THE EFFECTS OF FINANCIAL INNOVATIONS ON THE PERFORMANCE OF MICROFINANCE INSTITUTIONS IN KENYA FOR THE PERIOD 2011-2016

BY

ONCHONG’A VIONA KWAMBOKA

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

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A Research Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SPRING 2018
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: __________________________  Date: ________________
Viona Kwamboka Onchong’a (ID 626981)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: __________________________  Date: ________________
Mr. Kepha Oyaro

Signed: __________________________  Date: ________________
Dean, Chandaria School of Business
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ABSTRACT

The purpose of the study was to assess the effect of financial innovations on the performance of microfinance institutions in Kenya. The study was guided by the following research objectives; to determine the drivers of financial innovations in microfinance institutions in Kenya, to assess effects of financial innovations on the performance of microfinance institutions in Kenya and to illustrate the role played by financial technology companies in microfinance institutions.

The research was studied through descriptive survey design. The target population of the study was microfinance institutions registered in Kenya by CBK. The period of the study was the years 2011 to 2016. This research utilized secondary data from 13 microfinance institutions and the data was chosen because it was readily available at CBK website. Secondary data was collected from the microfinance annual reports as given by CBK. The data collected was analyzed using regression and correlation analysis. Data analysis was done using the statistical tools, Statistical Package for Social Science and Microsoft Excel. The findings were presented in form of tables and figures.

Based on the first objective, the study sought to establish the drivers of financial innovations in microfinance institutions in Kenya. The findings revealed that there are specific factors in the financial industry that led to developments seen in the microfinance institutions. Factors such as financial inclusion inequalities, usage of bank accounts, mobile money enabling informal financial arrangements and bank lending not supporting inclusive growth are some of the causes that led to financial innovation as discussed in the literature review.

The second objective sought to assess the effect of loan portfolio, number of bank branches and number of employees on microfinance institutions and the findings revealed that there was initially, there was a positive relationship between financial innovation and performance of microfinance institutions but due to unpaid loans, the relationship changed to negative. The variables were measured against ROA and the analysis show that as the number of variables increased in years 2014 to 2016, the ROA fell drastically. The results also indicated that the independent variables selected can predict financial performance of microfinance institutions in Kenya. These variables could explain 96.1% of the variation in return on assets in the microfinance institutions (r squared =0.961).
means that the regression model had a strong explanatory power as only 3.9% of variation in return on assets was not explained by the model.

The third objective aimed at establishing the role of financial innovation companies on microfinance institutions and the findings revealed that there was a positive relationship between the role played by fintech, in this case mobile money transfer and the performance on microfinance institutions in Kenya. The data analyzed was total number of mobile money transfer for years 2013 to 2016. The result showed that mobile money increased over the years. With all the thirteen microfinance institutions offering mobile money services, this can be attributed to the positive effect it has on the institutions and the customers.

The study concluded that microfinance institutions do support inclusive growth by specializing in providing financial services to individuals, Micro, Small and Medium businesses through provision of working capital, facilitating technological improvements and business innovations among their clients. Secondly, the study concluded that there is a significant positive relationship between loan portfolio, number of bank branches, number of employees and performance of microfinance institutions in Kenya though it has been affected by people defaulting the loans making the relationship negative. Lastly, the study concluded that with the introduction of mobile banking, financial technology companies have led to great improvement in microfinance institutions.

The study recommended that microfinance institutions need to put measures to mitigate loan default for the institutions to have a continuous positive relationship between innovation and performance. Also, with the rapid developments in the financial sector, the study recommended that financial institutions should invest in research and development to help them understand the fast-growing financial technology industry. Financial institutions should ensure that they are flexible enough to accommodate changes in the future. The study recommended further studies on financial technology companies should be undertaken because that is the future for finance.
ACKNOWLEDGEMENT

I wish to express my deepest gratitude to my supervisor Mr. Kepha Oyaro for the guidance to come up with this research proposal. I also thank God for the strength and His grace this far. I also extend my special gratitude to my friends, family and classmates for the support they have given me.
DEDICATION

My loving family. Your unconditional love, support and encouragement has been guaranteed throughout the entire period of study. Your emotional and moral support has been steadfast. May God bless you.
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<tr>
<td>ATM</td>
<td>Automated Teller Machine</td>
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<tr>
<td>CBK</td>
<td>Central Bank of Kenya</td>
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<td>FinTech</td>
<td>Financial Technology</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<td>MFIs</td>
<td>Microfinance Institutions</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Co-Operation and Development</td>
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<td>ROA</td>
<td>Return on Assets</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
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<td>SMEs</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Globally, financial services have revolutionized due to developments in the digital world, universal relations and unofficial polices (Shahrokhi, 2008). The benefits of finance and financial innovations have been felt widely resulting in a change in the economy. Financial innovation is broadly defined to include both the introduction of brand new financial products and services in advanced economies and financial liberalization, and thus the adoption of new products and services in emerging markets (Mullineux, 2010).

Arnaboldi and Rossignol (2015) stated in their research that one of the causes of the financial crisis in 2007 was created by people who took an excess risk in some innovative products and this led to the economic crisis. They also revealed that the harm in the overall economy is caused by excessive growth of the financial economy. Arnaboldi and Rossignol noted that when innovation is done in a correct way, the layers in the financial sectors such as microfinance institutions will invest in the new technology and lead to growth, whereas innovation that is not done right may have a negative implication on the economy. A financial innovation that provides economically valuable benefits constitutes a real financial innovation.

The financial sector plays a very integral part of an economy and its transformation is important for the growth of microfinance institutions. These changes have led to the formation of financial technology companies known as FinTech which have created job opportunities for many people leading to an improvement in their standards of living. This shows that the microfinance institutions will grow to accommodate new talents hence creating opportunities for the unemployed (Lerner and Tufano, 2011).

The relationship between financial development and economic growth differs from country to country and depends on the variables used to measure the financial innovations. The 1967 Bank Act in Canada paved way for financial stability and innovation by providing new instruments that are not related to the banking system but because of other factors such as competition, technology innovation and high interest
In India, the economy has transformed to a very great extent since 1991 after the government adopted liberation and globalization policies that contributed to economic reform programs that were part of the financial sector reforms (Sehrawat and Giro, 2015). In their research, Sehrawat and Giro revealed that both the bank-based and market-based indicators of financial development have a positive impact on economic growth in India.

Africa’s financial systems have undergone quite some transformation over the past decade. Behind increases in headline indicators of financial deepening are more structural changes that affect not only financial systems themselves but have critical repercussions for the real economy. The importance of the financial sector has motivated the concern that state-dominated monopolistic, inefficient and fragile banking systems in Sub-Saharan Africa could have been a major hindrance to development (Peiris, 2005). Technological innovations and improvements in communication should improve delivery of financial services in Africa and ultimately enhance economic development. In many African countries, financial institutions have responded to these technological innovations and new financial products and services have been introduced to meet customers’ needs.

Enhanced competition and efficiency in the financial system can lead to greater financial stability, product innovation and access by households and firms to financial services, which, in turn, drives increase on the performance of the firm. Even under imperfect market conditions that constrain competition, liberalization can still increase economic efficiency through improved allocation of resources. (Aleem and Kasekende, 2003).

Studies done by Odhiambo (2010) showed that economic growth in South Africa is the main driver of financial development and hence proves that there is a relationship between financial development and economic growth regardless of the measurement for financial development. Financial innovation was introduced in Uganda as a way of expanding the financial sector by allowing new types of financial institutions and changed a premium on the introduction of a new product (Kasekende, 2007).

Kasekende (2007) also stated the Ugandan economy has undergone reforms since 1987 whose objectives have been to create consistency and efficiency when allocating investments and improve financial services in all sectors of the economy. Additionally,
the financial system in Uganda is stable and does not cause any problem on the country’s macro-economic stability due to the development of the economy and financial services.

In Kenya, the financial sector has experienced changes in the legal, regulatory, and institutional framework (Mwinzi, 2013). Kenyan financial sector comprises of Banking, Insurance, Capital Markets, Pension Schemes and Quasi-banking institutions such as Savings and Credit Cooperative Societies (SACCOs); Microfinance Institutions (MFIs); Building Societies, Kenya Post Office Savings Bank (KPOSB); Development Finance Institutions; (DFIs) and informal financial services such as Rotating Savings and Credit Associations (ROSCAs) (Mwinzi, 2013). Nairobi has been rated the top African city in access to formal financial services, resulting to it being ranked among the top 10 cities in economic growth potential. According to the 2015 MasterCard African Cities Growth Index, Nairobi’s index value rose from 37.2 in 2014 when it was ranked 19th, to 41.3 in 2015 which ranks the city in ninth position out of 74 African cities. A 2013 survey by the Financial Sector Deepening Trust (FSD Kenya) showed that financial inclusion rate in Kenya is 75 per cent, boosted by the growth of mobile money usage, especially in the informal sector. Currently, the rate still stands at 75 per cent according to a recent report done by global research and consultancy Oxford Business Group (Financial Sector Deepening [FSD], 2013).

The global economy, growing importance of innovations as well as the wide use of technologies have changed the banking business worldwide. Financial innovations have led to the rise of financial technology companies known as FinTech. The rise of innovative solutions has fuelled a need for constant improvement especially in the adoption of technology in the financial services (McKinsey, 2013). This had led to traditional financial services increasingly placing more value on strategies that are highly embedded on capitalizing on the fintech model in a bid to fulfil their customer’s growing expectations. The lack of banking and electronic transaction infrastructure in place now opens the door for fintech businesses to provide financial services to millions of consumers who previously haven’t had access to bank accounts or other financial institutions. FinTech solutions hold enormous potential benefits to all business, especially new and existing small businesses. Small and medium-sized enterprises (SMEs) are crucial for economic growth and jobs (KPMG, 2016).
In modern economies, financial services industry has become one of the key contributors to country’s domestic product. FinTech companies have become an integral part of banking, and nowadays banks have started to compete beyond financial services facing increasing competition from nonfinancial institutions. The transparent and real-time operation of FinTech innovations, such as Blockchain and digital currencies, are generating new value streams in financial services. FinTech can also help drive improvements in traditional financial services and promote disruption through innovative new products and services, which can offer benefits to consumers and other sectors of the economy (PricewaterhouseCoopers [PWC], 2016).

The MPESA revolution in Kenya is known as the root of fintech innovation in Africa. Today, over 50% of adults in Kenya own a MPESA account and the transaction volume on the system is roughly equivalent to up to 50% of Kenya’s GDP. While Kenya has been incredibly successful with its mobile payment platform, similar programs have not taken off in other large markets such as South Africa and Nigeria. The goal and benchmark for the success of fintech companies will be how well they drive economic growth by creating maximum financial inclusion, high liquidity of capital within and across countries and offering customers targeted, relevant and affordable products and services that are purposely built for the African context (Mugo and Kilonzo, 2016).

The ability of new technology to capture and process data, in real time, is changing how all business is done, how products and services are conceived in the new economy, and the way consumers participate in this process. Financial services are the lifeblood of an economy, enabling households and businesses alike to save, invest, and protect themselves against risk (McKinsey, 2016).

A report done by McKinsey Global Institute concluded that broadening access to finance through digital means can unlock productivity and investment, reduce poverty, empower women, and help build stronger institutions with less corruption. This will be achieved while providing a profitable, sustainable business opportunity for financial service providers. The benefits for individuals, businesses, and governments can transform the economic prospects of emerging economies (McKinsey, 2016).

A report by the Central Bank of Kenya on financial stability indicated that Kenya’s financial sector has grown significantly in size and complexity as it continues to support
the overall economy. The sector comprises of the banking, capital markets, insurance, pensions, and savings credit cooperatives. Other players include microfinance institutions, money remittances companies, foreign exchange bureaus and development finance institutions. There are also safety nets and resolution institutions such as the Kenya Deposits Insurance Corporation for commercial and microfinance banks; Investor Compensation Fund for Capital Markets subsector; and the Insurance Policyholders Compensation Fund for the insurance subsector. These are supported by Credit Information Sharing (CIS) platforms through the Credit Reference Bureau and a vibrant Financial Markets Infrastructure (FMI) system comprising of trading, payments and settlements, and custodial services platforms (Central Bank of Kenya [CBK], 2016).

The World Bank’s most recent projected a 5.9% growth in 2016, rising to 6% in 2017. The key drivers for this growth include: a vibrant services sector, enhanced construction, currency stability, low inflation, low fuel prices, a growing middle-class and rising incomes, a surge in remittances, and increased public investment in energy and transportation (World Bank, 2016).

According to the 2017 Kenya National Bureau of Statistics (KNBS) quarterly report, provisional quarterly GDP estimates for the first quarter of 2017 show that Kenya’s economy expanded by 4.7 per cent measured against a similar period in 2016. The slowdown in growth was largely due to a contraction in the activities of agriculture as well as a deceleration in growth of financial intermediation and electricity supply. Key macroeconomic indicators remained largely stable and therefore supportive of growth throughout the period. Interest rates dropped significantly reflecting the impact of the capping that became effective in September 2016. In the money market, the Kenyan Shilling strengthened against most of its major trading currencies. The most notable gain was a 12.1 per cent strengthening against the Pound Sterling. However, the Shilling weakened against the South African Rand, Yen and US Dollar during review period (Kenya National Bureau of Statistics [KNBS], 2017).

Financial intermediation sector recorded a growth of 5.3 per cent during the first quarter 2017 compared to a growth of 8.2 per cent in the same quarter 2016. During the review quarter, broad money supply (M3) expanded to KSh 2,832.9 billion from KSh 2,662.2 billion in the first quarter 2016. The total domestic credit increased by 5.5 per cent during
the quarter under review, with credit to the private sector increasing by 4.5 per cent while that of central government expanded by 9.7 per cent (KNBS, 2017).

Financial innovation is divided into process, product and institution innovations. Process innovation refer to new ways such as online banking, mobile banking, information technology, computing and transaction clearing methods that make financial institutions run better (Mugo, 2009). These advancements are expected to lower transaction costs, increase credit for borrowers and give financial institutions new and cheaper way of raising funds. Institution innovation refers to the creation of new types of financial firms while product innovations involves new financial products being created in the market.

According to Mugo (2009), financial performance of MFIs is assessed through profitability, asset management, loan portfolio quality and efficiency leverage. Return on assets (ROA) fall within the domain of profitability measures and tracks MFIs' ability to generate income based on its assets. Efficiency of MFIs on the other hand is measured by the share of operating expenses to gross loan portfolio in most cases. The debt to equity ratio is a member of the asset management ratio and specifically attempts to track MFIs' leverage (Gupta, 2008).

Microfinance Institutions assume a major part in financial inclusion and giving loan facilities a big population in the world. Small and Medium Enterprises are aided by microfinance institutions to access financial services hence reducing the gap in the finance sector. This had led to an enhancement in services delivered by banks, Saccos and other informal banking service providers the role played by banks, Saccos, and other informal banking service providers.

The microfinance industry in Kenya has been growing at a very high rate because of the demand for loans by individuals and numerous firms that seek financing for their business at different time. This has also been applied in neighbouring countries such as Uganda, Rwanda and Nigeria, which have a very high population and thus a bigger market.

A report by FSD Kenya states that success of Microfinance Institutions requires good management and application of cutting edge technology to aid management decision making. There are several Microfinance information management systems that can be used. Most of these systems such as Jisort Banking Software are offered on cloud platform, making it easy for the institutions to run several branches. The leading
management system for Microfinance institutions, Microfinance ERP offers many services such as bulk payment system and other customized features that allow for quick disbursement of services. For a microfinance to succeed, the use of a good microfinance information management system and good decision making, must work together.

1.2 Statement of the Problem

A study by Lerner and Tufano (2011) examining the relationship between financial innovation and economic growth, researchers have presented empirical evidence of a consistently positive relationship between various financial developments and economic growth. Ndege (2012) did a research on the connection between financial sector deepening and economic growth in Kenya and a positive relationship between financial sector deepening and economic growth in Kenya. Odhiambo (2010) researched on financial depth, savings and economic growth in Kenya; he sought to establish a dynamic causal relationship. Lerner and Tufano (2011) in their research stated that top academia such as Miller and Merton agree that the emergence of new products and services in the financial field accompanied by the advancement lead to a better economy.

It is now generally accepted that financial sector development is central to economic development (Levine, 1997). Financial systems perform multiple functions, including liquidity provision, information production, price discovery, risk management, and governance, etc. (Levine, 1997). For financial development to have the desired impact, there should be clear channels or linkages to performance of financial institutions.

While a growing body of research has demonstrated the positive impact that both financial and digital inclusion can have on household welfare, little research to date has quantified the broad performance and societal benefits. This report aims to fill that gap. More importantly, although financial innovation studies based in Kenya describe the emerging innovations in branchless banking (Mwando, 2013), very little is known about the benefits of financial innovations at firm and macro levels. In addition, in view of the reviewed literature, very little is known about the link between financial innovations and performance of microfinance institutions. This has led to managerial actions and governmental policies that are not guided by reliable and sufficient research (Arellano and Bover, 1995).
1.3 General Objective

The general objective of this study was to assess the role of financial innovations and financial technology companies on the performance of microfinance institutions in Kenya.

1.4 Specific Objectives

1.4.1 To determine the drivers of financial innovation in MFIs in Kenya.

1.4.2 To assess the effects of financial innovations on the performance of MFIs in Kenya.

1.4.3 To illustrate the role financial technology companies play in MFIs in Kenya.

1.5 Significance of the Study

The study will benefit the following stakeholders:

1.5.1. Microfinance Institutions

The study will benefit the microfinance institutions in Kenya because it will give them a current insight on the innovations taking place in the country, which in return help them to plan on effective strategies to make them significance in this changing environment.

1.5.2 Financial Technology Companies

Financial technology companies will gain from the study since the information that will be gathered will help the existing businesses appreciate the role in the economy and help the start-ups in the industry to know what is expected of them to have a positive effect on the society.

1.5.3 The Government of Kenya

The study findings will be significant to the government and policy makers as they will understand the effects that financial innovations have on the economy and therefore, come up with effective policies when making decisions.
1.5.4 Academicians and Researchers

This study will help other scholars who may be interested in the same research to use the results as a reference in their studies. The study will facilitate individual Researchers to identify gaps in the current research and carry out further research in those areas.

1.6 The Scope of the Study

This study focused on the effects of financial innovations on the performance of Microfinance Institutions in Kenya. The study population involved licensed microfinance institutions in Nairobi. The researcher intended to collect secondary data from Central Bank of Kenya on performance indicators and data from Annual Reports of the 13 registered microfinance institutions in Kenya. The study focused on microfinance performance between January 2011 and December 2016.

1.7 Definition of Terms

1.7.1 Financial Innovation

Financial innovation can be defined as the creation and popularization of new financial products, processes, markets, and institutions (Lerner and Tufano, 2011).

1.7.2 Microfinance Institutions

Microfinance Institutions are organizations that provide financial services for poor and low-income clients (Mugo & Kilonzo, 2016).

1.7.3 Financial Technology Companies

FinTech is a dynamic segment at the intersection of the financial services and technology sectors where technology-focused start-ups and new market entrants innovate the products and services currently provided by the traditional financial services industry (PWC, 2016).

1.7.4 Economic Growth

Economic growth refers to how much more the economy produces than it did in the prior period. Gross domestic product is the best way to measure economic growth because it
considers the country's entire economic output. It includes all goods and services that businesses in the country produce for sale (Amadeo, 2017).

1.8 Chapter Summary

The chapter begun with giving a brief view on how financial innovations have taken shape globally and in Kenya discussing how the developments have impacted microfinance institutions in Kenya. Different scholars agree that there is a relationship between financial innovations and growth of microfinance institutions. The study focused on the different financial innovations and financial technology companies relating them to the role they play in performance of MFIs. The next chapter contains the review of related literature where the research objectives are discussed in detail and chapter three provides the methodology that was used to gather data for the study. Chapter four analyzed the results and findings received from the study and interpreted the data using tables and charts. Chapter five included the summary of the findings as well as conclusions and recommendations drawn from the research.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

In this chapter, the study reviewed literature by different scholars that focuses on the relationship between financial innovation and Microfinance institutions in Kenya. First, it gives an overview of the drivers of financial innovations and their contribution to the growth of microfinance institutions in Kenya. The chapter also gives an overview of how the financial innovations have influenced the microfinance institutions and lastly the gives an insight of the role played by financial technology companies in MFIs.

2.2 The Drivers of Financial Innovation in Microfinance Institutions in Kenya

Fatas and Mihov (2009) stated that global economic growth can only come from innovations. They referred to innovation as new ways of producing the same old things. In this part of literature review, I will discuss about the factors that have made it possible for innovation in the financial sector in Kenya and their effect on the growth of MFIs.

2.2.1. Financial Inclusion Inequalities

Access to financial services has received growing attention from policymakers around the world over the last decade. From being an issue largely associated with credit, driven in large part by the microcredit movement, it is now increasingly understood as an important dimension of economic and social inclusion (FSD, 2015).

Lagarde (2014) stated that there is large income inequality on a global scale and referred to inequality as a macroeconomic issue. A research done by International Monetary Fund (IMF) demonstrated that countries with higher inequality tend to have lower and less durable growth and thus financial growth should be more inclusive. A research done by the United Nations on inclusive finance for development showed that two billion adults are on the formal financial services. The poor in the rural households are excluded financially in emerging and developing countries and this has results to more than 70% of worldwide poverty.
The 2016 FinAccess Kenya survey reported that in the last ten years, the financial inclusion access in Kenya has increased by 50% resulting to 75.3% of Kenyans being formally included while the financial exclusion has halved since 2006 bringing it down to 17.4%. The report also shows that 35% women have access to formal prudentially regulated services such as banks compared to 50% for men. The financial inclusion rural-urban gap has risen over the last 10 years where services in urban areas has doubled that of rural areas. The oldest and youngest are more likely to be excluded and less likely to have formal accounts. In addition, formal inclusion increases with the level of education with only 73% of those with primary education are formally included but almost all those with tertiary education are included at 98%. The rich and those who are employed or in business are formally included compared to the poorest and those who rely on agriculture and casual labour. Formal inclusion is over 70% in most parts of the country, with formal inclusion in the western and coastal regions slightly lower. The northern parts of the country continue to face higher levels of exclusion, up to about 52% (FSD, 2016).

A 2014 research done by IMF and G20 concluded that technological innovation is the best way to advance financial innovation because it brings down the cost of serving low income clients making financial services affordable for users and viable to suppliers. Equally, advocates for inclusive finance for development at the UN suggested that digital financial services, together with effective oversight and supervision, can expand the scale, scope and reach of financial services, and are essential to closing the remaining gaps in financial inclusion. Financial inclusion is an enabler and accelerator of economic growth, job creation and development. Affordable access to and use of financial services helps families and small business owners generate income, manage irregular cash flow, invest in opportunities, strengthen resilience to downturns, and work their way out of poverty (International Monetary Fund [IMF], 2015).

2.2.2. Use of Bank Accounts and Development in the Financial Sector

The Global Findex Database indicate that there are 2 billion adults who are unbanked and 3.2 billion with accounts. The database assessed how frequently accounts are used by grouping them into four level: high use, medium use, low use and dormant. Globally, 15 percent of adults with an account at a financial institution reported making no deposit or withdrawal in the past 12 months and therefore have what can be considered a dormant (World Bank, 2014).
The 2016 FinAccess household survey in Kenya reported that banks in Kenya experience a much higher level of dormancy than other financial services because of lost income sources making the role of banks to generally be receiving salaries and other livelihood related payments and are not maintained for other reasons (FSD, 2016). Active bank account users mostly access their accounts once a month while mobile and informal accounts are used daily and weekly, indicating a higher level of importance in people’s daily lives and a stronger connection with informal income flows. The 2017 economic survey by Kenya National Bureau of Statistics (KNBS) outlined that Commercial banks real deposit liabilities declined marginally by 2.1 per cent from KSh 1,615.61 billion in 2015 to KSh 1,582.2 billion in 2016. Banking sector including other monetary intermediation declined from a growth of 10.1 per cent in 2015 to 7.1 per cent in 2016 (KNBS, 2017).

Shem, Misati and Njoroge (2012) in their research found out that the poor population who are largely unbanked can raise their standard of living and reduce poverty levels if financial services are accessible to them. Additionally, the development of the financial sector is critical in the realization of the vision 2030, in which the sector is one of the priority areas under the economic pillar. The sector is one of the key drivers of economic recovery and captures the sector’s increasing importance in boosting the economy, generating a rising contribution to real GDP from 5.3 % in 2014 to 5.7% in 2015 and 5.8% in 2016, by 4.6% in 2009 compared to 2.7% in 2008 (KNBS, 2017).

2.2.3 Mobile Money enabling Informal Financial Inclusion

A significant growth in clients using mobile applications is expected by 2020. While currently the majority of respondents (66%) contend that not more than 40% of their clients use their mobile applications, 61% believe that over the next five years, more than 60% of their clients will be using mobile applications at least once a month to access financial services (PWC, 2017).

Informal finance in Africa include and is not limited to Savings and Credit Association (SCA), professional money lenders, part time money lenders, mobile bankers, credit unions and co-operative societies (Aryeetey and Udry, 1995). Access to formal financial services in Sub-Saharan Africa is limited and obtained at high transaction costs because the financial institutions in the continent have not transformed compared to those in other
third world and developing countries (Cuevas, 1990). Studies done in China, Nigeria, Ghana, Malawi and Tanzania reveal that African socio-economic factors have led to the emergence and growth of informal financial arrangements in Africa (Aryeetey and Udry, 1997).

The formal financial sector in Kenya consists of the Banking, Capital markets, Insurance, Pensions, Savings and Credit Cooperative Societies (SACCOs) sectors. The sub-sectors are supervised by different independent regulators, namely, the Central Bank of Kenya (CBK), the Capital Markets Authority (CMA), the Insurance Regulatory Authority (IRA), the Retirement Benefits Authority (RBA), and the Sacco Societies Regulatory Authority (SASRA), Kenya has a dual financial sector consisting of the formal and informal sectors. Over the years the formal financial sector has shown growth, but the informal sector continues to serve most adults in the country (Shem et al., 2012). FinAccess report of 2016 shows that whilst customers trust banks more than they do mobile money providers, they are won over by the vastly superior access provided by mobile financial services (FSD, 2016).

The impact on poverty reduction appears to be the result of improved financial sector by facilitating easier and safer savings and changes in the occupational choice of users. Kenya is a global leader in mobile money services which is one of the innovations in informal financial services. In 2007, Safaricom which is a telecom operator launched M-PESA as a simple way to make small payments between users. Users of M-PESA are better able than non-users to manage health and other shocks by being able to access funds from their social network more quickly and at a lower cost. The survey also demonstrated that each year the users of M-PESA included more poor, rural and female users. Data from FSD Kenya and World Bank financial inclusion surveys confirm that a significant percentage of the poorest families are being reached through the mobile money services (World Bank, 2016).

The informal sector in emerging economies is as big as 42 percent of official gross domestic product. By shifting these business transactions from cash to mobile banking, it makes it harder for companies to evade paying taxes. Mauritius reported a 12 percent increase in tax returns in the first year of taking mobile payments. Rwanda, Kenya, Tanzania and Uganda also accept mobile tax payments (World Bank, 2016).
2.2.4 Bank Lending not Supporting Inclusive Growth

Financial sectors are expanding in terms of assets that belong to a small percentage of the population. Financial services are inclusive when they reach a majority of the population and is characterized by: (a) access of bankable households and micro and small enterprises to a full range of financial services, including savings, short and long-term credit, mortgages, insurance, pensions, remittances, leasing, and factoring; and (b) the sustainability of these services to assure access to services over time (Imboden, 2005). A report by the UN on financial inclusion for development showed that more than 200 million small and medium sized enterprises in emerging markets alone lack access to finance, limiting their ability to grow and thrive.

Most people and small businesses in emerging economies today do not fully participate in the formal financial system. They transact exclusively in cash, have no safe way to save or invest money, and do not have access to credit beyond informal lenders and personal networks. Even those with financial accounts may have only limited product choice and face high fees. As a result, a significant amount of wealth is stored outside the financial system and credit is scarce and expensive. This prevents individuals from engaging in economic activities that could transform their lives hence the economic growth suffers (McKinsey, 2016).

According to a research done by FSD-Kenya, taking a loan from a bank in Kenya is largely determined by the main source of income. The people employed in the government are more likely to get loans while those on pension have a lower chance of being given a loan from a bank in Kenya. Additionally, government employees are seven times less likely to be completely excluded from financial services compared to the people whose main livelihood is farming and fishing. In 2015, Kenya’s banking sector witnessed reduced activities in respect to their core banking systems compared to 2014 due to advancement in existing information and communication technology (Central Bank of Kenya, 2015).

Lending patterns within the banking sector appear to be strongly linked to the rising middle class, with growth in lending largely focused on easy wins in consumer lending and property markets. This is not likely to deliver the dividends for employment and growth that would come from increased lending to core productive sectors such as
manufacturing, agriculture and small and medium-sized enterprises (SMEs). Inclusive growth is not possible without appropriate financial services and instruments in place to benefit the under banked and those excluded from the formal banking system. The only way to ensure sustained, inclusive economic growth is through the financial inclusion of all individuals, communities and countries (Heyer and King, 2014).

2.3 The Effects of Financial Innovations on the Performance of Microfinance Institutions

Financial services enable households and businesses to save, invest and protect themselves from risks making the financial sector the heart of an economy. Most economies that are coming up lack access to basic saving and credit products which results to poverty and thus hinders economic growth. This problem can be resolved through digital financial services such as mobile money services. Financial inclusion, productivity and investments can be increased through efficient provision of digital payments and financial accounts (McKinsey, 2015).

A report by McKinsey showed that digital finance could improve the GDP of emerging economies by $3.7 trillion by 2025 and benefit different stakeholder. These stakeholders include, individuals, businesses, financial services providers and the government.

2.3.1 Individuals, Financial Innovations and Performance

Technological financial advancement could give 1.6 billion individuals access to a financial account for the first time, 45 percent of this population will come from the poorest two quantiles of the income distribution while 800 million will be women and when women possess a financial account, they spend more than men on food, education, and healthcare hence, increasing the welfare and productivity of a household (McKinsey, 2015). Equally, the research revealed that people in towns and cities will not waste productive time in lines at the bank and rural households could forgo trips to nearby towns and spend more time on income-generating activities.

A survey by FinAccess showed that 5% of Kenyans send or receive remittances internationally, many more are using mobile financial services for international remittances compared to 2013. While the dominant use of mobile financial services is still for interpersonal transfers, 42% of consumers use these services to make livelihood
payments, interact with their financial institutions and pay for goods and services. While
drought was a major shock for rural households, urban households were more likely to be
affected by the death of a relative or the loss/ destruction of property. Over 40% of
Kenyan households used their savings to cope with major shocks. A considerably higher
number of households in urban areas sold their assets or sought help from social
networks. In 2016, the proportion of Kenyans reporting that they sometimes or often go
without food was substantially lower compared to 2013 (FSD, 2016).

Efficient financial systems help channel capital to productive uses, provide insurance
against shocks, reduce information asymmetries, and can potentially alleviate poverty and
inequality (Beck et al., 2015).

2.3.2. Businesses, Financial Innovations and Performance

Advancement in the financial system helps to bring together savings adding to the money
available to finance investments and reduces information acquisition cost. Equally, the
development makes it easier to acquire new technologies through reduction in associated
risks. A transformed financial infrastructure creates good relationship with investors as it
gives them an opportunity to have an idea of how much they can borrow for innovative
activities and thus make better plans for their investments. Liquidity is increased through
improved financial services facilitating trading and settlement of financial instruments
(Levine, 1997).

Rioja and Valev (2004) in their research demonstrated that financial development leads to
an increase in Foreign Direct Investments resulting to a growth in the economy, but it
may be negative for the economies that have significantly developed their financial
system. The two scholars recommended that once an economy has reached higher levels
of its financial development and makes lesser foreign investments, investors should
consider making domestic investments to sustain the economic growth.

Africa and Kenya have become a centre for innovation and entrepreneurship. The region
has led the world in innovative financial services based on mobile telephony, especially in
East Africa. The fast spread of systems such as M-Pesa, M-Shwari, and M-Kopa in
Kenya has helped reduce transaction costs and facilitate personal transactions even in the
absence of traditional financial infrastructure. Microfinance has also grown rapidly,
providing services to customers at the lower end of the income distribution, and large parts of the population now have access to financial services more generally (IMF, 2015).

Innovation could lead to an increase in credit availability to formerly rationed small businesses for whom information production becomes revenue and expenditure also enable businesses to demonstrate their credit quality to lenders. Combined with the deposits gathered from newly included individuals, McKinsey calculates that digital finance could unlock an additional $2.1 trillion of loans to individuals and MSMEs, helping productive but credit-constrained businesses expand operations and invest in new technologies (McKinsey, 2015). Sound financial systems can also foster innovation and entrepreneurship through risk diversification (King, 2015).

2.3.3. Financial Service Providers, Financial Innovations and Performance

Development in financial services through the emergence of digital finance provides opportunities for new businesses and to the service providers by improving efficiency. Research done by McKinsey stated that a shift from cash to digital payments will help businesses save $400 billion yearly in direct cost (McKinsey, 2015). The internet has enabled service providers to use technology to satisfy the need of different consumer in the market, hence increasing their market share. Norris, Kersting, and Geneviève (2012) found that other things being equal, firms that have introduced a new process or product are more productive. The effect is quantitatively significant, with increases in productivity from innovation ranging from 16% to over 100%, depending on the sample and specification.

Kenya’s banking system has seen some major financial innovations in the past decade as well as steps to promote financial inclusion. The major impetus for financial innovation has been globalization of financial systems, deregulation, and great advances in technologies. In increasingly integrated financial systems facing higher volatilities, more competition and wide varieties of risks, financial innovation has become an essence to provide new products and strategies to better suit different circumstances of time and market and to meet different requirements of participants in financial system (Cherotich, 2013).

Financial innovation associated with technological change has totally changed the banking philosophy and that is further tuned by the competition in the banking industry in
Kenya. Challenging business environment within the banking system has created more innovation in the fields of product, process and market. Information technology has given rise to new innovations in the product designing and their delivery in the banking and finance industries. Customer services and customer satisfaction are their prime work. Current banking sector has come up with a lot of initiatives that oriented to providing a better customer services with the help of new technologies. Banking through internet has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labour-intensive methods with automated processes thus leading to higher productivity and profitability. The developments in the financial sector has not only led to the increase in the number of financial institutions, but also the development in level of sophistication with new payment systems and asset alternatives to holding money (CBK, 2013).

Financial inclusion in Kenya has increased due effective financial services through technology in mobile telephones. Prevalence of mobile telephones has been recorded to be three times the number of bank account holders. There has been increased competition as innovative electronic payment systems such as M-Pesa, Airtel Money, Yu Cash, Orange Money, MobiKash, M-Kesho, and Mshwari are introduced. Such interfaces render financial services provision more accessible for clients and cost efficient for financial institutions. Credit Reference Bureaus have reduced cost of doing business through technology resulting to building information capital, reduction in information search costs; and extend credit based on financial identity. This will change the collateral technology in use and reduce the costs of contracting loans and of lending rates. Growth is largely accredited to the financial Inclusion reforms and initiatives, innovations especially technological led innovations and financial awareness initiatives (CBK, 2013).

A global survey by McKinsey (2015) showed that to unleash the full range and potential of new forms of digital finance, a much wider variety of players than banks will likely be involved. These players include telecoms companies, payment providers, financial technology start-ups, microfinance institutions (MFIs), retailers and other companies. The contribution of the financial services sector to GDP continues to increase as access to financial services increase. In 2016, Kenya’s financial services sector contribution to GDP had increased to 7.1 percent from 3.2 percent in 2006; an annual increase of 8.3% over a ten-year period (Mugo and Kilonzo, 2016).
2.3.4 Governments, Financial Innovation and Performance

Research done by McKinsey reported that governments in emerging economies could collectively save at least $110 billion annually as digital payments reduce leakage in public expenditure and tax revenue. Of this, about $70 billion would come from ensuring that government spending reaches its target. This effectively would increase public investment in critical areas such as education, infrastructure, and health care. In addition, governments could gain approximately $40 billion annually from ensuring that tax revenue is collected efficiently (McKinsey, 2013).

Regulatory convergence of financial markets may directly stimulate local financial markets and foster internal competition, as well as open these markets to competitive pressure from foreign intermediaries. Overall, this process is likely to allow companies and households from financially backward countries to access the credit and security markets of the more advanced countries. This can in turn translate into higher economic growth (Guiso, Jappelli, Padula, Pagano, Martin and Gourinch, 2004).

The Government of Kenya Vision 2030 explicitly puts financial services at the center of higher economic growth in Kenya. The economic pillar of this strategy aspires to achieve high economic growth based on high national savings rates, which highlights the central role to be played by the financial sector. The financial sector is explicitly identified as one of the seven fast-track sectors in Vision 2030. Among its main objectives for financial sector development the strategy identifies: (i) improving stability; (ii) enhancing efficiency in the delivery of credit and other financial services, and; (iii) improving access to financial services products for a much larger number of Kenyans (World Bank, 2015).

Financial transformation in Kenya has given the country a reason to feel proud in the global technological innovation sphere through the revolutionary M-Pesa service by Safaricom. M-Pesa, which can well pass as the innovation of the decade, has transformed many lives in the country (FSD, 2016).

2.4 The Role of Financial Technology Companies in Improving Financial Performance of MFIs

In developed countries, fintech has given people who never had a chance to access financial services an opportunity to receive the services. Also, more financial firms have
been created by fintech’s. This has led to most people especially the middle-class citizens to have a levelled ground with the wealthiest as they enjoy the same services.

Several factors have made it possible for financial innovations: In the first place, client inclinations, especially among millennials and with respect to convenience, speed and cost of financial services are very critical. In addition, demand forces of economic development are driving reception of FinTech in rapidly developing emerging markets and frontier economies. Second, evolving technology, particularly which related to the internet, big data, mobile technology, and computing power, have made it possible for advancements in the financial sector. Lastly, business opportunity may have opened in places where traditional financial sectors have downsized exercises, presenting intermediation by non-traditional non-financial players. For instance, higher capital necessities and post-crisis deleveraging may have changed the loaning conduct of some bank (Blythin and Cooten, 2017).

Analysis done by KPMG defines Fintech as technology-based businesses that compete against, enable and/or collaborate with financial institutions. Innovation and technology have brought about a radical change in traditional financial services. The world has seen the emergence of more than 12,000 start-ups and massive global investment of USD 19 billion in 2015 in the fintech space. These innovators are utilising tech tools to bring in seamless and innovative financial services for the banked and unbanked population. The global fintech software and services sector is expected to boom as a USD 45 billion opportunity by 2020, growing at a compounded annual growth rate of 7.1 per cent (KPMG, 2016).

The U.S. rules the fintech industry with real centre points like Silicon Valley and New York. It provides the most astounding fintech speculation from the administration, corporate, extensive banks and financial speculators and from colleges and research organizations that set up advancement laboratories creates fintech courses and dispatch quickening agent projects to assemble inventive and innovative items and regulations. The U.S. has more than 25 unicorn fintech start-ups worth USD 1 billion. Silicon Valley has more than 15,000 start-up firms, with two million hi-tech workers and the most experienced start-up workers. After the financial emergency of 2007-2008 the financial advertise experts have intensified control of the keeping money segment, presenting new or reinforcing existing measures. Moreover, advancements and improvement of data and
financial advances have expanded the need to search for more imaginative arrangements in managing finances (KPMG, 2016).

Financial institutions have ruled the market by giving different items to a vast client base. In participation with stock trades and payment service providers, incumbents have played a significant role of the financial system we have today (Broom, 2017). Regulatory oversight and cost structure have transformed over time because of operations and activities of the players already in the market. As new innovations rise and changing customer behaviour, the new FinTech players are beginning to transform the financial sector by offering quicker and less expensive arrangements than the occupants, regularly giving a superior customer experience (Financial Stability Board (FSB), 2017).

Mobile and web-based payment platforms such as Alipay, Android Pay, Apple Pay, M-Pesa, PayPal and Samsung Pay, offer end clients the capacity to pay for goods and services through the internet or handheld gadgets, hence reducing the transaction cost. Digital currencies for example, Bitcoin and Litecoin, expect to be utilized for comparative purposes by families and firms to pay for genuine economic transactions. Equally, loans can be offered in digital currencies. Crowd funding connects investors to borrowers through a web-based platform; this can be viewed to pool supports and streamline the sharing of information outside the normal traditional financial intermediaries (PWC, 2017).

Payments and remittances newly established businesses represent the lion's share of Africa’s more than 300 fintech start-ups, however blockchain organizations are the more inclined to secure subsidizing. A report by Delloitte found out that there has been a boom in the fintech space during the most recent two years, with the greater part of the fintech start-ups having been launched after January 2015. These organizations are disturbing the financial sector with inventive arrangements that are drawing in the consideration of banks and financial specialists. Africa’s fintech start-ups have secured over US$92.5 million in investment since 2015. Southern Africa and West Africa are fintech pioneers in the continent with 34.2 per cent and 34 percent situated in those areas respectively. South Africa has the most fintech start-ups (94), trailed by Nigeria (74) and Kenya (56) (Delloitte, 2016).
The application of fintech cuts across multiple business segments, including lending, investment management and payments which play a significant role in a country’s economy and hence affecting microfinance institutions.

2.4.1 Peer to Peer Lending

Peer to Peer (P2P) lending is a key player in the Fintech world. Mateescu (2015) stated that Peer-to-peer lending is used to describe online marketplaces where lenders can lend to individuals or small businesses. Nasdaq has reported that P2P platforms are among the fastest growing segment in the financial services industry. Some of the well-known marketplaces in the U.S. and Europe are Lending Club Corporation, Zopa, Prosper Marketplace, Upstart, Funding Circle, CircleBack Lending, Peerform, Pave, Daric, Borrowers First, SoFi, Ratesetter and Auxmoney. A finding by Transparency Market Research suggests that “the opportunity in the global peer-to-peer market will be worth $897.85 billion by the year 2024, from $26.16 billion in 2015. The market is anticipated to rise at a whopping CAGR (Compound Annual Growth Rate) of 48.2% between 2016 and 2024.

A report done by Cambridge Centre for Alternative Finance on alternative finance benchmarking in Africa and Middle East indicated that peer-to-peer business lending in Africa, totalled $16 million in volume over a two-year period between 2014 to 2015 leading to a rapid growth from a $2 million in 2014, to $14 million in 2015. Kenya and South Africa are the leading peer to peer business lending markets. Fintech firms operating in P2P lending businesses serve as platforms to open access for communities to capital. Thus, investors will contribute to a more equal distribution of the country’s economic growth (Cambridge Centre for Alternative Finance [CCAF], 2017).

2.4.2 Payment Systems used by MFIs

Global trends indicate that a shift from cash to electronic payments can save countries one to two percentage points of GDP annually. Cash is an expensive and vulnerable mode of payment. It is important to recognize that digital payments are based on an interaction with financial systems, either through the exchange of bank account or credit/debit card data, or via a service access point authorized to take deposits or perform withdrawals (McKinsey, 2016).
Mobile is a vital tool in delivering digital and financial inclusion in Sub-Saharan Africa. Around 270 million people in the region access the internet through mobile devices, while the number of registered mobile money accounts reached 280 million as of March 2017. The expanding mobile money ecosystem offers new opportunities for productivity and efficiency gains to governments, businesses and individuals, as mobile money has developed from traditional payments to provide access to more complex financial products. In terms of revenue stream diversification, mobile operators are adopting new business models to increase the contribution of non-core communication services to overall revenues. In Kenya, Safaricom has expanded the use cases for mobile money platform M-Pesa, which contributed 27% of service revenues in the year 2016/17 at KES55 billion, to include financial products such as savings and credit. To truly transform the financial lives of underserved people, mobile money must become a central monetisation mechanism, universally available across a greater range of digital transactions. By making mobile money more central to the financial lives of these users, greater financial inclusion, economic empowerment and economic growth can be achieved (Global System for Mobile Association [GSMA], 2017).

2.4.3 Investment Management Decisions

In the financial sector, asset management refers to a sector of the financial services industry dealing with the management of special client accounts and investment funds. Traditionally, financial companies would employ experts to manage money and handle investment clients. The experts would study a client’s asset and possible investments and make recommendations to the client based on his financial health. However, the increased innovation in fintech has transformed asset management with robo-advisors competing with human experts. The increased interest in fintech management is also contributed to by the high amount of fees charged by active managers who nevertheless are no match for robo-advisors. A 2016 study by PwC revealed that 75% of asset managers view the impact of fintech in the perspective of the need to adapt to changing customer needs. On the other hand, 50% of them believe that fintech start-ups can help build trusted relationships and enhance interactions. The study also found out that companies rarely prioritise these types of investments, instead, they prefer focusing on investments around automated asset allocation and analytics, areas associated with robo-advisors (PWC, 2017).
Nairobi has risen as a Financial Technology (FinTech) centre because of the spearheading accomplishment of M-Pesa, the insufficiency of incumbent financial institutions and Kenya's conducive business and regulatory environment (FSD, 2016). In any case, FinTech organizations in Nairobi face various difficulties hindering their development, for example, deficiencies of managerial and software improvement ability, poor access to information and data, and little levels of credit and venture. FinTechs have given an opportunity to Kenyan’s who were financially excluded to access financial services, however there is prove that some FinTech can really do harm because of there are no control measures put in place in terms of policies, which hence allows organizations to offer easy services to unskilled customers (Broom, 2017).

2.5 Chapter Summary

This chapter reviewed literature by other scholars and researchers about financial innovation and financial performance based on the specific research objectives which were to determine the drivers of financial innovation in microfinance institutions in Kenya; to assess the effects of financial innovations on the performance of MFIs in Kenya; and to illustrate the role financial technology companies play in microfinance institutions in Kenya. The next chapter provides the research methodology that was applied for this study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that will be used to conduct the study. It describes the research design, the population and sampling design of the study, data collection methods as well as the research procedures and data analysis methods to be used in the research study.

3.2 Research Design

Research design is the framework for collection and analysis of data to answer research questions and meet research objectives providing reasoned justification for choice of data sources, collection methods and analysis techniques (Saunders, Lewis and Thornhill, 2016). The study adopted descriptive research method of study. Descriptive research is used to gain an accurate profile of events, persons or situations by helping the researcher to answer the question of who, what, where, when or how much in determining the effects of financial innovation on economic growth in Kenya (Saunders, Lewis and Thornhill, 2016). This research used the Return on Assets as the independent variable representing financial performance whereas Loan Portfolio, Number of Microfinance Branches, and Number of Employees were used as the dependent variables representing financial innovations. After analyzing the correlation between the independent and dependent variables, the study provided specific and relevant recommendations.

3.3 Population and Sampling Design

3.3.1 Population

According to Cooper and Schindler (2014), a population is the element about which a researcher wishes to make some inferences. The study targeted the 13 microfinance institutions licensed by the Central Bank of Kenya. The study period was drawn from the years 2011 to 2016. The year 2007 brought about the great revolution in the financial sector with the launch of MPESA in the country, hence by 2011 most institutions must have adopted the different financial innovations.
3.3.2 Sampling Design

3.3.2.1 Sampling Frame

A sampling frame is the list of elements from which a sample is drawn. This is a complete and correct list of population members only (Cooper and Schindler, 2014). The sampling frame for this study will be 13 Microfinance Institutions licensed by the Central Bank of Kenya within Nairobi County.

3.3.2.2 Sampling Technique

The study adopted census technique, all microfinance institutions licensed by the Central Bank of Kenya were used in this study. A census survey was conducted on all the 13 licensed Micro Finance Institutions (MFIs). This is because the population is considerably small and manageable. The source of the list of the firms that will constitute the sample size of this study was the Central Bank of Kenya.

3.3.2.3 Sample Size

As stated by Cooper & Schindler (2014) a sample size is the sum of entities in a given subset of a population chosen for analysis. Because there were only 13 licensed microfinance institutions by 2016, this study carried out a census. The Association of Microfinance Institutions provided the researcher with the list of microfinance institutions licensed by CBK.

3.4 Data Collection Methods

This research Project aimed at examining how microfinance institutions have been affected by the various financial developments in the country. The study utilized secondary data. Secondary data, is data which was originally collected for other purpose, but can be analyzed to provide different knowledge and new conclusion (Kaneza, 2016). This study relied on time series financial data of Kenya for the period 2011-2016 and it included both internal and external sources of data. Internal sources were reviewed from financial documents and databases and management reports while external data was sourced from World Bank reports, Central Bank of Kenya, Kenya National Bureau of Statistics and reports from various organizations that study the impact of financial sector on the people of Kenya. The data collected from this organizations included time annual
reports, publications, industry analysis, and trend analysis. The study used a checklist to collect secondary data on the 13 registered microfinance institutions where information on loan portfolio, number of branches and number of employees from 2011 to 2016 were recorded and verified.

3.5 Research Procedures

The researcher assessed the relationship between financial innovations and firms’ performance using financial reports from the licensed microfinance institutions in Kenya. The researcher then sought authority from the research office asking for permission to carry out the study on the registered microfinance institutions in Kenya. Thereafter, the researcher sought relevant secondary information namely; MFI published financial statements and reports from the Central Bank of Kenya.

3.6 Data Analysis Methods

According to Cooper and Schindler (2014), data analysis involves reducing accumulated data to a manageable size, developing summaries, looking for patterns, and applying statistical techniques. The data collected was edited to detect errors and omissions and corrected where possible to get accurate results. The data was entered to convert the information gathered through secondary method to a medium that will make it easy for viewing and manipulation. Database entry was used in this study. A database is a collection of data organized for computerized retrieval (Cooper and Schindler, 2014). This helped link data that was retrieved and tabulated over time. Data was analysed using descriptive Statistics and regression analysis and correlation Analysis to determine the relationship between performance variables and financial innovations. The tools used to analyse data was Microsoft Excel and SPSS which used database management, graphics and presentation capabilities for easier interpretation. Finally, the researcher analyzed data on loan portfolio, number of branches, number of employee and return on assets of the thirteen licensed microfinance institutions in Kenya.

A multiple regression analysis was used to determine the relationship between the dependent and the independent variables.
The multiple regression model used was:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon \]

Where:

\( Y \) = financial performance;

\( \beta_0 \) = Constant Term;

\( \beta_1, \beta_2, \text{ and } \beta_3 \) = Beta coefficients;

\( X_1 \) = Loan portfolio;

\( X_2 \) = number of bank branches;

\( X_3 \) = number of employees;

\( \varepsilon \) = Error term

The study used a 95% confidence level. A 95% confidence interval reflects a significance level of 0.05. This shows that for an independent variable to have a significant effect on the dependent variable, the p-value should be below the significance level (0.05).

3.7 Chapter Summary

This chapter analyzed the research methodology and it introduced the research design used in the study. The analysis of the data was done using Microsoft Excel and SPSS data analysis tool. Chapter four presents the research findings and results in relation to the specific research objectives.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter focuses on data analysis and presentation of the findings. The findings and discussions are presented according to the specific objectives. The purpose of this study was to establish the drivers of financial innovations in MFIs in Kenya. The study also sought to assess the effect of financial innovations on the performance of MFIs in Kenya and illustrate the role financial technology companies play in the microfinance institutions in Kenya. The findings from the research study are presented in table form and figures.

4.2 General Information

This chapter presents the findings and results from the analysis done on the effect of financial innovations on the performance of microfinance institutions in Kenya. The findings were based on specific research objectives of the study. The main aim of this study was to determine how performance was affected by loan portfolio, number of branches and number of employee of the thirteen microfinance institutions in Kenya. This study covers the period 2011-2016 and the data analyzed has been obtained from annual reports from the Central Bank of Kenya (CBK) and FSD-Kenya.

4.3 Descriptive Statistics

This section presents the findings obtained from the analysis of the thirteen licensed microfinance banks in Kenya.

4.3.1 Background of Microfinance Banks

4.3.1.1 CARITAS Microfinance Bank

CARITAS Microfinance Bank came into existence as a self-help program over three decades ago. It is owned by the Catholic Church in Kenya and was licensed by the Central Bank of Kenya in 2015. The bank adopts a social and competitive pricing approach and a two-pronged distribution strategy-branches and marketing offices.
4.3.1.2 Century Microfinance Bank

Century Microfinance Bank Limited is a Microfinance institution that specializes in providing financial services to Micro, Small and Medium Businesses at large. The main aim of the institution is to serve the agricultural sector. The bank was licensed by the Central Bank of Kenya in 2012. The bank serves over 15,000 customers.

4.3.1.3 Choice Microfinance Bank

Choice Microfinance Bank started was incorporated in the mid 1990’s and 2000’s by people in the diaspora who wanted to make some investments at home to raise the standard of living for the people.

4.3.1.4 Daraja Microfinance Bank

Daraja MFB’s target market is the Micro and Small Enterprises (MSEs), their owners and employees reside or operate businesses in Dagoreti Division, Nairobi County. In addition, Daraja targets salaried individuals through loans deducted through the payroll check off system. It was incorporated in 2015.

4.3.1.5 Faulu Microfinance Bank

Faulu Microfinance Bank is a limited liability company duly incorporated in Kenya under the Companies Act. The company changed its name to Faulu Kenya Deposit Taking Microfinance (DTM) Limited in 2008 as part of the requirements to obtain the Deposit Taking Licence from the Central Bank of Kenya. In May 2009, Faulu became the first registered DTM in Kenya under the Micro-Finance Act and is regulated by the CBK.

4.3.1.6 Kenya Women Microfinance Bank Limited (KWFT)

Kenya Women Microfinance Bank Limited (KWFT) was established in 2008 and began its operations in 2009 as women only bank. The bank has over 800,000 clients in the country with more than 245 offices across 45 counties in Kenya. This has made it possible for women in remote, rural and peri-urban settings to access finance and make their lives better.
4.3.1.7 Rafiki Microfinance Bank Limited

Rafiki Microfinance Bank Limited is the first microfinance institution to be owned by a commercial bank in Kenya. It started operating in 2011 after being successfully created by Chase Group in 2009. The bank aim is to grow a huge youth brand proposition.

4.3.1.8 REMU Microfinance Bank Limited

REMU Microfinance Bank Limited was licensed by the Central Bank of Kenya in 2008. It has been in operation since 2010 serving individuals and SMEs by unlocking their banking and financing potential.

4.3.1.9 SMEP Microfinance Bank Limited

SMEP Microfinance Bank Limited the Central Bank of Kenya to offer banking services focusing on Group banking, SME and Church banking. The bank has a subsidiary company known as SMEP Insurance Agency which provides insurance services to diverse customer insurance needs.

4.3.1.10 Sumac Microfinance Bank Limited

Sumac Microfinance Bank was incorporated in 2004 by a group of 14 investors who later opened doors to the public to help entrepreneurs who needed financial assistance and could not get loans from the banks.

4.3.1.11 U & I Microfinance Bank Limited

U & I Microfinance Bank targets micro-businesses and SME’s by providing working capital, facilitating technological improvements and business innovations. The microfinance institution began its operation in 2007 as a credit only microfinance institution but was licensed in 2013 by the Central Bank of Kenya.

4.3.1.12 Uwezo Microfinance Bank Limited

Uwezo Microfinance Bank was licensed in November 2010 to commence deposit taking micro-finance business in Nairobi. The name ‘Uwezo’ signifies empowerment and thus the bank aims to empower small and medium enterprises (SMEs) and low-income earners through provision of sustainable financial services.

4.3.1.13 Maisha Microfinance Bank Limited

Maisha Microfinance Bank offers financial services to entrepreneurs with the objective of expanding their economic possibilities.
4.4 Drivers of Financial Innovation

4.4.1 Financial Inclusion

Results from the analysis show the rate of financial inclusion has increased over the years since 2009 to 2016. In 2009 only 21% were included but in seven years the figure has doubled. This was caused by the introduction of various financial providers which include microfinance institution that served the needs of a wider population.

![Figure 4.1: Financial Inclusion Trend](image)

4.4.2 Bank Account Usage

The results from figure 4.2 show that in 2016 banks had highest number of accounts that were opened and left inactive at a rate of 22.3% while that of MFI was at 2.4%. This can be attributed to bank account users accessing their accounts less often as compared to mobile and informal accounts that people use frequently on a day to day activities.

![Figure 4.2 Bank Account Usage](image)
4.4.3 Mobile Money

From figure 4.3, mobile money accounts have increased in the last seven years. Mobile money service has been the leading financial innovation in Kenya serving a large population. MFIs have integrated this service to enable them to serve a various people with different needs.

![Mobile Money Account](image)

**Figure 4.3 Mobile Money**

4.4.4 Lending

Results from the analysis showed that bank lending did not support inclusive growth hence people sort other alternatives such as group lending. People use groups for different reasons as shown on the figure below. 66.8% of users involve in groups for ROSCA function which means all members contribute some amount and given money in turns. Only 12.6% use them for investment as shown in figure 4.4. This development has led to the formation of some microfinance institutions and advancement in financial services as lending remained to be the leading role of MFIs,
Performance indicators such as return on assets (ROA), return on equity (ROE), and return on sales (ROS) are used as indicators of financial performance. In this study, return on assets and profitability was used to assess the effect of financial innovation on the performance of microfinance institutions. The variables used are net loan portfolio, customer deposits, number of branches and total number of staff over the years.

4.5.1 Descriptive of Financial Performance

To analyze the financial performance, the return on assets (ROA) was measured and this was analyzed by dividing net income by the total assets and converted to a percentage. As indicated in the table 4.1.

Where:

NI- Net Income;

TA- Total Assets;

ROA- Return on Assets
Table 4.1: Performance of Microfinance Institutions (Million Shillings)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>302</td>
<td>173</td>
<td>395</td>
<td>474</td>
<td>395</td>
<td>224</td>
</tr>
<tr>
<td>TA</td>
<td>17,036</td>
<td>20,384</td>
<td>21,752</td>
<td>26,985</td>
<td>31,861</td>
<td>32,153</td>
</tr>
<tr>
<td>ROA</td>
<td>1.8%</td>
<td>0.8%</td>
<td>1.8%</td>
<td>1.8%</td>
<td>1.2%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

| FAULU MFI   |       |       |       |       |       |       |
| NI          | 27    | 58    | 183   | 401   | 115   | 43    |
| TA          | 5,141 | 7,638 | 12,434| 20,320| 25,324| 27,369|
| ROA         | 0.5%  | 0.8%  | 1.5%  | 2%    | 0.5%  | 0.2%  |

| RAFIKI MFI  |       |       |       |       |       |       |
| NI          | (15%) | 5     | 9     | 21    | 29    | (298) |
| TA          | 441   | 1,838 | 3,679 | 5,975 | 7,729 | 7,329 |
| ROA         | (3.4%)| 0.3%  | 0.2%  | 0.4%  | 0.4%  | (4.1%)|

| SMEP MFI    |       |       |       |       |       |       |
| NI          |       |       | 48    | (97)  | (1)   | (134) |
| TA          | 2,490 | 2,378 | 2,592 | 2,659 |       |       |
| ROA         | 1.9%  | (4.1%)| (0.04%)| (5%)  |       |       |

| CARITAS MFI |       |       |       |       |       |       |
| NI          |       |       | (60)  | (74)  |       |       |
| TA          |       |       | 186   | 574   |       |       |
| ROA         |       |       | (32.3%)| (13%) |       |       |

| SUMAC MFI   |       |       |       |       |       |       |
| NI          |       |       | (11)  | 4     | 7     | 14    |
| TA          |       |       | 307   | 390   | 608   | 803   |
| ROA         |       |       | (3.6%)| 1%    | 1.2%  | (1.7%)|

| REMU MFI    |       |       |       |       |       |       |
| NI          | (13)  | (7)   | (6)   | 3     | (15)  | (12)  |
| TA          | 124   | 181   | 337   | 395   | 397   | 362   |
| ROA         | (11%) | (3.9%)| (1.8%)| 0.8%  | (3.8%)| (3.3%)|

| U & I MFI   |       |       |       |       |       |       |
| NI          | 1     | 2     | 7     | 7     |       |       |
| TA          | 80    | 137   | 184   | 351   |       |       |
| ROA         | (3.30)| 1.3%  | 1.5%  | 3.8%  | 2%    |       |

| UWEZO MFI   |       |       |       |       |       |       |
| NI          | (8)   | (2)   | (2)   | 1     | 0.2   | 4     |
| TA          | 59    | 78    | 107   | 160   | 226   | 214   |
| ROA         | (14%) | (2.6%)| (1.9%)| 0.6%  | 0.09% | 1.9%  |

| DARAJA MFI  |       |       |       |       |       |       |
| NI          |       |       |       |       | (45)  | (28)  |
| TA          |       |       |       |       | 83    | 180   |
| ROA         |       |       |       |       | (54.2%)| (16%)|

| MAISHA MFI  |       |       |       |       |       |       |
| NI          |       |       |       |       |       | (31)  |
| TA          |       |       |       |       |       | 171   |
| ROA         |       |       |       |       |       | (18%) |

| CENTURY MFI |       |       |       |       |       |       |
| NI          |       |       | (27)  | (34)  | (53)  | (41)  |
| TA          |       |       | 164   | 231   | 197   | 225   |
| ROA         |       |       | (16.5%)| (15%)  | (27%)  | (18%) |

| CHOICE MFI  |       |       |       |       |       |       |
| NI          |       |       |       |       |       | (35)  |
| TA          |       |       |       |       |       | 122   |
| ROA         |       |       |       |       |       | (29%) |
4.5.2 Average Return on Assets

Table 4.2 shows the average return on assets of the thirteen microfinance banks as given by the Central Bank of Kenya. The year 2013 recorded the highest average ROA of 2%. The least average ROI was recorded in 2016 with a negative figure of 0.5%.

Table 4.2 Average Return on Assets

<table>
<thead>
<tr>
<th>Year</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1%</td>
</tr>
<tr>
<td>2012</td>
<td>1%</td>
</tr>
<tr>
<td>2013</td>
<td>2%</td>
</tr>
<tr>
<td>2014</td>
<td>1%</td>
</tr>
<tr>
<td>2015</td>
<td>1%</td>
</tr>
<tr>
<td>2016</td>
<td>-0.5%</td>
</tr>
</tbody>
</table>

4.5.3 Loan Portfolio, Customer deposits and ROA

To analyze whether financial innovation affects performance, a relationship between loan portfolio and ROA was established. The loan portfolio has been on the increasing trend over the six years while the ROA did not have a stable trend as seen in figure 4.6. ROA was stable in 2011 and 2012 even though there was slight increase in loan portfolio. As the loan portfolio increased in 2013 and 2014, ROA remained the same. After 2014 there was a negative relationship between loan portfolio and ROA. The negative relationship can be attributed to microfinance institutions giving loans to people who default their payment due to factors such as unfavorable economic conditions.

The analysis shows that there was no major growth in the loan book compared to 2015 because the MFIs did not offer more loans to recover and reduce the outstanding non-performing loans.
Figure 4.5 Loan Portfolio and ROA

Figure 4.5 and figure 4.6 show that the relationship between customer deposits and ROA is similar to the relationship between customer deposits and ROA. The results show that the loan portfolio increased in 2016 but there was a reduction in customer deposit in the year. This explains the introduction of new financial services that led to the trend demonstrated in the two figures.

Figure 4.6 Customer Deposits and ROA
4.5.4 Number of Branches and ROA

Table 4.3 indicates the number of branches for each microfinance institution as registered by CBK. By 2016, there were a total of 107 microfinance bank branches. Faulu microfinance which was the first MFI to be licensed by CBK has the most number of branches at 39 though KWFT had a market share of 42.9%. Six of the thirteen institutions have only 1 branch each. In 2016 there were 3 large microfinance banks, 3 medium microfinance banks with a market share and 7 small microfinance banks. The classification is based on weighted composite index. The market share of the thirteen registered MFIs as of 2016 is as shown in table 4.3.

Table 4.3 Number of Branches of licensed Microfinance Bank

<table>
<thead>
<tr>
<th>MFI</th>
<th>Number of Branches</th>
<th>% of total</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWFT MFB</td>
<td>31</td>
<td>29%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Faulu MFB</td>
<td>39</td>
<td>36%</td>
<td>39.2%</td>
</tr>
<tr>
<td>SMEP MFB</td>
<td>7</td>
<td>7%</td>
<td>4%</td>
</tr>
<tr>
<td>Rafiki MFB</td>
<td>17</td>
<td>16%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Remu MFB</td>
<td>2</td>
<td>2%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Sumac MFB</td>
<td>3</td>
<td>3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Uwezo MFB</td>
<td>1</td>
<td>1%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Century MFB</td>
<td>1</td>
<td>1%</td>
<td>0.3%</td>
</tr>
<tr>
<td>U&amp;I MFB</td>
<td>1</td>
<td>1%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Caritas MFB</td>
<td>2</td>
<td>2%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Choice MFB</td>
<td>1</td>
<td>1%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Daraja MFB</td>
<td>1</td>
<td>1%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Maisha MFB</td>
<td>1</td>
<td>1%</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>107</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
From the findings, ROA increased in 2012 to 2013 as the number of branches increased, remained constant in 2013 and 2014 as the number of branches increased. There was a decline in ROA from 2014 to 2016 though the number of MFI branches increased. Therefore, we can deduce that the slight increase in loan portfolio as shown in figure 4.7 led to an increase in loan loss leading to a fall in ROA.

Figure 4.7 Microfinance Branches in Kenya

4.5.5 Number of Staff and ROA

From the findings shown in figure 4.8, ROA increased in 2012 to 2013 as the number of employees increased, remained constant in 2013 and 2014 as the number of branches increased. There was a decline in ROA from 2014 to 2015 though the number of employees was on an increasing trend. The findings establish that there is improved efficiency when the number of employees increase tremendously as seen years 2012 but ROA reduced. In 2016 the number of employees and ROA decreased, this can be as a result of automated processes and unpaid loans.
Figure 4.8 Number of staff and ROA

4.5.6. Profitability of MFIs for the year 2011-2016

To further analyze financial performance, the profitability of the 13 microfinance institutions was used as shown on the microfinance published financial statements. As indicated in the table 4.4, the year 2012 recorded the highest average profit of 49.2%. The least average profit was recorded in 2016 with a loss of 27.8%.

Table 4.4: Profitability of Microfinance Institutions (Million Shillings)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Faulu</td>
<td>2</td>
<td>58</td>
<td>165</td>
<td>474</td>
<td>395</td>
<td>43</td>
</tr>
<tr>
<td>Kenya Women Finance Trust</td>
<td>302</td>
<td>173</td>
<td>391</td>
<td>299</td>
<td>115</td>
<td>224</td>
</tr>
<tr>
<td>SMEP</td>
<td>26</td>
<td>54</td>
<td>6</td>
<td>21</td>
<td>-1</td>
<td>-134</td>
</tr>
<tr>
<td>Rafiki</td>
<td>-15</td>
<td>5</td>
<td>9</td>
<td>-</td>
<td>29</td>
<td>-298</td>
</tr>
<tr>
<td>CARITAS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-60</td>
<td>-74</td>
</tr>
<tr>
<td>Sumac</td>
<td>-11</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Remu</td>
<td>-13</td>
<td>7</td>
<td>-6</td>
<td>-97</td>
<td>-15</td>
<td>-12</td>
</tr>
<tr>
<td>U &amp; I</td>
<td>-</td>
<td>1</td>
<td>-4</td>
<td>7</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Uwezo</td>
<td>-8</td>
<td>-2</td>
<td>-2</td>
<td>-4</td>
<td>0.2</td>
<td>4</td>
</tr>
<tr>
<td>Daraja</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-45</td>
<td>-28</td>
<td></td>
</tr>
<tr>
<td>Maisha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-31</td>
</tr>
<tr>
<td>Century</td>
<td>-27</td>
<td>-34</td>
<td>-53</td>
<td>-41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice</td>
<td>-29</td>
<td>-</td>
<td>-29</td>
<td>-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>49.0</td>
<td>49.2</td>
<td>58.4</td>
<td>93.6</td>
<td>29.2</td>
<td>-27.8</td>
</tr>
</tbody>
</table>
4.5.6. Average Profitability of MFIs
From figure 4.1 below, the profits of the MFIs under study rose from shillings 49, 000,000 to 93, 600, 000 in 2014. There was a drastic fall from 2014 to 2016 to a loss of shillings 27, 800, 000. Profitability was used as a measure of performance.

![Graph showing profit trend from 2011 to 2016.]

**Figure 4.9: Profitability of MFIs for the year 2011-2016**

4.5.7 Loan Portfolio and Profitability

The findings revealed that profitability has been increasing from years 2011 to 2014 as loan amount increased significantly as seen in figure 4.10. The profit decreased in 2015 to a point of making a loss in 2016. The findings showed that as profit was decreasing the loan portfolio was on an upward trend. This can be attributed to non-performing loans that may have caused the MFIs to reduce or stop offering loans.

![Graph showing profit and loan portfolio trends from 2011 to 2016.]

**Figure 4.10 Loan Portfolio and Profitability**
4.5.8 Customer Deposits and Profitability

From figure 4.11 below, the findings show that the customer deposits increased from 2011 to 2015. The profit increased until 2015 where there was a fall. In year 2015 and 2016, customer deposit remained constant as profits decreased to a point of making a loss in 2016. The cause of this trend may be reasons such as challenging economic times.

![Profitability and Customer Deposits](image)

Figure 4.11 Customer Deposits and Profitability

4.5.9 Profitability and Number of Branches

The findings show that the number of MFI branches increased from 2011 to 2016. The profit increased until 2014 where there was a fall. In year 2015 and 2016, decrease in profit was realized as shown in figure 4.12.
Figure 4.12 Profitability and Number of Branches

4.5.10 Profitability and Number of Staff

The study revealed that the number of employees increased from 2011 to 2015. There was a slight decrease in 2016. Profits also rose in years 2011 to 2014 but decreased in 2015 and a loss was realized in 2016.
4.6 The Role of Financial Technology Companies and Performance
The introduction of mobile money marked the beginning of financial technology companies in Kenya. Mobile technology has done well over the years as most financial institution have embraced it. Figure 4.9 shows mobile money transfers in Kenya trend from 2013 to 2016. From the analysis, it can be concluded that financial institution and their clients have accepted technology. This has made it possible for MFIs to reach the unbanked providing them with a more affordable payment system.

![Mobile money transfer in Kenya 2013-2016](image)

**Figure 4.14 Mobile Money Transfer**

4.7 Inferential Statistics
The study sought to establish the association between the dependent variable (performance of microfinance institutions) and the independent variables loan portfolio, number of microfinance branches and number of employees with an aim of understanding how the developments in the financial field came to be with the introduction of financial technology companies.

4.7.1 Regression Analysis
A regression analysis was done to establish the nature of the relationship between the variables and the findings revealed the R squared value was 0.961 which implies that 96.1% of the variations in performance of microfinance institutions was caused by the variations in amount of loan, number of branches opened, and number of employees as
indicated in table 4.5. This therefore means that other factors not studied in this research contribute 3.9% of the financial performance of microfinance institutions.

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.981</td>
<td>0.961</td>
<td>0.905</td>
<td>0.002830987</td>
</tr>
</tbody>
</table>

Table 4.5 Regression Analysis

4.7.2 ANOVA Analysis

ANOVA coefficient was undertaken for the variables and the findings revealed that the F value was 16.836 and was significant with a p value of 0.056. This implies that there was a positive linear relationship between performance of microfinance institutions and financial innovation as indicated in Table 4.6.

<table>
<thead>
<tr>
<th></th>
<th>Df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3</td>
<td>0.000404804</td>
<td>0.000134935</td>
<td>16.83636416</td>
<td>0.056</td>
</tr>
<tr>
<td>Residual</td>
<td>2</td>
<td>1.6029E-05</td>
<td>8.01448E-06</td>
<td>8.01448E-06</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>0.000420833</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Loan Portfolio, Number of Branches, Number of Employees

Table 4.6 ANOVA Analysis
4.7.3 Correlation

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-0.127</td>
<td>0.223</td>
<td>-5.56</td>
</tr>
<tr>
<td></td>
<td>Loan Portfolio</td>
<td>-0.331</td>
<td>0.000</td>
<td>-0.024</td>
</tr>
<tr>
<td></td>
<td>Number of Branches</td>
<td>-0.272</td>
<td>0.000</td>
<td>-0.021</td>
</tr>
<tr>
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<td>Number of Employees</td>
<td>-0.132</td>
<td>0.000</td>
<td>0.043</td>
</tr>
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</table>

Table 4.7: Correlation Analysis

As indicated in Table 4.7 the study intended to establish the multiple regression equation

The multiple regression model was:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon \]

Where; \( Y \) = financial performance; \( \beta_0 \) = Constant Term; \( \beta_1, \beta_2, \) and \( \beta_3 \) = Beta coefficients; \( X_1 \) = loan portfolio; \( X_2 \) = number of microfinance branches; \( X_3 \) = number of employees; and \( \epsilon \) = Error term indicated in Table 4.7.
4.8 Chapter Summary
This section has presented the findings on the effects of financial innovation on the performance of microfinance institutions. The findings were based on the specific research objectives which was to determine the conditions that made it favourable for the financial innovations to take place, effects of financial innovation on performance and the role played by financial technology companies. This study covers the period 2011-2016 and the data analyzed has been obtained from the Central Bank of Kenya (CBK) and FinAccess reports. The next chapter will present the discussions, conclusion and recommendations of the study.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents forth the discussion conclusions and recommendations from the data analysis done in the previous chapter. In this chapter, the author intends to compare the findings to precious studies as outlined in the literature reviewed. This was done in line with the research objectives of the study.

5.2 Summary

The general objective of this study was to assess how financial innovations affect the performance of microfinance institution in Kenya. Specifically, the study sought to determine how loan portfolio, the number of microfinance bank branches and the number of employees affect the performance of the institutions with an aim of understanding some of the factors that caused the developments and the role financial technology companies play in the institutions. This study reviewed literature on the conditions that have made it favorable for financial innovations to thrive and its effect on the performance of microfinance institutions in Kenya.

The research problem was studied through descriptive survey design. The target population of the study was microfinance banks registered in Kenya by CBK. The period of the study was 2011 to 2016. This research utilized secondary data and the data was chosen because they are readily available and more effective for this study. Secondary data was collected from the microfinance bank annual reports. The data collected was analyzed using regression and correlation analysis. Data analysis was done using Microsoft Excel and SPSS.

The study sought to establish the drivers of financial innovation in microfinance institutions and the findings revealed that a few factors in the financial industry led to developments seen in the microfinance institutions. Factors such as financial inclusion inequalities, usage of bank accounts, mobile money enabling informal financial arrangements and bank lending not supporting inclusive growth are some of the causes that led to financial innovation as discussed in the literature review.
The research assessed the effect of loan portfolio, number of bank branches and number of employees on microfinance institutions and the findings revealed that there was a negative relationship between financial innovation and performance of microfinance institutions. The variables were measured against ROA and the analysis show that as the number of variables increased in years 2014 to 2016, the ROA fell drastically. The results also indicated that the independent variables selected can predict financial performance of microfinance institutions in Kenya. These variables could explain 96.1% of the variation in return on assets in the microfinance institutions (r squared =0.961). This means that the regression model had a strong explanatory power as only 3.9% of variation in return on assets was not explained by the model.

The study further established the role of financial innovation companies on microfinance institutions and the findings revealed that there was a positive relationship between the role played by fintech, in this case mobile money transfer and the performance on microfinance institutions in Kenya. The data analyzed was total number of mobile money transfer for years 2013 to 2016. The result showed the mobile money increased over the years. With all the thirteen microfinance institutions offering mobile money services, this can be attributed to the positive effect it has on the institutions and the customers.

5.3 Discussion

5.3.1 The Drivers of Financial Innovation in Microfinance Institutions in Kenya

To analyze the first objective, the study sought to establish the causes of financial innovation in microfinance institutions and the finding revealed four factors that led to this development in the financial sector. Inequalities in financial inclusion, bank account usage, informal financial arrangements and bank lending not supporting inclusive growth are the main reasons for financial innovations.

Innovations in delivery channels such as agent banking, mobile phone money transfer services, and microfinance banks requirements are needed to reach out the unbanked and underserved. The poor in the rural households had been excluded financially resulting to 70% of worldwide poverty. The finding revealed that over the years more people have accessed financial services in Kenya as the financial inclusion access in Kenya has increased by 50% resulting to 75.3% of Kenyans being formally included by 2016. Institutions such as KWFT targeting women have made it possible for women to be
financially included. With some MFIs offering products such as agri-business loans and clean and renewable energy loans to those in the rural, the rural-urban gap financial inclusion gap has reduced over the years. Institutions such as Uwezo MFB empowers low income earners through provision of sustainable financial services and this has resulted to the poor being able to access financial services for their day to day activities and hence being formally included. Financial inclusion in Kenya has increased due effective financial services through technology in mobile telephones. Prevalence of mobile telephones has been recorded to be three times the number of bank account holders.

Results from the analysis showed that the rate of financial inclusion has increased over the years since 2009 to 2016. In 2009 only 21% were included but in seven years the figure has doubled. This was caused by the introduction of various financial providers which include microfinance institution that served the needs of the wider population. Figure 4.1 show the inclusion trend from year 2011 to 2016.

The research indicated that people with bank accounts accessed their accounts according to usage: high use, medium use, low use and dormant. Worldwide, 15% adults with accounts have dormant accounts because they had not made any deposit or withdrawal for a period of 12 months. The findings revealed that in 2016 banks had highest number of accounts that were opened and left inactive at a rate of 22.3% while that of MFI was at 2.4%. This can be attributed to bank account users accessing their accounts less often as compared to mobile and informal accounts that people use frequently on a day to day activities. Banks have the highest levels of closure while mobile money has the least. In order of least level of dormancy, MFIs are second after mobile money. This means that MFIs have come up with financial services that enable their client to access finance in a more effective and efficient way.

Mobile money accounts have increased in the last seven years. The research stated that more than 60% of mobile users will be using mobile applications at least once a month to access financial services (PWC, 2017). Mobile money service has been the leading financial innovation in Kenya serving a large population. MFIs have integrated this service to enable them to serve a various people with different needs with 100% of the registered MFBs providing the service. A 2015 report by board of governors of the federal reserve system. Mobile money services have become universal allowing consumers to obtain financial account information and conduct transactions with their financial
institution. Additionally, clients can make payments, transfer money, or pay for goods and services. Over the years, mobile services have been used by various financial institutions including MFIs and the types of services offered continue to change due to evolving technology and availability of options leading to consumers accepting mobile financial services has risen. Mobile money is convenient especially to those in the rural settings as they do not have to travel long distances to visit a financial institution. However, other factors may hinder this development because some people feel their mobile privacy is being interfered with. Mobile money users use the service to check account balance or transaction enquires, transfer money between accounts, and receiving alert from the financial institutions.

The study showed that most people and small businesses in emerging economies did not fully participate in the formal financial system. They transacted exclusively in cash, had no safe way to save or invest money, and did not have access to credit beyond informal lenders and personal networks. Even those with financial accounts had only limited product choice and face high fees. The findings revealed that bank lending did not support inclusive growth hence people sort other alternatives such as group lending as a way of supporting each other financially. People use groups for different reasons as shown in figure 4.4. 66.8% of users involve in groups for ROSCA function which means all members contribute some amount and given money in turns. Only 12.6% use them for investment. Groups are involved in different roles which include saving, borrowing, investment and social functions, usually within a single group. The 2016 FinAccess reported that two thirds of users use groups for ROSCA functions. ASCA function where member have flexible access to liquidity through borrowing and saving and can return on capital through interest payments and welfare functions are also popular.

While most users (59%) have only one group, 41% have two or more. The report also indicated that nearly 45% of groups are legally registered and 37% have bank accounts linking them to the formal sector. The groups have features which support transparency and accountability such as written records of financial transactions (79%) and elected officials (68%). However, close to 13% of users lost money in groups in the 2016 which is a rate higher than users of users of other financial services. This development has led to the formation of some microfinance institutions and advancement in financial services as lending remained to be the leading role of MFIs. Innovations in lending such as P2P
lending has made Kenya become one of the leading peer to peer business lending markets.

The findings showed that some MFIs such as Sumac Microfinance Bank opened doors to the public to help entrepreneurs who needed financial assistance and could not get loans from the banks. This indicates that microfinance institutions do support inclusive growth by specializing in providing financial services to individuals, Micro, Small and Medium businesses through provision of working capital, facilitating technological improvements and business innovations among their clients.

5.3.2 The Effects of Financial Innovation on the Performance of Microfinance Institutions

To assess the effect of financial innovation on microfinance institutions, the research sought to establish how loan portfolio, number of microfinance branches and number of employees affected performance by using the return on assets as a measure of performance. According to Njoroge (2013), loan portfolio measures the depth of outreach and directly affects financial performance of MFIs. Return on assets is used as a financial ratio that shows the percentage of profits a company earns in relation to its overall resources. It is calculated as net income divided by total assets. The size of loan depicts cost efficiency, therefore the higher the loan size, the higher the cost efficiency and this affects return on assets. Mugo (2012) stated that the performance of MFI is related to the number of loans given to their consumers. The findings revealed that loan portfolio has been on the increasing trend over the six years while the ROA did not have a stable trend as seen in figure 4.5. ROA was stable in 2011 and 2012 even though there was slight increase in loan portfolio. As the loan portfolio increased in 2013 and 2014, ROA remained the same. After 2014 there was a negative relationship between loan portfolio and ROA. The ROA dropped to -1% in 2016.

Negative relationship and other factors such as lack of willingness to pay loans, diversion of funds by borrowers, wilful negligence, and improper appraisal by credit officers, exchange rate depreciation, loan shortages, delay in time of loan delivery, small farm size, high interest rate, age of farmers, poor supervision, and non-profitability of farm enterprises can lead to loan default. Additionally, improper selection of an entrepreneur, deficient analysis of project viability, inadequacy of collateral security/equitable mortgage
against loans, unrealistic terms and schedule of repayment, lack of follow up measures, natural calamities and poor management of loans processes by MFIs have also been cited as causes of loan default.

To reduce loan defaults, MFIs need to design financial products that inherently reduce the risk of default, become more client-focused, have sound management practice and effective supervision to avoid non-performing loans (Owusu et al. 2015). Naceur and Goiaed (2001) demonstrated that for a bank to perform at its best, it should maintain a high level of deposit account relative to their assets. An increase in total deposits to total assets means adding the funds available to use by the bank in different profitable ways such as investments and lending activities. A related study in Kenya conducted by Kumar (2010) established that there was a very strong correlation between deposits of financial institutions and performances.

The study revealed that from tear 2011 to 2014, customer deposits were positively related to ROA then a negative relationship in 2016 with the ratio going down to -1. From the findings, the negative relationship can be associated with the microfinance institutions not having major growth in the loan book compared to 2015 because of the MFIs not offering more loans to recover and reduce the outstanding non-performing loans. Therefore, the MFIs ought to put in place effective strategies to attract deposits to have better ROA in the future and thus improve performance.

According to a report by Federal Reserve Bank (2015), technology has provided banks with alternative distribution channels such as ATMs and call centres that have enabled customers to access financial product and services. Internet banking has made it possible for customers to access their accounts electronically and make other transactions without necessarily visiting a physical office. However, the findings showed that the number of bank branches has been increasing during the period of study as seen in figure 4.7.

The number of microfinance bank has risen from 60 branches in 2011 to 107 in 2016. The findings revealed that ROA increased in 2012 to 2013 as the number of branches increased, remained constant in 2013 and 2014 as the number of branches increased. There was a decline in ROA from 2014 to 2016 though the number of MFI branches increased. From these findings we can deduce that the slight increase in loan portfolio as shown in figure 4.5 led to an increase in loan loss leading to a fall in ROA.
The findings revealed that the number of employees has been increasing slightly from year 2011 to 2015. There was a slight decrease in 2016. The decrease can be attributed to banks laying off staff and change of jobs. New digital technologies have changed how finance departments have traditionally operated, enabling greater productivity, and a new role within organizations. As more and more tasks are automated some employee roles will not be required in the financial sector.

The study further revealed that ROA increased in 2012 to 2013 as the number of employees increased, remained constant in 2013 and 2014 as the number of branches increased. There was a decline in ROA from 2014 to 2015 though the number of employees was on slightly increasing trend. The findings establish that there is improved efficiency when the number of employees increase tremendously as seen years 2012. In 2016 the number of employees and ROA decreased, this can be as a result of automated processes and unpaid loans and thus affecting performance.

Innovation could lead to an increase in credit availability to formerly rationed small businesses for whom information production becomes revenue and expenditure also enable businesses to demonstrate their credit quality to lenders. Combined with the deposits gathered from newly included individuals, McKinsey calculates that digital finance could unlock an additional $2.1 trillion of loans to individuals and MSMEs, helping productive but credit-constrained businesses expand operations and invest in new technologies (McKinsey, 2015). Sound financial systems can also foster innovation and entrepreneurship through risk diversification (King and Levine, 1993).

5.3.3 The Role of Financial Technology Companies in MFIs in Kenya

The study sought to establish the role of financial innovation companies on microfinance institutions and the findings revealed that there was a positive relationship between the role played by fintech, in this case mobile money transfer and the performance on microfinance institutions in Kenya. This can be attributed to the fact that all the thirteen MFIs provide mobile banking services.

The introduction of mobile money marked the beginning of financial technology companies in Kenya. Mobile technology has done well over the years as most financial institution have embraced it. The findings revealed that mobile money transfers in Kenya has been on an increasing trend from 2013 to 2016 as shown in figure 4.14.
Several factors have made it possible for financial innovations: In the first place, client inclinations, especially among millennials and with respect to convenience, speed and cost of financial services are very critical. In addition, demand forces of economic development are driving reception of FinTech in rapidly developing emerging markets and frontier economies. Second, evolving technology, particularly that related to the internet, big data, mobile technology, and computing power, have made it possible for advancements in the financial sector.

Lastly, business opportunity may have opened in places where traditional financial sectors have downsized exercises, presenting intermediation by non-traditional non-financial players. For instance, higher capital necessities and post-crisis deleveraging may have changed the loaning conduct of some bank (Blythin and Cooten, 2017). Equally, the research revealed that people in towns and cities will not waste productive time in lines at the bank and rural households could forgo trips to nearby towns and spend more time on income-generating activities.

A survey by FinAccess showed that 5% of Kenyans send or receive remittances internationally, many more are using mobile financial services for international remittances compared to 2013. While the dominant use of mobile financial services is still for interpersonal transfers, 42% of consumers use these services to make livelihood payments, interact with their financial institutions and pay for goods and services. While drought was a major shock for rural households, urban households were more likely to be affected by the death of a relative or the loss/ destruction of property. Over 40% of Kenyan households used their savings to cope with major shocks. A considerably higher number of households in urban areas sold their assets or sought help from social networks. In 2016, the proportion of Kenyans reporting that they sometimes or often go without food was substantially lower compared to 2013 (FSD, 2016).

Kumar (2010) noted that financial services can lower their cost through mobile banking hence making it efficient for microfinance institutions to adopt it. The level of security of mobile money has led to great trust among individuals by giving them the confidence and an independent place to access funds that is private and inaccessible to other people.
M-banking for financial institutions has improved customer service. A study by Kumar (2010) stated that SMEP microfinance improved customer service once it linked into the M-PESA platform. Before the introduction of m-pesa, a SMEP customer underwent a long process to receive the services. Mobile phones have provided a range of financial services and information to various people irrespective of their level of skill. M-pesa application is simple and hence making it easy for many to use the services (Nyaoma, 2010). M-Pesa customers just need to understand the sending, receiving and balance concept to conveniently use the mobile banking services offered by M-Pesa and other mobile banking services.

Development in financial services through the emergence of digital finance provides opportunities for new businesses and to the service providers by improving efficiency. Research done by McKinsey stated that a shift from cash to digital payments will help businesses save $400 billion yearly in direct cost (McKinsey, 2015). The internet has enabled service providers to use technology to satisfy the need of different consumer in the market, hence increasing their market share. Norris, Kersting, and Geneviève (2012) found that other things being equal, firms that have introduced a new process or product are more productive. The effect is quantitatively significant, with increases in productivity from innovation ranging from 16% to over 100%, depending on the sample and specification.

There has been increased competition as innovative electronic payment systems such as M-Pesa, Airtel Money, Yu Cash, Orange Money, MobiKash, M-Kesho, and Mshwari are introduced. Such interfaces render financial services provision more accessible for clients and cost efficient for financial institutions. Credit Reference Bureaus have reduced cost of doing business through technology resulting to building information capital, reduction in information search costs; and extend credit based on financial identity. This will change the collateral technology in use and reduce the costs of contracting loans and of lending rates. Growth is largely accredited to the financial Inclusion reforms and initiatives, innovations especially technological led innovations and financial awareness initiatives (CBK, 2013).

From the analysis, it can be concluded that financial institutions and their clients have accepted technology. This has made it possible for MFIs to reach the unbanked providing them with more affordable payment systems.
5.4 Conclusion

5.4.1 The Drivers of Financial Innovation in Microfinance Institutions in Kenya

Africa’s financial system has undergone quite some transformation over the past decade. Behind increases in headline indicators of financial deepening are more structural changes that affect not only financial systems themselves but have critical repercussions for the real economy. In responding to these changes, the Kenyan market has recently witnessed a host of changes in the financial sector because of changes in the legal, regulatory, and institutional framework. Fast changing technology has also greatly influenced access to financial services and increased channels through which financial services are provided.

The study concluded that there are factors in the financial industry which have led to the developments seen in the microfinance institutions. These factors include; majority of people being financially included, easily accessible accounts, introduction of mobile banking and lending that support inclusive growth. The study, also, concluded that microfinance institutions do support inclusive growth by specializing in providing financial services to individuals, Micro, Small and Medium Businesses through provision of working capital, facilitating technological improvements and business innovations among their clients.

5.4.2 The effects of Financial Innovations on the Performance of Microfinance Institutions in Kenya

A significant positive relationship exists between loan portfolio, number of bank branches, number of employees and performance of microfinance institutions in Kenya. However, the relationship becomes negative after a period of time because of unpaid loans. This has affected the way the institutions carry out their activities leading introduction of measures that help the institutions run effectively and efficiently. The MFIs need to keep a loan books and always update it. The study cannot be concluded without a mention on how innovations have led to job loss affecting those in the banking industry.
5.4.3 The Role Played by Financial Technology Companies in Microfinance Institutions in Kenya

The introduction of mobile banking, financial technology companies have led to great improvement in the microfinance institutions leading to improved performance. Customers have accepted technology making it possible for MFIs to reach the unbanked through the provision of more affordable payment systems.

5.5 Recommendations

5.5.1 Recommendations for Improvement

5.5.1.1 The Drivers of Financial Innovation in Microfinance Institutions in Kenya

The study found that factors such as financial inclusion inequalities, usage of bank accounts, mobile money enabling informal financial arrangements and bank lending not supporting inclusive growth are some of the causes that led to financial innovation in the financial sector. The study recommends that the financial institutions should ensure that they are flexible enough to accommodate changes in the future.

5.5.1.2 The Effects of Financial Innovations on the Performance of Microfinance Institutions in Kenya

The study established that there is a significant positive relationship between loan portfolio, financial innovations and performance of microfinance institutions in Kenya though it has been affected by people defaulting the loans making the relationship negative. The study recommends that microfinance institutions need to put measures to mitigate loan default for the institutions to have a continuous positive relationship between innovation and performance.

5.5.1.3 The Role Played by Financial Technology Companies in Microfinance Institutions in Kenya

Financial technology companies have led to an improvement in performance. This in turn helps customers to easily access funds making them financially included. The study recommends that, with the rapid developments in the financial sector, banks should invest in research and development to help them understand the fast-growing financial technology industry.
5.5.2 Recommendation for Further Studies

This study focused on financial innovation variables affecting performance of registered microfinance in Kenya with an aim of understanding the role that financial technology companies play in the financial sector. Further studies on these companies should be undertaken because that is the future for finance.
REFERENCES


Financial Stability Implications from fintech Supervisory and Regulatory Issues that Merit Authorities’ Attention. (2017), (June)


APPENDICES

APPENDIX I: MICROFINANCE INSTITUTIONS REGISTERED IN KENYA

<table>
<thead>
<tr>
<th>MFI</th>
<th>Market share as at December 2016</th>
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<tbody>
<tr>
<td>KWFT MFI</td>
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</tr>
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</tr>
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</tr>
<tr>
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</tr>
<tr>
<td>Century MFI</td>
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</tr>
<tr>
<td>U&amp;I MFI</td>
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<td><strong>Total</strong></td>
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Source: Central Bank of Kenya
APPENDIX II: Return on Assets for the Period 2011-2016

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Source: Central Bank of Kenya
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