THE EFFECT OF NON-PERFORMING LOANS ON THE
FINANCIAL PERFORMANCE OF DEPOSIT TAKING
MICROFINANCE INSTITUTIONS IN KENYA

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DECLARATION

This research project is my original work and has not been presented or published for the award of any degree in this or any other university.

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This Research project has been submitted for examination with my approval as a University Supervisor.

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DEDICATION

This project is dedicated to my father Stanley Amuti who laid the foundation of my academic world. Special dedication to my mother Christine Otit and my brothers Nicholas Amuti, Kenneth Amuti and Tom Amuti for the role they played in my life.
ACKNOWLEDGEMENT

My sincere gratitude goes to the almighty God who renewed my strength at every single stage in this project. I am very grateful to my supervisor Mrs. Winnie Nyamute for her professional support, guidance, commitment and support.

I salute my husband Zablon Manoah, children Robina Mogore and Stanley Sanawa for the support they accorded me during the entire period I was studying the MBA programme.

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ABBREVIATIONS

AMFI: Association of Microfinance institutions of Kenya
MFI: Microfinance Institution
ROA: Return on Assets
ROE: Return on Equity
SACCO: Savings and Credit Cooperative Organization
ABSTRACT

Nonperforming loans have got an effect on not only the financial institutions but on the entire economy. When non-performing loans continue to increase over time, it makes it difficult for financial institutions including microfinance institutions to manage them. The main aim of this study was to establish the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya. The study had one objective to achieve: to determine the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya.

It involved a survey of deposit taking microfinance institutions in Kenya. The study made use of secondary data that was obtained specifically from the financial statements of the microfinance institutions. The study targeted to collect secondary data from 9 deposit taking microfinance institutions but managed to obtain data from 7 institutions. Multivariate regression analysis was used to establish the effect of these variables of the dependent variable.

It was established that the nonperforming loans in deposit taking microfinance institutions account for the greatest percentage of the variance in the profitability of these institutions. All the three independent variables in the study non performing loans, rate of loan repayment and operational expenses explain 64.6% of the profitability of microfinance institutions. However non performing loans and operational expenses have more significant effect than the rate of loan repayment that is achieved by the organizations.
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The deterioration in the quality of non-performing loan portfolio has been at the center of episodes of costly financial institutions' distress and economic crises in both developing and advanced economies. The 2008 global financial crisis is no exception. Its devastating effects, as well as its origination from a sharp increase in mortgage loan defaults in the United States, underscore the linkages between financial and macroeconomic shocks and have renewed interest in the relationship between credit market frictions and the risk of financial instability (Nkusu, 2011). The rise in nonperforming loan ratios has serious consequences not only to microfinance institutions but also to the entire economy. The level of nonperforming loans is a significant determinant of the level of bank costs as well as the estimates of scale economies in banking and it has also been associated as a major cause of the Asian financial crisis (Kwack, 2000).

There are various factors that determine the level of non-performing loans among financial institutions. According to Nkusu (2011) the determinants of non-performing loans can belong to two categories: institutional or structural and macroeconomic. The institutional or structural indicators pertain to financial regulation and supervision and the incentive structure therein. Intuitively, disparities in financial regulation and supervision affect banks' behavior and risk management practices and are important in explaining cross-country differences in non-performing. The macroeconomic environment influences borrowers' balance sheets and their debt servicing capacity. The set of macroeconomic variables used varies across previous studies, but broad indicators of
macroeconomic performance, such as Gross Domestic Product growth and unemployment are generally included in the three strands of the literature we consider on the determinants of non-performing. The finding of a negative relationship between non-performing and economic growth is a common thread among studies surveyed and will therefore not be mentioned (Nkusu, 2011).

Non-performing loans are not a preserve of any particular institution or economy since they are evident in both developed and developing economies. According to Klein (2013) there has been a constant increase in the level of non-performing loans of financial institutions in Central and Eastern Europe more especially during and after the 2008 financial crisis. Odongo and Kendi (2013) indicate that microfinance institutions in Kenya are equally facing loan defaults with individual defaulters turning out to be more than group loan defaulters. This has made most microfinance institutions to prefer group lending more than individual lending.

1.1.1 Concept of nonperforming loans

Nonperforming loans are defined as those financial assets from which banks no longer receive interest and/or installment payments as initially or previously scheduled. They are referred to as non-performing because the loan ceases to generate income for the bank. Choudhury et al. (2002) state that the nonperforming loan is not a multiclass concept. This is mainly because nonperforming loans can be classified into different varieties usually based on the duration it has been overdue. Nonperforming loans are viewed as a typical byproduct of a financial crisis: they are not a main product of the lending function
but rather an accidental occurrence of the lending process, one that has enormous potential to deepen the severity and duration of financial crisis and to complicate macroeconomic management (Woo, 2000). This is because nonperforming loans can bring down investors' confidence in the banking system, piling up unproductive economic resources even though depreciations are taken care of, and impeding the resource allocation process. In a bank-centered financial system, nonperforming loans can further thwart economic recovery by shrinking operating margin and eroding the capital base of the banks to advance new loans.

This is sometimes referred to as “credit crunch” (Bernanke et al., 1991). In addition, nonperforming loans if created by the borrowers willingly and left unresolved, might act as a contagious financial malaise by driving good borrowers out of the financial market. Muniappan (2002) asserts that a bank with high level of nonperforming loans is forced to incur carrying costs on non-income yielding assets that not only strike at profitability but also at the capital adequacy of a bank, and in consequence, the bank faces difficulties in augmenting capital resources. Bonin and Huang (2001) indicate that the probability of banking crises increases if financial risk is not eliminated quickly. Such crises not only lower living standards but can also eliminate many of the achievements of economic reform overnight.

1.1.2 Concept of financial performance

Financial performance is a very important aspect of financial management and can therefore not be ignored because it is central to the survival of any business enterprise.
Without sound financial performance, a business organization may easily close down its operations. Successful financial performance of an organization will depend on a number of factors such as capacity to manage financial issues effectively. There is also evidence of a positive association between financially related activities such as planning, maintenance of financial records, obtaining external finance and professional finance advice, and successful financial performance (Ismaila, 2011).

Measuring financial performance of an organization is very important since it determines whether the organization has been able to achieve its financial objectives or not. There are a variety of measures that organizations can use or adopt in measuring their financial performance. One such category of measures is the liquidity measures that determine the ability of the business to meet its financial obligations without disrupting any of its activities. These measures usually rely on the relationship between assets and liabilities of the organization. The other type of measures are solvency measures which determine the amount of borrowed capital used by the business relative the amount of owner’s equity capital invested in the business.

This implies that solvency measures provide an indication of the business’ ability to repay all indebtedness if all of the assets were sold. Financial performance can also be measured using profitability measures such as Return on Assets (ROA) and Return on Equity (ROE). The profitability measures are important in measuring the extent to which a business can be able to generate profits from the factors of production (Crane, n.d).
1.1.3 Nonperforming Loans and Financial Performance

Non performing loans have got an effect on not only the financial institutions but on the entire economy. For instance Klein (2013) indicates that the financial crisis of 2008 had a huge impact on the individual financial performance of financial institutions as well as far reaching macroeconomic effects in most countries around the globe. When non-performing loans continue to increase over time, it makes it difficult for financial institutions including microfinance institutions to manage them. It also implies that more resources have to be committed towards provisions for the non performing loans and additional costs will be spent in financing recovery efforts. These costs and the provisions devour a huge portion of the profits that is earned microfinance institutions thus retarding their financial performance.

The level of non performing loans in microfinance institutions also determines how sustainable a microfinance institution can be. Kereta (2007) confirms that nonperforming loan level is one of the major determinants of financial performance of microfinance institutions. It is therefore evident that nonperforming loans are very critical in determining the level of financial performance that can be attained by a microfinance institution.

According to Mwangi (2012) there is an inverse relationship between the amount of non-performing loans and the financial performance. He further says that when the non-performing loans are high, the financial performance measured by ROA is low. The reverse also happens when non-performing loans are low. A similar position is also held by Wanjira (2010) who confirms that non-performing loan management practices
determine the financial performance of an organization. This implies that best practices in non-performing loan management practices has the potential of enhancing the financial performance of an organization.

1.1.4 Microfinance Institutions in Kenya

Microfinance can be defined as financial instruments, such as loans, savings, insurance and other financial products that are tailored only to the poor. Microfinance is created in the economy for the economic benefit of the poor and to alleviate poverty. Microcredit is the lending side of microfinance. Microcredit loans help the poor to be involved in income generating activities that allow them to accumulate capital and improve their standard of living. Previously, microfinance was known as rural finance or informal finance. Rural finance and informal finance have similar characteristics and practices as microfinance, as they are involved in small loans that are normally tailored to the poor. The term microfinance became popular and widely used with the establishment of Grameen Bank by Muhammad Yunus in the 1970s in Indonesia (Mokhtar, Nartea and Gan, 2009).

The microfinance concept is still relatively new in Kenya but is gaining popularity quickly. The activities of microfinance institutions in Kenya are governed by the Microfinance Act that was enacted in the year 2006. The Act recommends that microfinance institutions can exist in three different categories depending on the type of registration: There are deposit-taking microfinance institutions that are allowed to take customer deposits; lending non-deposit taking institutions such as SACCOs and informal
organizations. The latter category includes club pools and financial services associations. Microfinance institutions in Kenya have an objective of facilitating access to financial services among the unbanked poor and they currently serve about 6.5 million clients with an outstanding loan portfolio in excess of Ksh23.6 billion.

1.2 Research Problem

The main activity of microfinance institutions is to encourage small savings and lending to low income earners in order to alleviate poverty as one of the millennium development goals as stated by the United Nations Organization. However, in the process of lending to this category of people, the microfinance institutions also experience some challenges in recovering all the monies lent to their clients. This creates a non performing loan portfolio that eats into their profits due to large provisions for the same. The customers may not entirely be blamed for the non-performing loans since the general macroeconomic conditions and the management of the loan book play a very significant role in determining the size.

Microfinance institutions in Kenya have played a very important role of providing financial services to majority of the unbanked populations. These financial services include small credit facilities in form of loans but most of them have a challenge of recovering these loans lately. Research has established that non-performing loans affect the financial performance of financial institutions. For instance Nkusu (2011) did carry out a study on nonperforming loans and macro-financial vulnerabilities in advanced economies. The study established that an increase of non-performing loans beyond some
level may result to major economic setbacks such as the 2008 financial meltdown. Wu, Chang and Selvili (2003) had a slightly similar study that investigated the banking system, real estate markets, and nonperforming loans. Their study confirmed that a higher ratio of corporate loans to individual loans results in a lower percentage of nonperforming loans. In contrast, a lower real estate lending rate relative to the primary lending rate leads to a higher percentage of nonperforming loans. These results suggest that the percentage of nonperforming loans can be partially governed by the lending practices of bank. There are equally local studies that have been conducted and are closely related to this study. For instance Wanjira (2010) conducted a study on the relationship between non-performing loans management practices and financial performance of commercial banks in Kenya. The study established that commercial banks need to adopt good lending practices such as ensuring sufficient collaterals, limiting lending to various kinds of businesses, loan securitization, ensuring clear assessment framework of lending facilities and use of procedures in solving on problematic loans.

Mwangi (2012) also carried out a study on the relationship between the level of nonperforming loans and the financial performance of Commercial banks in Kenya. The study revealed that when the non-performing loans are low, the financial performance of commercial banks is high and the reverse also happens when the non performing loans are high.

There is evidence of expansive research on nonperforming loans and financial performance both internationally and locally. However, a close examination at the work
of several authors reveals that most of the research has concentrated on commercial banks thus excluding microfinance institutions. Microfinance institutions charge lower levels of interest and they target the lower income earners in the economy. They are also relatively new in most developing countries such as Kenya and they have a critical role in solving the problem of financial inclusion. Their exclusion from studies on the effect of non-performing loans on financial performance leaves a critical gap that needs to be filled. This study will therefore seek to establish how non-performing loans affect the financial performance of deposit taking microfinance institutions in Kenya. The critical question that the study sought to answer was: what is the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya?

1.3 Research Objective

To determine the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya.

1.4 Value of the Study

The findings of this study will be of great significance to several categories of people: Academicians who may be interested in conducting further research on nonperforming loans and financial performance will get relevant information that can serve as reference. The study will also be essential in confirming the theoretical relationship that exists between non-performing loans and financial performance of deposit taking microfinance institutions. It will also form part of the body of knowledge on nonperforming loans and financial performance.
The deposit taking microfinance institutions both locally and even internationally will be able to benefit from the findings of this study. They will be able to understand the effect of non-performing loans on their financial performance. This will be of great help to them since it will enable policy makers in these institutions to come up with appropriate policies on management of non-performing loans. The policies may assist them to better manage the non-performing loans. Potential investors in microfinance sector will also gather prior knowledge before commencing business.

There are a number of deposit taking microfinance institutions in the country that are funded by non governmental organizations. These organizations will also be able to understand the effect of non-performing loans on the microfinance institutions they fund. It will enable them redesign their funding policy in order to counter the non-performing loan challenges.

Research has also confirmed that macroeconomic conditions influence the level of non-performing loans. The government of Kenya will also benefit from the findings of this study since it will enable them to come up with favorable macroeconomic policies that will not lead to increase in the level of non performing loans.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a discussion on the relevant literature reviewed as far as the effects of non-performing loans and financial performance of deposit taking microfinance institutions is concerned. Among the issues discussed include the theoretical foundations; the conceptual framework; the empirical literature and the summary of the literature review.

2.2 Theoretical Framework

There are a number of theories that seek to explain financial performance. However, the theories that explain nonperforming loans are few. This study will discuss five theories that seek to explain the two concepts. The first two theories explain the need for financial performance and the last three presents need for microfinance lending and reasons why microfinance institutions deviate from lending to the poor.

2.2.1 The stewardship theory

The main purpose of the stewardship theory is to address the underlying agency theory assumption that there is a tension between the risk propensity of principals and their agents whereby agents focus their actions upon mitigating their personal risk at the expense of principals. The agency theory suggests that owners must recognize this tension and prevent agent activity related to moral hazard by monitoring managers and developing mechanisms that align the interests of agents with principals and prevent
opportunistic actions by agents (2003). On the other hand, stewardship theory assumes that managers behave as trustworthy stewards of the organization and focus on the collective good of the constituents in the firm regardless of the manager's self-interests (Donaldson and Davis 1991). The possibility of moral hazard is assumed away because the manager, who is considered as the steward, decides to work on behalf of the owners and this causes the risk differential between owner and manager that drives the hidden actions of managers in the owner-agent theory are not acted upon by the steward manager.

The steward manager believes ownership will equitably share the residual claims from the firm hence maximization of those claims for the owner maximizes the share of the steward manager. The stewardship theory indicates that there is no misalignment between the interests of managers and owners because steward managers believe the pursuit of what is best for the organization is what is best for their constituents and themselves. Actions that benefit the organization and their owners are taken even if such actions are not in the steward’s immediate self-interest.

This underlying assumption of commonality between managers and owners runs counter to the assumption of the individualistic, self-serving, opportunists that organizational economists have offered as the model of firm management in a market system (Arthurs, 2003). Stewardship theory also argues that individuals can abandon self-interest. In this case, the managers are not motivated by personal or individual goals but rather by the firm interests (Wesley, 2010). 

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2.2.2 The stakeholder theory

The stakeholder theory is based on the argument that other than shareholders there are several agents with an interest in the actions and decisions of companies. Stakeholders are groups and individuals who benefit from or are harmed by, and whose rights are violated or respected by corporate actions. In addition to shareholders, stakeholders include creditors, employees, customers, suppliers, and the communities at large. Stakeholder theory asserts that companies have a social responsibility that requires them to consider the interests of all parties affected by their actions. Management should not only consider its shareholders in the decision making process, but also anyone who is affected by business decisions. In contrast to the classical view, the stakeholder view holds that “the goal of any company is or should be the flourishing of the company and all its principal stakeholders (Freeman et al., 2004).

Some of the problems with stakeholder theory lie in the difficulty of considering voiceless stakeholders such as the natural environment and absentee ones such as future generations or potential victims (Capron, 2003). The difficulty of considering the natural environment as a stakeholder is real because the majority of the definitions of stakeholders usually treat them as groups or individuals, thereby excluding the natural environment as a matter of definition because it is not a human group or community as are, for example, employees or consumers (Buchholz, 2004).
Phillips and Reichart (2000) argue that only humans can be considered as organizational stakeholders and criticize attempts to give the natural environment stakeholder status. The authors of this article agree with this assertion.

2.2.3 Mission drifting theory of microfinance

The mission drifting theory of microfinance suggests that the main mission of microfinance institutions is to provide affordable financial services to majority of the poor populations around the world. Provision of affordable financial services therefore entails provision of loans at low interest rates and laying more emphasis on poor clients. But some microfinance institutions find themselves shifting their focus from the poor clients who are more riskier to lend to and start lending to corporate or rich clients in their bid to enhance financial performance and avoid high levels of non performing debts. When this happens, microfinance institutions are said to be drifting from their initial mission of providing affordable financial services to the poor. The level of nonperforming debts and the need to attain high financial performance is slowly making microfinance institutions to deviate from their mission of lending money to the low income bracket in the society (Beatrice and Ariane, 2010).

2.2.4 The Financial Accelerator Theory

This theory seeks to explain how small economic shocks can have relatively large effects on the lending and borrowing activities. The theory relies on the interplay between economic agents' net worth and the external finance premium that arises due to asymmetric information between lenders and borrowers. Where economic agents' net
worth is defined as: the sum of liquid assets plus collateral value of illiquid assets less outstanding obligations; and the external finance premium is defined as: the difference between the cost of funds raised externally and opportunity costs internal to the firm (Bernanke, Gertler and Gilchrist, 1999). The theory posits that in the case of debt financing, borrowers will be more eager to undertake riskier projects. That is, a project that has a high probability of large return, but also those offering low returns. From the borrower’s perspective these projects are preferred since the firms’ losses in the cases when the project’s return is low are limited to zero by legal regulation. From the lenders’ point of view, these projects are unfavorable since they bear all, or most of, the costs in the case of low project returns. The theory also indicates that due to economic shocks, the borrowers may not have the ability to borrow and are likely to avoid repayment of their loans or external finance.

2.2.5 Credit Rationing Theory

The credit rationing theory suggests that lenders control the amount of credit they give out to borrowers depending on the prevailing interest rates and available collateral or substitutes for collaterals. Lenders will make decisions to lend or not to lend depending on the type of collateral that has been presented to them by a borrower. If lenders disburse loans at high interest rates, they attract riskier investments and there are more chances of borrowers avoiding to meet their repayment requirements. The provision of loans based on other alternatives to collateral provides borrowers with an avenue of defaulting from repaying their loans since their relationship with the lender is not as strong when collateral is involved. The credit rationing theory suggests that interest rate
is very significant in determining the amount a financial institution will be willing to lend and determine the ability of the borrower to repay the loan (Tessie and Wim, 2009).

2.3 Empirical Literature

Bernstein (1996) carried out a study on the effect of nonperforming loans on financial performance. The study involved a regression analysis of non-performing loans as independent variable and operational costs as the dependent variable. The study reveals that the level of nonperforming loans is a significant determinant of the level of bank costs as well as the estimates of scale economies in banking. He further asserts that the cost curve of banks with high levels of nonperforming loans have the standard U-Shape with the optimal point. On the other hand, the banks with low levels of nonperforming loans do not exhibit the same characteristics. Their cost curve shows that scale economies increase continuously with bank size.

Reynolds, Ratanakomut, and Gander (2000) also looked at bank size and further examine the bank financial structure in Asia prior to the financial crisis of 1997. They regress financial performance ratios such as loan preference, capital adequacy, liquidity and profitability on structural variables such as assets and income. They find that, during financial liberalization, loan-preference ratios were lower, which they interpret as increased levels of risk. They also find that, for some countries such as Indonesia, Korea, and Thailand, the banks show stronger lending performance but weaker profitability which may have led to the financial crisis. They also observe that bank size matters since profits and loan preference increase with size and capital adequacy decreases with size.
A study was carried out by Kereta (2007) on the outreach and financial performance analysis of microfinance institutions in Ethiopia. The aim of the study was to investigate the performance of registered microfinance institutions in the country from outreach and financial sustainability perspectives. The study adopted a linear regression where dependency ratio was the dependent variable and non-performing loans the independent variable. The findings from the study revealed that the microfinance sector's outreach rise in the period from 2003 to 2007 on average by 22.9 percent. It identified that while MFIs reach the very poor, their reach to the disadvantaged particularly to women is limited (38.4 Percent). From financial sustainability angle, it finds that MFIs are operational and sustainable as measured by return on asset and return on equity and the industry's profit performance is improving over time. The study also established that microfinance institutions are financial sustainable.

Quigley (2001) suggests that real estate markets played a very significant role in explaining the Asian financial crisis. He points out the increasing supply of office space, the high ratio of asset prices to market rents, the high growth rate of bank credit, the high ratio of nonperforming real estate loans, the relative size of the real estate sector and the relative weight of real estate among nonperforming assets as indicators of an upcoming crisis. He further indicates that the percentage of real estate bank loans in Taiwan to be in the 35 to 45% range with an average Moody’s rating of D. The study further shows a bank intermediation ratio of 1.46, and the average exposure to real estate as percentage of GNP to be 58%. The findings also show that when real estate is the only in form of collateral, there is a strong incentive for investors to buy into an appreciating market in order to borrow funds to expand.
Collyns and Senhadji (2002) also examine the link between lending booms, asset price cycles, and financial crises across the East Asian countries. They regressed lending booms against asset prices and financial crises. The study found a strong relationship between bank lending and asset price inflation. They state that the optimistic growth expectations, heavy capital inflows, inadequate corporate governance, and dependence on intermediation by under-regulated banks all led to a rapid credit growth, especially in the real estate market. They state that the real estate market is particularly vulnerable to the formation of price bubbles because information asymmetries are larger, the supply is more rigid, and the market is therefore more imperfect.

Further, they document the contemporaneous rise of nonperforming loans, property exposure and real estate prices in Korea, Indonesia, Malaysia, Philippines, Thailand, Hong Kong, and Singapore. Through a VAR analysis, they conclude that property prices are strongly procyclical and that the bank lending has contributed to the inflation of property prices prior to the crisis period. They also find that the response of property prices to credit is stronger during times of rising prices than the response during times of falling prices. The main policy implications of the paper are to strengthen credit assessment while reducing reliance on collateral and to reduce the moral hazard in the banking system.

Another study was done by Kwack (2000) who looks at whether there is a relationship between the Asian financial crisis and the weakness of financial institutions, as well as the levels of international interest rates, short-term debt, excessive lending and current account deficits. The author conducts empirical analyses between 1995 and 1997 in seven Asian countries: Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, and
Thailand. He finds that the 3-month LIBOR interest rate, the nonperforming loan rates, and the corporate leverage ratio are very significant in explaining the Asian financial crisis.

Mwangi (2012) carried out a study on the effect of nonperforming loans on the financial performance of commercial banks in Kenya. The study aimed at establishing how the nonperforming loan portfolio impacted on the profitability of commercial banks in Kenya. The study focused on all the 46 commercial banks in Kenya for the period between 2005-2011. Secondary data was obtained from the banks relating to two variables: Return on Assets which was the dependent variable and Non-performing loans which was the independent variable. The study adopted simple linear regression model of the form \( Y = a + bx \) to establish the effect of nonperforming loans on the commercial banks. The results obtained from the study confirm that during the early years of the study there was a high amount of non-performing loans and this resulted to very low ROA. However later years showed a different trend where ROA was higher and the non-performing loans were low.

Another closely related study was also conducted by Wanjira (2010) on the relationship between non-performing loans management practices and financial performance of commercial banks in Kenya. The main focus of this study was to establish how financial performance of commercial banks is affected by the type of non-performing loan management practices that are adopted by commercial banks. The study used both primary and secondary data. The secondary data was obtained from the audited financial
statements of the 46 commercial banks in Kenya. No sampling was done since a census was possible due to the small number of commercial banks in Kenya. The study revealed that the type of non-performing loans management practices adopted by commercial banks determine their financial performance.

Ng’etich and Wanjau (2011) conducted a study on the effects of interest rate spread on the level of non-performing assets. The study focused on commercial banks in Kenya. This was a case study with an aim of establishing how interest rates affect non-performing loans in commercial banks operating within East Africa. Both quantitative and qualitative data was used in the study. The findings from the study reveal that the spread of interest rates affects the non-performing assets in commercial banks by increasing the cost of loans charged on the borrowers. When the cost of loans is high, there are high chances of loan default and a likelihood of having a huge non-performing loan portfolio.

A study was also conducted by Moti et al., (2012) on the effectiveness of credit management system on loan performance. The study was an empirical review of the microfinance sector in Kenya. The main aim of the study was to assess the credit risk management practices and how this impacts on the performance of non-performing loans of microfinance institutions in Kenya. The study collected data from credit officers in Meru Town in Kenya. The study established that involvement of credit officers in formulating credit policy is very significant in determining the loan performance of microfinance institutions. It was further revealed that involving top management of microfinance institutions does not have an impact on the performance of loans.
2.4 Summary of the Literature Review

From the literature that has been reviewed, it is evident that nonperforming loans affect a number of institutions. Commercial banks are largely affected by the non-performing loans. It is also clear that asset prices are affected by the level of non performing loans. Non performing loans have also been associated with the origin of financial crises around the globe including the 2008 financial meltdown that saw the dwindling of property values. However, it is evident that most of the studies have focused on commercial banking institutions and leaving out microfinance institutions. Non-performing loans in microfinance institutions and their effect on the financial performance have rarely featured among the studies that have been reviewed. This leaves a gap that needs to be filled. This study will therefore focus on this gap.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this section of study, the researcher presents a discussion on the research methodology that was adopted in investigating the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya. Among the pertinent issues that are discussed include the research design the researcher employed; the target population for the study; the techniques that were employed to arrive at the sample size for the study; the type of data collection methods and the techniques to be adopted in analyzing the data that was collected.

3.2 Research Design

According to Kothari (2004) research design is defined as framework that shows how problems under investigation will be solved. This was a descriptive survey of all the deposit taking microfinance institutions that are operating in Kenya. A descriptive survey is a design that involves establishing what is happening as far as a particular variable is concerned. It was appropriate for this study since it allowed the researcher to use both qualitative and quantitative data in trying to establish the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya.

3.3 Population and Sample

According to Polit and Hungler (1999) the population of any research is the total number of all subjects or elements conforming to specific characteristics of the study. The main
focus of this study was the microfinance sector in Kenya. According to the Central Bank of Kenya (CBK), there are a total of 9 deposit taking microfinance institutions in Kenya. These 9 institutions were therefore the target population for the study. The deposit taking microfinance institutions were specifically selected because they are large in their operations and obtaining secondary data may be easier because there is availability of published financial reports.

Since the number of microfinance institutions in the target population was small, the whole population of 7 deposit taking microfinance institutions in Kenya that are listed in appendix I, was studied. In this case the researcher conducted a census. Since there was no sampling, no sampling technique was applied.

3.4 Data Collection

The study made use of secondary data. This was quantitative in nature and included data on the levels of nonperforming loans, profitability of the microfinance institutions and provisions for bad debts. These were collected from the 7 deposit taking microfinance institutions in Kenya. This data was obtained from published financial statements for the microfinance institutions for the purpose of obtaining the levels of nonperforming loans, profitability of the microfinance institutions; analyzing financial performance and provisions for bad debts. In order for the study to be comprehensive enough, data for five years was collected from 2008 to 2012. An appropriate data collection schedule was designed for the purpose.
3.5 Data Analysis

The researcher made use of regression analysis to determine the effect of non-performing loans on the financial performance of microfinance institutions in Kenya. Simple linear regression model has been successfully used by Mwangi (2012) in establishing the effect of non-performing loans on the financial performance of commercial banks in Kenya. In order to conduct the regression analysis, the following model was instrumental: \[ Y = \alpha + \beta X_1 + \beta X_2 + \alpha X_3 + e \]

\( Y \) represented the financial performance of microfinance institutions in Kenya. This performance was measured using Return on Assets (ROA). \( X_1 \) represented non-performing loan portfolio for the deposit taking microfinance institutions in Kenya and this was measured using total nonperforming loans as a fraction of the total loan book; \( X_2 \) is the recovery rate of loans and it was measured using the loans recovered as a percentage of the total loan book; \( \alpha \) is the control variable which was operating expenses of microfinance institutions and it was measured as a percentage of the total revenue earned by the microfinance institutions and \( e \) is the error term that represents the total variance that is not unexplained by the variables above.
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The main aim of this study was to establish the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya. The study made use of secondary data that was obtained specifically from the financial statements of the microfinance institutions. The study targeted to collect secondary data from 9 deposits taking microfinance institutions but managed to obtain data for 7 institutions. This is an indication that the study managed to achieve a response rate of 77.8%. This response rate was considered enough to allow the researcher to generalize the findings of the study on the entire industry of deposit taking microfinance institutions.

4.2 Summary Statistics

Table 4.1: Model summary for 2008

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.752a</td>
<td>.564</td>
<td>.512</td>
<td>.141</td>
</tr>
</tbody>
</table>

It is clear from the results in table 4.1 that the R squared value is 0.564. This implies that the three independent variables of non-performing loan portfolio for the deposit taking microfinance institutions in Kenya; rate of loan recovery and operation expenses of microfinance institutions explain 56.4% of the variance in the profitability of deposit taking microfinance institutions in Kenya. This leaves a variance of 45.6 that is not explained by these variables but rather by other variables outside this study.
Table 4.2: Model coefficients for 2008

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.796</td>
<td>.257</td>
<td>.257</td>
<td>2.874</td>
</tr>
<tr>
<td>non-performing loans</td>
<td>.678</td>
<td>.321</td>
<td>.541</td>
<td>2.382</td>
</tr>
<tr>
<td>loan recovery rate</td>
<td>.348</td>
<td>.258</td>
<td>.487</td>
<td>2.742</td>
</tr>
<tr>
<td>operation expenses</td>
<td>.749</td>
<td>.193</td>
<td>.459</td>
<td>1.697</td>
</tr>
</tbody>
</table>

It is evident from the table of model coefficients above, for 2008 that all the three independent variables of non-performing loan portfolio for the deposit taking microfinance institutions in Kenya; rate of loan recovery and operation expenses of microfinance institutions have positive coefficients of 0.678, 0.348 and 0.749 respectively. Two of the variables have high positive coefficients implying that they explain a larger percentage of the variance on the profitability of deposit taking microfinance institutions in Kenya.

Table 4.3: Model summary for 2009

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.687*</td>
<td>.623</td>
<td>.574</td>
<td>.101</td>
</tr>
</tbody>
</table>
The study sought to establish the relationship between profitability of deposit taking microfinance institutions in Kenya and non performing loans in the year 2009. The findings tabulated above confirm that the three independent variables of the study explained 62.3% of the variance in the profitability of deposit taking microfinance institutions in Kenya in the years 2009. Compared to the results of the year 2008, it is evident that the independent variables explain a higher percentage of the variability in 2009. This is an indication that the variance that is not explained by the three variables is only 33.7%.

**Table 4.4: Model coefficients for 2009**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.844</td>
<td>.324</td>
<td></td>
<td>3.112</td>
</tr>
<tr>
<td>non-performing loans</td>
<td>.741</td>
<td>.365</td>
<td>.423</td>
<td>2.478</td>
</tr>
<tr>
<td>loan recovery rate</td>
<td>.246</td>
<td>.149</td>
<td>.325</td>
<td>2.549</td>
</tr>
<tr>
<td>operation expenses</td>
<td>.867</td>
<td>.142</td>
<td>.384</td>
<td>3.741</td>
</tr>
</tbody>
</table>

The model coefficients for the year 2009 reveal that the slopes of the independent variables were still positive. It is evident from the table that non-performing loans had a positive coefficient of 0.741, loan recovery rate a coefficient of 0.246 and operation expenses of deposit taking microfinance institutions a coefficient of 0.867. As it can be observed non performing loans and operational expenses had the highest positive
coefficients that confirm that they explain higher variance of the profitability of deposit taking microfinance institutions in Kenya.

Table 4.5: Model summary for 2010

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.804\textsuperscript{a}</td>
<td>.645</td>
<td>.582</td>
<td>.098</td>
</tr>
</tbody>
</table>

The researcher sought to establish the effect of nonperforming loans on the profitability of deposit taking microfinance institutions in Kenya. The results from regression analysis presented in table 4.5 above confirm that r-squared value for 2010 was 0.645. This implies that in that year, non-performing loan portfolio for the deposit taking microfinance institutions in Kenya; rate of loan recovery and operation expenses of microfinance institutions explained 64.5% of the variance on the profitability of the institutions. A close comparison of the regression results for the years 2008, 2009 and 2010 confirm that there is an upward trend on the variance explained by the three independent variables. The unexplained variance reduced to 35.4 and this implies that the independent variables explained a greater percentage of the variance on profitability of the institutions.
Table 4.6: Model coefficients for 2010

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.914</td>
<td>.285</td>
<td></td>
<td>3.435</td>
</tr>
<tr>
<td>non-performing loans</td>
<td>.857</td>
<td>.326</td>
<td>.503</td>
<td>3.124</td>
</tr>
<tr>
<td>loan recovery rate</td>
<td>.314</td>
<td>.168</td>
<td>.431</td>
<td>2.644</td>
</tr>
<tr>
<td>operation expenses</td>
<td>.889</td>
<td>.158</td>
<td>.413</td>
<td>3.943</td>
</tr>
</tbody>
</table>

It was also evident from the findings of the study that the regression coefficients for the year 2010 were also positive. The non-performing loans and the operation expenses had the highest coefficients of 0.857 and 0.889 respectively. This is a confirmation that these two independent variables explain the highest percentage of the variance on the profitability of the deposit taking microfinance institutions in Kenya. The rate of loan recovery for the third year had the lowest coefficient value indicating that it does not explain a very high percentage of the variance.

Table 4.7: Model summary for 2011

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.827*</td>
<td>.687</td>
<td>.613</td>
<td>.065</td>
</tr>
</tbody>
</table>

It was established from the study findings that the independent variables of the study continued to explain a higher variance of the profitability of deposit taking microfinance institutions in Kenya. For instance in the year 2011 the regression results indicate that the
r-squared value was 0.687. This implies that 68.7% of the profitability of the deposit taking microfinance institutions in Kenya is affected by three variables namely: non-performing loan portfolio for the deposit taking microfinance institutions in Kenya; rate of loan recovery and operation expenses of microfinance institutions. The remaining 31.3% of the profitability was affected by variables beyond the three variables of this study.

**Table 4.8: Model coefficients for 2011**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.962</td>
<td>.301</td>
<td></td>
<td>3.548</td>
</tr>
<tr>
<td>non-performing loans</td>
<td>.878</td>
<td>.336</td>
<td>.463</td>
<td>3.326</td>
</tr>
<tr>
<td>loan recovery rate</td>
<td>.348</td>
<td>.186</td>
<td>.212</td>
<td>3.741</td>
</tr>
<tr>
<td>operation expenses</td>
<td>.894</td>
<td>.258</td>
<td>.443</td>
<td>3.994</td>
</tr>
</tbody>
</table>

The study further observed that the three independent variables of the study still had positive coefficients in the year 2011. Another important observation is that the value of the coefficients continues to increase over the four years so far regressed. It is clear that in the year 2011, nonperforming loans had a positive coefficient of 0.878; loan recovery rate had a positive coefficient of 0.348 and operational expenses had a positive coefficient of 0.894. As it was the case in 2008, 2009 and 2010, the two variables of nonperforming loans and operational expenses had the highest positive coefficients in
2011. This is still a confirmation that they explain a higher percentage of the profitability of the deposit taking microfinance institutions in Kenya.

Table 4.9: Model summary for 2008-2012

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.805*</td>
<td>.646</td>
<td>.612</td>
<td>.058</td>
</tr>
</tbody>
</table>

The researcher also sought to establish the effect of the non performing loans on the profitability of deposit taking microfinance institutions over the entire duration for the study from 2008 to 2012. The regression results reveal that for the five years that were the focus of this study, the three independent variables of non-performing loan portfolio for the deposit taking microfinance institutions in Kenya; rate of loan recovery and operation expenses of microfinance institutions explain a higher percentage of the variance on the profitability of the institutions. The r squared value is 0.646; this is an indication that they explain 64.6% of the variance in the profitability of the institutions.

Table 4.10: Model coefficients for 2008-2012

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.912</td>
<td>.288</td>
<td></td>
<td></td>
</tr>
<tr>
<td>non-performing loans</td>
<td>.858</td>
<td>.334</td>
<td>.498</td>
<td>2.984</td>
</tr>
<tr>
<td>loan recovery rate</td>
<td>.316</td>
<td>.152</td>
<td>.426</td>
<td>2.524</td>
</tr>
<tr>
<td>operation expenses</td>
<td>.891</td>
<td>.168</td>
<td>.398</td>
<td>3.848</td>
</tr>
</tbody>
</table>
It was clear from the overall regression results that the three independent coefficients of the study explain a greater percentage of the variance on the profitability of the deposit taking microfinance institutions in Kenya. The results tabulated above indicate that nonperforming loans and operation expenses have the highest positive coefficients and this reveals that they are the ones that affect the profitability of these institutions most.

Using these coefficients for the five years, it is possible to come up with an empirical model that can be used to establish the effect of nonperforming loans on the profitability of deposit taking microfinance institutions in Kenya. This model will take the form of:

\[ Y = 0.912 + 0.858 X_1 + 0.316 X_2 + 0.891 X_3 + 0.288 \]

**Table 4.11: Sample T-test**

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2 tailed)</th>
<th>Mean Diff.</th>
<th>95% confidence of interval of difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>NPL</td>
<td>3.582</td>
<td>21</td>
<td>0.002</td>
<td>6.532</td>
<td>11.27</td>
</tr>
</tbody>
</table>

The researcher tested the significance of the model for average regression analysis from the year 2008 to 2012. From the results as tabulated in table 4.11 above it is clear that the t value is 3.582 and the p-value is 0.002. The p-value is less than 0.005 which is normally used a test of significance. This is an indication that the average nonperforming loans for 2008 to 2012 are statistically significant in explaining the variance in the profitability of microfinance institutions in Kenya.
4.3 Discussion of Findings

The findings from the study reveal that the three independent variables of nonperforming loans explain 56.4% of the variance on the profitability of microfinance institutions in Kenya. The variance explained continued to register an upward trend from 2008 to 2012. This is an implication that in each of the years that were the focus of this study, nonperforming loans explains more than one half of the variance on the profitability of the microfinance institutions. These findings confirm the position held by Bernstein (1996) who indicated that the level of nonperforming loans is a significant determinant of the level of bank costs as well as the estimates of scale economies in banking. He further asserts that the cost curve of banks with high levels of nonperforming loans have the standard U-Shape with the optimal point.

The average regression results from 2008 to 2012 indicate that for the five years under this study, non performing loans explain a significant variance in the profitability of the microfinance institutions in Kenya. For instance in the last regression results in illustrated in table 4.9, the non performing loans explain 64.6% on average for the five years from 2008 to 2012. This is a confirmation that nonperforming loans had a significant impact on financial performance of the deposit taking microfinance institutions in Kenya. This also confirms the findings by Mwangi (2012) who carried out a study on the effect of nonperforming loans on the financial performance of commercial banks in Kenya and established that NPLs were important determinants since during the early years of the study there was a high amount of non-performing loans and this resulted to very low
ROA. However later years showed a different trend where ROA was higher and the non-performing loans were low.

The test of significance to test the model of the average regression results for the year 2008 to 2012 indicates that nonperforming loans are a significant indicator of the financial performance of deposit taking microfinance institutions in Kenya. The p-value obtained was 0.002 against the standard measure of 0.005. This implies that nonperforming loans are an important determinant of the profitability of the institutions. These findings are an important confirmation of Bernstein (1996) results that revealed that nonperforming loans significantly affect costs and thus determine the financial performance of an organization.
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings on the effect of non-performing loans on the financial performance of deposit taking microfinance institutions in Kenya. Provided in the chapter also are the conclusions, limitations of the study, the recommendations made on careful consideration of the findings and the suggestions for further research work.

5.2 Summary

The study has revealed that in the year 2008, the nonperforming loans and operational expenses of deposit taking microfinance institutions in Kenya explained more than half of the variance in the profitability of these institutions. The study also established that the operational expenses and the nonperforming loans accounted for the largest portion of the variance on profitability of the institutions in the same year. This agrees with Bernstein (1996) who indicates that nonperforming loans inflate expense.

The trend observed from the results indicates that in each of the subsequent years after 2008, the nonperforming loans continued to explain the highest variance in the profitability of the deposit taking microfinance institutions. It was also clear that there was an upward trend in the variance explained by the independent variables. In each of the years that were covered by the study there was a notable increment on the variance explained by the independent variables.
The overall regression results for all the years from 2008 to 2012 confirm the findings for the other specific years that nonperforming loans explain the highest variance in the profitability of deposit taking microfinance institutions. The results were able to establish that for the five years in this study, the nonperforming loans explain an average of 64.6% of the profitability of these institutions. This also agrees with the findings of Mwangi (2012) who indicated that nonperforming loans determine the return on assets.

It was further evident from the overall regression analysis results that nonperforming loans and operational expenses explain the highest variance since they had high positive coefficients throughout the five years and even in the overall regression results. The study was able to develop an empirical model that can be used to establish the effect of nonperforming loans on the financial performance of deposit taking microfinance institutions in Kenya.

5.3 Conclusions

The nonperforming loans in deposit taking microfinance institutions account for the greatest percentage of the variance in the profitability of these institutions. All the three independent variables in the study non performing loans, rate of loan repayment and operational expenses largely affect the profitability of the institutions. However non performing loans and operational expenses have more significant effect than the rate of loan repayment that is achieved by the organizations.

The test of significance for the model indicates that the p-value was 0.002 and indicates a high level of significance for the average regression model that was used for the years 2008 to 2012. This was a confirmation that the nonperforming loans are a significant
variable that explains the variance in the profitability of deposit taking microfinance institutions in Kenya.

5.4 Limitation of the study

The study was subject to time limitations. The time available could not allow the researcher to conduct a survey of all the microfinance institutions in Kenya and compare the findings to microfinance institutions outside Kenya.

Financial resources was also a major limitation and this was the reason why the research focused on deposit taking microfinance institutions that have got offices in Nairobi for ease of data collection.

Obtaining data for some of the microfinance institutions was also a challenge. This explains the reason why the study could not be able to achieve 100% response rate in data collection in all the nine deposit taking microfinance institutions.

Further, not all microfinance institutions prepare financial statements, from which data can be obtained for analysis purposes. This explains the reason why the study focused on only deposit taking microfinance institutions in Kenya.

The findings of this study are only directly relevant and applicable to deposit taking microfinance institutions in Kenya. They may not be used to generalize for the entire microfinance industry in Kenya.
5.5 Recommendations

5.5.1 Policy Recommendations

It is clear from the findings that the volume of nonperforming loans explains a high percentage of the variance in the profitability of deposit taking microfinance institutions in Kenya. It will be credible for these institutions to put in place appropriate credit management policies to assist in development of quality loan book that will not lead to high volumes of nonperforming loans.

The study observed that the rate of loan repayment also explains some portion of the profitability of the deposit taking microfinance institutions in Kenya. It will be important for the institutions to put in place policies that can enhance the recovery of nonperforming loans in order to improve their profitability.

5.5.2 Suggestions for Further Research

This study focused on deposit taking microfinance institutions only. It will be important to carry out a survey of the entire industry in order to be able to get a clear picture of the effect of nonperforming loans on all microfinance institutions in the country.

It will also be important to conduct a comparative study with deposit taking microfinance institutions in other countries in order to establish any similarities and differences.
REFERENCES


APPENDICES

Appendix I: List of Deposit Taking Microfinance Institutions

1. Kenya Women Finance Trust
2. Rafiki Deposit Taking Microfinance
3. Faulu Kenya
4. SMEP
5. Remu DTM
6. Uwezo DTM
7. Century DTM
8. Sumac Credit
9. U&I Deposit Taking Microfinance Limited