).

4.4 Financial Performance of Microfinance Institution

The study analyzed the consolidated financial performance of the four microfinance institution during the study period. The findings were as shown in the figure 4.3 below:

Figure 4.3 Return on Assets



Source: (Research Findings, 2022)

From the study findings in figure 4.3 above, the study established that the microfinance institutions return on Assets was 0.915 in the year 2017, 1.17 in 2018 and 1.29 in 2019. This could be attributed to many factors beyond this study as the performance of microfinance institution a function of more variables including the macroeconomic variables besides the mobile banking effects being looked at in this study.

4.3 Regression Analysis

In order to establish the relationship between the mobile banking and the financial performance of the microfinance institution in Kenya, the study conducted a multiple regression analysis. The findings were as shown in the table 4.1 below:

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826 ^a	.682	.611	.58610

a. Predictors: (Constant), NBU, YMM

Source :(Research Findings,2022)

Coefficient of determination explains the extent to which changes in the dependent variable (financial performance of microfinance Institutions in Kenya) can be explained by the change in the independent variables or the percentage of variation

in the dependent variable (financial performance of microfinance institution in Kenya) that is explained by all the two independent variables (Yearly value moved, number of mobile banking users). The two independent variables that were studied, explain only 68.2% of the changes in the financial performance of microfinance institutions in Kenya as represented by the R².

Table 4.2 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.620	2	3.310	9.636	.006 ^a
	Residual	3.092	9	.344		
	Total	9.712	11			

a. Predictors: (Constant), NBU, YMM

b. Dependent Variable: ROA

The probability value of 0.006 indicates that the regression was significant in predicting how mobile banking impacts the financial growth of the microfinance sector in Kenya. The F critical at 5% level of significance was 0.344 since F calculated is less than the F critical (value = 2.371), this shows that the overall model was insignificant.

Table 4.3 Coefficients

	Unstandardized Coefficients	Standardized Coefficients		

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.707	.599		-1.181	.268
	YMM	.216	.062	.870	3.468	.007
	NBU	-.022	.077	-.070	-.279	.787

a. Dependent Variable: ROA

The researcher conducted a regression analysis so as to determine the relationship between mobile banking and financial performance of microfinance institutions in Kenya. The regression equation ($Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2$) was:

$$Y = -0.707 + 0.216X_1 - 0.022X_2$$

Whereby Y = financial performance of microfinance institutions in Kenya;

X₁ = Number of mobile banking users in microfinance institutions;

X₂ = Yearly Value moved.

According to the regression equation established, taking all factors (number of mobile banking users and total value moved through mobile banking) constant at zero, the financial performance of the banking sector will be -70.7%. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in number of users will lead to a 0.022 increase in financial performance of the microfinance institution. A unit increase in the amount of money moved through mobile banking will lead to a 0.216 increase in the financial performance of the microfinance institution.

This notwithstanding, the study shows that there is a weak positive insignificant correlation between mobile banking and financial performance of financial institutions Kenya. Therefore, it can be deduced that mobile banking has an impact on the financial performance of micro financial institution although not significant.

4.6 Interpretation of Findings

From the research findings the number of users of mobile banking in Kenya women Finance Trust averaged 11.953, Rafiki Microfinance 7.55 million Faulu Kenya 8.876 million SMEP averaged 11.14 million within the three years. These findings show that as time lapsed, the number of mobile banking users increased.

From the research findings the amount moved in Kenya women Finance Trust averaged 12.67 billion Kenya shillings within the three years, Rafiki Microfinance 6.2633 billion shillings Faulu Kenya 9.333 billion shilling and SMEP averaged 6.53 billion shillings within the three years. These findings show that as time lapsed, the amount moved increased.

During the year 2019, the number of companies offering mobile money transfer had increased to six, namely; Safaricom (M-Pesa), Airtel Networks (Airtel Money), Essar Mobile Pay (Tangaza) and Mobikash (Mobikash).

The study established that the microfinance institutions return on Assets was 0.915 in the year 2017, 1.17 in 2018 and 1.29 in 2019. This could be attributed to many factors beyond this study as the performance of microfinance institution a function of more variables including the macroeconomic variables besides the mobile banking effects being looked at in this study.

In order to establish the relationship between the mobile banking and the financial performance of the microfinance institution in Kenya, the study conducted a multiple regression analysis. Coefficient of determination explains the extent to which changes in the dependent variable (financial performance of microfinance Institutions in Kenya) can be explained by the change in the independent variables or the percentage of variation in the dependent variable (financial performance of microfinance institution in Kenya) that is explained by all the two independent variables (Yearly value moved, number of mobile banking users). The two independent variables that were studied, explain only 67.2% of the changes in the financial performance of microfinance institutions in Kenya as represented by the R².

From the findings presented above, it is evident that as the number of mobile banking users increased, the monthly amount moved through mobile banking increased. This was largely because the financial performance of microfinance institution is a function of many other variables not looked at in this study. From the findings, the performance of microfinance institution measured by return on Assets.

These findings are consistent with the argument by Al-Jabri (2012) who studied mobile banking adoption by looking at the application of diffusion of innovation theory and established that with better mobile banking support and provision of variety of services, the more useful customers perceive mobile banking to be and to increase their level of adoption. The increase in the number of users shows confidence among mobile banking users. This shows that microfinance institutions took keen

interest in ensuring minimal risk exposure for their customers. As Al- Jabri (2012) suggested, banks must seek to reduce risk perceived by their customers by offering specific guarantees protecting them and taking their complaints seriously and urgently. Summarize the major findings of the study Then compare and contrast the findings with those of previous studies.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the summary of key data findings, conclusions drawn from the findings highlighted and policy recommendations that were made. The conclusions and recommendations drawn were in quest of addressing research objectives of establishing the effect of mobile banking on the financial

performance in microfinance Institutions in Kenya.

5.2 Summary

Financial institutions in Kenya have adopted mobile services to provide crucial banking services to customers in Kenya. The results show that as the monthly value moved through mobile banking increases, the profitability of the microfinance institution increase. The research shows that mobile banking to a larger extent impacts the financial performance of microfinance institution in Kenya in that it helps reduce unnecessary cost, increase efficiency and improves on service delivery to customers.

This could however be explained that although there is a relationship between mobile banking and financial performance of microfinance institutions in Kenya, the relationship is somehow weak. This was well explained by the F critical at 5% level of significance which was 0.963 falling below the F critical (value = 2.371). In addition, the R squared value was extremely at 68% showing that the effect of mobile banking on the financial performance of the microfinance institution. However, the study concludes that mobile banking is being used to improve financial operations. The microfinance institutions have put in place measures become more competitive by keeping pace with the technological developments. It can also be noted from the findings on the number of users that the numbers keep increasing from one year to another. This shows that customers are appreciating and embracing mobile banking. This could be attributed to the advantages offered by mobile banking which include convenience and flexibility.

You should explain the objective, methodology and findings

5.3 Conclusions

From the research findings presented in chapter four and above summary of findings, the study concludes that there is a positive relationship between mobile banking and financial performance of financial institutions in Kenya. This could be attributed to the trends recorded in the two variables where the monthly transfers maintained a positive growth rate while financial performance of microfinance

You should discuss logical and reasonable conclusions based on the findings (1 page)

5.4 Recommendations

From the above conclusion, the study recommends that policy makers consider mobile banking in their formulation of policies because of the technological developments and the expected switch from physical branch networks to technologically supported banking services. This is because the relationship may not be direct but an indirect one resulting from the convenience that the mobile banking services offers to microfinance institutions.

The study recommends the regulatory authorities to strengthen the governance and internal control structures; integrate of MFIs into the formal financial sector; offer specialized equity funds to help compensate for the lack of private sector representation on MFI boards. Investors are highly recommended to explore mobile banking technology options when putting up their investments in Microfinance institutions. This will help in the penetration of the market and

enhance customer base which will eventually have a higher return on their investments. The study further recommends scholarly exploration on the impact of mobile banking on Microfinance performance and other financial institutions to promote mobile banking technology and other technology related innovations

Simple measures to evaluate SME performance is still a critical area that requires dedicated attention. Financial measures adopted by larger businesses have not been widely adopted by SMEs. Book keeping is erratic, yet it which could be a source of useful information on business turnover, employee information and business growth. Other practical tools may have to be thought of to bridge the gap that exists when looking for data on SMEs. In this respect, the service from Safaricom Lipa na M- Pesa' could have a built in function to undertake simple analyses like total income and total expenditure in a given time.

You should discuss robust and quality recommendations absed on the conclusions

5.5 Limitations of the Study

A limitation was regarded as a factor that was present and contributed to the researcher getting either inadequate information or if otherwise the response given would have been totally different from what the researcher expected. The main limitations of this study were:

The data used was secondary data generated for other purposes hence may not accurately predict the relationship among the variables. The measures used may keep on varying from one year to another subject to the prevailing condition. In

addition, changes in the macroeconomic environment could have affected the profitability of such microfinance institutions.

Another limitation for the study included the short period which mobile banking has been in existence which could not give a long trend for analysis. Mobile banking was only introduced in Kenya by March 2007. It has only been just a few years since the launch which may not give a clear picture of the relationship as not all microfinance institution have embraced it.

5.6 Suggestions for Further Studies

The study suggests that further research be conducted on the relationship between mobile banking and financial performance in other countries within the East African Community. This study only concentrated on Kenya yet mobile banking has been adopted in most countries in Africa.

The study further suggests that another study be conducted on the impact of mobile banking on financial deepening in Kenya. The Central Bank statistics show that as a result of mobile banking, there is an increase in the level of financial deepening in Kenya of up to about 85%. A study needs to be carried out to ascertain the effectiveness of mobile banking in financial deepening.

You should provide a third suggestion

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APPENDICES

Appendix I: List of MFIs

1. Caritas Microfinance Bank Limited
2. Century Microfinance Bank Limited
3. Choice Microfinance Bank Limited
4. Daraja Microfinance Bank Limited
5. Faulu Microfinance Bank Limited
6. Kenya Women Microfinance Bank PLC.
7. Key Microfinance Bank Limited
8. Maisha Microfinance Bank Limited
9. Muungano Microfinance Bank Limited
10. Rafiki Microfinance Bank Limited
11. SMEP Microfinance Bank Limited
12. Sumac Microfinance Bank Limited
13. U & I Microfinance Bank Limited
14. UWEZO Microfinance Bank Limited

Source: CBK (2022)

Appendix II: Data Collection Sheet

Year	Net income	Total assets	Total loans	NPLs	Operating income	Operating expenses	number of m-banking transactions	value of m-banking transactions
2017								
2018								
2019								
2020								
2021								

Edit the document for grammatical and typographical mistakes