THE EFFECT OF CREDIT RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN KENYA

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DECLARATION

This research project is my original work and has not been submitted to any other University or institution of higher learning for any academic award.

Sign……………………………………………….. Date…………………………

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This research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

To my family for the motivation and encouragement provided throughout the undertaking of this study. I am grateful to the almighty God for His blessings without which it would have been impossible to achieve.

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LIST OF ABBREVIATIONS

AMFI	-	Association of Microfinance Institutions
ANOVA	-	Analysis of Variance
BCBS	-	Basel Committee on Banking Supervision
CAR	-	Capital Adequacy Ratio
CBK	-	Central Bank of Kenya
CIS	-	Credit Information Sharing
GDP	-	Gross Domestic Product
IR	-	Interest Rate
HKIB	-	Hong Kong Institute of Bankers
KBRR	-	Kenya Banks Reference Rate
LR	-	Liquidity Risk
MFBS	-	Microfinance Banks
MFIs	-	Microfinance Institutions
MPT	-	Modern Portfolio Theory
NPL	-	Non-Performing Loans
NPLR	-	Non-Performing Loans Ratio
OSS	-	Operations Self-Sufficiency
PAR	-	Portfolio at Risk
ROA	-	Return on Assets
ROE	-	Return on Equity
SD	-	Standard Deviation
SPSS	-	Statistical Package for Social Sciences
VAR	-	Value at Risk

ABSTRACT

Credit risk is on an increasing rate is becoming an area of concern to many people and institutions in the lending business globally. This kind of exposure leads to instability and poor financial performance of financial institutions. Therefore, this research sought to evaluate the effect of credit risk management on the financial performance of DTMs and non-deposit taking MFIs in Kenya. The research design exploited descriptive research design in this research as it draws in a comprehensive analysis of credit risk management and its correlation with financial performance in micro finance institutions. Secondary data gathered from microfinance institutions yearly reports (2011- 2015) was utilized. The study population was 13 microfinance institutions licensed by CBK and 22 non-deposit taking MFIs, though data was attained from 27 MFIs. The data collected was subjected to a multiple regression analysis, correlation, and ANOVA. In the analysis, ROE was used as a profitability indicator whereas PAR 30 was a measure of credit risk. This study depicted that there is a considerable correlation involving financial performance and credit risk management. From the model, the ROE (Financial performance) was 10.676 when other factors (Credit risk, Liquidity risk and Interest rate risk) are held constant. A unit increase in credit risk holding other factors constant results in a 2.165 decrease in the return on equity (ROE). Additionally, a unit increase in liquidity risk results in a 0.224 increase in the return on equity other factors held constant. Finally, from the model, when other factors are held constant, (Credit Risk and Liquidity risk), a unit increase in the central bank of Kenya interest rates results in a decrease in the ROE of the microfinance institutions by 0.518. The credit risk and interest risk were the most significant variables as their p-values were less than 0.05. The study recommends that the Mfis in Kenya must pay constant attention to credit risk being a major risk to NPLs. Secondly; CBK needs to come up with strong regulations on the unregulated non-deposit making MFIs. Thirdly, the regulators must come up with adequate capital adequacy requirements to shield the MFIs from financial risks. Further research needs to be done on the effects of absence of regulations on the MFIs in Kenya.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The economic crisis that occurred in 2007 and 2008 along with the credit crunch placed credit risk management into the regulatory focus. Subsequently, supervisory bodies instigated more transparency. This called for financial institutions in the lending business to have comprehensive knowledge of their borrowers (customers) and their associated credit risk (Lybeck, 2011). The new Basel III policies conveyed by BCBS present a superior regulatory burden for banks. The proposed Basel (IV) standards for capital reserves for banks will assist in the mitigation of risk in the occurrence of a financial crisis. It is probable to follow the third Basel accords and more rigorous capital requirements and superior financial disclosure will be required. These Basel accords impose certain minimum capital ratios as a guarantee that banks have a sturdy capital position to guard their solvency in the occurrence of a deep recession. The capital strength ensures that the banks carry on lending even in the depression stage of the business cycle.

To act in accordance with the most rigorous regulatory requirements, and take up the elevated capital costs of credit risk, as illustrated by Lybeck (2011) many financial institutions such as banks are refitting their approach to credit risk management. Nevertheless, banks with a perception that this is solely a conformity exercise are being shortsighted. Therefore, a superior credit risk analysis and management presents an opportunity for banks to improve the overall financial stability, and performance to retain a competitive advantage.

Based on existing literature, credit risk exposure continues to be a significant basis of problems for the lending institutions. This issue is even more imperative with reference to microfinance institutions in Kenya. As defined by Kairu (2009) microfinance is the process of providing monetary services to the unbanked or low-income earners. It also refers to the sustainable practice of offering those services. These institutions lend to low income earners, a group that is believed to be very risky in terms of exposure to credit risk. Therefore, credit risk can be defined as the likelihood of loss owing to a borrower's failure to meet his obligation (loan, line of credit) (HKIB, 2012).

1.1.1 Credit Risk Management

Stability and profitability of a financial institution depends solely on the credit management practices in that institution while poor performance is attributed to weakening credit quality. The management of credit risk can play down operational risk while locking in realistic income. The first step to managing credit risk is ensuring that the lending staff complies with the laid down industry lending standards and policies. Secondly, the financial institutions should ensure that their credit policies manage other areas of credit risk such as syndicated loans, evergreen loans just to name a few and there is minimal individual lending. An institution's board and management should ensure that there are set targets in terms of loan portfolio mix included in the yearly planning. Thus, the monitoring of a loan portfolio should be on a continual basis in order to establish that the current performance matches up to the projected expectations, and the intensity of risk stays within tolerable confines.

As defined by Gregory (2010) credit risk occurs when counterparty is not in a position or is unwilling to meet his or her obligation. It may be distinguished in terms of an actual default or declining of counterparty's credit quality. Owing to the fact that credit risk exposure goes on as the foremost basis of tribulations in financial institutions globally, these institutions draw constructive lessons from these past occurrences. Financial institutions as an overview should have a keen responsiveness of the need to recognize, determine, observe and manage credit risk. Furthermore, these institutions should ensure that their capital is sufficient to counter these risks as well as ensure superior compensation for the risks incurred. The Basel Committee on Banking Supervision present the basis that financial institutions worldwide can uphold sound practices for the management of credit risk. Though most of the principles in the Basel accords are applicable in business of lending, it is advisable that they are utilized in all activities where credit risk is present.

One of the major assets of a MFI is the loan portfolio and its quality is a reflection of loan delinquency, establishes projected income and its capacity to augment its outreach, and services to existing customers (Ledgerwood, Earne & Nelson, 2013). Portfolio at risk over 30 days and Non Performing loans ratio (NPLR) are the key measures of portfolio quality. The performance of a loan portfolio is assessed in terms of the returns generated from the different loan products; which is a factor of the loans financed and the outlay of advancing them. PAR30 may include refinanced, restructured, evergreen, or any other adjusted loans. Most of the loans advanced by MFIs are deemed high risk for the fact that they do not have collateral and are frequently advanced to a more susceptible and low-

income individuals. Regardless of this fact, the repayment rate on MFI loans has in the past proven strong.

Therefore, PAR30 as well as non-performing loan ratios are subjective measures of how MFIs manage to generate revenue from their assets. As illustrated by Ledgerwood et al., (2013) these variables should generally be employed in the evaluation of the general financial performance, steadiness, as well as health of MFIs over a period, in addition to comparing similar institutions in the same industry.

1.1.2   Financial Performance

As defined by Gibson (2012), financial performance may be referred to as the extent to which financial goals and objectives of a financial institution have been accomplished or are being attained. It is a process of matching up the revenue generated to the institution's set policies. It is a key measure for assessing the financial health of a particular organization within the set time.

Several financial institutions to measure their financial stability and performance utilize profitability ratios. These ratios are key indicators of credit analysis in most banks as well as MFIs, as they are linked to the results that are attributable to the performance of management (Gibson, 2012). Regularly used ratios are Return of equity as well as return on assets. The superiority level of return on equity should be at least 15% and 30%, for Return on Assets; it should be at least 1%. ROE is a significant indicator in measuring profitability, consequentially, financial performance. Further, ROE evaluates the efficiency of MFIs illustrating the level at which MFIs reinvest their earnings to generate

their projected future revenue. As defined by Öttker-Robe and Podpiera (2010), ROE is measured by dividing a corporation's net annual income after tax by shareholder equity. It establishes the revenue derived from equity. An increase in ROE might indicate that an institution's revenue is on the rise without necessarily adding more capital. Thus, a rise on return on equity as well as return on assets indicates that the institution is financially stable. A superior return on equity or return on assets indicate enhanced revenue projection for a MFI expansion and pliability to shocks, and thus leads to lower credit risk (Öttker-Robe & Podpiera, 2010).

As illustrated by the Kenya Financial report 2014 the Kenyan financial sector has progressed considerably in terms of the overall Gross Domestic Product (GDP) highlighting the stability of the sector (CBK, 2015). The industry's assets increased to 89.52% of GDP in December 2014 as compared to the previous year 85.9%. Further, the Market Capitalization for all equities trading at the Nairobi Securities Exchange accounted for 42.93% of GDP as at December 2014 weighed against 40.60% the previous year. The Bond market accounted for 9.25% of the GDP in 2014 contrasting the previous year's 9.56%. Consequentially, by evaluating the sub sector contribution, the Banking sub sector assets accounted for 60.87% percent of the state's nominal GDP as at December 2014. Further, the Pension sub sector input was 14% of the GDP, the Insurance sub sector 7.96%, SACCOs 5.63% and lastly, the Microfinance banks 1.06% (CBK, 2015).

Thus, it can be concluded that the financial stability and performance of MFIs affects the overall stability of the Kenya's financial sector. Gashayie and Singh (2015) argue that it is better not to have MFIs than have financially unstable MFIs, thus, illustrating the importance of financial stability of MFIs. Some of the MFIs are donor funded or operate on soft loans. However, when an MFI is financially stable, it continues its processes without drawing funds from these resources. According to Gibson (2012), a MFI is said to be financially stable when its operating costs and expenses are fully covered by its operating income Thus, if the non-performing loans and portfolio at risk escalates, the stability of the microfinance is susceptible. CBK lending interest rates, repayment rate, and portfolio quality are key determinants in measuring the financial stability and performance of MFIs.

1.1.3 Credit Risk Management and Financial Performance

Likelihood of counterparty defaulting on his or her obligations is referred to as default risk. This brings about deterioration of the credit quality deteriorates or else there is an increase in default risk. As stated by Gregory (2010), it is difficult to evaluate the extent of credit risk since information on non-payment and resurgence rates are not wide-ranging. As illustrated by Otieno and Nyagol (2016), the microfinance industry is on the rise and gaining significance in the global financial sector. In their study, there were over a thousand microfinance institutions at the end of year 2010 with a projected borrower base of around two hundred million and an outstanding portfolio in excess of forty four billion dollars. The growth of borrowers stood at 12% from 2003 to 2008 and a portfolio outstanding 34%. The greatest growth rate in terms of borrowers was seen in Asia. North

and Sub-Saharan Africa, as well as the Middle East, recorded the slowest growth. Latin America takes the lead with a portfolio in excess of $16 billion or 36% of the overall worldwide portfolio; though, South Asia leads in terms of global borrower base accounting for 50%.

Credit risk has been cited to be and continue to be an impediment in the performance and growth of this very important sector. In Kenya, the Microfinance industry over the years experienced growth and risk management challenges that brought increasing calls for regulation and hence the enactment of microfinance act 2006 and Deposit Taking Microfinance Regulations of 2008. A sound Microfinance banking sub sector is vital for economic development as the sector supports low end entrepreneurs operating SMEs that form the bulk of Kenyan economy.

In Kenya, the microfinance banking sub sector has been faced with risk management challenges. This necessitated the adoption of the Risk Based Supervision approach of supervising Microfinance banks in 2010. Additionally Credit Information Sharing (CIS) feature was extended to Microfinance banks (MFBs) to check on credit default. Despite these efforts, most MFBs continue to record negative growth regardless of amplified number of Microfinance bank licenses being established. The level of profitability and stability of the sector dropped significantly with ROE and ROA reported at 8% and 1% respectively. Non-performing loans increased by 6.9 percent and Risk coverage ratio shows a worrying negative trend. The loan loss reserve ratio coverage of portfolio stood at only 2.1% and risk coverage ratio showing a worrying negative trend. As stated by

CBK (2015) the value of gross NPLs increased by 6.9% from 95.1 billion Kenyan shillings in March 2014 to 101.7 billion Kenyan shillings in June 2014. The asset quality declined from 2.0 percent to 4.1 when evaluated as a proportion of aggregate NPLs to total loans in the banking segment. This establishes a correlation involving credit risk management approaches employed in relation to financial performance in the Kenyan Microfinance industry.

1.1.4 Microfinance Institutions in Kenya

As illustrated by Aduda and Kalunda (2012), Kenya is known as one of the African countries at the forefront in the discovery of the significance of MFIs as a poverty eradication tool thus more efforts have been directed in the development and promotion of the MFI sector. Microfinance industry in Kenya has evolved and is carried out in diverse institutional forms, which include the semi formal, formal and non-formal providers (Muriuki, Maru, & Namusonge, 2015). The formal institutions include commercial banks; Credit only MFIS, Deposit taking microfinance banks, semi formal include co-operative societies, NGOs. Further, in-formal financial institutions include Rating Savings and Credit Association (ROSCAs), and Accumulating Saving and Credit Associations (ASCAs). (Ayele, 2015)

 Microfinance has evolved as an economic development approach that assist SMEs, the poor, and households that cannot access the more institutionalized monetary system, in mustering savings, and acquiring access to financial services (Kinde, 2012). Various MFIs have come up to bridge the gap for the unsatisfied demand for financial services by small enterprises and low-income earners in Kenya. These MFIs includes microfinance

banks, Credit only MFIs, Commercial Banks focusing on microfinance, Developmental Institutions, Insurance Companies (micro-insurance), SACCOs and Wholesale MFI lenders. The establishment and registration of Association of Microfinance Institutions (AMFI) in 1999 under the Societies Act was to operate as an oversight association for the MFIs doing business in Kenya. AMFI's major objective is to promote expansion and progress of Microfinance institutions by encouraging well-organized as well as efficient presentation of services.

In relation to the performance of MFIs, AMFI report (2013) indicated a gross portfolio increase in 2012 because of the raise of interest rates on loans in the perspective of elevated inflation. The report also indicates that profitability and sustainability levels of the sector dropped dramatically because of high operating costs that resulted from expensive lending rates and high-risk exposure. In addition, Operations self-sufficiency (OSS) decreased in the year 2012 and the decrease was because of decreased performance of the Deposit taking microfinance as their Operations self-sufficiency dropped from 114% to 104% as of December 2011. Further, higher operating costs led to decreased levels of efficiency and profitability. The funding costs increased to 8.6% while operating costs shot up to 26.7%. In terms of operational costs associated with staffing ration increased to 53.3 percent as more MFI operation called for more field staff. This shows that on overall, the operational self-sufficiency and sustainability of microfinance institutions in Kenya have been decreasing over the years (AMFI, 2013).

1.2 Research Problem

The asset quality formerly known as portfolio quality (Ledgerwood et al., 2013) is still a key measure of financial performance and stability for Microfinance institutions. Currently, MFIs continue to increase their products in terms of deposits provision, insurance just to mention a few. Therefore, the loan portfolio is still viewed as a key element of a MFI asset base. For that reason, the quality of the assets continues to be a major gauge of a microfinance financial feasibility. The effectiveness of credit risk management of MFIs largely dictates their success because these institutions generate their earnings from interest achieved on loans advanced. The Central Bank Annual Supervision Report (2014) highlighted a soaring rate of credit risk because of the increasing rate of NPLs in MFI's. This kind of a drift threatens the stability, viability, and sustainability of the MFIs. Whilst many studies that have been carried out by researchers on the causes of poor loan performance and their effects on the wide-reaching banking crises in Europe, Asia and some parts in Africa, there have not been detailed studies on the outcome of credit risk management on the Microfinance industry's financial performance.

Poor credit-risk rating, analysis and modeling result in financial instability. Most of the financially stable MFIs have maintained far above the ground levels of loan recovery rates. These recovery ratios are because of donor funding and funding agencies used in the expansion of their operations (Ledgerwood et al., 2013). Regardless of the fact that these financially stable MFIs maintain their credit risks within preferred levels, volatility of their portfolio at- risk (PAR30) ratios create bigger challenges. The sources of these

challenges include increased competition in the market, product diversification of long-term structures, increased operations, move to individual lending, expansion and efforts to intensify the outreach. Credit risk management practices help MFIs reduce their exposure to credit risks, and enhance their ability to compete in the market with other well-established financial institutions like banks.

Studies have been done to establish the outcome of credit risk management of DTMs as well as commercial banks performance. For instance, Kisala (2014) evaluated credit risk management practices in relation to loan performance of MFIs in Nairobi. Korir (2014) investigated the correlation of credit risk management in regards to the financial performance of DTMs licensed by the Central Bank in Kenya. Magnifique (2013) evaluated the link of credit risk management in regards to financial performance of profit-making banks in Rwanda. Murage (2014) carried out a study on the relationship of credit risk on the corporate liquidity of DTMs in Kenya. However, these studies do not factor in the non-deposit taking MFIs whose number has been on the rise in the recent past. To the researchers' knowledge, there is no known study carried out on the relationship of credit risk management on non-deposit taking MFIs financial performance in Kenya. This study tries to close this gap of knowledge by examining the correlation of these two variables on both deposit and non-deposit taking MFIs in the Kenyan context.

1.3   Research Objective

The rationale of this study is to institute the correlation of credit risk management on MFIs in Kenya in terms of their financial performance.

1.4   Value of the Study

The results of this study will be crucial in the management of Microfinance institutions in Kenya as it will unearth the effect of credit risk management on financial performance and take on suitable credit risk analysis procedures to reduce the level of nonperforming loans and improve financial performance and stability. The study will also present an insight on superlative credit risk analysis and management approaches Microfinance Institutions ought to implement in order to efficiently control and augment their financial performance.

This study will be essential for the players in the Microfinance industry, as it will present insights on the best credit risk management practices and approaches that should be implemented to cut down the incidence of nonperforming loans as well as improve portfolio at risk performance. The study will be helpful to the government in the policy making process vis-à-vis the loan requirements along with the regulation of Microfinance institutions. The study will also avail knowledge to the policy makers on the best practices that ought to be adopted and implemented to reduce the poor performance of loans. This study will consequently act as a guide in taking on effectual credit risk management procedures by MFIs in mitigating the occurrence of defaults. Finally, the study will complement the existing literature on credit risk management practice that has shown the effects of credit risk in the management of portfolios of Microfinance institutions.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

As illustrated in this section, previous research work has been analyzed in order of establishing the correlation involving credit risk management and financial performance of MFIs. Issues on diverse theories of credit risk have also been vitally analyzed.

2.2   Theoretical Review

The theoretical framework of a thesis identify with the set of concepts, descriptions, and suggestions that relay to the research problem. It can be termed as the basis on which the whole research project is founded. Therefore, a theoretical framework identifies and defines the indispensable variables that are significant to the problem and consequently illustrate and explicate the interrelationships among these variables. This framework acts as a guide in determining the factors that will be evaluated and the statistical association the study will analyze.

2.2.1   Portfolio Theory

The Portfolio Theory often described as modern portfolio theory. For a long time financial institutions have been faced with credit defaults. Having been pioneered by Harry Markowitz in 1952, the Modern portfolio theory is widely used in the banking sector as well as the MFIs. Most of the MFIs are using the value at risk along with portfolio at risk to handle exposure brought about by interest rate and market dynamics. This theory lets investors assess the expected risk and return in their investment portfolios (Wong, 2013).

MPT is a refined investment approach that has turned out to be concept financial institutions and investors build their asset portfolios. Markowitz quantified exposure and demonstrated quantitatively the reduction of risk by portfolio diversification thus increasing return on investment for investors. Modern Portfolio Theory allows investors to project the risk exposure that they face as well as the expected return by using a statistical measure for their asset portfolios. Markowitz (1952) illustrated on how to merge assets to come up with efficiently diversified portfolios. This theory established that most investors were unsuccessful in accounting appropriately the lofty correlation between security incomes. The theory suggests that a portfolio's exposure can be abridged and the projected rate of return amplified, whilst securities with divergent value actions are pooled together. Markowitz concluded that diversification decreases exposure if securities are pooled together, and the prices of these securities shift inversely, or at dissimilar period, in regards to each other.

This theory helps in examining the relationship between Portfolio at risk and financial stability and performance. It considers how diversification of financial products minimizes credit risk hence improving on financial performance.

2.2.2 Value at Risk Theory

This theory is employed in estimating the likelihood of portfolio losses based on the arithmetical investigations of past price drifts and unpredictability. Banks in addition to investment firms usually use VaR as it has the ability to quantify risk while it occurs. It is an important consideration for firms when making trading and hedging decisions

(Kaplanski & Levy, 2013). Value at Risk can be measured using three variables namely, the sum of potential loss, the probability of that sum of loss, and the time period.

The relevance of this theory to this study is that is aids in quantifying credit risk arising from the non-performing loans and portfolios at risk in relation to financial stability of MFIs. This theory also aids in identifying the relevant risk factors affecting the various portfolios of MFIs.

2.2.3 Liquidity Risk Theory

Liquidity risk is a major exposure that precedes any relentless market catastrophe. It is argued that it is the definitive indicator that leads to the explosion of credit risks in addition to market risks, and it is referred to as the means, which modifies remote loss dealings into widespread collapses of financial institutions. The unmatched crisis in the United States mortgage market in 2007 makes no exception. Acerbi and Scandolo (2007) depicts that any financial institution should be in a position to classify as well as categorize the liquidity risk to which it is exposed. In the case of microfinance institutions, their liquidity requirements along with the sources of liquidity on hand to convene these requirements rely extensively on the institutions dealings, product portfolio, cash flows reports as well as well as their balance sheet makeup. Therefore, it is required of any financial institution to evaluate its liquidity position to avoid a declining effect on its earnings and capital.

The relevance of this theory to this study is that, it aids in quantifying the liquidity risk arising from non-performing loans and portfolios at risk consequentially affecting the

financial stability and performance of MFIs. This theory also aids in identifying the relevant changes in revenue and capital affecting the overall stability of the MFIs.

2.3 Determinants of Financial Performance

The fiscal stability and profitability (performance) of financial institutions can be determined by either internal factors or external factors. Internal factors could be MFIs specific determinants while external factors are Industry specific determinants and macroeconomic determinants. These indicators include capital adequacy, liquidity and interest rate (Rahman & Mazlan, 2014).

2.3.1 Capital Adequacy

As a measure of financial stability of an institution, the percentage ratio its primary capital to its assets is employed. As set by Bank for International Settlements (BIS), the capital adequacy rule requires that banks must meet at least primary capital base equivalent to eight percent of their assets (Omondi, 2015). According to the Microfinance Act 2006, the CBK should determine the capital adequacy MFIs.

According to Gabilondo (2016), capital adequacy is said to be an essential element in the execution of prudential guidelines in financial institutions. It is a measure that illustrates the financial performance and soundness of any financial institution. It makes certain that these institutions are well protected in the occurrence of any risk. Further, capital adequacy ratio (CAR) evaluates the total a financial institution has reserved in comparison to the risk it is exposed to. Most banks are at an advantage because they have the financial muscle to comply with the laid down CBK prudential guidelines. This

ensures that they are in a position to maintain a realistic amount of risk. Deposit taking MFIs also have some level of risk protection as they are regulated by the CBK. It is unfortunate for the non-deposit taking MFIs in Kenya since there is no oversight body that ensures that there is adequate capital adequacy for these institutions. Most of them are faced with huge financial losses due to non-performing loans resulting to negative PAR30.

This ratio presents investors with a good understanding of the exposure a financial institution is acquiring with the equity they afford. Banks and MFIs incessantly take on risks in their course of doing business, thus more of their equity assets are faced with some level of risk exposure. Thus, there should be strong credit policies in place and risk mitigation procedures to ensure that they are in a position to overcome any sort of financial distress.

2.3.2   Return on Equity

As exemplified by Rahman and Mazlan (2014), ROE is a profitability ratio that highlights the capacity if an institution to generate revenue from its investors investments into the company. This is an important evaluation tool for possible investors for the reason that they would wish to evaluate how an institution will use their investment efficiently to generate net returns. Return on equity illustrates how an institution manages equity financing in funding its operations in order to grow the business.

ROE highlights how much profit an institution has generated measuring it against the holistic capital invested by its shareholders. Shareholder equity is computed by

subtracting total liabilities from total assets. ROE also establishes how well an institution performs in the industry it operates. A higher return on equity is highly encouraged. A high ROE indicates that an institution is in a position to generate more revenue internally. ROE is calculated by dividing net profits by average shareholders' equity. A higher ROE highlights how a financial institution can easily raise capital for growth and development.

2.3.3   Liquidity Risk

Liquidity problems affect several financial institutions such as the banks and MFIs. These issues affect an institution's earnings and capital and at a great extent may result in the collapse of the institution leading to insolvency. As illustrated by Acerbi and Scandolo (2007), during a liquidity crisis, a good number MFIs may borrow from the market at an extremely high rate. Consequentially, this leads to a decline in their earnings. Furthermore, the MFIs borrowing affect the debt to equity ratio making it difficult to maintain the capital structure.

As a result, MFIs should be in a position to assess their on and off balance sheet operations and other conditional exposures that may have an effect on their sources and uses of funds and the overall effect on the financial performance and stability.

MFIs should also differentiate and reflect on the tough links involving liquidity risk and the other kinds of exposure it is subjected to. These risks include interest rate and credit risk, which may influence their liquidity profile thus, affecting the overall financial stability of the MFIs.

2.3.4 Interest Rate Risk

This kind of risk exposure arises from the shift and unpredictability of interest rates. It occurs from disparity amid the lending time and closing time of loan repayments. The changes of interest rate in Kenya are largely determined by the CBK's KBRR rate that is pegged on the exchange rate and inflation rate (CBK, 2015). Any slight movement of KBRR rate causes a decline or increase in interest rates. Therefore, movements of interest rates affect the net interest income due to increase in NPLs, PAR as well as the MFIs reported earnings. Further, the changes affect the MFIs underlying economic value, that is: assets, liabilities, and interest-rate correlated agreements hence affecting their financial performance.

2.4 Empirical Review

Magnifique (2013) evaluated the link of credit risk management in regards to financial performance of profit-making banks in Rwanda. His research had four key goals in ascertaining the identification, analysis, and assessment of credit exposure, credit-scoring method, and risk supervision and their effect on commercial banks financial performance in Rwanda. A descriptive research design was used in carrying out this research with a sample size of eleven commercial banks. Using a questionnaire, primary data was collected for analysis. The findings of the study indicated that three key objectives played a major function in predicting the banks financial performance except for risk monitoring. Credit risk identification explained the productivity of these banks in Rwanda while scoring, analysis as well as assessment of credit risk explained the financial performance. However, this study took into account the correlation of credit risk

management in regards to the monetary performance of banks only, whose capital adequacy requirements are different from that of Microfinance institutions. Secondly, the study was carried out in Rwanda whereas the objective of this research is to evaluate the impact of credit risk management in MFIs on financial performance within the Kenyan context.

Kisala (2014) examined the relationship that exists between credit risk management on the loan performance of MFIs in Kenya. The researcher used a descriptive research design that involving an exhaustively analysis of credit risk management and its relationship with loan performance in micro finance institutions. A sample size of nine MFIs was used, however, both primary data and secondary data was collected from 5 microfinance institutions through questionnaires and annual reports (2007-2011). The researcher used ROE as a profitability indicator while CAR and NPL ratio as credit risk management pointers. The findings of the study pointed out that there is a major correlation involving credit risk management and loan performance. The findings of the research indicated that NPL and CAR do have a negative and comparatively significant effect on ROE. NPL ratio had a greater effect on ROE as compared to CAR. The study instituted that there is a correlation between credit risk management and microfinance institutions financial performance. This study however, focused on exclusively on deposit taking microfinance institutions only leaving out the non-deposit taking MFIs. Therefore, this study aims at focusing on both deposit and non-deposit taking MFIs with an aim of filling this research gap.

Korir (2014) assessed the outcome of credit risk management on the fiscal performance of DTMs that are licensed by the Central Bank. The researcher used a descriptive research design in his study that drawn in an exhaustively analysis of credit risk management and financial performance as the major variables. A sample size of nine Microfinances was used, however, both primary data and secondary data was collected from 6 microfinance institutions through questionnaires and annual reports (2011 - 2014). Return on asset (ROA) model was used as a profitability indicator while Default rate, cost per loan asset, and bad debt cost as credit risk management indicators. Using multiple regression analysis the key finding of the study was that cost per loan asset, and bad debt cost and default rate are major credit risk management indicators that have an inverse effect on financial performance of DTMs. This study however, focused exclusively on DTMs leaving out the non-deposit taking MFIs. Therefore, this study focuses on both deposit and non-deposit taking MFIs with an aim of filling this research gap.

Murage (2014) carried out a study on the relationship of credit risk on the corporate liquidity of DTMs in Kenya. The researcher using secondary data obtained from CBK and AMFI in Kenya using a sample size of 5 DTMs for a period of 2011-2013. Using correlation analysis, regression analysis, descriptive analysis and variance analysis the key findings pointed out that credit risk and debt to equity ratio had a positive correlation with corporate liquidity for DTMs. Additionally, portfolio to asset ratio, operating expense ratio and Portfolio at Risk had a negative correlation with corporate liquidity. Lastly, the study shows that weakening in the quality of the credit portfolio, very high

operational expenses and Portfolio at Risk may have a long term effect on the earnings or capital of a firm and thus adversely affecting the liquidity position. The intent of this research was to institute the connection between credit risk and DTMs corporate liquidity in the Kenyan context. The purpose of this research is to fill the gap by evaluating credit risk management and its outcome on financial performance of MFIs in Kenya.

2.5   Summary of Literature Review

While these studies have tried to institute the correlation involving credit risk management along with financial performance, most of these studies only examined the deposit taking MFIs leaving out the non-deposit taking MFIs whose number has been on the rise in Kenya. Secondly, these studies focused on credit risk management leaving out some of the specific impacts of credit risk management on MFIs' financial performance and stability.

2.6   Conceptual Framework

The framework spells out the correlation involving the Credit risk (independent variable), Liquidity risk (independent variable) and financial performance (Dependent variable). It also aims at showing the effect of interest rate volatility (Moderating variable) on the correspondence involving credit risk as well as financial performance amongst MFIs in Kenya.

Table 2.1: Conceptual Framework

Independent Variables   **Dependent Variable**

Credit Risk
▪ Portfolio at Risk 30

Liquidity Risk
▪ Liquidity Ratio

Interest Rate Volatility
(SD of CBK Lending Rate)

Financial Performance
▪ ROE
▪ Capital Adequacy
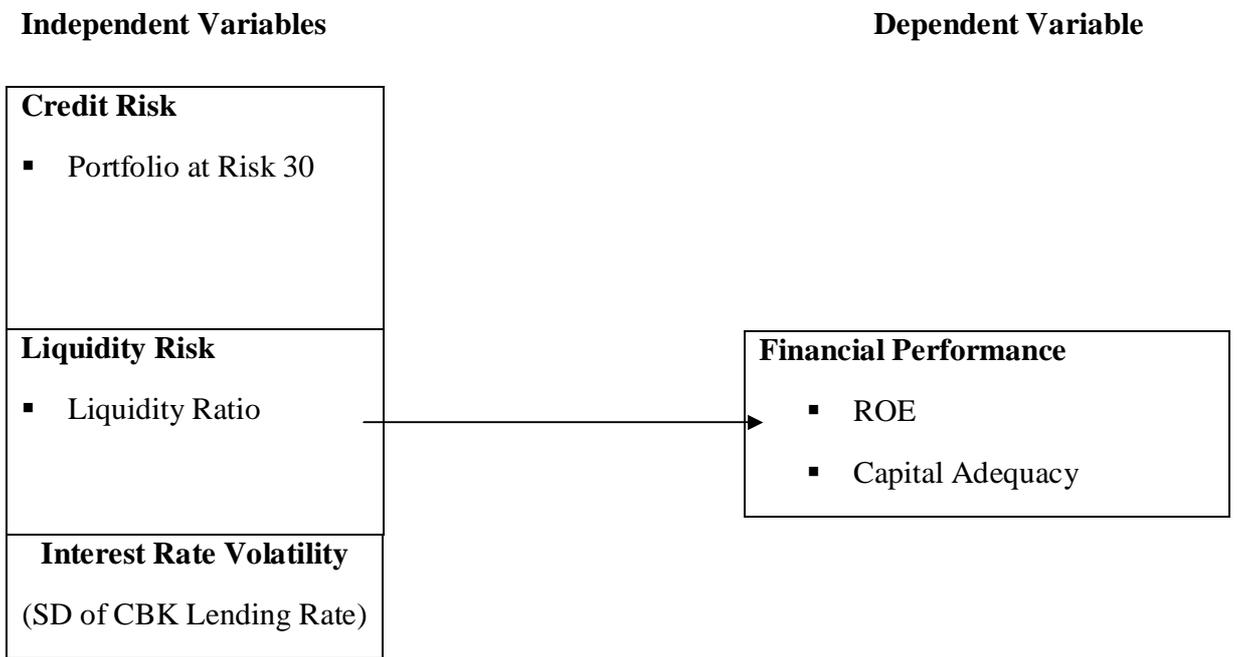
Source (Researcher, 2016)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1   Introduction

This section highlights the technique that was employed in conducting the study. It also spells out the approaches, sampling, research design, the population under evaluation, the sample size, the collection methods of facts, instruments, along with the analytical tools for data scrutiny and presentation.

3.2   The Research Design

A descriptive survey was used in obtaining information on the correlation between credit risk management and MFIs' financial performance in relation to the Kenyan microfinance industry. A descriptive research design was used in view of the fact that it presents acumen into the study issue by evaluating the variables. It is used to classify, estimate, predict, and examine associative correlations. This helps in presenting constructive and precise information to rejoin the queries that are founded on who, what, when, and how (Mitchell and Jolley, 2012)

3.3   Target Population

The population of the study consisted of 35 Microfinance institutions in Kenya through the period 2011 to 2015.

Table 3.1: Target Population

MFIs	Population
Deposit taking MFIs	13
Non-deposit taking MFIs	23
TOTAL	**35**

Source (AMFI report, 2015 & CBK, 2015)

3.4   Sampling Design and Sampling Technique

As defined by Cooper and Schindler (2007) a census is practical and essential when the population in question is undersized and the elements in the population size are diverse from each other. In an instance where the population is undersized and inconsistent, any sample picked may not be accurately expressive of the population from which it is picked. For this reason, the researcher found it appropriate to use the census method because the population was small and the institutions under study are easily accessible. The population was grouped into two; non-deposit taking and deposit taking MFIs. This method was beneficial for comparison purposes in relations to the impact of credit risk on the financial performance of these MFIs.

3.5   Data Collection Instruments

Data collection is a course of action of assembling empirical facts and statistics in pursuance of insights concerning a particular situation and answering the questions that instigate undertaking of a research (Healey, 2014). In this research, data was amassed from secondary sources which included the Microfinance's statistical information and financial statements for the period 2011 to 2015.

3.6   Data Analysis and Presentation

The facts gathered were evaluated using descriptive statistics with the aid of SPSS version 20. Descriptive statistics aids in summarizing the wide-ranging propensities in data, presenting a perceptive of how diverse scores might be, and providing insight into where one score stands in contrast with other scores (Healey, 2014). Pie charts, bar graphs, and tables were applied in presenting the data for easier analysis and assessment to achieve relevant conclusions and finding.

3.6.1   Empirical Model

A regression analysis was also employed with the aim of generating a regression output that was used in determining the effect of independent variables on the dependent variable. The study employed the multiple regression models shown below.

Model : Multiple Regression Model

$Y = \beta_0 + \beta_{CR} X_{CRit} + \beta_{LR} X_{LRit} + \beta_{IR} X_{IRit} + \ell i$

Where; Y is the dependent variable (Financial performance) measured using the Return on Equity (ROE), β_0 is a constant,

$\beta_{CR}, \beta_{LR}, \beta_{IR}$, are the regression coefficients

X_{CRLt}, X_{LRt} represents the independent variables while X_{IRit} represents the moderating variables where:

   X_{CRit} = Credit risk of MFIs at time t measured using PAR 30.

X_{LRit} = Liquidity Risk of MFIs at time t measured using the liquidity ratio of the individual MFIs

X_{IRit} = Interest Rate volatility at time t measured using the lending interest rates set by the central bank of Kenya

ℓi is the error term

i=number of MFIs (27) under study

t= time period (2011 – 2015)

The purpose of this model was to observe the correlation involving credit risk and financial performance of MFIs in Kenya. It took into account moderating variable (interest risk volatility) in illustrating the effect of the independent variables (credit risk and liquidity risk) on the dependent variable (financial performance). It was helpful in determining the extent to which interest rate volatility affected the link involving the independent variables and the dependent variable.

The research used 95% confidence level to test for the significance of the model variables i.e. at P-values =0.05

Table 3.2: Operationalization and Measurement of Variables

Variable	Type	Operationalisation	Measurement
Financial Performance (Y)	Dependent	Stability as established using the yearly financial returns on equity	Return on Equity (ROE)
Credit Risk	Independent	Focus is on the non-performing loans of MFIs from 2011 to 2015.	Portfolio at Risk (PAR 30)
Liquidity Risk	Independent	Focus is liquidity state of MFIs from 2011 to 2015	Liquidity Ratio (Current Ratio)
Lending Interest Rate Volatility	Moderating	Focus is on changes in market interest rates from 2011 to 2015	Standard Deviation of CBK Lending Rate

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1   Introduction

This section illustrates the findings obtained from the analysis of the secondary data using regression, correlation, and analysis of variance to establish the relationship of credit risk management in regards to the financial performance of MFIs both deposit taking and non-deposit taking in the Kenyan context.

4.2   Response Rate

The targeted population size was 35 MFIs, 13 licensed under the central bank of Kenya and 22 non-deposit taking MFIs. The research used a census where all the population was studied. A response rate of above 50% is deemed suitable for the purpose of adequate data analysis whereas 60% is good and above 70% is excellent. The response rate of this study stood at 77%, which indicate that the data gathered, was efficient in analysis and interpretation.

4.3   Descriptive Statistics

Table 4.1 below presents the descriptive statistics for the data set. Five variables namely financial performance, credit risk, interest rate spread, and liquidity risk of the 27 MFIs.

Table 4.1: Descriptive Statistics Table

Statistic	Financial Performance (Logs of ROE)	Credit Risk (%)	Liquidity Risk (Ratio)	Interest Risk (%)
N	81	81	81	81
Mean	-5.5358	7.4889	4.0289	10.9933
Median	4.1000	6.1000	1.2960	8.8300
Mode	.00	.00	.00	8.40[a]
Std. Deviation	58.12823	6.53439	11.81988	3.38903
Skewness	-4.847	1.681	6.544	.712
Std. Error of Skewness	.267	.267	.267	.267
Kurtosis	25.741	3.522	47.756	-1.519
Std. Error of Kurtosis	.529	.529	.529	.529
Minimum	-341.00	.00	.00	8.40
Maximum	48.70	30.80	96.00	15.75
a. Multiple modes exist. The smallest value is shown				

Source: Research Findings

The results from the findings showed that the financial performance as measured using the ROE had a mean of -5.5358 with a minimum of -341, a maximum of 48.70 and a standard deviation of 58.128. This implies that on average most MFIs in Kenya had poor financial performance during the study period. This is further manifested by huge minimum value of -341 and a high standard deviation of 58.128. This could possibly be because of the existence of many unregulated MFIs, over lending and poor recovery thus leading to losses. A positive maximum value of 48.70 indicates that some MFIs had good performance in the period under study. In terms of skewness and kurtosis, financial performance had a skewness of -4.847 and kurtosis of 25.741. This manifests a negatively skewed and a highly peaked distribution.

Credit risk as measured by PAR30 had a mean of 7.489, minimum of 0 and a maximum of 30.8 and a standard deviation of 6.534. This showed that on average, the PAR was 7.489. Some MFIs had a PAR as low as 0 and others as high as 30.80. There was less variability in PAR from one period to the other given the standard deviation of 6.534. The credit risk had a skewness of 1.681 and kurtosis of 3.522. This points to a positively skewed and a highly peaked distribution.

Liquidity risk as measured by liquidity gap had a mean of 4.029, minimum of 0 and a maximum of 96 and a standard deviation of 11.82. This showed that on average, the liquidity risk was 4.029. Some MFIs had a liquidity risk as low as 0 and others as high as 96. There was high variability in liquidity risk from one period to the other given the standard deviation of 11.82. The liquidity risk had a skewness of 6.544 and kurtosis of 47.76. This indicates a positively skewed and a highly peaked distribution.

Lastly, interest rate risk as measured using the CBK lending rates had a mean of 10.99, minimum of 8.40 and a maximum of 15.75 and a standard deviation of 3.389. This implies that on average, the interest rate risk was 10.99. It also implies that the interest rate risk among the MFIs were as low as 8.40 and as high as 15.75. There was a relatively low variability in interest rate risk during the study period as shown by the standard deviation of 3.389. In terms of skewness and kurtosis, interest rate risk had a skewness of 0.712 and a kurtosis of -1.519. This implies that the distribution was positively skewed with a lowly peaked distribution.

4.4 Correlation Matrix

Pearson Correlation analysis was employed to attain a 95% confidence level. The correlation analysis enabled the analysis of the relationship of credit risk, which has an important effect on financial performance of MFIs. The results are presented in the table below;

Table 4.2 : Correlation Matrix

Variable		Financial Performance	Credit Risk	Liquidity Risk	Interest Risk
Financial Performance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	81			
Credit Risk	Pearson Correlation	-.243*	1		
	Sig. (2-tailed)	.029			
	N	81	81		
Liquidity Risk	Pearson Correlation	.032	.041	1	
	Sig. (2-tailed)	.775	.718		
	N	81	81	81	
Interest Risk	Pearson Correlation	-.403*	.060	.108	1
	Sig. (2-tailed)	.034	.592	.336	
	N	81	81	81	81

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research findings

From the findings it can be concluded that there was a significant negative correlation between the financial performance (ROE) and the credit risk since the p-value was 0.029 (p<0.05). The correlation value obtained was -0.243. Secondly, a significant negative correlation exist between the interest rate risk and financial performance since a p-value

of 0.34 was obtained (p<0.05) with a negative correlation value of 0.403. Lastly, there was a positive insignificant correlation between financial performance and liquidity risk as shown by the results obtained. P value is 0.775 (p >0.05) with a correlation value of 0.32.

4.5   Linear Regression Analysis

The linear regression analysis method used in the study was the least squares method. The model of the study was;

$$Y = \beta_0 + \beta_{CR} X_{CRit} + \beta_{LR} X_{LRit} + \beta_{IR} X_{IRit} + \ell i$$

Where; Y is the dependent variable (Financial performance) measured using the Return on Equity (ROE) and β_0 is a constant, while $\beta_{CR}, \beta_{LR}, \beta_{IR}$, are the regression coefficients. X_{CRit} represent Credit risk of MFIs at time t, X_{LRit} represents Liquidity Risk of MFIs at time t measured using the liquidity gap of the individual MFIs while X_{IRit} represents the Interest Rate risk at time t measured using the lending interest rates set by the central bank of Kenya. ℓi is the error term.

Table 4.3 : Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.63[a]	.398	.317	.173663

a. Predictors: (Constant), Credit risk, Liquidity risk, Interest risk

b. Dependent variable: ROE

Source: Research findings

The model had a correlation value of 0.630, which manifests a good linear relationship between dependent and independent variables. The model had an R-square value of 0.398 with an adjusted value of 0.317; hence, the model was moderately strong. The R-square value of 0.317 implies that the independent variables explain 31.7% of the changes in financial performance of MFIs as measured by ROE.

Table 4.4: Analysis of Variance (ANOVA)

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	16006.684	1	16006.684	4.972	.029[b]
Residual	254304.602	79	3219.046		
Total	270311.286	80			
a. Dependent Variable: Financial performance					
b. Predictors: (Constant), Credit Risk, Liquidity Risk, Interest Risk					

Source (Research Findings)

The findings from the ANOVA help in indicating the weakness or the strength of the model. According to Belle (2008), an insignificant F-test value indicates a weak regression model. From the findings obtained in the table above the F-test value were 4.972 with a significance value of 0.029 at 0.05 level of significance. Since the p-value obtained was <0.05, the F-test was significant hence the conclusion that the regression model was good.

Table 4.5 : Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	10.676	9.623		1.109	.271	-8.478	29.829
Credit Risk	-2.165	.971	-.243	-2.230	.029	-4.097	-.232
Liquidity Risk	.224	.546	.046	.410	.683	-.864	1.312
Interest Risk	-.518	1.907	-.030	-.272	.787	-4.316	3.280
a. Dependent Variable: Financial performance							

Source: Research findings

From the table above, the following regression equation was established

ROE= 10.676 - 2.165CreditRisk + 0.224LiquidityRisk - 0.518InterestRisk

From the model, the ROE (Financial performance) is 10.676 when other factors (Credit risk, Liquidity risk and Interest rate risk) are held constant. A unit increase in credit risk holding other factors constant results in a 2.165 decrease in the return on equity (ROE). This indicates a negative association between the credit risk and financial performance of the micro finance institutions. Additionally, a unit increase in liquidity risk results in a 0.224 increase in the return on equity, other factors held constant. This indicates a positive association between liquidity risk and financial performance. The increase is however low.

Finally, from the model, when other factors are held constant, (Credit Risk and Liquidity risk), a unit increase in the central bank of Kenya interest rates results in a decrease in the

ROE of the microfinance institutions by 0.518. This finding indicates a negative association between the interest rates and financial performance of the MFIs in Kenya.

4.6   Discussion of the Findings

The findings indicate that credit risk is a major risk facing the microfinance institutions in Kenya, followed by the interest rate risk. The interpretation of the findings is as below:

First, there was a significant negative correlation between the financial performance (ROE) and the credit risk since the p-value was 0.029 ($p<0.05$). The correlation value obtained was -0.243. These results agree with the study by Korit, (2014) which sought to establish the outcome of credit risk management on the fiscal performance of DTMs that are licensed by the Central Bank. He found out a significant relationship between the credit risk management and the financial performance as measured using the return on assets.

Further, from the study, a significant negative correlation exist between the interest rate risk and financial performance since a p-value of 0.34 was obtained ($p<0.05$) with a negative correlation value of 0.403. The results are in agreement with the findings by Wani & Hague, (2015) which observed that interest rate risk doo influence the profitability of a company and that every financial institution must pay constant attention to its interest risk management strategies.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusions, and recommendations of the study. The study aimed at ascertaining the effect of credit risk management on the financial performance of the micro finance institutions in Kenya, both deposit and non-deposit taking microfinance institutions.

5.2 Summary

The study used secondary data obtained from the financial statements of various MFIs in Kenya through the period 2011 to 2015. The data was analyzed using SPSS version 20 and the findings are summarized below.

The results from the descriptive statistics showed that the financial performance as measured using the ROE had a mean of -5.5358 with a minimum of -341, a maximum of 48.70 and a standard deviation of 58.128. This implies that on average most MFIs in Kenya made losses during the study period. This is further manifested by huge minimum value 0f -341 and a high standard deviation of 58.128. This could possibly be because of the existence of many unregulated MFIs attributed to over lending and poor recovery thus leading to losses. A positive maximum value of 48.70 indicates that some MFIs made profits in the period under study. In terms of skewness and kurtosis, financial performance had a skewness of -4.847 and kurtosis of 25.741. This manifests a negatively skewed and a highly peaked distribution.

Credit risk as measured by PAR30 had a mean of 7.489, minimum of 0 and a maximum of 30.8 and a standard deviation of 6.534. This showed that on average, the PAR was

7.489. Some MFIs had a PAR as low as 0 and others as high as 30.80. There was less variability in PAR from one period to the other given the standard deviation of 6.534. The credit risk had a skewness of 1.681 and kurtosis of 3.522. This points, to a positively skewed and a highly peaked distribution.

Liquidity risk as measured by liquidity gap had a mean of 4.029, minimum of 0 and a maximum of 96 and a standard deviation of 11.82. This showed that on average, the liquidity risk was 4.029. Some MFIs had a liquidity risk as low as 0 and others as high as 96. There was high variability in liquidity risk from one period to the other given the standard deviation of 11.82. The liquidity risk had a skewness of 6.544 and kurtosis of 47.76. This indicates a positively skewed and a highly peaked distribution.

Lastly, interest rate risk as measured using the CBK lending rates had a mean of 10.99, minimum of 8.40 and a maximum of 15.75 and a standard deviation of 3.389. This implies that on average, the interest rate risk was 10.99. It also implies that the interest rate risk among the MFIs were as low as 8.40 and as high as 15.75. There was a relatively low variability in interest rate risk during the study period as shown by the standard deviation of 3.389. In terms of skewness and kurtosis, interest rate risk had a skewness of 0.712 and a kurtosis of -1.519. This implies that the distribution was positively skewed with a lowly peaked distribution.

A correlation matrix was also obtained from the analysis. From the findings there was a significant negative correlation between the financial performance (ROE) and the credit risk since the p-value was 0.029 ($p < 0.05$). The correlation value obtained was -0.243.

Secondly, a significant negative correlation exist between the interest rate risk and financial performance since a p-value of 0.34 was obtained (p<0.05) with a negative correlation value of 0.403. Lastly, there was a positive insignificant correlation between financial performance and liquidity risk as shown by the results obtained. P value is 0.775 (p >0.05) with a correlation value of 0.32.

The model had an R-square value of 0.398 with an adjusted value of 0.317; hence the model was moderately strong. The R-square value of 0.317 implies that the independent variables explain 31.7% of the changes in financial performance of MFIs as measured by ROE. The findings from the ANOVA help in indicating the weakness or the strength of the model. According to Belle (2008) an insignificant F-test value indicates a weak regression model. From the findings obtained in the table above the F-test value were 4.972 with a significance value of 0.029 at 0.05 level of significance. Since the p-value obtained was <0.05, the F-test was significant hence the conclusion that the regression model was good.

From the regression model obtained, the ROE (Financial performance) is 10.676 when other factors (Credit risk, Liquidity risk and Interest rate risk) are held constant. A unit increase in credit risk holding other factors constant results in a 2.165 decrease in the return on equity (ROE). This indicates a negative association between the credit risk and financial performance of the micro finance institutions. These results are in agreement with the study Korir (2014) which found a negative relationship between credit risk and financial performance. The findings are also in agreement with the study by Kisala, (2014).

Additionally, a unit increase in liquidity risk results in a 0.224 increase in the return on equity other factors held constant. This indicates a positive association between liquidity risk and financial performance. The increase is however low.

Finally, from the model, when other factors are held constant, (Credit Risk and Liquidity risk), a unit increase in the central bank of Kenya interest rates results in a decrease in the ROE of the microfinance institutions by 0.518. This finding indicates a negative association between the interest risk and financial performance of the MFIs in Kenya.

5.3   Conclusion

The major conclusion from this study is that microfinance institutions in Kenya are faced with credit risk as depicted by the significant negative relationship between the financial performances (ROE) and credit risk. A unit increase in credit risk holding other factors constant results in a 2.165 decrease in the return on equity (ROE) which is the highest negative association compared to the other forms of risks.

Secondly, changes in the lending CBK interest rates greatly affect the financial performance of the Microfinance institutions in Kenya. From the results, a significant negative association was obtained between the financial performance and the interest rate risk.

Thirdly, most MFIs were making losses and with a lower ROE were the unregulated non deposits taking Microfinance institutions as indicated by their negative mean.

Lastly, liquidity risk isn't a major risk going by the results. A unit increase in liquidity risk results in a 0.224 increase in the return on equity other factors held constant. This

indicates a positive association between liquidity risk and financial performance. The increase is however low.

5.4 Recommendations

The major policy recommendation is that the MFIs in Kenya must constantly pay attention to the credit risk being a major risk affecting its performance. For instance, it needs to come up with a ceiling on its nonperforming loans beyond which it should shift its major focus towards thoroughly investigating and recovering the non-performing loans.

Secondly, the central bank of Kenya needs to come up with regulatory measures to regulate not only the DTMs but also the non-deposit taking MFIs. From the results obtained in the study, it became apparent that most MFIs with losses or low ROE were the unregulated non-deposit taking. Besides, the government should come up with a legislation to strengthen the Association of Microfinance Institutions (AMFI-Kenya) regulatory role of MFIs in Kenya.

Lastly, the regulators who include the central bank of Kenya and the AMFI-Kenya must come up with capital adequacy requirements of the MFIs both the deposit and non-deposit taking, in line with best risk management practices in the financial sector globally.

5.5   Limitations of the Study

The major limitation of the study was that while the target population was 35 MFIs, the researcher was not able to obtain sufficient data from eight MFIs most of which have been facing financial risks as well as closure e.g. Milango Financial services, thus the researcher focused on 27 out of the 35 MFIs in Kenya.

Some institutions approached were reluctant in giving information fearing that the information sought would be used to print a negative image about them. The study handled the problem by carrying an introduction letter from the University and assuring them that the information they give would be treated confidentially and it would be used purely for academic purposes.

Some of the data collected was from the financial statements. The research was also limited to the level of exactness of the data acquired from the secondary sources. Despite the fact that the data was certified, however this could still be prone to these inadequacies. The research was based on a five-year research period from the year 2011 to 2015. A longer period of the research will have incorporated timeline of the diverse financial implications such as boom and slump. This would have presented a broader spotlight and representation and extensive opinion of the research problem.

5.6   Suggestions for Further Research

Further research needs to be carried out on the unregulated MFIs in Kenya for instance, research need to be done on the effects of the absence of regulations on the Micro finance institution in Kenya

Secondly, research is recommended on the effect of Credit Reference Bureaus on loan performance in microfinance institutions in Kenya. Further research should also be done on the relationship between credit management and nonperforming loans on Microfinance Institutions in Kenya and on the reasons for loan default in microfinance organizations from the clients" perspective.

Finally, further research is recommended on the effect of insider lending on the performance of Microfinance institutions and more emphasis on the unregulated micro finance institutions.

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APPENDIX I: LIST OF MFIs IN KENYA

DEPOSIT TAKING				
Uwezo Microfinance Bank Ltd	Faulu Microfinance Bank Ltd	Choice Microfinance Bank Limited	U&I Microfinance Bank Ltd	
Kenya Women Microfinance Bank Ltd	Rafiki Microfinance Bank Ltd	Century Microfinance Bank Ltd	Daraja Microfinance Bank Ltd	
Remu Microfinance Bank Ltd	SMEP Microfinance Bank Ltd	Sumac Microfinance Bank Ltd	Caritas Microfinance Bank Ltd	Maisha Microfinance Bank Limited
NON DEPOSIT TAKING				
Bimas	Platinum Credit	AAR Credit Services	Samchi Credit	
ECLOF Kenya	Opportunity Kenya	Century	SISDO	
Greenland Fedha	Jitegemea Credit Scheme	Vision Fund	Springboard Capital Ltd	
Juhudi Kilimo	Milango Financial Services	KEEF	Taifa Option Microfinance	
Letshego	TAIFA Option Microfinance	Rupia Ltd	YEHU	
Musoni	PAWDEO			

Source (AMFI report, 2015 & CBK, 2015)