

**THE RELATIONSHIP BETWEEN CREDIT RISK MANAGEMENT  
AND THE FINANCIAL PERFORMANCE OF MICROFINANCE  
INSTITUTIONS IN KENYA**

**BY**

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**DECLARATION**

This research project is my original work and has not been submitted anywhere for examination in any other university or institute of higher learning.

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## **DEDICATION**

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## ABBREVIATIONS

<b>AMFI</b>	Association of Micro Finance Institutions
<b>ANOVA</b>	Analysis of Variance
<b>APT</b>	Arbitrage Pricing Theory
<b>CAPM</b>	Capital Asset Pricing Theory
<b>CBK</b>	Central Bank of Kenya
<b>CBK</b>	Central Bank of Kenya
<b>CR</b>	Credit Risk
<b>CRM</b>	Credit Risk Management
<b>D/E</b>	Debt to equity
<b>LP</b>	Loan Provision
<b>MFI</b>	Micro Finance Institutions
<b>NGOs</b>	Non-Governmental Organization
<b>NPL</b>	Non-Performing Loan
<b>ROA</b>	Return on Assets
<b>SDF</b>	Stochastic Discount Factor
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TA</b>	Total Asset
<b>TL</b>	Total Loan



## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

Credit risk is the most obvious risk that a credit union faces based on the nature of its activity. In terms of potential losses, it is typically the largest type of risk. The default of a small number of members may result in a very large loss for the union (Bessis, 2003).

Credit risk is the risk that a borrower defaults and does not honor his or her obligation to service debt. It can occur when the member is unable to pay or cannot pay on time. There can be many reasons for default, in most cases the borrower is in a financially stressed situation and may be facing a bankruptcy procedure. He can also refuse to comply with the debt service obligation, for example in the case of a fraud or a legal dispute.

Credit risk arises from non-performance by a borrower by either inability or unwillingness to perform in the pre-committed contracted manner. This affects the lender holding the loan contract as well as other lenders to the creditor (Caoutte, Altman and Narayanan, 1998). Therefore the financial condition of the borrower as well as the current value of any underlying collateral is of considerable interest to its credit union. The deviation of portfolio performance from its expected value results to real credit risks that face the financial institutions (Gestel & Baesen, 2009). Credit risk is hard to eliminate but it can be diversified because a portion of the default risk may result from the systematic risk. In addition, the peculiar nature of some portion of these losses remains a problem for creditors in spite of the beneficial effect of diversification on total uncertainty. This is particularly true for banks that lend in local markets and the ones that take highly illiquid assets. In such cases, credit risk is not easily transferred and accurate estimates of loss are difficult to obtain. (IFSB, 2005).

Credit risk is the potential change in net asset value due to changes in the perceived ability of counterparties to meet their contractual obligations. It occurs when a borrower does not pay back the loan. The definition makes it clear that credit risk arises much earlier than the final failure to pay becomes visible. According to Mwirigi (2006), most financial institutions as early as one month late repayment, a loaner was considered as a defaulter and thus collections efforts were intensified and this explains why micro finance institutions commend low default rates. Those who didn't pay on time, their property was sold to recover the money, followed by write off of the balance and others would consider writing off the balance and allow defaulters to repay the principal only.

Moreover, credit risk is not what financial institution believes its default risk situation is. It is about the perceptions others have about the quality of microfinance loan portfolio. Depositors, venture capitalist and other creditors all look at the quality of the microfinance loan portfolio as the primary indicator of creditworthiness. If there are doubts about the quality of the portfolio, it will be hard to mobilize or retain deposits or to qualify for a funding facility with microfinance. This is a very important linkage between credit risk and liquidity risk which yield to market confidence (Kimeu, 2008).

Given the importance of credit risk management in microfinance functioning, the efficiency of microfinance risk management which includes techniques, methods, process, procedures, activities, incentives expected to significantly influence its financial performance (Harker & Satvros, 1998). Santomero and Babbel (1997) argues that credit risk management influence financial performance of firms. According to Pagano (2001), credit risk management is an important function of financial institutions in creating value for shareholders and customers. Therefore microfinance institutions in Kenya will engage

in credit risk management to enhance shareholder value and improve its financial performance (Ali & Luft, 2002). Effective credit risk management either in microfinance institutions is expected to enhance the value of the firm and shareholder wealth and improve Return on Investment for microfinance institutions. The financial performance is the ability of the microfinance institutions to generate new resources which include operating income, earnings before interest and taxes, and net asset value., from day-to-day operations, over a given period of time.

### **1.1.1 Credit Risk Management**

Credit risk management is a structured approach to managing uncertainties through risk assessment, developing strategies to manage it and mitigation of risk using managerial resources. The strategies include transferring to another party, avoiding the risk, reducing the negative effects of the risk, and accepting some or all of the consequences of a particular risk. Credit risk management processes enforce the MFIs to establish a clear process in for approving new credit as well as for the extension to existing credit. These processes also follow monitoring with particular care, and other appropriate steps are taken to control or mitigate the risk of connected lending (Basel, 2010).

Credit risk management is very important to financial institutions as it is an integral part of the loan process. It maximizes bank risk, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk. Bank is investing a lot of funds in credit risk management modeling. The objective of risk management is to reduce the effects of different kinds of risks related to a pre-selected domain to the level accepted by society. It may refer to numerous types of

threats caused by environment, technology, humans, organizations and politics. On the other hand it involves all means available for humans, or in particular, for a risk management entity (Ali & Luft, 2002). Some of the parameters used to measure credit risk includes; default rate, cost per loan assets and capital adequacy ratio.

### **1.1.2 Financial Performance**

Financial Performance is company's ability to generate new resources, from day- to- day operations, over a given period of time; performance is gauged by net income and cash from operations. A firm's financial performance, in the view of the shareholder, is measured by how better off the shareholder is at the end of a period, than he was at the beginning and this can be determined using ratios derived from financial statements; mainly the balance sheet and income statement, or using data on stock market prices (Harker, P.T & Satvros, 1998). These ratios give an indication of whether the firm is achieving the owners' objectives of making them wealthier, and can be used to compare a firm's ratios with other firms or to find trends of performance over time. Charreaux (1997) in Severin (2002) stated that an adequate performance measure ought to give an account of all the consequences of investments, on the wealth of shareholders. The main objective of shareholders in investing in a business, is to increase their wealth. Thus the measurement of performance of the business must give an indication of how wealthier the shareholder, has become as a result of the investment over a specific time.

### **1.1.3 Credit Risk Management and Financial Performance**

Business owners are well advised to use sound risk management practices when planning for the future so as not to deplete the assets of the company (Gold, 1999). He further

argued companies could not survive with increased loss and expense ratios. Preventing losses by taking precautionary measures is a key driver of profitability and a key element in reducing risks (Jolly, 1997). He further stated that companies have a direct financial interest in reducing losses.

Given the importance of risk management in functioning of companies, the efficiency of its risk management is expected to significantly influence its financial performance. An extensive body of literature (Santomero & Babbel, 1997) argues that risk management matters for financial performance firms. According to Pagano (2001), risk management is an important function of firms in creating value for shareholders and customers. The corporate finance literature has linked the importance of risk management with the shareholder value maximization hypothesis. This suggests that a firm will engage in risk management policies if it enhances shareholder value (Ali & Luft, 2002).

The goal of credit risk management is to maximise a financial institution risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Financial institutions need to manage the credit risk inherent to the entire portfolio as well as the risk in individual credits as transactions (Sinkey, 1992). Credit risk management should be at the centre of financial institutions operations in order to maintain financial sustainability and reaching more clients. Despite these facts, over the years there has been increased number of significant financial institutions problems in both, matured as well as emerging economies (Brownbridge & Harvey, 1998; Basel, 2004). Financial institutions problems, mostly failures and financial distress have afflicted numerous financial institutions, many of which have been closed down by the regulatory authorities (Brownbridge & Harvey, 1998). Among other factors, weakness in credit risk

management has all along been cited as the main cause for financial institutions problems (Richard et al., 2008 and Chijoriga, 1997).

Since exposure to credit risk continues to be the leading source of problems in financial institutions world-wide, financial institutions and their supervisors should be able to draw useful lessons from past experiences. The financial institutions should now have a keen awareness of the need to identify measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for risks incurred (Basel, 1999). Pazarbasioglu (1999), believes that the best warning signs of financial crises are proxies for the vulnerability of the banking and corporate sector. He adds that the most obvious indicators that can be used to predict financial crises are those that relate directly to the soundness of the financial sector.

#### **1.1.4 Microfinance Institutions in Kenya**

A microfinance institution (MFI) is an organization that provides financial services to the poor. It is widely believed that MFIs evolved out of the vacuum left by the mainstream banks. It is said that about 50% of Kenyans are classified as poor and have low incomes not worth banking. Microfinance institutions have proven that the poor are “bankable” (PMT Kenya, 2001). Today, formal institutions are rapidly absorbing the lessons learned about how to do small-transaction banking.

The Kenyan microfinance industry emerged in the past 30 years in response to the lack of access to formal financial services for most of Kenya’s low-income people. The contribution of the microfinance sector in the economic development of Kenyan economy cannot be overlooked. It is now widely recognized in Kenya that the promotion

of micro and small enterprises is a viable and dynamic strategy for achieving national goals, including employment creation and poverty alleviation.

The Microfinance industry in Kenya has experienced major transformations over the past twenty years, growing from a fledgling concern dominated by a few donor and church-based NGOs to a vibrant industry increasingly driven by commercial sustainability. Generally, the providers of microfinance services in Kenya can be clustered into three broad categories, notably; formal, semi-formal and informal institutions - with the level of formality defined by the degree of regulation.

Omino (2005) puts emphasis on sound development of microfinance institutions as vital ingredients for investments, employment and to spur the economic growth. As a result of their flexibility and the way they operate, they are exposed to various risks which include financial risks, operational risks and strategic risks. And as competition increases and the sector mature, MFIs are faced with numerous risks as highlighted above and the sector must mitigate the risks in order to sustain the business and remain relevant in the long run (Omino, 2005). To ensure that the growth in the banking sector does not jeopardize its stability, risk management is crucial. In view of this, the CBK carried out a risk management of micro finance institutions in Kenya (CBK, 2010). The surveys objective was to determine the needs of the local banking sector with regard to risk management. The survey was necessitated by the drive to fully adopt Risk Based Supervision and to incorporate the international risk management best practices envisioned in the 25 Basel Core Principles for Effective Banking Supervision. The survey culminated in the issuance of the Risk Management Guidelines (RMGs) in 2005 and the adoption of the Risk Based Supervision approach of supervising financial institutions in 2005 (CBK, 2010).

## **1.2 Research Problem**

Prior to financial sector deregulation, financial institutions were highly motivated to grant credit facility to clients who could easily express their creditworthiness (Bryant, 1999). Deregulation offered the opportunity to meet the demands for credit across a wide range of borrowers. Large amount of bad credit, as a result of boom-time advances in the 1980's, caused the financial institutions to be too cautious in extending credit (Boyd, 1993; Bryant, 1999). Credit risk management processes enforce the financial institutions to establish a clear process in for approving new credit as well as for the extension to existing credit. These processes also follow monitoring with particular care, and other appropriate steps are taken to control or mitigate the risk of connected lending (Basel, 1999). Credit granting procedure and control systems are necessary for the assessment of loan application, which then guarantees a financial institution total loan portfolio as per the institutions overall integrity (Boyd, 1993).

According to Basel (1999), it is necessary to establish a proper credit risk environment, sound credit granting processes, appropriate credit administration, measurement, monitoring and control over credit risk, policy and strategies that clearly summarize the scope and allocation of bank credit facilities as well as the approach in which a credit portfolio is managed i.e. how loans are originated, appraised, supervised and collected, a basic element for effective credit risk management. Credit scoring procedures, assessment of negative events probabilities, and the consequent losses given these negative migrations or default events, are all important factors involved in credit risk management systems (Altman, Caouette, & Narayanan, 1998). Most studies have been inclined to focus on the problems of developing an effective method for the disposal of



these bad debts, rather than for the provision of a regulatory and legal framework for their prevention and control (Campbell, 2007).

Growth of Microfinance Sector in Kenya is exposed to various risks which originate from both the internal and external environment. Financial risks which threaten their financial viability and long-term sustainability. As a result well run microfinance institutions (MFI's) make better use of scarce funds by providing better financial services and reaching more poor clients. Although the literature on microfinance is significant and growing, very few studies explore the relationship between MFI credit risk management and their financial performance. Despite all the controls put in place by financial institutions in measuring credit risk, the level of non-performing loans has continued to increase, thus posing a great danger to the financial system in Kenya. Externalization of risk by transferring it to customers for instance through high interest rates to price for risk would suggest that MFI's would make little effort to appraise loan applications further increasing the non-performing loans portfolio (Omagwa, 2005).

Credit risk management can help credit firms reduce their exposure to credit risks and enhance their ability to compete with other well established financial institutions like commercial banks in the market (Iqbal & Mirakhor, 2007). Reduction of microfinance institutions exposure to credit risk will enhance achievement of their set objectives and ascertain its success. Therefore, it is necessary for microfinance institutions to have in place comprehensive risk management practices and reporting process to identify, measure, monitor, manage, report and control credit risks. Credit risk management has been vital in allowing the phenomenal growth in credit firms. Effective management of credit risk is critical to enhance institutions viability and sustained growth. Failure to

control credit risk may lead to insolvency. However, the mere perception of high credit risk can dissuade credit organizations from entering a particular market segment whereas the major contributing factor to that perception may be due to lack of adequate credit risk evaluation and management practices. In addition, if the practices are identified and the risk controlled, management can take certain steps to improve its potential for success.

Locally, various studies have been conducted on credit risk management. Omagwa, (2005) did a study on foreign exchange risk management practices by foreign owned commercial banks in Kenya and found out that the responding banks employed both conventional and bank-specific foreign exchange risk management practices. Yusuf, (2005) did a survey of operational risks management practices by commercial banks in Kenya. Mwirigi, (2006) did an assessment of credit risk management techniques adopted by microfinance institutions in Kenya. Obiero, (2002) did a study on banking regulation and its adequacy in preventing bank failure. Kombo et al; (2010) who asserted that strategic risk, credit risk and liquidity risk are the most frequent risks; whereas reputation and subsidy dependence risks occur at a very low incidence for Micro Finance Institutions (MFIs) located in Kisii area. Mokoroet et al, (2010) in an investigation of the various challenges facing the transition of informal MFIs into formal MFIs recognize the existence of risks emanating from both the external and internal stakeholders.

This study noted that the reviewed studies, have gaps in terms of generalized conclusions due to a tendency to research on all factors that affect the growth of MFIs and the absolute disregard of the role of financial risk management strategies on the growth of MFIs. Since no sufficient research studies have been done, the study sought to answer the

question; what is the relationship between credit risk management and the financial performance of microfinance institutions in Kenya?

### **1.3 Research Objective**

The objective of this study was to establish the relationship between credit risk management and the financial performance of microfinance institutions in Kenya.

### **1.4 Value of the Study**

The study would be valuable to the management of microfinance institutions in identifying the relationship between credit risk management and the financial performance. It would also assist microfinance institutions to see the need to establish formal risk management practices within its ranks. To academicians, the study would provide a useful basis upon which further studies on credit risk management in the financial sector could be conducted.

To Central Bank of Kenya, the country's financial regulator, the study would explore some of the credit risk management practices that have not been adopted by the local microfinance institutions. This would provide an insight to the regulator, with a view to address the identified challenges and provide workable strategies and intervention mechanisms to enhance capabilities in their oversight role. Also the study would benefit the business executives and the general public with knowledge on microfinance industry financial performance and credit risk management.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents a review of the related literature on the subject under study. It gives an overview of the theoretical framework and empirical review on the relationship between credit risk management and performance of microfinance institutions

### **2.2 Theoretical Framework**

The study was based on the following three theoretical foundations; Portfolio theory of investment which tries to maximize portfolio expected return for a given amount of portfolio risk, Capital asset pricing theory which is used to determine a theoretically appropriate required rate of return of an asset, if that asset is to be added to an already well-diversified portfolio, given that asset's non-diversifiable risk and arbitrage pricing theory which describes the price where a mispriced asset is expected to be.

#### **2.2.1 Portfolio Theory**

Portfolio theory was introduced by Harry Markowitz in 1952. Since then, some theoretical and practical criticisms have been leveled against it. These include evidence that financial returns do not follow a Gaussian distribution or indeed any symmetric distribution, and that correlations between asset classes are not fixed but can vary depending on external events. Portfolio theory of investment which tries to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully choosing the proportions of various assets. Although Portfolio Theory is widely used in practice in the financial industry and several of its creators won a Nobel Prize for the theory, in recent years the basic Portfolio

Theory have been widely challenged by fields such as behavioral economics (Markowitz, 1952)

Portfolio Theory is a mathematical formulation of the concept of diversification in investing, with the aim of selecting a collection of investment assets that has collectively lower risk than any individual asset. That this is possible can be seen intuitively because different types of assets often change in value in opposite ways. For example, when prices in the stock market fall, prices in the bond market often increase, and vice versa. A collection of both types of assets can therefore have lower overall risk than either individually. But diversification lowers risk even if assets' returns are not negatively correlated indeed, even if they are positively correlated (Markowitz ,1952).

Portfolio Theory was developed in the 1950s through the early 1970s and was considered an important advance in the mathematical modelling of finance. Since then, many theoretical and practical criticisms have been levelled against it. These include the fact that financial returns do not follow a Gaussian distribution or indeed any symmetric distribution, and those correlations between asset classes (Micheal, 1998).

### **2.2.2 Capital Asset Pricing Theory**

Sharpe (1964), published the capital asset pricing theory (CAPM). Parallel work was also performed by Treynor (1961) and Lintner (1965). CAPM extended Harry Markowitz's portfolio theory to introduce the notions of systematic and specific risk. For his work on CAPM, Sharpe shared the 1990 Nobel Prize in Economics with Harry Markowitz and Merton Miller. In such a simple world, Tobin's (1958) super-efficient portfolio must be the market portfolio. All investors will hold the market portfolio, leveraging or de-

leveraging it with positions in the risk-free asset in order to achieve a desired level of risk. CAPM decomposes a portfolio's risk into systematic and specific risk. Systematic risk is the risk of holding the market portfolio. As the market moves, each individual asset is more or less affected. To the extent that any asset participates in such general market moves, that asset entails systematic risk. Specific risk is the risk which is unique to an individual asset. It represents the component of an asset's return which is uncorrelated with general market moves (Lintner, 1965).

No matter how much we diversify our investments, it's impossible to get rid of all the risk. As investors, we deserve a rate of return that compensates us for taking on risk. The capital asset pricing model (CAPM) helps us to calculate investment risk and what return on investment we should expect. Here we look at the formula behind the model, the evidence for and against the accuracy of CAPM, and what CAPM means to the average investor (Sharpe, 1964).

When the CAPM was first introduced, the investment community viewed the new model with suspicion, since it seemed to indicate that professional investment management was largely a waste of time. It was nearly a decade before investment professionals began to view the CAPM as an important tool in helping investors understand risk. The key element of the model is that it separates the risk affecting an asset's return into two categories. The first type is called unsystematic, or company-specific, risk. The long-term average returns for this kind of risk should be zero. The second kind of risk, called systematic risk, is due to general economic uncertainty. The CAPM states that the return on assets should, on average, equal the yield on a risk-free bond held over that time plus a

premium proportional to the amount of systematic risk the stock possesses (Markowitz 1952).

The treatment of risk in the CAPM refines the notions of systematic and unsystematic risk developed by Harry M. Markowitz in the (1950s). Unsystematic risk is the risk to an asset's value caused by factors that are specific to an organization, such as changes in senior management or product lines. For example, specific senior employees may make good or bad decisions or the same type of manufacturing equipment utilized may have different reliabilities at two different sites. In general, unsystematic risk is present due to the fact that every company is endowed with a unique collection of assets, ideas and personnel whose aggregate productivity may vary.

### **2.2.3 Arbitrage Pricing Theory**

The Arbitrage Pricing Theory (APT) was developed primarily by Ross (1976). It is a one-period model in which every investor believes that the stochastic properties of returns of capital assets are consistent with a factor structure. The Arbitrage Pricing Theory (APT) describes the price where a mispriced asset is expected to be. It is often viewed as an alternative to the capital asset pricing model (CAPM), since the APT has more flexible assumption requirements. Whereas the CAPM formula requires the market's expected return, APT uses the risky asset's expected return and the risk premium of a number of macro-economic factors. Arbitrageurs use the APT model to profit by taking advantage of mispriced securities. A mispriced security will have a price that differs from the theoretical price predicted by the model. By going short an overpriced security, while

concurrently going long the portfolio the APT calculations were based on, the arbitrageur is in a position to make a theoretically risk-free profit. (Ross, 1976)

The basis of arbitrage pricing theory is the idea that the price of a security is driven by a number of factors. These can be divided into two groups: macro factors, and company specific factors. Ross' formal proof shows that the linear pricing relation is a necessary condition for equilibrium in a market where agents maximize certain types of utility. The subsequent work, which is surveyed below, derives either from the assumption of the preclusion of arbitrage or the equilibrium of utility-maximization. A linear relation between the expected returns and the betas is tantamount to an identification of the stochastic discount factor (SDF). The APT is a substitute for the Capital Asset Pricing Model (CAPM) in that both assert a linear relation between assets' expected returns and their covariance with other random variables. (Ross, 1976)

The difference between CAPM and arbitrage pricing theory is that CAPM has a single non-company factor and a single beta, whereas arbitrage pricing theory separates out non-company factors into as many as proves necessary. Each of these requires a separate beta. The beta of each factor is the sensitivity of the price of the security to that factor.

### **2.3 Determinants of Financial Performance in Microfinance Institutions**

The role of financial institutions remains central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable financial sector is better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou et al, 2005). Therefore, the determinants of financial institutions and performance have attracted the interest of academic research as



well as of financial institutions management, financial markets and financial institutions supervisors since the knowledge of the internal and external determinants of financial institutions profits and margins are essential for various parties.

During the last two decades the financial sector has experienced worldwide major transformations in its operating environment. Both external and domestic factors have affected its structure and performance. Correspondingly, in the literature, profitability is usually expressed as a function of internal and external determinants. The internal determinants refers to the factors originate from financial accounts (balance sheets and/or profit and loss accounts) and therefore could be termed micro or financial specific determinants of profitability. The external determinants are variables that are not related to financial institutions management but reflect the economic and legal environment that affects the operation and performance of financial institutions. A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study (Yuqi, 2006).

### **2.3.1 Size**

Company size positively affects performance measured by ROA, which proves to be a direct link with another indicator of financial performance, net profit margin. The size of the company can have a positive effect on financial performance because larger firms can use this advantage to get some financial benefits in business relations (Mathur & Kenyon, 1997). Large companies have easier access to the most important factors of production, including human resources. Also, large organizations often get cheaper funding.

In the classical theory, capital structure is irrelevant for measuring company performance, considering that in a perfectly competitive world performance is influenced only by real factors. Recent studies contradict this theory, arguing that capital structure play an important role in determining corporate performance (Kakani, Biswatosh & Reddy, 2001). Barton and Gordon (1988) suggest that entities with higher profit rates will remain low leveraged because of their ability to finance their own sources. On the other hand, a high degree of leverage increases the risk of bankruptcy of companies. Total assets are considered to positively influence the company's financial performance, assets greater meaning less risk (Beaver, Kettler & Scholes, 2000). Large firms tend to be more diversified and fail less often, enabling the firms to use more debt, tolerating high debt ratios. The certainty of easier access to debt and better borrowing conditions reduces the transaction costs and tax rates making large firms more easily to attract a debt.

### **2.3.1 Level of Risk**

The level of risk is said to be one of the primary determinants of a firms' capital structure. The tax shelter-bankruptcy cost theory of capital structure determines a firm's optimal leverage as a function of business risk (Castanians, 2003). Given agency and bankruptcy costs; there are incentives for the firm not to fully utilize the tax benefit of a hundred percent debt within the static framework model. The more likely a firm is exposed to such cost, the greater their incentives to reduce their level of debt within its capital structure. One firm variable that affects this exposure is the firm's operating risk; in that the more volatile the firm's earnings stream, the greater the chance of the firm defaulting and being exposed to such costs. According to Johnson (2007), firms with more volatile earnings growth may experience more situations in which cash flows are

too low for debt service. Kim and Sorensen (2006) also observe that firms with a high degree of business risk have less capacity to sustain financial risk and thus use less debt. Despite the broad consensus that firm risk is an important determinant of corporate debt policy, an empirical investigation has led to contradictory results. A number of studies have indicated an inverse relationship between risk and debt ratio (Friend & Lang, 2008; Mackie-Mason, 2000). In this study the firms risk level shall be measured by the squared difference between the firm's profitability for each year and the mean profitability for the five year period.

### **2.3.3 Capital Structure**

The capital structure of a firm is the specific mixture of debt and equity a firms employs in financing its operation (Abor, 2008). There is various measure of capital structure and these include: total liabilities, long-term liabilities, short-term liabilities, and convertible debt divided by either book value or market values of equity. The divisor can also be either sum of numerator plus book values or markets values of equity (Booth, et al., 2001). The book values and market values of these measures are highly correlated and therefore each can be used as a proxy for the other without significant errors being introduced (Browman, 2005). It was observed that there is no reason to suspect that difference between market values and book values should be correlated with the determinants of capital structure and consequently no obvious bias will result from use of book values instead of market values. In line with this view capital structure (debt ratios) will be measures using book values in this study

Turning to the external determinants, several factors have been suggested as impacting on profitability and these factors can further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics. The latter refer to market concentration, industry size and ownership status (Athanasoglou et al, 2005).

#### **2.3.4 Credit Risk Management**

Altman and Kao, (1991), Carty and Fons, (1993), argue that credit risk involves the possibility that the inherent risk of the asset migrates to a lower quality level, thereby resulting in lower security values in a market-to-market pricing environment. Over the last decade, a number of the world's major development finance institutions and banks have developed sophisticated systems to quantify and aggregate credit risk across geographical and product lines, BIS, (1999). The initial interest in credit risk models stemmed from the desire to develop more rigorous quantitative estimates of the amount of economic capital needed to support a bank's risk-taking activities, and more so to assess the overall risk management aspect of any given institution.

Credit risk is the potential change in net asset value due to changes in the perceived ability of counterparties to meet their contractual obligations. It occurs when a borrower does not pay back the loan. The definition makes it clear that credit risk arises much earlier than the final failure to pay becomes visible. According to Mwirigi (2006) most financial institutions as early as one month late repayment, a loanee was considered as a defaulter and thus collections efforts were intensified and this explains why micro finance institutions commend low default rates. Those who didn't pay on time, their property was

sold to recover the money, followed by write off of the balance and others would consider writing off the balance and allow defaulters to repay the principal only.

Other internal factors, such as credit or liquidity are considered as bank specific factors, which closely related to bank management are poor asset quality and low levels of liquidity are the two major causes of bank failures and represented as the key risk sources in terms of credit and liquidity risk and attracted great attention from researchers to examine the their impact on bank profitability.

Moreover, credit risk is not what financial institution believes its default risk situation is. It is about the perceptions others have about the quality of MFI loan portfolio. Depositors, venture capitalist and other creditors all look at the quality of the MFI loan portfolio as the primary indicator of creditworthiness. If there are doubts about the quality of the portfolio, it will be hard to mobilize or retain deposits or to qualify for a funding facility with a MFI. This is a very important linkage between credit risk and liquidity risk which yield to market confidence (Kimeu, 2008).

## **2.4 Empirical Literature**

Tucker and Miles (2004), studied three data series for the period between March 1999 and March 2001 and found that self-sufficient MFIs are profitable and perform better, on return on equity (ROE) and return on assets (ROA), than developing-world commercial banks and MFIs that have not attained self-sufficiency. Tucker and Miles (2004) recalled the use of the Accion CAMEL rating system (a modification of the CAMELS system used by U.S. commercial lenders) by the microfinance industry to report financial

measures, such as capital adequacy, asset quality, management, earnings, liquidity management and sensitivity to market risk

Mwirigi (2006), used a data set composed of 45 MFIs for the period 2000-2005. The objective was to measure MFIs' performance, including financial performance. The study retained one only variable referring to sustainability or financial performance, and five variables to assess outreach or social performance. Mwirigi (2006) used factor analysis methodology to construct synthetic indices of both outreach and sustainability. Mwirigi (2006) estimated a seemingly unrelated regressions model (SUR) to assess the determinants of the performance. The four most significant determinants of financial performance are: interest rate ceiling (the higher the interest rate, the higher is the MFI financial return), number of clients per loan officer (the higher the number, the higher the financial return), competitiveness (more competitors, less profits), and number of days for processing a first loan (the shorter the processing time, the more profitable for the MFI).

Cull et al (2006), studied the possibility for MFIs to earn profits while serving the poor. They used a data set of 124 MFIs (village banks, individual-based lenders, and group-based lenders) from 49 developing countries for the period, between 1999 and 2002, to search patterns of the relationship between financial performance and outreach of MFIs. Cull et al (2006), used three dependent variables: FSS, unadjusted measure of OSS and ROA. The evidence demonstrates that raising interest rates to very high levels does not ensure greater profitability, nor does cost minimization. This evidence is coherent with Stiglitz and Weiss (1981)'s assumption, which says that raising interest rates will undermine portfolio quality due to adverse selection and moral hazard. The researchers

found that individual-based lenders that charge higher interest rates are more profitable than others, but only up to a point. Beyond threshold interest rates, profitability tends to be lower. In contrast, for solidarity group-lenders, financial performance tends not to improve as yields increase. Consistent with the economics of information, they also found that individual-based lenders with higher labor costs (as a fraction of total assets) are in fact more profitable. For solidarity groups, who exploit local information to select and monitor customers, they found no significant relationship between labor costs and profitability. Moreover, Cull et al. (2006) found that institutions that make smaller loans are not necessarily less profitable. Larger loan sizes are associated with lower average costs for both individual-based lenders and solidarity group lenders.

Kioko (2008), analyzed the relationship between financial performance of MFIs and their management mechanisms. 83 MFIs of three type (non-profit institutions and NGOs, non-banking financial institutions, for-profit institutions and cooperatives), from Kenya. All these MFIs were evaluated based on three financial indicators (ROA; AROA; Financial self-sufficiency FSS) and four management dimensions (Decision making: board governance competencies; Accounting and control: planning budgeting and reporting competences, competencies; Top management: competencies of the top managers; Human resources: competencies of HR management). The results of Kioko (2008)'s analysis show that management ratings influence drastically the MFI financial performances. However, except for the cooperatives where the management variable (specifically HR human resources management) has a negative impact on the ROA, no organizational structure exhibits better results for the three financial indicators. The author underscores that regulated MFIs have significantly better management ratings than

non-regulated ones. It is also the case for larger MFIs, in terms of loan portfolio, total assets or borrowers. Conversely, younger MFIs may be more financially profitable, as suggested by Stephens (2005), but not particularly better managed. According to this study, the top management is a key indicator of financial success among the four management dimensions, and seems to have also a positive influence on the amount of received subsidies.

Gisemba (2010), studied the importance of benchmarking and competition in improving Sacco's financial performance. He states that the rise of competition and the emergence of the possibility to compare the financial performance of SACCOs with each other and to benchmarks. He selected three benchmark ratios and used their adjusted measures, obtained after adjusting the data by removing subsidies. These ratios are gross financial margin (GFM), ROA and ROE, and the target benchmark ratios were calculated based upon the measures of the better performing SACCOs. ROA and ROE are higher in unadjusted measures than in adjusted measures (AROA and AROE) due to the high level of subsidies disbursed in the SACCOs. GFM adjusted and unadjusted measures are high for SACCOs and well above that obtained by the commercial banks. Commercial banks have lower GFM because they benefit from economies of scale and lower operating expenses to assets. Regulated SACCOs achieve better economies of scale than unregulated SACCOs, and have a better Debt to equity (D/E) ratio than unregulated SACCOs but still lower than commercial banks. Gisemba (2010) concludes that using benchmark measures improves business practices. The author also stress on the importance of having benchmarks in order to be able to compare SACCOs with each other, particularly on the basis of financial performance.



Ndwiga (2010), studied the relationship between the performance of MFI and their legal status. For that, he compared the performance of 47 MFIs between 2004 and 2009. Three forms of ownership were chosen: cooperatives, private microfinance cooperatives and non-profit making organizations (NGOs). He analyzed five types of performance: financial performance, social performance, and organizational efficiency, quality of portfolio and size and solvency. To assess financial performance of microfinance institutions, the author chose to measure the following ratios: ROA, OSS and profit margin (PM). Regarding sustainability, Ndwiga (2010) found no significant difference between NGOs and cooperatives, and that private microfinance corporations have better financial performance than NGOs and better portfolio quality than cooperatives and NGOs.

Linbo Fan (2013) examined efficiency versus risk in large domestic USA banks. He found that profit efficiency is sensitive to credit risk and insolvency risk but not to liquidity risk or to the mix of loan products. This indicates the importance of upgrading financial supervision and credit risk management practices as a precondition for successful financial liberalization. According to Nabil (2013), the increased emphasis on risk management reflects a fundamental shift among bank managers and regulators to better anticipate risks, rather than just react to them. This approach emphasizes the importance of “self-supervision” and a proactive approach by board members and managing directors to manage their financial institutions. Historically, banks have waited for external reviews by regulators to point out problems and risks, and then acted on those recommendations. In today’s fast changing financial environment, regulators are often left analysing the wreckage only after a bank has had a financial crisis.

## **2.5 Summary of Literature Review**

The study reviewed three theoretical foundations; Portfolio theory of investment which tries to maximize portfolio expected return for a given amount of portfolio risk, Capital asset pricing theory which is used to determine a theoretically appropriate required rate of return of an asset, if that asset is to be added to an already well-diversified portfolio, given that asset's non-diversifiable risk and arbitrage pricing theory which describes the price where a mispriced asset is expected to be.

Empirically credit risk is the most obvious risk that a credit union faces based on the nature of its activity. In terms of potential losses, credit risk is typically the main type of risk. The default of a small number of members may result in a very large loss for the union. Credit risk management helps credit firms reduce their exposure to credit risks and enhance their ability to compete with other well established financial institutions like commercial banks in the market. Reduction of microfinance institutions exposure to credit risk will enhance achievement of their set objectives and ascertain its success. Therefore, it was necessary for microfinance institutions to have in place comprehensive risk management practices and reporting process to identify, measure, monitor, manage, report and control credit risks. This study noted that the reviewed studies had gaps in terms of generalized conclusions due to a tendency to research on all factors that affect the growth of MFIs and the absolute disregard of the role of financial risk management strategies on the growth of MFIs.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter outlines the method used in the study as follows: research design, population, sample and sampling method, data collection methods and data analysis methods.

### **3.2 Research Design**

The research adopted a descriptive research design. According to Mugenda and Mugenda (2003) descriptive research is one in which information is collected without changing the environment sometimes referred to as “correlational” or “observational” studies. Descriptive study was preferred for this study because it demonstrated associations or relationships between credit risk management and the financial performance (Mugenda & Mugenda, 2003). It was a longitudinal study on the selected microfinance institutions between 2009-2013 years.

### **3.3 Target Population**

The study population in this case was all the microfinance institutions in Kenya. This study was a survey of all the firms operating in Kenya by 2013. There were 52 MFI as at 31<sup>st</sup> December 2013 as per the list of MFIs by the Central Bank Kenya (CBK) provided in appendix. Therefore a census survey of all the 52 firms was utilized in this study.

### **3.4 Data Collection**

This research used secondary data to analyse the relationship between credit risk management and the financial performance. Secondary data was obtained by abstraction method from credit risk management statements and financial statements for the 52 MFI

to be covered. This data covered the period 2009 to 2013 which was collected from the CBK publications on MFIs banking sector survey and the respective MFIs financial statements for the period of analysis. The financial data was collected from the annual reports which was used to get information related to the variables.

### **3.5 Data Analysis**

Descriptive analysis was used to analyze the data. The data collected was analyzed using multiple regression and correlation analysis to test the relationship between the dependent variable and the independent variables. The regression results were interpreted based on the Pearson correlation, R-squared, adjusted R-squared, Test of significance using F statistic through the Analysis of Variance (ANOVA), coefficients of the independent variables and their p-values.

#### **3.5.1 Empirical Model**

The researcher expected with better credit risk management to have high return on asset (ROA) and lower non-performing loan and loan provision. The researcher used the following regression model.

The regression equation was

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

Whereby Y = Financial performance (measured using ROA)

$$ROA = \frac{\text{Annual Net Income}}{\text{Average Total Assets}}$$

Also  $\beta_0$  is an intercept and  $\beta_1$ -  $\beta_4$  is the parameter of explanatory variable of dependent variable (return on asset).

$X_1$ = Non-performing loan to total loan

$X_2$  and  $X_3$  = Control variables will be leverage (L) and (S) size

$X_2$ = Ratio of total debt to total assets

$X_3$  = Size, defined as the natural log (Ln) of Total assets

$\epsilon$  = Disturbance term

### **3.5.2 Diagnostic Tests**

F-test was used to test for joint significance of all coefficients and t-test for significance of individual coefficients. Measures of central tendency (mean) and a measure of dispersion/variation (standard deviation) was used to analyze the data. Results are said to be statistically significant within the 0.05 level, which means that the significance value must be smaller than 0.05. The significance was determined by the t values of the respective variable, which indicates how many standard error means the sample diverges from the tested value.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

### 4.1 Introduction

This chapter presents the information processed from the data collected during the study on the relationship between credit risk management and the financial performance of microfinance institutions in Kenya. The sample composed of all the 52 microfinance institutions in Kenya.

### 4.2 Descriptive Statistics

**Table 4. 1: Summary of the study variables**

<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>Mean</b>	<b>Std. Deviation</b>
ROA	0.06965	0.25727	0.11430	0.08169	0.08443	0.12150	0.07767
RNPL	0.08229	0.07926	0.07645	0.07388	0.07128	0.07663	0.07663
Leverage	4.159688	3.75339	1.20305	0.37081	2.41397	2.2319	1.86394
Size	9.54126	9.30453	9.34919	9.36002	9.69340	9.4497	0.16355

**Source: Author (2014)**

Table 4.1 presents the summary of the study variables from the microfinance institutions in Kenya. From the summary 2009 recorded the lowest ROA at 0.06965 while 2010 recorded the highest ROA at 0.25727, the mean of ROA for the five years was 0.12150. On ratio of non-performing loan to total loan (RNPL) 2009 recorded the highest at 0.082290 while 2013 had the lowest at 0.07128; Ratio of non-performing loan to total loan had a mean of 0.07663. The leverage was least in 2012 at 0.37081 and highest in

2009 at 4.159688 with an average of 2.2319. Size had an average of 9.4497 with very minimal fluctuations among the five years.

#### 4.3 Regression Results

The study conducted a linear regression model to establish the relationship between credit risk management and the financial performance of microfinance institutions in Kenya. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (financial performance of microfinance institutions in Kenya) that is explained by all the three independent variables (Ratio of Non-performing loan to total loan, Leverage and Size of the firm).

**Table 4. 2: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.863	0.746	0.695	0.1076

**Source: Author (2014)**

The three independent variables that were studied, explain only 69.5% of the financial performance of microfinance institutions in Kenya as represented by the adjusted  $R^2$ . This therefore means the three variables contribute to 69.5% of financial performance of microfinance institutions in Kenya, while other factors not studied in this research contributes 30.5% of financial performance of microfinance institutions in Kenya.

Therefore, further research should be conducted to investigate the other (30.5%) factors influencing financial performance of microfinance institutions in Kenya.

**Table 4.3: Summary of One-Way ANOVA results of the regression analysis between financial performance of microfinance institutions in Kenya and predictor variables**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.421	3	0.855	19.973	0.00051
	Residual	1.67	49	0.043		
	Total	5.091	52			

**Source: Author (2014)**

From the ANOVA statistics in table 4.3, the processed data, which are the population parameters, had a significance level of 0.00051 which shows that the data is ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 19.973. Since F calculated is greater than the F critical (value = 2.77), this shows that the overall model was significant i.e. there is a significant relationship between credit risk management and the financial performance of microfinance institutions.



**Table 4. 4: Regression coefficients of the relationship between financial performance of microfinance institutions in Kenya and the three predictive variables**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.723	0.409		2.003	0.0364
RNPL	-0.264	0.028	0.246	-0.175	.0411
Leverage	0.427	0.211	0.409	1.307	.0233
Size of the Firm	0.754	0.041	0.682	0.108	.0417

Dependent variable: financial performance of microfinance institutions in Kenya

**Source: Author (2014)**

The coefficient of regression in Table 4.4 above was used in coming up with the model below:

$$FP = 0.723 - 0.264RNPL + 0.427L + 0.754SF$$

Where FP is Financial Performance, **RNPL** is Ratio of Non-performing loan to total loan, L is Leverage and SF is Size of the firm. According to the model, all the variables were significant as their significance value was less than 0.05. Among the three variables (Leverage and Size of the firm) were positively correlated with financial performance of microfinance institutions in Kenya while ratio of Non-performing loan to total loan is significantly negatively correlated with financial performance of microfinance institutions in Kenya. From the model, taking all factors (Ratio of Non-performing loan

to total loan, Leverage and Size of the firm) constant at zero, financial performance of microfinance institutions in Kenya was 0.723. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in ratio of Non-performing loan to total loan will lead to a 0.264 decrease in financial performance of microfinance institutions in Kenya, a unit increase in leverage will lead to a 0.427 increase in financial performance of microfinance institutions in Kenya while a unit increase in size of the firm will lead to a 0.754 increase in financial performance of microfinance institutions in Kenya. This deduces that size of the firm has the most positive effect on financial performance of microfinance institutions in Kenya.

#### **4.4 Summary and Interpretation of Findings**

From the above regression model, the study found out that there were factors influencing the financial performance of microfinance institutions in Kenya, which are Ratio of Non-performing loan to total loan, Leverage and Size of the firm. Leverage and Size of the firm influenced financial performance of microfinance institutions positively while ratio of Non-performing loan to total loan influenced financial performance of microfinance institutions negatively. The study found out that the intercept was 0.723 for all years.

The three independent variables that were studied (Ratio of Non-performing loan to total loan, Leverage and Size of the firm) explain a substantial 69.5% of financial performance of microfinance institutions in Kenya as represented by adjusted R<sup>2</sup> (0.695). This therefore means that the three independent variables contributes 69.5% of financial performance of microfinance institutions in Kenya while other factors and random variations not studied in this research contributes a measly 30.5 % of financial performance of microfinance institutions in Kenya.

The study established that the coefficient for ratio of non-performing loan to total loan was (-0.264) meaning that ratio of non-performing loan to total loan negatively and significantly influenced the financial performance of microfinance institutions in Kenya. This is in line with Capario and Klingebiel (1996) who noted that the immediate consequences of non-performing loans are the reduction in profitability through disposal costs like provisions for credit losses and direct write-offs for bad debts and shrinking of loanable funds. Capario and Klingebiel (1996) further noted that large amounts of non-performing loans in the banking and non-banking financial system have at many times threatened the failure and actually collapsed many banks and microfinance institutions. Many researches on the causes of bank failure show that poor quality of loan portfolio is statistically a major predictor of insolvency (e.g. Dermigue-Kunt, 1989; Barr and Siems, 1994) with failing banks usually having high levels of non-performing loans prior to failure. Similarly Barth et al., (2004) in his study found that loan portfolio constitutes the largest operating assets and source of revenue of most financial institutions. Fofack (2005), found out that some of the loans given out become non-performing and adversely affect the profitability and overall financial performance of the lending institutions. Fofack (2005) noted that healthy loan portfolios are therefore vital for lending institutions in view of their impact on Liquidity, lending capacity, earnings and profitability of the MFIs. The issue of loan default is becoming an increasing problem that threatens the sustainability of MFIs. Fofack (2005) concluded that non-performing loan are always a source of misery for lenders because if an MFI has too much of it on its balance sheet, it can adversely affect its operations in terms of liquidity, profitability, debt- servicing capacity, Lending capacity and ability to raise additional capital.

The study also deduced that leverage had a positive and significant influence on financial performance of microfinance institutions in Kenya since it had a coefficient of 0.427. This is in line with Margaritis and Psillaki (2010) who found that leverage has a positive effect on firm performance. Giroud et al. (2012) show that reducing leverage ratios result in better performance. Antoniou et al. (2008), provide evidence to support the notion that the relation between financial leverage and performance is negative. Furthermore, Connelly et al. (2012) find that the variation in leverage is not associated with firm performance, measured as Tobin's q. Some studies show that the relation between financial leverage and financial performance is non-monotonic. For instance, Coricelli et al. (2012) find that the positive relation between leverage and total productivity growth exists to a certain point and beyond such a critical threshold, the negative relation between leverage and total productivity growth exists. In addition, financial leverage is associated with growth. For instance, Lang et al. (1996) find that leverage is negatively related with future growth. In other words, firms with higher leverage ratios appear to exhibit lower future growth rates.

The study further deduced that size of the firm positively influenced financial performance of microfinance institutions in Kenya as it had positive coefficient (0.754). This correlates with Hennessy and Levy (2002) who posit that large firms are more likely to exploit economies of scale and enjoy higher negotiation power over their clients and suppliers leading to a better firm performance. Serrasqueiro and Nunes (2008) found that size is related positively to performance but only for the sample of SMEs and not for large firms. A similar finding by Diaz and Sanchez (2008) in the Spanish context suggested that SMEs were more efficient than large firms lending support to earlier

studies that identified an inverse relationship between size and performance (Hall 1987; Hart and Oulton 1996). These studies imply a relationship between firm size and performance that might not necessarily be linear, as illustrated in Barrett et al. (2010), Yoon (2004), and Risseuw (1997), conclude that company growth beyond optimal level can deteriorate financial performance.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter provides a summary, conclusion and recommendations of the main findings on the relationship between credit risk management and the financial performance of microfinance institutions in Kenya. The chapter presents the discussions drawn from the data findings analyzed and presented in chapter four. The study was conducted by use of secondary sources such as published reports. The chapter is structured into discussions, conclusions, recommendations and areas for further research.

### **5.2 Summary of Findings**

Credit risk arises from non-performance by a borrower by either inability or unwillingness to perform in the pre-committed contracted manner. This affects the lender holding the loan contract as well as other lenders to the creditor (Caoutte, Altman and Narayanan, 1998). The deviation of portfolio performance from its expected value results in real credit risks that face the financial institutions. Credit risk is hard to eliminate but it can be diversified because a portion of the default risk may result from the systematic risk. Credit risk is not what financial institutions believe their default risk situation is. It is about the perceptions others have about the quality of microfinance loan portfolio. According to Pagano (2001), credit risk management is an important function of financial institutions in creating value for shareholders and customers.

The study sought to establish the relationship between credit risk management and the financial performance of microfinance institutions in Kenya. This study adopted a

descriptive survey design. According to Schindler (2003), a descriptive research design is appropriate where the study seeks to describe the characteristics of certain groups, estimate the proportion of people who have certain characteristics and make predictions. All the 52 microfinance institutions in Kenya constituted the target population of this study, thus it was a census survey. Secondary data was collected using desk review of published company annual financial statements and academic sources. These data sources shall satisfied the data requirements of the three primary variables that constitute this research. The review covered a period spanning five years (2009 – 2013).

The linear regression model was used to establish t the relationship between credit risk management and the financial performance of microfinance institutions. From the regression model, the study found out that there were factors influencing the financial performance of microfinance institutions in Kenya, which are Ratio of Non-performing loan to total loan, Leverage and Size of the firm. Among the three variables (Leverage and Size of the firm) were positively correlated with financial performance of microfinance institutions in Kenya while ratio of Non-performing loan to total loan is significantly negatively correlated with financial performance of microfinance institutions in Kenya. The three independent variables that were studied contribute to 69.5% of financial performance of microfinance institutions in Kenya, while other factors not studied in this research contributes 30.5% of financial performance of microfinance institutions in Kenya as represented by adjusted  $R^2$  (0.695).

### **5.3 Conclusions**

Given the importance of risk management in functioning of companies, the efficiency of its risk management is expected to significantly influence its financial performance. An

extensive body of literature (Santomero & Babbel, 1997) argues that risk management matters for financial performance firms. According to Pagano (2001), risk management is an important function of firms in creating value for shareholders and customers. The corporate finance literature has linked the importance of risk management with the shareholder value maximization hypothesis. This suggests that a firm will engage in risk management policies if it enhances shareholder value (Ali & Luft, 2002). The goal of credit risk management is to maximise a financial institution risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Financial institutions need to manage the credit risk inherent to the entire portfolio as well as the risk in individual credits as transactions (Sinkey, 1992).

This study examined the relationship between credit risk management and the financial performance of microfinance institutions in Kenya. The three independent variables that were studied (Ratio of Non-performing loan to total loan, Leverage and Size of the firm) explain a substantial 69.5% of financial performance of microfinance institutions in Kenya as represented by adjusted  $R^2$  (0.695). This therefore means that the three independent variables contribute to 69.5% of the financial performance of microfinance institutions in Kenya.

The study found that the coefficient for ratio of Non-performing loan to total loan was (-0.264), meaning that it is significantly negatively correlated with financial performance of microfinance institutions in Kenya. This is in line with Capario and Klingebiel (1996) who noted that the immediate consequences of non-performing loans are the reduction in profitability through disposal costs like provisions for credit losses and direct write-offs for bad debts and shrinking of loanable funds. Capario and Klingebiel (1996) further



noted that large amounts of non-performing loans in the banking and non-banking financial system have at many times threatened the failure and actually collapsed many banks and microfinance institutions.

The study also deduced that leverage had a positive and significant influence on financial performance of microfinance institutions in Kenya since it had a coefficient of 0.427. This is in line with Margaritis and Psillaki (2010) who found that leverage has a positive effect on firm performance. Giroud et al. (2012) show that reducing leverage ratios result in better performance. Antoniou et al. (2008), provide evidence to support the notion that the relation between financial leverage and performance is negative. Furthermore, Connelly et al. (2012) find that the variation in leverage is not associated with firm performance, measured as Tobin's q. Some studies show that the relation between financial leverage and financial performance is non-monotonic. For instance, Coricelli et al. (2012) find that the positive relation between leverage and total productivity growth exists to a certain point and beyond such a critical threshold, the negative relation between leverage and total productivity growth exists. In addition, financial leverage is associated with growth. For instance, Lang et al. (1996) find that leverage is negatively related with future growth. In other words, firms with higher leverage ratios appear to exhibit lower future growth rates.

The study further deduced that size of the firm positively influenced financial performance of microfinance institutions in Kenya as it had positive coefficient (0.754). This correlates with Hennessy and Levy (2002) who posit that large firms are more likely to exploit economies of scale and enjoy higher negotiation power over their clients and suppliers leading to a better firm performance. Serrasqueiro and Nunes (2008) found that

size is related positively to performance but only for the sample of SMEs and not for large firms. A similar finding by Diaz and Sanchez (2008) in the Spanish context suggested that SMEs were more efficient than large firms lending support to earlier studies that identified an inverse relationship between size and performance (Hall 1987; Hart and Oulton 1996). These studies imply a relationship between firm size and performance that might not necessarily be linear, as illustrated in Barrett et al. (2010), Yoon (2004), and Risseeuw (1997), conclude that company growth beyond optimal level can deteriorate financial performance.

#### **5.4 Limitations of the Study**

The researcher encountered quite a number of challenges related to the research and most particularly during the process of data collection. Due to inadequate resources, the researcher conducted this research under constraints of finances. In addition microfinance institutions in Kenya analysts had to be pushed to assist with data. This was done through many calls to remind them. Other thought that the information they were requested to volunteer was confidential.

The other limitation is that this study used only three variables and this does not seem to have overall effect on the financial performance of microfinance institutions in Kenya and hence there is need to carry out the study with other different determinants in order to be able establish which are the major determinants that affect the f financial performance of microfinance institutions in Kenya.

## **5.5 Recommendations and Suggestions**

### **5.5.1 Policy Recommendations**

The findings of the research has brought to the fore the dire consequences that the incidence of non-performing loan in MFIs have on their operations in terms of profitability, ability to grant more credit, liquidity and investor and depositor confidence.

The analysis clearly showed that non-performing loan have eaten a chunk of the organization's financial fortunes in the five-year period, (2009-2013).

The study recommends that periodically relevant training programs are organized for loan officers particularly in the area of risk management, management of non-performing loan and financial analysis. This helps improve the knowledge and analytical skills of the credit officers so as to improve their credit appraisal techniques. The training program will assist the loan/credit officers to appreciate the importance of prompt credit delivery in loan default prevention. Through the training, credit officers will be able to better assess and analyse the loan portfolios (using tools such as Portfolio at Risk {PAR} and ageing Analysis) and pick early warning signals much more quickly and take potent remedial measures to halt any further deterioration of the loan portfolio. It is also strongly recommended that management will always give a serious attention to the health of loan portfolio and resource the credit officers to prevent loans or credit facilities slipping into adverse classification.

The study also recommends for effective and regular monitoring. One of the most potent means of curbing the incidence of non-performing loans is by effective and regular monitoring of the loan from the time of disbursement till the final repayment. This will

help to prevent diversion and misapplication of funds which are identified as two important causes of non-performing loans in MFIs. This activity also afford the loan officers the opportunity to inspect the books of accounting of the customers and help the customers to keep proper records of their business transactions.

In the light of the uncertainties that surround repayment of loans, lenders cannot tell from the looks of people's faces whether they are good or bad borrowers as indicated by Kwarteng (2007), it is therefore strongly recommended that MFIs will begin to demand some form of security even if not adequate to ensure that at least, it can recover part of the indebtedness in the event of default. This recommendation is even more critical at this time when the central bank of Kenya (CBK) is taking steps to streamline and sanitize the operations of the MFIs in Kenya. Security such as blocked savings account, fixed deposit or guarantee could all be considered as acceptable security arrangements. This will reduce the losses arising from non-performing loans and help minimize the adverse impact of such loans on the financial performance of the MFIs.

Most of the MFIs lack the efficient risk management mechanism that will help eradicate or sieve out serial defaulters. To effectively lock out these serial defaulters, MFIs requires referencing solution that will enable them submit and share data whilst processing their customers' credit application. The credit reference bureau is a body working in collaboration with the Central Bank to provide credit reference of prospective borrowers to lending institutions. The idea is to prevent borrowers with unsatisfactory credit record from accessing further credit from other unsuspecting lending institutions. The Credit Referencing Bureau collate the information of all borrowing customers into a common database where the credit history of any loan applicant can be cross-checked for a sound

credit decision. It is therefore recommended to the management of MFIs to avail itself of the services of this body to enable them to check the credit history of loan applicants. This will reduce the incidence of loans going bad since the organization will avoid lending to borrowers with unsatisfactory credit record.

### **5.5.2 Suggestions for Further Research**

Arising from this study, the following directions for future research in the area of study are recommended as follows: A study should be done to identify reasons for loan defaults from clients' perspective in microfinance institutions in Kenya. A study on the effect of Credit Referencing of customers on loan performance in microfinance institutions.

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## APPENDIX I: MICROFINANCE INSTITUTIONS IN KENYA

1	AAR Credit Services	27	Kenya Women Finance Trust
2	ADOK TIMO	28	Kenya Women Holding
3	Agakhan First Microfinance Agency	29	Kilimo Faida
4	Barclays Bank of Kenya Ltd	30	Mega Microfinance Limited
5	Biashara Factors Limited	31	MESPT
6	BIMAS	32	Micro Africa Limited
7	Blue Limited	33	Microensure Advisory Services
8	Canyon Rural Credit Limited	34	Molyn Credit Limited
9	Chartis Insurance	35	Muramati SACCO Society Ltd
10	CIC Insurance	36	Oikocredit
11	Co-operative Bank	37	One Africa Capital Limited
12	ECLOF Kenya	38	Opportunity International
13	Elite Microfinance	39	Programme (PAWDEP)
14	Equity Bank	40	Rafiki Deposit Taking Microfinance Ltd
15	Faulu Kenya DTM Limited	41	Remu DTM Limited
16	Fusion Capital Ltd	42	Assistance
17	Greenland Fedha Limited	43	Rupia Limited
18	Jamii Bora Bank	44	Select Management Services Limited
19	Jitegemea Credit Scheme	45	SISDO
20	Jitegemea Trust Limited	46	SMEP DTM Limited
21	Juhudi Kilimo Company Limited	47	Swiss Contact
22	K-Rep Bank Ltd	48	Taifa Option Microfinance
23	K-Rep Development Agency	49	U & I Microfinance Limited
24	KADET	50	Uwezo DTM Limited
25	Kenya Entrepreneur Empowerment Foundation	51	Yehu Microfinance Trust
26	Kenya Post Office Savings Bank	52	Youth Initiatives - Kenya (YIK)

**Source: Central Bank of Kenya-2013**