

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

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D61/64347/2011

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF
BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF
NAIROBI**

NOVEMBER 2014

DECLARATION

This research project is my original work and has not been presented in any other University for examination for an award of a degree.

.....

.....

Signature

Date

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

Signed..... Date

Mr. Mirie Mwangi

ACKNOWLEDGEMENTS

I am greatly indebted to many people who assisted me in various ways in order to complete my study.

To my parents I thank you so much for the encouragement and support that you gave me during the entire period of my research and may God bless you abundantly. To my sister Joan Chebet thank you for your invaluable motivation.

I would like to single out my supervisor, Mr. Mirie Mwangi who dedicated a lot of time and effort to my work. This undertaking would not have been possible without his sincere comments, advice, criticism, suggestions and encouragement. He has inspired me to look at all things critically and keep an open mind.

I would also like to thank the Licensed Deposit Taking Microfinance Institutions for unconditionally availing me the information I needed. I would also like to thank the University for taking the time and affording me the opportunity to acquire the knowledge required to fulfill this project. I am grateful to all those who in one way or another assisted me in being able to conclude this project.

Finally, I thank God almighty for his mercies, unfailing love, and providence and for giving me strength and seeing me through my studies.

DEDICATION

To my parents, for your love, encouragement and support that you have given that has brought me this far. To the Almighty God for His unceasing blessings without which it is impossible to accomplish anything.

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LIST OF ABBREVIATIONS

AROA	Adjusted Return on Assets
BDC	Bad Debts Cost
CLA	Cost per Loan Asset
CPB	Cost Per Borrower
CSFI	Centre for the Study of Financial Innovation
DR	Default Rate
DTMFI	Deposit Taking Microfinance Institutions
EAR	Earnings at Risk
EBIT	Earnings Before Income and Tax
FEA	Financial Expense/Total Assets
HPR	Holding Period
IFC	International Finance Corporation
MFI	Microfinance Institutions
MPT	Modern Portfolio Theory
MSEs	Micro and Small Enterprises

NGOS	Non-Governmental Organizations
PA	Personnel Allocation ratio (Loan Officers/Personnel)
PEA	Personnel Expense/Total Assets
ROA	Return on Assets
ROE	Return on Equity
SQRT	Square Root (of Time)
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VAR/VaR	Value at Risk

ABSTRACT

This study sought to investigate the effect of credit risk management of financial performance of Deposit Taking Microfinance Institutions (DTMI) licensed by the Central Bank. The research design used in this study was descriptive research design. The study involved an in depth study of credit risk management and the relationship between the two variables i.e. credit risk management and the financial performance of DTMI was described extensively. Primary data was collected using questionnaires. Secondary data collected from the Deposit Taking Microfinance Institutions (DTMI) licensed by the Central Bank annual reports (2011 - 2014) was used. Of the 9 licensed DTMIs in Kenya, full data was attained from 6 of them and thus the study concentrated on the 6 DTMIs. The data collected from the annual reports of the DTMIs was analyzed using multiple regression analysis. In the model return on asset (ROA) was used as the profitability indicator while Default rate, cost per loan asset and bad debt cost as credit risk management indicators. The study established that cost per loan asset, and bad debt cost and default rate are significant credit risk management indicators that have an inverse effect on financial performance of DTMFI. The study also results indicated that MFIs use credit risk control in Credit risk Management. The study further established that interest rate risk, liquidity risk, credit risk and operational risk affects performance of loans in the MFI. The recommendation is to advise MFIs to enhance their credit risk control this will help in decreasing default levels as well as non-performing loans. This will help improve financial performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Since 1700s when Jonathan swift coined the idea of microfinance, it has changed and evolved to be globally accepted as an important tool in poverty reduction. His microfinance concept began slowly in 1840s and became widespread among institutions, about 300 branches all over Ireland within a decade. Microfinance concept was boosted in 1970s by Dr. Mohammad Yunus experiment to give loans to poor women. Over the years, microfinance institutions (MFI) have universally enlarged the frontier of financial intermediation to those excluded from formal financial system through credit extension as 'small working capital loans' which are invested in microenterprises or other income generation activities (Churchill and Frankiewicz, 2006).

The main investment activity of microfinance institutions is extending these credits. For these financial services, poor people are willing to pay because of the added advantage they receive for not collateralizing anything (Gaurav, 2011). However, the potential possibility that borrowers default to meet the obligation as per the agreed terms poses a significant credit risk that threatens the solvency of the financial institution.

The corporate world is increasingly changing and successful financial institutions as well as businesses realize the need for preparedness against risks out of any changes, subsequently, management of these risks. Other than credit risks (a financial risk),

financial institutions are exposed to other risks such as operational risks, strategic risks and producer risks. Therefore, these institutions need to design sound credit management that entails the identification of existing potential risks inherent in lending activities. Timely identification of potential credit default is important as high default rates lead to decreased cash flows, lower liquidity levels and financial distress, ultimately affecting financial performance.

1.1.1 Credit Risk Management

Credit risk is the risk of loss due to a debtor's nonpayment of a loan or other line of credit (either the principal or interest (coupon) or both), while default rate is the possibility that a borrower will default, by failing to repay principal and interest in a timely manner (Dziobek, 1998). According to Apps (1996), risk management is the integration of recognized risk, risk assessment, and development of strategic management approaches that endeavor to mitigate the risk by use of managerial resources. McDonough (1998), definition integrates these two concepts to define credit risk management as identification, measurement, monitoring, and control of risk arising from the possibility of default in loan repayments. Every financial institution bears a degree of risk when the institution lends to business and consumers and hence experiences some loan losses when certain borrowers fail to repay their loans as agreed.

While risk management has been a part of business planning for large businesses and financial institutions for some time, it is a new discipline among MFIs. This new focus is the result of recent crises and experiences that represents a new understanding of the

importance in anticipating unexpected events, rather than merely reacting to them. Just like any other financial institutions, MFIs face great credit risk as most of the microloans are usually unsecured (Churchill and Coaster 2001). The magnitude and level of loss caused by the credit risk as compared to other kind of risks is severe to cause high level of loan losses and even institution failure.

To minimize credit risk, financial institutions are encouraged to use the “know your customer” principle as expounded by the Basel Committee on Banking Supervision (Demirguc-Kunt and Detragiache, 2000). The key principles in credit risk management are; establishment of a clear structure, allocation of responsibility and accountability, processes have to be prioritized and disciplined, responsibilities should be clearly communicated and accountability assigned thereto (De Young, Roland and Zhuravskaya 2006).

1.1.2 Financial Performance

According to Apps (1996), financial performance is company’s ability to generate new resources, from day-to-day operations, over a given period. Avkiran, (1995) further explains that financial performance is the subjective measure of how well a firm can use assets from its primary mode of business and generate revenue. Therefore, the general measure of the overall net income and cash from operations from firm’s investment portfolio, in a given period of time, depicts the financial health of the company. A portfolio is a collection of investments held by an institution or a private individual. MFIs

earn financial revenue from their loan portfolio and other financial services in the form of interest fees, penalties, and commissions.

According to Gatuhu (2013) microfinance institutions are seeking financial sustainability. Many MFIs were restructured in order to achieve financial sustainability and finance their growth. 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. As such, to be sustainably self-efficient, MFIs need to generate sufficient profit to cover expenses while eliminating all subsidies, even those less-obvious subsidies, such as loans made in hard currency with repayment in local currency” (Tucker and Miles, 2004). In order to optimize their performance, Gatuhu (2013) posits that MFIs need to become more commercially oriented and stress more on improving their profitability; therefore sustainably self-efficient.

MFIs play an important role in contributing to a country’s economic development. If MFIs sector does not perform well, the effect to the economy could be huge and broad. From their empirical findings, Demirguc-Kunt and Detragiache (2000) suggested that MFI profitability is an important predictor of financial crises. The study of the determinants of the MFIs profitability is significant as it helps comprehend current conditions of the MFI sector and the critical factors to consider in making decisions and creating new policies either for recovery or for improvement (Woolcock, 1999).

1.1.3 Effect of Credit Risk Management on Financial Performance

As financial performance of MFIs dwells entirely on generated returns of assets from operations; loan portfolio falls as a critically valuable asset that unfortunately exposes the institution to financial risks (credit risk, market risk and liquidity risks). As performance is majorly pinned on loan returns, credit risk begins when these loans are extended to the borrowers since the possibility of defaulting with interest is considered (Dziobek, 1998). MFIs might lose a significant amount of the loans issues which results in ruining the loan portfolio and eventually escalate to poor financial performance such as losses, bankruptcy, economic downturn. In any organization especially financial institutions, financial performance is affected by credit risk.

According Scheufler (2002), credit risk management is significant to MFIs since it plays an integral role in crediting process by maximizing the institution risk, adjusted risk rate of return by monitoring credit risk exposure with a view of shielding it from adverse effects of credit risk. Scheufler (2002) further explains that credit risk management endeavors to lower risk exposure in extended loans thus having optimal debtors level with reduced chances of bad debts and enhances financial health.

Seppala et. al (2001) argue that a sound credit policy would help improve prudential oversight of asset quality, establish a set of minimum standards, and to apply a common language and methodology (assessment of risk, pricing, documentation, securities, authorization, and ethics), for measurement and reporting of non-performing loans, loan classification and provisioning. The credit policy should set out the financial institutions'

lending philosophy and specific procedures and means of monitoring the lending activity (Polizatto, 1990).

According to Hermes and Lensink (2007), the financial systems approach emphasizes the importance of financially sustainable MFIs that guarantee a large-scale outreach to the poor on a long-term basis. Achou and Tenguh (2008) also conduct research on bank performance and credit risk management and found that there is a significant relationship between financial institutions performance (in terms of profitability) and credit risk management (in terms of loan performance).

1.1.4 Microfinance Institutions in Kenya

The formal banking sector in Kenya, over the years, has regarded the informal sector as risky and not commercially viable (Omino, 2005). According to the Poverty Reduction Strategy Paper of 1999, a large number of Kenyans derive their livelihood from the micro and small enterprises (MSEs). However, in spite of the importance of this sector, experience shows that provision and delivery of credit and other financial services to the sector by formal financial institutions, such as commercial banks has been below expectation. Only 10.4% of the MSEs receive credit and other financial services. This means that it is difficult for the poor to climb out of poverty due to lack of finance for their productive activities. Microfinance institutions fill a needed gap within the financial services industry by offering small loans, or micro-loans, to people unable to access conventional loan services.

Microfinance institutions vary in size and function with some organizations focusing entirely on micro financing, while others work as extensions of large investment banks. Microfinance institutions in Kenya are regulated under The Microfinance Act, 2006 and the Microfinance Regulations issued there under sets out the legal, regulatory and supervisory framework. The principal object of the Microfinance Act is to regulate the establishment, business and operations of microfinance institutions in Kenya through licensing and supervision. Many MFIs access commercial borrowing to fund their portfolio. Other sources of funds for operational and financial activities are International NGOs and Aid Agencies including; USAID, IFC and UNDP.

1.2 Research Problem

The success of MFI in financial performance is largely accredited to the management of credit. Increasing profitability is a priority for most managers in MFI. While microfinance institutions try to be financially sustainable, they appear to be often making losses (Dziobek, 1998). According to an annual report released by the Central Bank in the year 2010, there have been high cases of credit risks linked to non-performing loans in microfinance institutions for over a decade, a situation that has adversely impacted their profitability. Increasing profitability is a priority for all managers in financial institutions.

Among other factors, weakness in credit risk management has all along been cited as the main cause for MFIs problems (Woolcock, 1999). Since exposure to credit risk continues to be the leading source of problems in MFIs world-wide, they will be able to draw useful lessons from past experiences. MFIs 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 (Wilson, 2000).

MFIs are exposed to credit risk especially from unsecured loans as Churchill and Coaster (2001) put it, 'traditional collateral'. Since MFIs extend credit to those without collateral, it leads to a high default risk for repayment of interest or even the principles. This calls for a strategic credit risk management that entails identification of existing and potential risks inherent in lending activities. Nonetheless, most recent studies have focused on credit models used by MFIs and their impact on profitability (Gatuhu 2013).

According to Nguta and Huka (2013), MFIs in Kenya offer medium amounts of loans mostly to business people who cannot afford collaterals to get loans from the main commercial banks. Despite the recent growth in the Micro-finance sector, the sector is faced with challenges of loan repayment defaults by clients (Nguta and Huka, 2013). Individual groups have tried using group's equity for collaterals which is expected to ensure the revolving of money for the benefits of other individual's members of the group. However, loan delinquency has continued to causes serious challenge to most microfinance institutions.

Other studies have focused on MFIs in Kenya on effects of credit recovery, credit management or credit risk management on financial performance but none has been done with specific focus on Deposit Taking Microfinance institutions licensed by the Central

Bank of Kenya Therefore, this research intends to addresses that gap, with the research question: Does credit risk management have an effect on the financial performance of Deposit Taking Microfinance Institutions in Kenya?

1.3 Research Objective

To investigate the effect of credit risk management on financial performance of Deposit Taking Microfinance Institutions licensed by the Central Bank of Kenya.

1.4 Value of the Study

The study will carry rich intellectual arguments and results beneficial to researchers and scholars in outlining flexible procedures to be used by MFIs to assess firm performance and the likelihood for borrower default. The study will supplement to the body of knowledge in finance and accounting discipline by bridging gaps in credit risk management studies. Academicians will have another reference in the study of credit (risk) management vis-à-vis financial performance. The research will also provide other researchers with empirical studies to use in their studies.

A number of contributions out of this study will be made to building the knowledge and improve practice in credit risk management as well as financial performance. Since the research will consist of a broad review of theoretical and empirical studies, a comprehensive framework of the studying changes in financial performance and credit risk management will be outlined and recommended. In addition, the study will shed

more light to policy makers as they pursue improvement in the microfinance/financial sector.

Microfinance institutions under survey will benefit greatly as the study result will directly reflect their position and recommendations deduced from the study will be very relevant. By extension, other financial institutions will benefit from results of the study. The non-financial business firms, in various sectors of the economy, will benefit from the research findings e.g. to make informed decisions. The study results will shed insight on appraisal of credit policies and review of operations such as critical perspectives while giving credit facilities.

To regulators and policy makers, the research will provide the basis for regulatory policy framework to mitigate the financial system from financial crises and to better appreciate and quantify those credit risk exposures.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this section we cover the literature on credit risk management and or measurement by financial institution and narrow down to different management strategies undertaken by MFIs to achieve a high repayment rate of loans extended.

2.2 Theoretical Review

This section covers the theories of credit risk management in relation to financial performance.

2.2.1 Portfolio Theory

Modern Portfolio Theory (MPT) was introduced by Harry Markowitz in 1952 and later changed it to portfolio theory since there was nothing modern about it. According to Markowitz (1952), the theory allows investors to measure the expected risks and returns, as given statistically, for their investment portfolios. Since the 1980s, banks have positively employed MPT to market risk. Scheufler, (2002), posits that the information of MPT theory to default risk has lagged over the years, not to mention, default risk remains the largest risk faced by many financial institutions.

Banks recognize how credit concentrations can adversely impact financial performance. As a result, a number of sophisticated institutions are actively pursuing quantitative approaches to credit risk measurement, while data problems remain an obstacle. This industry is also making significant progress in using credit derivatives to transfer risk efficiently while preserving customer relationships. These two approaches have led to a vastly accelerated progress in managing credit risk in a portfolio context over the past several years (Scheufler, 2002). Nonetheless, other than MPT theory, majority of financial institutions apply earnings at risk (EAR) and value at risk (VAR) models to manage their interest rate and market risk exposures.

While the asset-by-asset approach is a critical component to managing credit risk, it does not provide a complete view of portfolio credit risk, where the term risk refers to the possibility that actual losses exceed expected losses. Therefore to gain greater insight into credit risk, banks increasingly look to complement the asset-by-asset approach with a quantitative portfolio review using credit models.

2.2.2 Value at a Risk Theory

The mathematics that underlies VaR was largely developed in the context of portfolio theory by Harry Markowitz and others, though their efforts were directed towards a different end – devising optimal portfolios for equity investors. In particular, the focus on market risks and the effects of the movements in these risks are central to how VaR is computed. The impetus for the use of VaR measures, though, came from the crises that beset financial service firms over time and the regulatory responses to these crises. The

first regulatory measures that evoke Value at Risk, though, were initiated in 1980, when the Securities Exchange Commission tied the capital requirements of financial service firms to the losses that would be incurred, with 95% confidence over a thirty-day interval, in different security classes; historical returns were used to compute these potential losses (Manganelli and Engle, 2001).

Value at risk (VAR or sometimes VaR) theory has received immense attention being titled the "new science of risk management". This is a technique used to measure the probability of portfolio losses based on the statistical analysis of historical price trends and volatilities. Value at risk is commonly used by banks, security firms and companies that are involved in trading energy and other commodities. VAR is able to measure risk while it happens and is an important consideration when firms make trading or hedging decision (Manganelli and Engle, 2001). According to Jorion (2001), VaR measure the worst expected loss over a given horizon under normal market conditions at a given level of confidence.

Basically, VAR is represented by:

$$\text{Value at risk} = \text{Mean} * \text{HPR} + [\text{Z-score} * \text{Std Dev} * \text{SQRT}(\text{HPR})]$$

Where mean is the average expected (or actual) rate of return, HPR is the holding period, Z-score is the probability, Std Dev is the standard deviation and SQRT is the square root (of time).

For financial institutions, risk is about the odds of losing money given out as loans, and VAR is based on that common-sense fact. By assuming financial institutions care about the odds of a really big loss on loans, VAR answers the question, "What is my worst case scenario?"

2.2.3 Asymmetric Information Theory

The asymmetric information theory was brought to light by Vickrey and Mirrlees, award winners of Nobel Prize for the economics of asymmetric information. The problem of the economics of information and the special issue of asymmetries of information had been under discussion for some time prior to the crucial breakthroughs by Akerlof, Spence, and Stiglitz in the 1970s (Barkley, 2002). Information asymmetry refers to a situation where business owners or manager know more about the prospects for, and risks facing their business, than do lenders (Eppy 2005). It describes a condition in which all parties involved in an undertaking do not know relevant information.

In a debt market, information asymmetry arises when a borrower who takes a loan usually has better information about the potential risks and returns associated with investment projects for which the funds are earmarked. The lender on the other hand does not have sufficient information concerning the borrower (Edwards and Turnbull, 1994). Binks and Ennew (1997) point out that perceived information asymmetry poses two problems for the banks, moral hazard (monitoring entrepreneurial behavior) and adverse selection (making errors in lending decisions).

Banks will find it difficult to overcome these problems because it is not economical to devote resources to appraisal and monitoring where lending is for relatively small amounts. This is because data needed to screen credit applications and to monitor borrowers are not freely available to banks. Bankers face a situation of information asymmetry when assessing lending applications (Binks and Ennew, 1997). The information required to assess the competence and commitment of the entrepreneur, and the prospects of the business is either not available, uneconomic to obtain or difficult to interpret. Thus creates two types of risks for the Banker (Deakins and Hussain 1999).

2.3 Determinants of Financial Performance of MFIs

2.3.1 Corporate Governance Practices

Both policy makers and practitioners of microfinance are increasingly stressing on the need for improved corporate governance to enhance MFIs' survival and growth. Indeed, CSFI (2008) report identifies corporate governance as a principal risk facing microfinance. This control mechanism is important because managers and funders are likely to have divergent priorities and missions. MFI managers may for instance focus on fulfilling the objectives of the MFI but they may additionally have preferences for non-pecuniary rewards, which subsequently lead to the so called agency problem in the corporate governance literature.

MFIs board has several major stakeholders represented who include donors, equity investors, management and employees and creditors. Some MFIs have included clients

on their boards (Mitchell, Agle, and Wood, 1997). The board controls the managerial power thereby reducing organizational inefficiencies (Andrés-Alonso, Azofra-Palenzuela, and Romero-Merino, 2009). Donors or their representatives in the board of directors and other governance bodies can lead to a better control of the opportunistic behavior of the manager (Hartarska 2005). However, the relative power balance or otherwise of these various stakeholders affects MFIs performance (Mersland 2009). Hence, the traditional board governance may be less effective in not-for-profit MFIs. Donors on the other hand may prefer outreach to sustainability, while private investors prefer profitability. These two stakeholders may put their representatives on the board and influence the direction of manager's effort.

2.3.2 Financial Sustainability

Sustainability, according to Cooperman, Mills and Gardner (2000), refers to full cost recovery or profit making, without the need to government subsidies or donor funds. Much concern points to exhorts microfinance providers to aggressively pursue sustainability through raising interest rates and lowering costs. A vast and growing literature posits that for MFIs to achieve full potential they must become financially sustainable (Brau and Woller, 2004). Financial sustainability also known as financial self-sustenance and operational self-sustenance (as defined above, is measured as the ability of MFIs to continue operations indefinitely using own resources without seeking donations, grants, or subsidized loans from outside individuals, NGOs, or governments. It should however be noted that sustainability does not imply profitability (Morduch 2005). According to the pioneers on literature about financial self-sufficiency, Hollis and

Sweetman (1998) examined six micro credit organizations of 19th-century Europe, to identify institutional designs that were a prerequisite to financial sustainability. They established that organizations that relied on charitable funding were more fragile and tended to lose their focus more quickly than those that obtained funds from depositors. Hollis and Sweetman (2007), further explain that these MFIs were financially sustainable for more than a century, because they adapted to their economic and financial environment.

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. However, aggregate data of all MFIs in the sample show that MFIs are unprofitable and perform bad compared to their geographic commercial peers. In order to optimize their performance, MFIs are seeking to become more commercially oriented and stress more on improving their profitability; therefore self-sustainable MFIs are not likely to be servicing the smallest and costliest loans to the poor. Yet, the authors emphasize on the fact that most of MFIs will continue to require subsidies, and thus not to be self-sustainable, because their mission is not only to provide financial services and earn interest, they provide also non-financial services without requiring any gains in order to help their clients to better manage their living and their business.

2.3.3 Financing Choice

While there is a vast literature on the optimal capital structure of corporate firms, the application of the Modigliani and Miller (1958) theorem and other corporate finance theorems to microfinance institutions is not straight-forward. Modigliani and Miller theorem posits that financing decisions do not matter in a world without taxes, transaction costs, or other market imperfections. They argue that a firm cannot change the total value of its securities by splitting its cash flows into different streams and therefore value is determined by its real assets. Thus, capital structure does not matter as long as the firm's decisions are endogenously determined (Helms, 2006).

Using data on outreach and default rate as the dependent variables, Kyereboah-Coleman (2007) investigate the impact of capital structure on the performance of microfinance institutions by estimating a random and fixed effects linear model. Several key trends have emerged; the tendency towards increased leveraging of capital, the rise in mobilizing public deposits as more MFIs get regulated and a shift away from subsidized donor funds towards commercial funding (Armendáriz and Morduch, 2010).

Commercially-funded MFIs respond to the profit incentive, working to increase revenues while minimizing expenses so that they can have revenues sufficient to cover all operating expenses including cost of capital (Cull et al, 2006). MFIs with access to donor funds may not respond to these pressures to operate efficiently or may deliberately choose outreach over profitability by serving poorer or rural clients with higher delivery costs (Armendáriz and Morduch, 2010). A higher cost of external funds may force the

MFI to raise the interest rate it charges its borrowers, with implications on profitability. Cheap external funding may however attract an inefficient MFI, which relies on the implicit subsidy to cover its high operating costs (Ghosh and Tassel 2011). Studies that would provide empirical evidence on this policy relevant issue are however lacking.

2.3.4 Outreach of Microfinance Institutions

Outreach is defined by Foulk, (2002), as the effort by MFIs to extend loans and financial services to an ever-wider audience (breadth of outreach) and especially toward the poorest of the poor (depth of outreach). Consequently, impact is the extent to which the incomes and welfare of those reached is raised. The pioneering theoretical work by Copestake (2007) and Ghosh and Tassel (2008), shows that wealthier clients cost less thus pursuit of outreach should decrease MFI profitability. Empirical evidence adduced so far shows mixed results (Hermes and Lensink 2011). Cull, Demirgüç-Kunt and Morduch (2007) empirically investigate whether there is a trade-off between the depth of outreach and profitability of MFIs. Their results show that MFIs that mainly provide individual loans perform better in terms of profitability, but the fraction of poor borrowers and female borrowers in the loan portfolio is lower than for institutions that mainly provide group loans. They stress on the importance of institutional design in determining the existence and size of such a trade-off.

The most comprehensive study of sustainability-outreach trade-off is by Hermes, Lensink, and Meesters (2011). Using data for 435 MFIs for the period 1997-2007, they focus on the relationship between cost efficiency as a proxy for sustainability of MFIs

and the depth of outreach measured by the average loan balance and percentage of women borrowers. They conclude that outreach is negatively related to sustainability of MFIs. The results remain robustly significant even after taking into account a long list of control variables. This is consistent with Cull et al (2009), shows evidence of such trade off from recent commercialization trend in microfinance. Although Olivares-Polanco (2005) uses less rigorous techniques and/or smaller datasets, their study also confirms the existence of this trade-off. These findings are however inconsistent with Ayayi and Sene (2010) who after estimating a pooled regression model, show that outreach and the percentage of women among the clientele do not significantly influence the MFIs' financial sustainability. Their findings confirm Cull, Demirgüç-Kunt and Morduch (2007) who shows that MFIs can expand outreach without compromising financially sustainability. Though there is no convergence among these studies, we can deduce that varying outreach has implications on MFI financial outcomes. It is important however to point that the evidence adduced here mostly relate to MFIs sustainability and not profitability.

2.4 Empirical Review

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. However, aggregate data of all MFIs in the sample show that MFIs are unprofitable and perform bad compared to their geographic commercial peers. In order to optimize their performance, MFIs are seeking

to become more commercially oriented and stress more on improving their profitability; therefore, self-sustainable MFIs are not likely to be servicing the smallest and costliest loans to the poor.

Luzzi and Weber (2006) used a data set composed of 45 MFIs for the period 1999-2003. Their objective is to measure MFIs' performance, including financial performance. They used factor analysis methodology to construct synthetic indices of both outreach and sustainability to evaluate the determinants of the performance. Their results highlighted 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).

In their paper, Bartual, Cervella and Moya (2011) chose to measure the performance of MFIs that have a banking side and a social side, using a goal programming based multicriterion methodology. Out of 12 global business performance ranking variables, assuming that the higher the value of any of the criteria, the higher the perception of the performance, Bartual et al. (2011) identified FEA (financial expense/total assets), personnel expense/total assets (PEA), CPB (cost per borrower (operating expense/average number of active borrowers) and PA (personnel allocation ratio (loan officers/personnel) variables to be exceptional with a negative effect.

Hudon (2010) analyzes the relationship between financial performance of MFIs and their management mechanisms. 83 MFIs of three types (non-profit institutions and NGOs, non-banking financial institutions, for-profit institutions and cooperatives), from Latin America, Africa, Central Asia and NIS, North Africa and the Middle East, and Asia, constitute the dataset provided by PlaNet Rating. All these MFIs are evaluated based on three financial indicators (ROA; AROA; Financial self-sufficiency) and four management dimensions (Decision making; board governance competencies). The results of Hudon (2010)'s analysis show that management ratings influence drastically the MFI financial performances. 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.

Cull, Demirgüç-Kunt, and Morduch (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 two dependent variables: financial self-sufficiency 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 Gaurav (2011)'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. 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.

Moti, Masinde, Mugenda, and Sindani (2012) conducted a study on empirical evidence of effectiveness of Credit Management System on Loan Performance on Microfinance Institutions in Meru Town and found out that credit terms formulated by the microfinance institutions do affect loan performance. The involvement of credit officers and customers in formulating credit terms affects loan performance. Interest rates charged had a negative effect on the performance of the loans, the higher the interest rates the lower the loan performance. Credit risk controls adopted by microfinance institutions have an effect on loan performance, credit insurance, signing of covenants with customers, diversification of loans, credit rating of customers, reports on financial conditions, refrain from further borrowing had an effect on loan performance (Kariuki, 2010). Collection policies adopted by microfinance institution had an effect on loan performance, stringent policy had a great impact on loan performance, and the lenient policy had an effect but was not as great as that of stringent policy.

Gatuhu (2013) undertook a study on the effects of Credit Management on Financial Performance of Microfinance Institutions in Kenya surveying 59 MFIs in Kenya. She used a census study to carry out the research and found out that client appraisal, credit risk control and collection policy had effect on financial performance of MFIs. The study established that there was strong relationship between financial performance of MFIs and client appraisal, credit risk control and collection policy. The study revealed that a unit increase in client appraisal would lead to increase in financial performance of MFIs in Kenya. According to Gatuhu (2013), this is an indication that there was positive association between client appraisal and financial performance of MFIs, an increase in credit risk control would lead to increase in financial performance of MFIs in Kenya, which shows that there was positive relationship between financial performance of MFIS and credit risk control and a unit increase in collection policy would lead to increase in performance; this is an indication that there was a positive relationship between financial performance of MFIs and collection policy. Client appraisal, credit risk control and collection policy significantly influence financial performance of MFIs in Kenya.

Musyoki and Kadubo (2012) conducted a study to assess various parameters pertinent to credit risk management as it affects banks' financial performance of Banks in Kenya between the periods of 2000 - 2006. The parameters covered in the study were; default rate, bad debts costs and cost per loan asset. Financial reports of 10 banks was used to analyze profit ability ratio for seven years (2000-2006) comparing the profitability ratio to default rate, cost of debt collection an cost per loan asset which was presented in descriptive, regression and correlation was used to analyze the data. The study revealed

that all these parameters have an inverse impact on banks' financial performance, however the default rate is the most predictor of bank financial performance vis-à-vis the other indicators of credit risk management. The recommendation is to advise banks to design and formulate strategies that will not only minimize the exposure of the banks to credit risk but will enhance profitability and competitiveness of the banks.

Mwangi (2012) conducted a study on the effects of credit risk management of financial performance of commercial banks in Kenya using a modern ROE as profitability indicator while non-performing loan ratio and capital adequacy ratio as credit risk management indicators. This study showed that there is a significant relationship between financial performance (in terms of profitability) and credit risk management (in terms of loan performance and capital adequacy). The results of the analysis states that both non-performing loans ratio and capital adequacy ratio have negative and relatively significant effect on return on equity (ROE), with non-performing loan ratio having higher significant effect on ROE in comparison to capital adequacy ratio. Hence, the regression as whole is significant; this means that non-performing loan ratio and capital adequacy ratio reliably predict ROE.

Muasya (2009) analyzed the impact of non-performing loans on the performance of the banking sector in Kenya in the time of global financial crises. The findings confirmed that non-performing loans do affect commercial banks in Kenya. This was with keen focus on financial performance and financial stability of commercial banks in Kenya. His

study concluded that commercial banks with high percentage of non-performing loans are more risky than those with lower percentage of non-performing loans.

Wanjira (2010) studied the relationship between non-performing loans management practices and financial performance of commercial banks in Kenya. The study concluded that there is a need for commercial banks to adopt non-performing loans management practices. The study further concluded that there was a positive relationship between non-performing loans management practices and the financial performance of commercial banks in Kenya which implies that the adoption of non-performing loans management practices leads to improved financial performance of commercial banks in Kenya.

2.5 Summary of Literature Review

The literature review begun by highlighting the theoretical approaches that surround the context of the relationship between credit risk management and financial performance of MFI. Key theories discussed are Portfolio Theory, Value at a Risk Theory and Asymmetric Information Theory. Then the chapter delves on empirical examples and literature that weigh financial performance against other determinates such corporate governance, financial sustainability, financial choice and outreach of financial institutions. The chapter also concentrated on empirical facets of credit management and financial performance from a global perspective and narrowing down to local studies that have been done on MFI sector. Local studies that have been done on microfinance sector do not focus on the effect of credit risk management on the financial performance of

Deposit Taking MFIs, there is therefore a gap in the empirical evidence available .This study seeks to bridge the gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed to attain accuracy in the description, explanation, and prediction to complete the study. The chapter comprises research approach, sampling, data collection, data analyzing instruments and the description of applied model.

3.2 Research Design

According to Mugenda and Mugenda (1999), research design is the outline plan or scheme that is used to generate answers to the research problems. It is basically the structure and plan of investigation. The study used a descriptive survey design. Descriptive research is used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation. The design involved an in depth study of credit risk management and its effect on financial performance of Deposit Taking MFIs licensed by Central Bank of Kenya.

3.3 Study Population

According to Mugenda and Mugenda, (2003) target population is that population to which a researcher wants to generalize the results of the study. The population of study

consisted of all the (9) Deposit Taking MFIs in Kenya that are licensed by the central Bank of Kenya (See Appendix 2).

3.4 Data Collection

The study used questionnaires, annual reports and financial statements on record and data from the Mix market to collect information. Primary data was collected using questionnaires (See Appendix 1). The questionnaire was both open and close-ended questions. The closed ended questions were used to test the rating of various attributes in order to obtain more varied responses. The open-ended questions provided additional information that may not have been captured in the close-ended questions.

Secondary data, such as tax profit, total assets, written off debt, and value of loans outstanding, were collected from annual reports and financial statements of the respective MFIs for the period year 2011 – year 2013.

3.5 Validity and Reliability

The questionnaire was pre-tested and where appropriate adjusted before the study to establish the effectiveness of the instrument. The opinion of the experts, supervisor was sought in development of the questionnaire to ensure it collects the relevant data to answer the research questions. The data collected from the DTMFI were audited financial statements from the institutions or extracted from the newspaper.

3.6 Data Analysis

The data collected through questionnaires were tabulated and analyzed using Statistical Package for the Social Sciences version 18 (SPSS v.18) and results tabulated and analyzed using descriptive statistics. The data collected from the annual reports of the DTMFIs was analyzed using multiple regression analysis: the relation of one dependent variable to multiple independent variables. The regression output was obtained using SPSS version 18.

3.6.1 Analytical Model

Theoretical Model equation

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where:

Y= Return On Assets (RoA)

α = Constant Term

β = Beta Coefficient

X1= Default Rate (DR)

X2= Bad Debts Cost (BDC)

X3= Cost per Loan Asset (CLA)

ϵ = Error term

The test of significance was 0.05

Definition of Variables

I. Dependent Variable

The measure for financial performance was the return on Assets (ROA), a ratio that measures company earnings before interest & taxes (EBIT) against its total net assets.

The ratio is considered an indicator of how efficient a company is using its assets to generate income before contractual obligation is met.

It is calculated as: $ROA = EBIT / \text{Total Assets}$.

ROA gives an indication of the capital intensity of the financial institution, which will depend on the industry; MFI that require large initial investment will generally have lower return on assets (Apps, 1996).

II. Independent Variables

Default rate (DR) is the term for a practice in the financial services industry for a particular lender to change the terms of a loan from the normal terms to the default terms that is, the terms and rates given to those who have missed payments on loan (Apps 1996).

DR ratio can be calculated as $Dr \text{ Ratio} = \text{Nonperforming Loans} / \text{Total loan}$

Bad Debt Cost is incurred when MFI lends a sum of assets to a debtor and is granted to be repaid under certain agreements; in many cases, however, the debtor is unable to repay

the debt at the fixed period of time by a certain date. In addition, changes in the valuation of debt currency change the effective size of the debt due to changes in market/interest rates (inflation or deflation), even though the borrower and the lender are using the same currency. Consequently, this can lead to bad debt cost. Bad debt cost includes lawyer's fees, consultancy fees & commissions to auctioneers (Apps, 1996).

Bad debt costs ratio can be calculated as: $BDC \text{ Ratio} = \text{Bad debt cost} / \text{Total cost}$

Cost per loan asset (CLA) is the average cost per loan advanced to customer in monetary term. Purpose of this is to indicate efficiency in distributing loans to customers. (Apps, 1996) CLA ratio can be calculated as:

$CLA \text{ Ratio} = \text{Total Operating Cost} / \text{Total amount of loans.}$

Table 3.1: Summary of Variables and Measurements

Variable	Definition	Formulae
Y	Financial Performance	$ROA = \text{Return on Assets} = \frac{\text{net operating income-taxes}}{\text{average total assets}}$
X1	Default Rate (DR)	$Dr \text{ Ratio} = \frac{\text{Nonperforming Loans}}{\text{Total loan}}$
X2	Bad Debts Cost (BDC)	$BDC \text{ Ratio} = \frac{\text{Bad debt cost}}{\text{Total cost}}$
X3	Cost per Loan Asset (CLA)	$CLA \text{ Ratio} = \frac{\text{Total Operating Cost}}{\text{Total amount of loans.}}$

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of data collected and discusses the findings of the effects of credit risk management on the financial performance of Deposit Taking Microfinance Institutions in Kenya. In this chapter, the results of the questionnaire and regression model are presented. The results are analyzed and the effect of credit risk management on firm performance described.

4.2 Response Rate

Out of the nine Licensed Deposit Taking MFIs by the central bank of Kenya, full data was attained from 6 hence a response rate of 67%. Thus, the study concentrated on the 6 Deposit Taking MFIs.

4.3 Data Validity

The questionnaire was pre-tested and where appropriate adjusted before the study to establish the effectiveness of the instrument. The opinion of the experts, supervisor was sought in development of the questionnaire to ensure it collects the relevant data to answer the research questions. The data collected from the DTMFI were audited financial statements from the institutions or extracted from their website.

4.4. General Information

The study sought to establish the length of time the Deposit Taking MFIs have been in existence as shown in table 4.1. From the findings 33.3 % of the respondents indicated 5 to 10 years 16.7% of the respondents indicated less than 5 years, whereas 50% of the respondents indicated for more than 15 years this implies that most of the Deposit Taking MFIs had been in existence for over 15 years.

The study sought to determine the number of clients the organization had. From the findings, all respondents indicated that their organization had over 5000 clients implying majority of the organizations featured in this study had over 5000 clients. The study sought to determine the organizations that had adopted Credit Risk Management practices. From the findings 83.3% of the respondents indicated that their organizations had adopted Credit Management practices, whereas 16.7 % indicated that their organizations had not, this implies that a significant number of organizations had adopted the use Credit Risk Management practices.

4.5 Descriptive statistics

Table 4.2 present the descriptive statistics for the data set. Four variables namely Financial Performance (ROA), Default Rate (DR), Bad Debts Cost (BDC) and Cost per Loan Asset (CLA) of the 6 MFIs with 12 observations each were used in the analysis. Return on assets had a mean of 0.525 with standard deviation of 0.14654. This illustrates that for every one shilling invested in average total assets, the firms earned net operating

income of Ksh. 0.525. On the average, default rate had a mean of 0.14093 and standard deviation of 0.6025. This implies that the firms incurred Ksh 0.1409 as non-performing loan for every one shilling advanced for loan to customers. Bad debt cost registered a mean of 0.17751 with standard deviation of 0.6693. This indicated that one shillings of total cost generated Ksh.0.17751 as a bad debt and finally cost per loan asset had a mean of 0.2051 with standard deviation of 0.01504. This illustrates that one shilling advanced as loan to consumers required Ksh 0.2051 as an operating cost.

Table 4.2: Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Return on Assets	12	0.525	0.146541	-0.79	7.17
Default Rate	12	0.1409	0.60257	0.305	0.46
Bad Debt Cost	12	0.1775	0.669396	0.15	0.57
Cost per Loan Asset	12	0.2051	0.01504	0.1922	0.375

4.6.1 Correlation analysis

The study sought to determine the effect of credit risk management on financial performance of Deposit Taking Microfinance Institutions licensed by the Central Bank of Kenya. Pearson Correlation analysis was used to achieve this end at 99%, 95% and 90% confidence levels. Table 4.3 shows that default rate to ROA is weak and negative ($R = -2.79$). Bad Debt cost showed negative but weak relationship with financial performance ($R = -0.094$). Cost per loan reported strong and negative correlation with return on asset ($R = -0.877$).

Table 4.2: Correlations Matrix

	ROA	Default_Rate	Bad_Debt_Cost	CLA_Ratio
ROA	1.000			
Default_Rate	-.279	1.000		
Bad_Debt_Cost	-.094	-.194	1.000	
CLA_Ratio	-.877	-.128	.064	1.000

4.6.2 Model Summary

Determination coefficients (R^2) were also carried out to determine the strength of the relationship between independent and dependent variables as shown in table 4.4 below

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.60996	.781	.752	1.9851

a. Predictors: (Constant), CLA_Ratio, Bad_Debt_Cost, Default_Rate

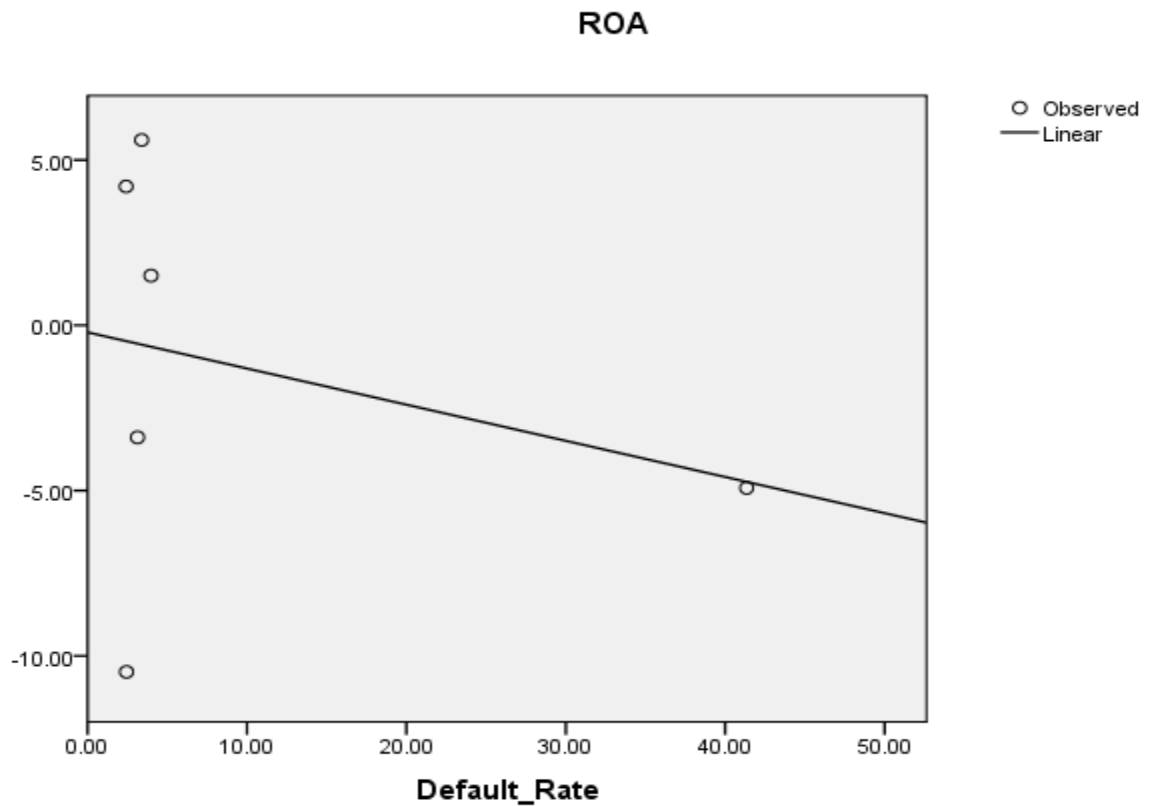
b. Independent Var:ROA

The study established R of 0.60996 and R^2 of 0.781, R of 0.60996 indicate strong relationship between ROA and the explanatory variables. This illustrates that credit risks management has strong effect on financial performance of MFIs. R square of 0.781

showed that 78.1% of the total variation in MFI financial performance is attributed to the changes in explanatory variables.

4.6.3 Relationship between ROA and Default Rate

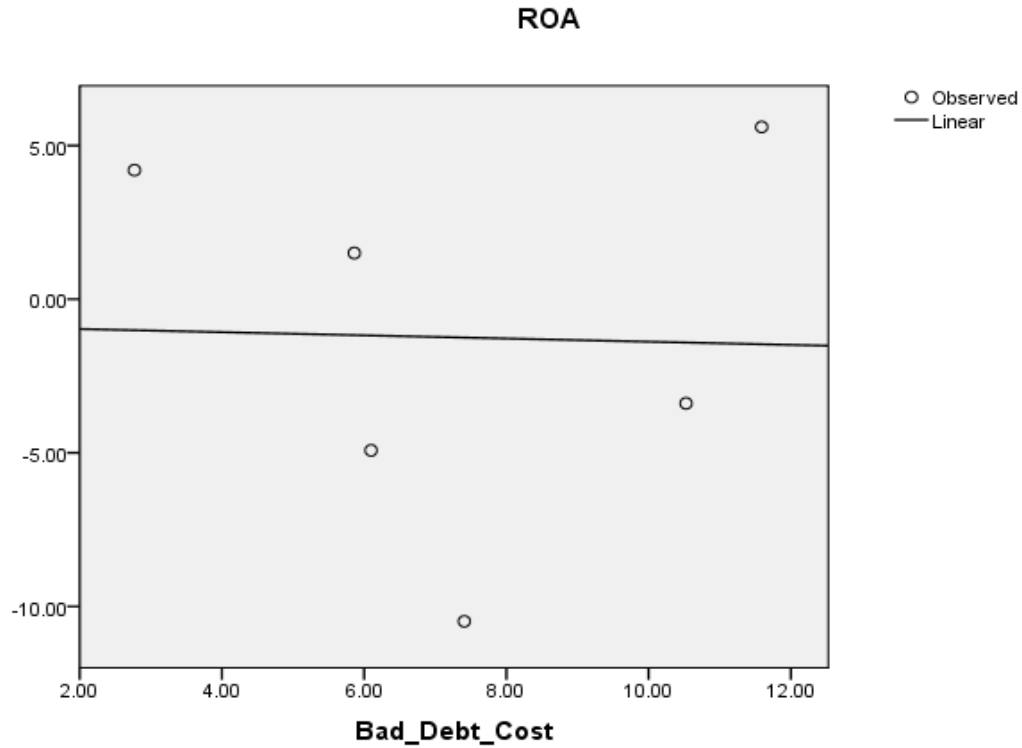
Figure 4.1: Scatter diagram for ROA vs Default Rate



The scatter diagram above shows the negative relationship between the two variables hence a negative gradient. This also implies that default rate is a relatively low indicator of return on assets subject to subsequent results (coefficients) in the regression analysis.

4.6.5 Relationship between ROA and Default Rate

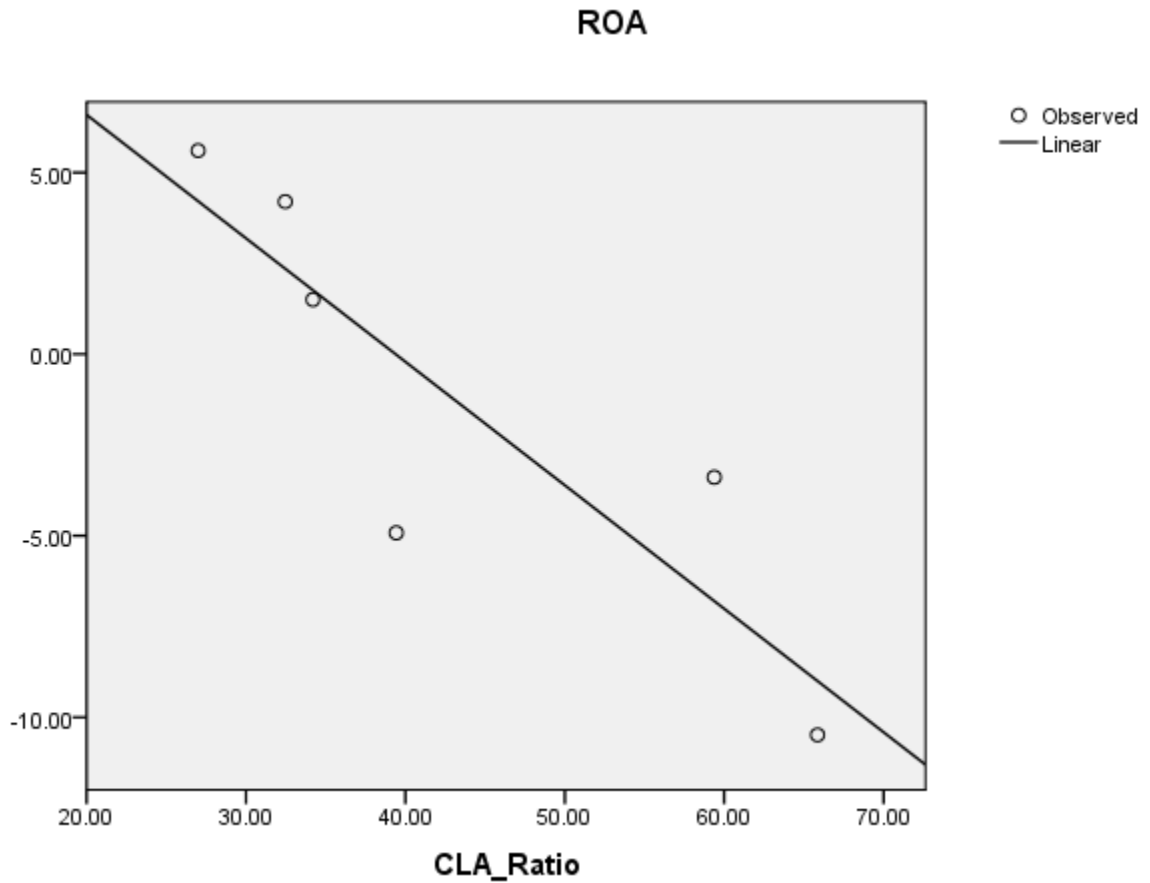
Figure 4.2: Scatter diagram for ROA vs Bad Debt Cost



From the scatter diagram above the points along the line of the best fit are observed to have a big dispersion in regard to the line. The negative points make line more horizontal reducing the gradient/slope between the two variables.

4.6.6 Relationship between ROA and Default Rate

Figure 4.3: Scatter diagram for ROA vs CLA



The scatter diagram above shows the negative relationship between the two variables hence a negative gradient. The slope hints that CLA is a relatively significant indicator of return on asset.

Table 4.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.6735	3	58.231	1.07	.0101 ^a
	Residual	128.1633	12	6.452		
	Total	142.8368	15			

a. Predictors: (Constant), CLA_Ratio, Bad_Debt_Cost, Default_Rate

b. Dependent Variable: ROA

4.6.2: Coefficients Analysis

From the data in table 4.11 the established regression equation was

$$Y = 2.990 - 0.6517 X_1 - 4.8026 X_2 - 0.3114 X_3$$

4.6.7

Table 4.5: Summary of Coefficient Results

Model		Standardized Coefficients	t	Sig.
		Beta		
1	-cons	2.990	-3.82	.011
	Default Rate	-.6517	-4.88	.001
	Bad Debt Cost	-4.8026	-3.45	.025
	CLA Ratio	-.3114	-4.98	.000

4.7 Discussion of Research Findings

From the regression result above, all the explanatory variables are statistically significant in explaining the variation in return on assets. On average, the firms will register 2.99 units in return on assets if other explanatory variables were not considered. At 5% level of significance, default rate is significant ($t=-4.88$, $p=0.001$, $p<0.05$) in causing the variation in return on assets. A unit increase in default rate will lead to 0.6517 units decrease in return on assets. The study has established that bad debt cost is statistically significant ($t=-3.45$, $p=0.025$, $p<0.05$) in explaining the variation in return on assets. A unit increase in bad debts cost will lead to 4.8026 units decrease in return on assets. Cost per loan assets is statistically significant in causing the changes in return on assets ($t=-4.98$, $p=0.000$, $p<0.05$). Therefore a unit increase in cost per loan assets will lead to 0.3114 unit decrease in return on assets. This finding therefore indicates that all the independent variables tested in this research process have a strong relationship with the dependent variable ROA which was a measure of financial performance in DTMFIs. The regression equation established that cost per loan asset, and bad debt cost and default rate are important credit risk management indicators that predict financial performance of DTMFIs. R square of 0.781 showed that 78.1% of the total variation in MFI financial performance is attributed to the changes in explanatory variables. The findings shows that default rate to ROA is weak and negative ($R= -2.79$). Bad Debt cost showed negative but weak relationship with financial performance ($R= -0.094$). Cost per loan reported strong and negative correlation with return on asset ($R= -0.877$).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of key data findings, conclusion drawn from the findings highlighted and recommendations made there-to. The conclusions and recommendations drawn were focused on addressing the objective of the study. The researcher intended to determine the effect of credit risk management on the financial performance of Microfinance Institutions in Kenya.

5.2 Summary of Findings

The objective of the study was to investigate the effect of credit risk management on the financial performance of the Deposit Taking Microfinance Institutions in Kenya. In general, the study was able to deduce the effect of credit risk management on financial performance. Using regression outputs of the Deposit Taking MFIs the results showed that cost per loan had the most significant negative effect on ROA as compared to default rate and cost per loan, which also have a negative relationship to ROA. The study findings indicated that financial performance is fairly affected by credit risk management among microfinance institutions. Since microfinance institutions employ varied credit risk management practices, credit risk management affect financial performance on different levels of operations.

The regression equation established that cost per loan asset, and bad debt cost and default rate are important credit risk management indicators that predict financial performance of DTMFIs. The study also showed that cost per loan asset is a major predictor of financial performance. The study also found that all the p-values were less than 0.05 an indication that all the variables were statistically significant in influencing financial performance of Deposit Taking MFIs in Kenya.

The study established that DTMFIs use credit risk control in Credit risk Management to a great extent. The study further established that interest rate risk, liquidity risk, credit risk and operational risk affects performance of loans in the DTMFI. Credit checks enhance credit risk management, flexible repayment periods improve loan repayment, penalty on late payment enhances clients commitment to repay loan, and Credit committees involvement in making decisions regarding loans are essential in reducing default/credit risk which entirely are essential in reducing default/credit risk.

5.3 Conclusion

The general objective of the study was to establish the impact of credit risk management on financial performance of DTMFIs' in Kenya. The result of the study showed that credit risk management is predictor of MFI financial performance thus success of MFI performance depends on risk management practices and credit risk control set by management.

Credit risk management indicators such as Bad Debt Cost and Default rate are not significant predictors of performance of Deposit taking MFI. On the other hand, Cost per Loan Asset is a significant determinant of DTMFI financial performance. Since risk management in general has very significant contributions to financial performance of Deposit Taking MFIs, more emphasis should be put on credit risk management. Sustainability and self-efficiency in DTMFIs is a key priority mostly sought through credit risk controls that eventually affect profit generation.

In order to reduce risk on loans and achieve maximum performance DTMFI's need to allocate more funds to default rate management and strategize ways to reduce or limit bad debt cost and cost per loan asset. In light of the above sentiments, the researcher came to the conclusion that Deposit Taking Microfinance Institutions with lower Bad Debt Cost, default rate, and Cost per Loan Asset ratios have high return on asset hence good credit risk management strategies.

5.4 Recommendations

Since credit risk management in general has very significant contributions to DTMFI performance, they are advised to put more emphasis on risk management. In order to reduce risk on loans and achieve maximum performance the DTMFI's need to allocate more funds to default rate management and find better mechanisms to limit bad debt cost and cost per loan asset.

Based on the study other factors not studied in this research may have significant contributions to MFI financial performance, therefore, require further research to efficiently manage the credit risk hence improve MFI financial performance.

There is also need for MFIs to enhance their credit risk control. All MFIs should adopt a credit risk grading system. The system should define the risk profile of borrower's to ensure that account management, structure and pricing are commensurate with the risk involved. Risk grading is a key measurement of a MFIs asset quality, and as such, it is essential that grading is a robust process. All facilities should be assigned a risk grade. Where deterioration in risk is noted, the Risk Grade assigned to a borrower and its facilities should be immediately changed. Borrower Risk Grades should be clearly stated on Credit Applications. This will help decrease default rate levels as well as non-performing loans. This will help in improve financial performance.

5.5 Limitations of Study

Due to unavailability of information, the study did not include all 9 licensed Microfinance Institutions but rather concentrated on 6 MFIs licensed by the Central Bank, which the researcher was able to collect full data. The study was limited to license MFIs, which happen to be bigger financial institutions of the industry in the country and the challenges facing the service industry.

The respondents approaches was reluctant in giving information fearing that the information sought would be used to intimidate them or print a negative image about

them or their Micro Finance Institution. Some respondents even turned down the request to fill questionnaires. The study handled the problem by carrying an introduction letter from the University and requested approval from the office head office to collect data from the respective MFI branches, while assuring them that the information they give would be treated confidentially and it would be used purely for academic purposes.

Employees operate on tight schedules; respondents were not able to complete the questionnaire in good time and this might overstretch the data collection period. To mitigate this limitation, the study made use of network to persuade targeted respondents to fill up and return the questionnaires.

5.6 Suggestions for Further Research

Credit risk management in the microfinance institutions is improving and evolving, but much still needs to be done. Based on the study other factors not studied in this research has a very significant contribution to MFI performance therefore require further research to efficiently manage the credit risk hence improve bank financial performance.

Having institutional structures like credit reference bureau in Kenya will go hand in hand in reducing the credit risk posed by lending and hence a study is needed to investigate the cut in insurance costs associated with loans and cutbacks in profitability of these firms.

This study could be further developed by including more independent variables to the regression model and increasing the sample size. The variables would help improve the

results of the study since it would include all the other factors that affect the profitability of the banks. The increased sample size would give a better representation of the banking sector.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

Name of MFI

Part A: General Information

1. For how long has your MFI been in existence?

Less than 5 years []

Between 5 to 10 years []

Between 10 to 15 years []

Above 15 years []

2. How many clients does your organization have?

Less than 100 clients []

between 100 to 250 Client []

Between 250 to 500 clients []

above 5000 client []

3. Has your organization adopted Credit Risk Management Practices?

Yes [] No []

4. To what extent does the MFI develop strategic management approaches that mitigate credit risk?

Very great extent []

Great extent []

Moderate extent []

Low extent []

Not at all []

5. Please review the risk types below and evaluate the risk of your institution in terms of importance, (1=very important, 5=not important) and how well your institution is prepared for the management of such risks (1= well prepared, 3= not prepared).

Importance	Preparedness	Risk types	These risks affect your ability and willingness to extend credit?				
			Very great extent	Great extent	Moderate extent	Low extent	Not at all
		Credit Risk					
		Liquidity Risk					
		Market / interest rate risk					
		Operational risk					
		Others specify:					

6. How do any of these risks affect your willingness to extend credit?

Please elaborate

.....

Part B: Credit Risk Management Practices

7. What is your level of agreement on the following statements relating to credit risk management in MFIs?

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The MFI faces credit risks					
The MFI has credit risk rating systems for the credit risk of both individual exposures and portfolios					
Does your MFI have a system of verifying client information before loan disbursement					
Building relationship with customer during short term loan period before disbursing a long-term loan is a proactive credit risk management					
Amount of loan disbursed is the biggest predictor of non-repayment of loan disbursed to new clients					

8. Which of the following is the single most important contributing factor to credit risk reduction in your institution?

- The use of credit scoring models
- Short term loans instead of long-term loans
- Smaller loan amounts
- Accurate loan affordability methods

Comment

.....

CREDIT RISK CONTROL

9. To what extent does the MFI use credit risk control in Credit Risk Management?

Very great extent [] Great extent [] Moderate extent [] Low extent [] Not at all []

10. What is your level of agreement on the following statements on credit risk control in MFIs?

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Imposing loan size limits is a viable strategy in credit management					
Regular credit checks enhance credit risk management.					
Flexible repayment periods improve loan repayment					
Penalty on late payment enhances clients commitment to repay loan					
The use of customer credit application forms improves monitoring and credit risk management as well					
Credit committees involvement in making decisions regarding loans are essential in reducing default/credit risk					
Interest rates charged affect performance of loans in the MFI					

11. According to your institutional policy framework, what is the most effective way of lowering your risk exposure?

- Conservative credit granting policy
- Better loan management system
- Better debt collecting on client arrears
- Well educated staff
- Improved Internal controls

APPENDIX 2: DATA ANALYSIS

Table 4.10: Period within which MFI had been in existence

Period of time	Frequency	Percentage
Less than 5 years	1	16.7
Between 5 to 10 years	2	33.3
Between 10 to 15 years	0	0
15 years and above	3	50
Total	6	100

Table 4.11: The Number of Clients in the organization

Number of clients	Frequency	Percentage
Less than 100 clients	0	0
Between 100 to 250 Client	0	0
Between 250 to 500 clients	0	0
above 5000 clients	6	100
Total	6	100

Table 4.12: Adoption of Credit Risk Management Practices

	Frequency	Percentage
Yes	5	83.3
No	1	16.7
Total	6	100

Table 4.13: Development of strategic management approaches to mitigate credit risk

Importance	Preparedne	Risk types	These risks affect your ability and willingness to extend credit?							Mean	Std Deviation
			Very great extent	Great extent	Moderate extent	Low extent	Not at all				
5	2	Credit Risk	3	3					0.12	0.43	
5	2	Liquidity Risk		6					0.16	0.54	
5	2	Market/ interest rate risk	3	3					0.12	0.43	
5	2	Operational risk	3	3					0.12	0.43	

Table 4.14: Credit Risk Management Practices

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std Deviation
The MFI faces credit risks	6					0.08	0.27
The MFI has credit risk rating systems for the credit risk of both individual exposures and portfolios	2	3	1			0.17	0.64
Does your MFI have a system of verifying client information before loan disbursement	6					0.08	0.27
Building relationship with customer during short term loan period before disbursing a long-term loan is a proactive credit risk management	4		2			0.13	0.52
Amount of loan disbursed is the biggest predictor of non-repayment of loan disbursed to new clients				3	3	0.36	1.23

Table 4.15: Extent to which MFI use credit risk control in Credit Management

Number of clients	Frequency	Percentage
Very great extent	1	16.7
Great extent	4	66.7
Moderate extent	1	16.7
Total	6	100

Table 4.16: Credit Risk Control

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std Deviation
Imposing loan size limits is a viable strategy in credit management	3		3			0.16	0.61
Regular credit checks enhance credit risk management.	6					0.08	0.27
Flexible repayment periods improve loan repayment	6					0.08	0.27
Penalty on late payment enhances clients commitment to repay loan	6					0.08	0.27
The use of customer credit application forms improves monitoring and credit risk management as well	3	3				0.16	0.59
Credit committees involvement in making decisions regarding loans are essential in reducing default/credit risk	6					0.08	0.27
Interest rates charged affect performance of loans in the MFI		3		3		0.24	0.86

APPENDIX II: LIST OF LICENSED DEPOSIT TAKING MICROFINANCE INSTITUTIONS

- 1) Faulu Kenya DTM Limited
- 2) Kenya Women Finance Trust DTM Limited
- 3) SMEP Deposit Taking Microfinance Limited
- 4) Remu DTM Limited
- 5) Rafiki Deposit Taking Microfinance
- 6) UWEZO Deposit Taking Microfinance Limited
- 7) Century Deposit Taking Microfinance Limited
- 8) SUMAC DTM Limited
- 9) U&I Deposit Taking Microfinance Limited

Source: The Central Bank of Kenya

URL: <https://www.centralbank.go.ke/index.php/microfinance-institutions/14-bank-supervision/83-list-of-licensed-deposit-taking>

Appendix III: Data

MFI	Year	ROA	Default Rate	BDC	CLA
Faulu Kenya	2011	0.42	0.311	0.277	0.3246
	2012	0.45	0.384	0.287	0.1922
Kenya Women Finance Trust	2011	7.17	0.397	0.506	0.342
	2012	7.08	0.388	0.15	0.2898
SMEP	2011	0.561	0.305	1.359	0.2699
	2012	0.632	0.46	0.434	0.2999
Remu	2011	-1.04	0.344	0.341	0.2585
	2012	2.51	0.363	0.526	0.3419
Rafiki	2011	-0.49	0.35	0.51	0.2942
	2012	1.55	0.416	0.57	0.3291
Uwezo	2011	-0.79	0.313	0.053	0.3938
	2012	4.848	0.342	0.23	0.2842