THE RELATIONSHIP BETWEEN CREDIT RISK MANAGEMENT TECHNIQUES AND LOAN DEFAULT RATES IN MICROFINANCE INSTITUTIONS IN KENYA

MWAURA VIRGINIA MUKAMI

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULLFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION (MBA), SCHOOL OF BUSINESS UNIVERSITY OF NAIROBI

2017

DECLARATION

I hereby declare that this project is my own work and effort and that it has not been submitted anywhere for any award.

Signature: …………………………….Date: …………………

Mwaura Virginia Mukami   **D61/80590/2015**

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

Signature: …………………………….Date: …………………

Dr. Winnie Nyamute

Senior Lecturer, Department of Finance and Accounting

School of Business

University of Nairobi

DEDICATION

I dedicated this research project to my family and friends who have helped me complete it.

ACKNOWLEDGEMENT

I wish to give my deepest gratitude to God the Almighty who has given me strength, grace and resources to pursue and complete this course.

My gratitude goes to the University of Nairobi, School of Business for availing a good studying environment and availing scholarly materials plus academic literature that I used in writing and compiling this research paper.

I wish to thank my supervisor Dr. Winnie Nyamute for her great support, constructive feedback and understanding in this study, as without it I would not have accomplished this study.

Special thanks goes to all my MBA colleagues, family members, friends and all those who have assisted me in one way or another throughout this period of study and though I may not name each of them individually their contribution is highly appreciated. I owe you all my gratitude and may God almighty bless you.

ABSTRACT

Microfinance Institutions in Kenya play a key role in enhancing financial access to individuals and small and medium enterprises. They offer secured and unsecured loans to their various customers all over the country. Through issuing out loans these institutions are exposed to credit risk. These institutions need to have efficient and effective credit risk management techniques to mitigate this risk. According to the Central Bank's Annual Banking Supervision report there has been an increase in loan default rates in the microfinance sector which is measured as a percentage of gross non-performing loans divided by net advances to customers from 7% in 2011 to 16% in 2016. The objective of this study was to determine the relationship between credit risk management techniques and loan default rates in microfinance institutions. A descriptive study of credit risk management techniques used by microfinance institutions was conducted. The study targeted all the 46 micro finance institutions in Kenya. The study used both primary and secondary data. Primary data was collected through structured and semi structured questions and open and closed ended questions. These questionnaires were presented to credit risk managers and officers in the micro finance institutions. The data was analyzed by use of summary statistics, including percentages, means and standard deviation to measure interrelationships between the variables. Graphs were also used to display the information to improve presentation of the analyzed results for ease of interpretation. A regression analysis was developed having credit risk identification, risk analysis and risk monitoring as the independent variables and loan default rates as the dependent variable to determine the relationship between these variables. The study established that there exists a weak negative relationship between the loan default rates and risk identification and risk monitoring and a weak positive relationship between loan default rates and risk analysis. The study also established that the relationship between credit risk management techniques and loan default rates is insignificant. The management of the microfinance institutions should enhance their credit risk management techniques and deal with the other factors that affect loan default rates in order to reduce non-performing loans.

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ABBREVIATIONS

AMFI-K   Association of Micro Finance Institution, Kenya

ASCAs   Accumulating Savings and Credit Associations

CBK   Central Bank of Kenya

CBOs   Community Based Organizations

CRB   Credit Reference Bureau

FBOs   Faith Based Organizations

IMF   International Monetary Fund

IRB   Internal Ratings Based Approach

MFIs   Microfinance Institutions

NGO   Non-Governmental Organization

NPLs   Non- Performing Loans

ROSCAs   Rotating Savings and Credit Associations

SACCO   Savings and Credit Cooperatives

UAE   United Arab Emirates

CHAPTER ONE: INTRODUCTION

1.1Background

Credit risk and loan default rates are very critical in the financial sector. There are three major theories that determine how credit risk management techniques and loan default rate relate. The first theory is the modern portfolio theory proposed by Harry Markowitz in his paper in 1952. This theory is used by institutions in the financial sector to determine their level of exposure to credit risk. This theory determines the combination of assets that have the highest expected return on an asset with a specified risk level. These institutions use an asset by asset method to mitigate credit risk. The Information Asymmetry Theory as the second theory was first explained by George Akerlof in 1970. This theory hinges on the possibility for market failure whereby asymmetrical valuation information is held by both the buyer and the seller.

According to Levin (2005) borrowers often have more information about the projects they have invested in than the lenders which leads to information asymmetry in credit markets. This creates a possibility of loan default cases. Thirdly, the Credit Risk Theory which was developed by Melton in 1974 to determine the point of default during the life cycle of an asset for example a bond or a loan exemplifies how credit risk management techniques and loan default rates relate. According to Longstaff and Schwartz (1995) it is not only at maturity that default of a corporate bond can occur but it can occur throughout the life of a corporate bond.

Today in the financial sector, there are different sizes of MFIs worldwide offering needful financial services to the poor. MFIs use innovative procedures such as peer group lending which involves issuing loans to individuals with collateral or sometimes without and also with social capital in the form of peers and who in many cases are jointly liable for the loan given. According to Gomez & Santor (2008) this type of lending can lead to loan defaulting in situations where effective credit risk management techniques are not put in place. Non- performing loans have been increasing in the finance sector, the loan default rate increased from a rate of 8.7% in September 2016 to 9.1% in December 2016 (CBK, 2016). This shows that financial institutions need effective credit risk management techniques and they need to be aware of its relationship with loan default rates. The relationship between credit management techniques and loan default rates needs to be established to reduce the non-performing loans.

1.1.1 Credit Risk Management Techniques

Risk associated with credit is basically described as the likelihood of a borrower to fail to fulfill his or her obligations with regard to the agreed terms and conditions. Credit risk management techniques refer to measures put in place to keep credit risk exposures at the lowest levels (Basel, 2000). Credit risk management techniques also refer to practices put in place to assist in mitigating losses through ensuring the ability of the financial institution's capital to cover loan cost reserves at a specified moment in time (CBK, 2017).

Credit risk management techniques are also defined by Gakure, R. W, Prof, Ngugi, J. K., Ndwiga, P. M., & Waithaka, S. M. (2012) as structures used to manage ambiguities

through risk assessment, coming up with strategies for risk management and mitigation of risk through effective management. This means that credit management techniques involve risk identification, risk analysis and risk monitoring.

According to the Basel II Accord financial institutions need to ensure that the credit risk intrinsic in the whole portfolio and on transactions is effectively managed. Credit risk is measured using two approaches the first is standardized approach that relies on external ratings that are given by market based external agencies. The second approach is the IRB approach which requires financial institutions to come up with their own internal ratings approaches to classify credit risk exposure. This internal ratings system must take into account the nature of the credit, its contractual agreements, presence of collateral or guarantors and the potential for default (Basel, 2000).

1.1.2 Loan Default Rate

According to Pearson and Greeff (2006) the loan default rate is the rate which explains the moment in time in the borrower's record for repayment where a payment in the year is not made for at minimum three installments. This indicates the borrower's behavior whereby there is a high possibility of risk whereby the borrower will default. Loan default is also explained as failure to make loan payments when they are due. Default comes about at the moment when a debtor does not meet his debt obligation for repayment. This was explained by Murray (2011) cited by Siaw et al. (2014) that when the borrower does not make payments as required by the terms of the loan, loan default occurs.

Financial institutions view loan defaults in terms of NPLs. A non- performing loan is defined by IMF (2009), as any loan whereby payment for the interest and principal have not been made in more than 90 days. Loan default rates in micro finance institutions are measured quantitatively through the Gross NPLs divided by the total number of Gross Advances or Loans given out.

1.1.3 Credit risk management techniques and loan default rate

Bank managers need to take into account management of credit risk as it determines the interest rate, maturity and collateral needed for the loan. Credit risk management involves identification, assessment and monitoring of the risk to determine which investments and projects are riskier than the others before advancing a loan. If the analysis of the credit risk is insufficient, loan default rates would increase and hence lead to liquidation.

Credit risk management and loan default rate relate based on information asymmetry issues. Theoretically it has been concluded that loan collateral by borrowers tends to alleviate problems caused by moral hazard and adverse selection faced by financial institutions when lending, Stiglitz and Weiss (1981). In contrast however, Jimenez and Saurina (2002) in their study of banks in Spain found that secured credit operations have a higher probability of default.

Several studies find a significantly negative relationship between credit risk management and loan default rates. Kariuki (2009) found out that a negative correlation exists between loan default and credit risk management techniques applied by commercial banks in Kenya. Hence commercial banks must efficiently manage their credit risks so as to lower the rates of default on loans. An efficient credit risk management also leads to low

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interest rates thereby further reducing default.

According Waweru & Spraakman (2012) the management of credit risk is fundamental in determining how the financial sector operates in terms of loan performance, Ahmed and Malik (2015) concluded that credit risk management techniques in terms of credit terms and policy, loan collection policy and control of credit risk have an insignificantly positive influence on performance of a loan.

These studies have shown that credit management techniques and loan default rate are expected to relate in a negative manner. This means that credit management techniques affect loan default rates negatively.

1.1.4 Micro finance Institutions

Conroy (2003) defines micro finance institutions as delivery of services to small and low income customers unable to access other financial institutions. Consequently, institutions that offer microfinance are called Micro finance institutions (MFIs). Chepkorom (2013) defines the term micro finance as financial access to underprivileged and households and enterprises that report little income.

According to World Bank (2010) an MFI is an institution whose principal business is the delivery of micro finance services, including micro credit. MFIs offer financial services using methodologies that are designed specifically to guarantee their financial sustainability and improve the standards of living for their customers. They use a unique technique of group lending. The less fortunate are thus enabled to gain control over their lives and become engines of economic growth provided they put their skills to work. The

AMFI has a total of 46 institutions offering services to averagely 6,500,000 customers (AMFI Website, 2017).

With regard to credit management techniques and loan default rate in micro finance institutions in Kenya there is not enough literature on the relationship between the two variables. However there are studies performed to determine factors that affect the loan default rate in micro finance institutions which bring out some aspects with regard to this relationship. Gatimu and Kalui (2014) assessed internal factors which lead to loan defaulting in micro finance institutions. Their study concluded that credit risk policy, the loan appraisal and analysis process and loan recovery processes impact loan defaulting in micro finance institutions.

1.2 Research Problem

This study aims to determine how credit risk management techniques and loan default rates in micro finance institutions relate hence determine whether credit management techniques affect the loan default rates in microfinance institutions. According to the CBK report 2016, Credit risk is the only largest factor affecting the reliability of financial institutions and the financial system in totality. Non-performing loans have also increased from 8.7% in September 2016 to 9.1% in December 2016. Lending is the core business for financial institutions meaning that loan default rates need to be monitored. If the loan default rates are not efficiently controlled, they have an ability to erode the asset book value and eventually affect profitability and overall performance (Tetteh (2012) cited by Kariuki (2009)). Microfinance institutions in Kenya like other financial

institutions are usually faced with dilemma of exposure to credit risk in various financial instruments especially loans (Basel, 2000).

In the global context, studies have been done to establish the loan defaults in micro finance institutions. Korankye (2014) performed a study in Ghana on loan default causes in micro finance institutions and how to control them. The study found these causes to be high interest rate, inadequate sizes of the loan, poor appraisal procedures, lack of credit monitoring, and inefficient client selection. Addo (2014) also found out that financial institutions in Ghana require sound credit risk management policies and framework. Mosha (2016) after studying determinants of loan defaults in MFIs in Tanzania recommends that MFIs should involve borrowers in reviewing loan repayment terms, effective monitoring of loans, credit training programs and where necessary the use private debt collectors.

In the local context, studies have been performed to determine how credit risk management and loan default rates relate in commercial banks in Kenya. Kariuki (2009) explained that loan default and credit risk management techniques used by commercial banks in Kenya have a negative correlation. Hence commercial banks must efficiently manage their credit risks so as to lower the rates of default on loans. An efficient credit risk management also leads to low interest rates thereby further reducing default. Nyong'o (2014) suggested that bank's board managers need to put in place credit risk management techniques that will be used to assess borrowers through review of loan terms and conditions. This is because they are responsible for risk management. They should come up with a risk management strategy which entails well-defined policies and

procedures. Management of risk should be based on a portfolio so as to implement an overall outlook on the risk exposure in assessing and managing risk profile.

These studies both locally and globally have just shown the importance of credit risk management techniques and determining loan default rates but the relationship between these two variables is lacking. Furthermore they have only focused on commercial banks; there is no study yet on MFIs. This study focused on bringing into light this relationship hence the research question "what is the relationship between credit management techniques and loan default rate in microfinance institutions in Kenya?"

1.3 Research Objectives

The main goal of this study is to determine the relationship between credit risk management techniques and loan default rates in micro finance institutions in Kenya.

1.4 Value of the study

The purpose of the study is to help micro finance institutions managers in decision-making processes because it will provide management with information they could use to come up with clearly defined credit management techniques to mitigate credit risk.

The study would benefit scholars in the finance sector as it will increase academic knowledge in the field of risk management especially in MFIs in Kenya. It will contribute to theory as it will help in increasing knowledge regarding credit management.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical framework advanced on credit risk management techniques and loan default rates. It will also focus on the empirical studies by other scholars on the subject.

2.2 Theoretical Framework

2.2.1. Modern Portfolio Theory

This concept was first brought out by Harry Markowitz in his paper 'Portfolio Selection' in 1952. This theory's main objective was to determine the combination of assets that have the highest expected return on an investment for a specified risk level. This means a portfolio that has higher risk cannot be undertaken unless it is complemented by a high rate of return.

According to Kariuki (2009) the use value at risk (VAR) models to determine market risk exposure is another application of modern portfolio theory by financial institutions. On the other hand Margrabe (2007) found out that the use of modern portfolio theory with regard to credit risk has wadded. Scholars generally agree that modern portfolio theory is used by financial institutions to find out the level of exposure. To mitigate credit risk they use an asset by asset method. This method deals occasionally with looking at the extent of credit exposures through credit risk identification, credit risk analysis, and credit risk

rating. The results are thereafter determined and aggregated to assess a portfolio's expected losses. This approach helps the managers to determine changes in the portfolio and credit limits. This approach however has a disadvantage as it faces a challenge in measuring and identifying concentration risk. This risk refers to increased credit risk as a result of increased credit risk exposures. (Mutua, 2015)

2.2.2 Information Asymmetry Theory

This theory was first explained by George Akerlof (1970) he suggested that possibility for market failure arises in cases where the two parties in an exchange transaction have asymmetrical information on valuation. The theory is based on the notion that one party has detailed information than the other. According to Glen (2011) information asymmetry could lead to market failure in cases where the legal aspect of a tradable good is relevant to the buyer's initial valuation. According to Levin, (2005) in credit markets information asymmetry results from borrowers possessing greater information about projects they invest in than the lenders.

Information asymmetry can either be "ex ante" or "ex post". An "ex ante" information asymmetry comes about when lenders are unable to tell the difference between borrowers with different levels of credit risks before issuing advances to them. This is referred to as an adverse selection problem which occurs when the interest to be paid is not charged according to the risk profile of the borrower. Information asymmetry occurs "ex post" when only the borrowers can verify the actual incomes once the project is completed and lenders are unable to determine these returns. This is recognized as a moral hazard problem which occurs when a borrower transacts in a way that reduces the chances of

repayment of the loan. Information asymmetry leads to financial intermediaries lending to borrowers with higher risks.

According to this theory it might be complex to differentiate borrowers due to problems of adverse selection and moral hazard. If two parties differ with regards to information, the one with less information is likely to make incorrect judgments on entering the contract. Problems of adverse selection and moral hazards have resulted to a high increase in NPLs in banks, Bofondi and Gobbi (2003) cited by Kariuki (2014).

2.2.3 Credit Risk Theory

Melton (1974) developed the credit risk theory. The structural theory was used to develop approaches to measure credit risk. This theory is based on the structural model of measuring credit risk which determines the default event. The event of default is derived from a firm's asset life cycle. This model is based on variables related a specific issuer. Before 1974 literature on credit risk measured applied actuarial approaches to measure credit risk. These methods were criticized as they over relied on data that was retrieved historically. According to Essendi (2014) the quantitative measures of credit risk are the structural method, appraisal method and incomplete information method. Longstaff and Schwartz (1995) explain that the default event can take place throughout the life of a corporate loan or bond and not only at its maturity.

2.3 Determinants of loan defaults in micro finance institutions

Determinants of loan default rate in micro finance institutions include the credit management techniques. These techniques include risk identification, risk monitoring and risk analysis.

2.3.1. Risk Identification

Risk identification involves borrower screening in terms of analyzing the borrower's character, attitude, capacity and capital. Screening involves determining the annual income, indebtedness and credit history of the borrower. Altman, Resti and Sironi (2004) came up with the 5 'Cs' of credit analysis: character, capital, capacity, condition and collateral for effectively performing borrower screening. These factors consider the credit record of the borrower, level of education and the earning potential. Korankye (2014) in his study cited that many borrowers are take part in traditional, low paying dealings hence they hardly diversify their businesses. This means that they possess little or no knowledge in business skills that can offer competitive advantage. Secondly, a number of them are ignorant and lack accounting skills. Hence they cannot perform accounting functions for their businesses which leads to them making losses.

Borrowers related factors such as diversion/ misallocation of loan, borrowers' attitude, borrowers' economic and income status and borrower's ability to invest affect loan defaulting. According to Ogesia, Alala, Museiga and Manase (2014) there is a significantly relationship between the borrower's character and repayment of the loan. It means that if the character is in line with the banks credit terms meaning that the

borrowers agrees to these terms then this will affect loan repayment in appositive manner. How borrowers react during credit risk assessment or after receiving credit has a high effect on establishing the relationship that is developed during the lending process and determines the effectiveness and efficiency of loan repayment.

Ahamad (1997) cited by Munyua (2016) established that causes of loan defaults are the lack of a borrower's willingness to pay, diversion of loan funds, deliberate negligence and lack of proper loan appraisal. Loan diversion or misallocation of loans funds lead to default of loan repayment. Muigai (2010) found that 68% of loan defaults are determined by loan diversion. According to Munyua (2016) loan diversion greatly affects loan defaults in microfinance institutions. Borrowers' negative attitude, low economic status and inability to invest could lead to loan defaulting. According to the findings of Wakuloba (2010) the major causes of loan defaults are low business performance and diversion of funds. Kirera (2009) found that borrower screening is important as it determines the disposition and ability of the client to repay the loan. This involves proper selection of the borrowers. According to Muigai (2009) poor selection of the borrower could lead to loan default.

2.3.2. Risk Analysis

Risk analysis involves determining the loan design, loan collection procedures and terms of credit: the amount of the loan, its maturity period and the interest rate given. According to Kirera (2009) the design of the loan which is guaranteed through group guarantees, business equipment, household appliances, livestock and member's salary, affect the loan default rates in micro finance institutions. MFIs should carry out proper

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loan design to meet and address client's needs and the purpose for which the loan is intended. The study conducted by Okorie (1986) cited by Korankye (2014) showed that the design of the loan, time taken to disburse it, loan supervision and the client's business profitability lead to inability of repayment ability and high default rates. According to the findings by Munyua (2016) loan defaults in micro finance institutions are highly affected by loan collection procedures.

According to Bindra (1998) cited by Chelangat (2012) the underlying cause of non-performing loans is poor risk management by commercial banks. This happens when the credit officers are unable to perform effective risk assessment of their customers. According to the study, these banks perform insider lending and poor loan supervision. He concludes that loan losses can be minimized through having qualified professional staff members who follow the procedures put in place. The credit officers need to carefully appraise loan requests, continuously monitor customer conditions and perform effective follow up in the manner in which the loan has been put to use as it is possible that it will not be used for the purpose it was intended for.

The terms of the loan also affect defaulting. Okpugie (2009) cited by Korankye (2014) showed that the high interest rate that is charged by the micro finance institutions could be a reason behind high cases of loan defaulting. Vandel (1993) confirmed that when commercial banks charge high interest rates it tends to facilitate defaulting. Kirera (2009) established that the amount of interest charged on loans influences the ability of the borrower to pay the borrowed loan hence very high chances of defaulting on loan repayment schedule and time.

2.3.3. Risk Monitoring

Risk monitoring involves loan supervision and loan support. The findings of Muigai (2010) indicated that poor/ lack of loan supervision and follow up could lead to loan default. According to him 85% of loan defaults are caused by lack of supervision, Munyua (2016) found that lack of managerial skills contributes to rates of defaults in loans in micro finance institutions. Inadequate financial analysis also causes of loan default, Sheila (2011) cited by Korankye (2014). This is when the officers in the loan department fail to assess the applicants' risk to ensure the borrower is able to repay the loan.

Korankye (2014) found out that with regards to risk monitoring inadequate loan support causes loan default. According to the study it is highly important that the loan staff members as a group ascertain the cases in which the borrower may need loan support. If there is need it should be availed to them. Unfortunately even when the support is given, it is not enough to support the borrower which then results to the business crumbling and eventually leading to default.

2.3.4. Macro-economic Environment

The macro-economic environment determinants determine loan defaults. These determinants cannot be controlled by the finance institution. These include interest rates, government policies, economic conditions, inflation rates and competition.

Bloem (2002) cited by Korankye (2014) found out that inevitable economic decisions and bad luck cause non-performing loans. This bad luck is a result of unpredictable weather patterns and inflation of prices for certain products. According to Korankye (2014) some

factors determine loan default. These factors include government imposed interest rate ceilings, monopolistic markets and borrowers incurring high costs of transaction during loan application.

Scholars in literature have studied how the macroeconomic environment affects loan quality through establishing a link between the stability of the institution and its business life cycle. Fofack (2005) cited by Korankye (2014) through his study on the implication of macroeconomic environment on default rates, showed that during instances of stable macroeconomic environment and high economic growth there is a low possibility of loan default. However during macroeconomic instability and high costs of capital there is a rising level of non-performing loans. Waweru and Kalani (2009) indicated that in Kenyan banks, low economic performance and low consumer purchasing power cause non-performing loans.

Korankye (2014) also argues that high levels of completion also cause loan losses and default. This usually occurs when there are quite a number of financial institutions involved in lending. Due to high competition experienced in the credit markets, financial institutions are unable to attract customers and as a result the MFIs may neglect to demand adequate collateral just have customers. Muigai (2010) also found that 88% of the respondents found out that market forces such as inflation rate and competition among off farm loan borrowers of microfinance programmes. Munyua (2016) further found out that there are cases of multiple borrowing which result from the high number of MFIs in Kirinyaga County. The high level of competition results to information asymmetry. The conclusion concurs with Givendolyn (2001) and Vogelgesong (2003)

cited by Munyua (2016) who state that borrowing multiple times adds the chances of being over independent and eventually leads to loan defaults.

2.4 Empirical Studies

2.4.1 Global Studies

Keeton and Morris (1987) cited by Chelangat (2012) studied causes of loan losses. They investigated 2,470 commercial banks that reported losses in the United States (US) over the years 1979 to 1985. They used NPLs to measure loan losses. Their study concluded that micro economic conditions and poor performance caused loan losses recorded. According to the study commercial banks that have higher risk appetites seem to report losses. This study only focuses on causes of loan losses in commercial banks. This study lacks information with regards to micro finance institutions.

Kromschroder and Luck (1998) found that risk identification is very important to enhance risk management. To perform effective credit risk identification the management of the financial institution needs to know the risks they face. In order to perform effective risk identification the first step is to implement the risk management department in order to determine the internal and external risk areas to focus on. The next step is to assign the members of the department with responsibilities to categorize the specific risks into market risk, credit risk and operating risk. The researchers did not consider the techniques of risk monitoring and risk analysis.

Al-Tamimi (2002) while studying the commercial banks in the UAE discovered that they were mostly facing the problem of credit risk. According to the study risk identification

involves analysis of financial statements performed by branch managers. The study established the credit risk management techniques as instituting standards and procedures, credit analysis and credit risk scoring. Al-Tamimi and Al-Mazrooei (2007) performed a study on commercial bank's risk management techniques. Their findings revealed that the three critical types of risks encountered by financial institutions are foreign exchange risk, credit risk and operating risk. This study was important as it identified the types of risks financial institutions face. However it did not focus on any risk.

Haron and Hin Hock (2007) studied risk identification and its mitigation with regards to the three types of risks. They illustrated that some risks are inherent in the operations of conventional banks while others are not. The also concluded that even if the risk exposures differ in different financial institutions, both credit and market risk management are applied. According to Sundararajan (2007) while performing a study on methods of comprehensive risk measurement, management and mitigation of risks, explained that these risks arise from financing activities. The study concluded that banks should take into account the use of modern methods to measure credit risk and other risks that affect banks.

Ahmed and Malik (2015) evaluated loan terms and policy, client appraisal, loan collection policy and credit risk control as the aspects of the credit risk management practices and their effect on loan performance in micro finance banks of Pakistan. They gathered data from 157 managers of the MFIs in micro finance banks in Islamabad and Rawalpindi. They used descriptive and inferential techniques to analyze the data. They

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found out that these credit management practices impact on loan performance in a positive way. The study only focused on loan performance and not the loan default rate. Koopahi and Bakhshi (2002) exercised a discriminate analysis that differentiated defaulters from non-defaulters in agricultural banks in Iran. As per their study the length of loan repayment period and loan supervision have a significantly positive impact on agricultural loan performance. These researchers only focused on differentiating defaulters and non-defaulters with regard to credit repayment performance.

Pollio and Obuobie (2008) performed a study using qualitative techniques in Ghana on factors that affect default rates in MFIs that use individual-liability loan contracts. The study concluded that with the frequent loan monitoring, the business life cycle, the number of guarantors and if the client was a first time borrower reduced the probability of loan default.

2.4.2 Local Studies

Essendi (2013) studies how credit risk management affected loan portfolios among SACCOs in Kenya. The study revealed that formulating and regulating the credit policy is done by the board of directors and employees in the organization. The existing credit policy of the Sacco is the primary document upon which formulation of new credit policy is based, trends of creditors and overhead costs are also taken into account in the process of formulation. Findings further show that CAMEL rating system helps in the assessing the soundness of SACCOs.

Nyong'o (2014) studied how credit risk management and non-performing loans in commercial banks relate. This study concluded that most banks have a comprehensive credit risk management system which involves credit risk identification, credit risk monitoring and control. This system reduces loan default which leads to low NPLs. The study resolved that the key responsibility of risk management lies with the banks' board of management.

Kibor, Ngahu and Kwasira (2015) studied credit risk management influences loan performance of commercial banks in Nakuru Town. They used an inferential research design. They recognized that a relatively strongly positive relationship between loan lending policy and loan performance exists.

Mutua (2015) performed a study on the effect of mitigating risk on financial performance of commercial banks in Chuka town. This study revealed that there is a significantly positive relationship between financial performance in banks and credit risk management techniques which include risk identification, risk monitoring and credit sanctions. The study concluded that banks should have policies and strategies to mitigate credit risk which will eventually have a great impact on financial performance.

Nyasaka (2017) performed a study on how credit risk management practices and non-performing loans in commercial banks relate using a case study of the KCB group Limited. The study established that non-performing loans negatively affect bank's profitability as they deny the bank ability to access capital markets and they cause undercapitalization of the banks. This also leads to a negative signaling effect in the stock

market. The study also concluded that the commercial banks have credit granting strategies focusing on whom, how, when and what needs be done while assessing borrowers.

Kariuki (2009) while studying the how credit risk management techniques affect loan default rates among commercial banks in Kenya, found out that a negative correlation exists between loan default and credit risk management techniques among commercial banks in Kenya. Hence commercial banks must efficiently manage their credit risks so as to lower the rates of default on loans. An efficient credit risk management also leads to low interest rates thereby further reducing default.

Gakure et al., (2012) studied the influence of credit risk management techniques on unsecured bank loans performance in commercial banks in Kenya. The study focused on risk identification, risk measurement, risk monitoring and credit approval procedures. According to the study credit approval policies and risk monitoring of borrowers to a large extent influence how unsecured bank loans perform. They also found out that clearly established approval procedures for new loans and extension procedures for existing borrowers is quite important in credit risk management.

Wakaria (2016) studied how credit risk management affects the financial performance in microfinance institutions in Kenya. He used a descriptive research design. According to the stud there exists a negatively correlated relationship between financial performance and credit risk management. Increased levels of credit risk resulted to reduction in profitability. The study recommended that MFIs in Kenya should pay close attention to

credit risk as it contributes to non-performing loans. This study only focused on financial performance.

Kariuki (2017) studied how credit risk management practices influence financial performance in deposit taking SACCOs in Kenya. The conclusion of the study was that credit risk identification, credit analysis procedure and credit monitoring has a significantly positive effect on SACCOs' financial performance. While for credit mitigation measures especially in debt collection have a significant positive effect on financial performance of SACCOs. This implies credit risk mitigation measures need to be put in place to ensure that credit advanced to customers are repaid on time and thus ensuring that financial performance is not adversely affected as a result of debt accumulating due to non-repayments.

2.5. Summary on Empirical Evidence

Empirical studies in the area of credit risk management are quite numerous however there is not enough literature on the how credit risk management techniques and loan default rates in MFIs relate. The studies above have focused on the causes of loan defaults. This study will focus on bringing out this relationship. Earlier studies were based on credit mangement in terms of risk identification and risk management. While more recent studies have been based on the effect of credit risk management techniques on financial performance of commrcial banks. This study hopes to integrate the credit risk management techniques with loan default rates in micro finance institutions.

2.6. Conceptual Framework

Independent Variables   **Dependent Variables**

• Risk Identification • Risk Monitoring • Risk Analysis	Loan Default Rate
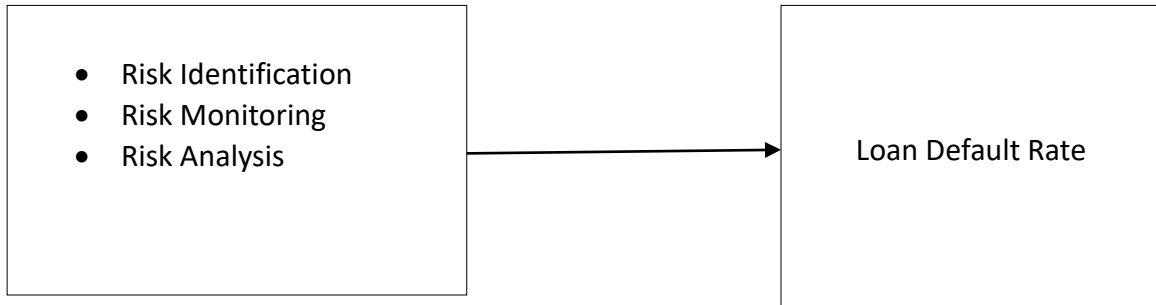
Source; Researcher 2017

Figure 2.1. Conceptual Framework Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter offers a methodological framework that was used to fulfill the objectives of this study. It details the research design, target population design, sampling design, the data collection and data analysis techniques.

3.2 Research Design

Mugenda and Mugenda (2003) infer that a research design refers to the method used to carry out a research. This study used a descriptive research design. This type of research design involves collection of quantity data which is then analyzed to describe a specific phenomenon. Descriptive research design was used because it helped in explaining and generalizing the findings in detail.

3.3 Target population and sample

The target population is used when the researcher wants to generalize the results of the study, Mugenda and Mugenda, (2003). The target population for this study was the 46 micro finance institutions in Kenya (AMFI Website, 2017). The financial statements and the annual reports of the micro finance banks for the years 2011 to 2016 were accessed. These information included total assets, total sales and net income in the annual reports and financial statements which provided the needed information for the study.

3.4 Data collection

Collection of both primary and secondary data was involved. Primary data was collected through the use of questionnaires that were filled by the respondents who are managers of selected micro finance banks so that we could assess their credit management techniques. The questionnaires contained questions that tackle day to day activities carried out by the employees dealing with credit management. The five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) will be used. The questionnaire regarding the aspects of the credit management was adopted from the studies of Nyong'o (2014) and Essendi (2013). The respondents were asked to specify their level of agreement with each question with regards to the loan default rate of their microfinance banks. These questionnaires assisted in determining the credit management techniques in terms of risk identification, risk analysis and risk monitoring.

In determining risk identification the questionnaire focused on questions regarding the borrower screening procedures. This included determining how they rate their clients in terms of borrower's character, borrower's capacity to repay and borrower's capital. In determining risk monitoring the questionnaire focused on the extent of loan supervision and loan support in terms of the credit granting criteria. Risk analysis techniques were determined in terms of the collection procedures and the terms of the loan.

Secondary data involved examining the annual reports of micro finance institutions which have information on the income statements, balance sheet, cash flows and other disclosures. This was used mainly to determine the loan default rate. This involved a

comprehensive report on micro finance banks' activities throughout the six preceding years that is years 2011, 2012, 2013, 2014, 2015 and 2016.

3.5 Data analysis

The data gathered from the questionnaires, annual reports and financial statements of financial institutions which included, balance sheet, income statement and consolidated financial statement were analyzed using regression analysis, correlation analysis and descriptive statistics using the statistical package for social science (SPSS). It was presented by the use of percentages and tables. Descriptive and inferential statistical techniques were applied for analysis purpose. In descriptive statistics the mean and standard deviation were used while for inferential statistics, correlation and multiple regression analysis were used to determine the results of the analysis. To represent the relationship between credit risk management techniques and loan default rates, regression model took the form of:

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

Where: Y = Loan Default Rate

α = the amount loan default rate that is not affected by credit risk management techniques

X1, X2 and X3 = Independent Variables

X1=Risk Identification

X2=Risk monitoring

X3=Risk analysis

β_1, β_2, β_3= Regression coefficients or Change included in Y by each X value

ϵ = error term

Table 3.1: Operationalization of Variables

VARIABLE	ITEM	MEASURE
Risk Identification	Borrower Screening through credit scoring mechanisms	Extent of using the 5 c's of credit analysis to approve new credits
Risk Analysis	Collection policy and terms of the loan	Extent of credit granting processes
Risk Monitoring	Loan supervision and Loan support	Extent of credit mitigation and credit monitoring processes
Loan Default Rate	Total Non- Performing loans divided by the Total advances given	Total Non- Performing loans divided by the Total advances given

Source; Researcher 2017

The dependent variable which is loan default rate was measured by the ratio of the Gross NPLs to Net Advanced Loans given out. Risk Identification involved determining how the Micro finance banks perform their borrower screening. This was through determining their credit rating systems. Risk analysis involved determining how loan supervision is done by these banks and whether loan support is given through the credit granting process. This was through assessing their collection procedures. On the other hand, risk monitoring involved looking at the institution's credit terms, lending policies and assessing their credit control policies. The Pearson Product Moment Correlation Coefficient was used to determine the direction and magnitude of the relationship between the dependent and independent variables at 95% confidence level. The t-test was also used to test the significance of each predictor variable in the model.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The objective of the study was to determine the relationship between credit risk management techniques and loan default rates in microfinance institutions in Kenya. The study was based on questionnaires given out to credit managers and officers in the microfinance institutions. The target population was 46 microfinance institutions. However the response was only from 26 microfinance institutions. The response rate was 56%. According to Mugenda and Mugenda (2006) a response rate of above 50% is good for statistical reporting. The questionnaire was based on a five point Likert scale that was used to determine the differential and inferential statistics for analysis.

4.2 General Information

Data was collected on the general information about the microfinance institutions. This included the type of loans issued, types of risks that the institutions consider important and the credit risk management techniques used. This information was necessary to determine the characteristics of the microfinance institutions. Differential statistics of frequencies mean and standard deviations were used.

4.2.1 Types of loans

The study sought to determine the type of loans the institution offers to its borrowers. The table 4.1.1 below shows that 76.9% of the microfinance institutions give out both secured and unsecured loans and 23.1% of them give out only secured loans. This means that most microfinance banks issue both unsecured and secured loans.

Table 4.1.1 Types of Loans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secured	3	23.1	23.1	23.1
	Both Unsecured and Secured	23	76.9	76.9	100.0
	Total	26	100.0	100.0	

Source; Researcher 2017

4.2.2 Importance of risk

The study sought to establish which type of risk was considered important to the institution. The study focused on 4 types of risks namely; foreign exchange risk, market risk, credit risk and operating risk. A five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) was used to evaluate this information. According to the data obtained as shown in table 4.1.2 below, credit risk is considered as the most important risk as it has a mean of 5.00. Market risk, foreign exchange risk and operational risk are not considered important by the microfinance banks as they had means of 2.38, 2.00 and 1.62 respectively.

Table 4.1.2 Types of Risks

	Mean	Std. Deviation
Foreign Exchange Risk	2.00	1.528
Market Rate Risk	2.38	1.710
Credit Risk	5.00	.000
Operational Risk	1.62	1.502

Source; Researcher 2017

4.3 Credit Risk Management Techniques

With regard to credit risk management, the study sought to find out if the institution had a sound credit risk management system. The table 4.3 below revealed that 100% of the microfinance banks have a credit risk management system.

Table 4.1.3 Credit risk management system

Does your institution have a sound credit risk management system?				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	26	100.0	100.0	100.0

Source; Researcher 2017

Based on the information given, the study sought to find out the credit risk management techniques that were often used by the microfinance institutions. A five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) was used to evaluate this information. The table 4.1.4 below revealed that Risk analysis and Loan Polices were the frequently used techniques as they had a mean of 5.00 each. Credit scoring, Risk identification and Risk monitoring are also used frequently as they have a mean 4.69 while Portfolio Management is rarely used as it has a mean of 3.69.

Table 4.1.4 Credit risk management techniques

	Mean	Std. Deviation
Credit Scoring	4.69	.480
Risk Identification	4.69	.855
Risk Analysis	5.00	.000
Portfolio Management	3.69	1.653
Loan Policies	5.00	.000
Risk Monitoring	4.69	.630

Source; Researcher 2017

4.3.1 Risk Identification

4.3.1.1 Individuals involved in credit policy formulation

In terms of risk identification, the study sought to find out the extent to which different parties in the organization are involved in formation of credit policies. A five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) was used to evaluate this information. The table 4.1.5 below established that in 53.8% of the microfinance institutions, the executive management are involved in risk identification and credit policy while 15.4% involve the credit manager and the credit committee while 30.8% involve both the executive management and the credit employees to formulate credit policies.

Table 4.1.5 Individuals involved in credit policy formulation

To what extent do you involve the following parties in risk identification and formulation of credit policy?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Executive Management	20	53.8	53.8	53.8
	Credit Manager and Committee	2	15.4	15.4	69.2
	Both of them	4	30.8	30.8	100.0
	Total	26	100.0	100.0	

Source; Researcher 2017

4.3.1.2 Borrower Screening

The study aimed to find out the borrower screening characteristics that are usually used by the microfinance institutions. A five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) was

used to evaluate this information. The table 4.1.6 below shows that the microfinance banks mainly focused on capacity of the borrower to repay which has the highest mean of 5.00. This was followed by collateral which has a mean of 4.77, capital of the borrower had a mean of 4.54 and conditions of the loan had a mean of 4.31. The least characteristic was character and reputation having a mean of 3.08.

Table 4.1.6 Characteristics used in borrower screening

	Mean	**Std. Deviation**
Character and reputation	3.08	1.847
Capital of the borrower	4.54	1.127
Conditions of the loan	4.31	1.251
Capacity to repay	5.00	.000
Collateral	4.77	.599

Source; Researcher 2017

4.3.1.3 Risk identification techniques

The study aimed to establish the credit risk identification techniques used by the microfinance institutions. A five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) was used to evaluate this information. The table 4.1.7 below shows that the most risk identification technique used was visiting the client's premises as it had the highest mean of 4.77. Use of the credit reference bureau was the second most used technique as it had a mean of 4.69. This was followed by internal credit scoring mechanisms which had a mean of 4.38. Looking at audited financial statement was the least used technique as it had a mean of 4.23.

Table 4.1.7 Risk identification Techniques

	Mean	Std. Deviation
Credit Reference Bureau	4.69	1.109
Visiting Client Premises	4.77	.599
Audited Financial Statements	4.23	1.301
Credit Scoring Mechanism	4.38	1.121

Source; Researcher 2017

4.3.2 Risk Analysis

In determining how the microfinance institutions perform their credit risk analysis the study sought to find out if the institutions have a sound credit granting system. The table 4.1.8 below shows that 100% of the microfinance banks have a sound granting system.

Table 4.1.8 Sound Credit Granting System

	Frequency	Percent
Sound Credit Granting system	26	100.0

Source; Researcher 2017

4.3.3 Risk Monitoring

4.3.3.1 Review of credit policy

In terms of risk monitoring the study determined how often the microfinance institution reviewed its credit policies. The figure 4.1 revealed that 61.54% of the institutions review their credit policy annually while 23.08% review their credit policy semiannually and 15.38% review their credit policy quarterly. This means that the microfinance banks usually review their credit policies annually.

Figure 4.1 Review of Credit Policy

Pie Chart Percent of How regularly do you review your credit policy?

How regularly do you review your credit policy?
- Quarterly
- Semiannually
- Annually

61.54% 15.38% 23.08%
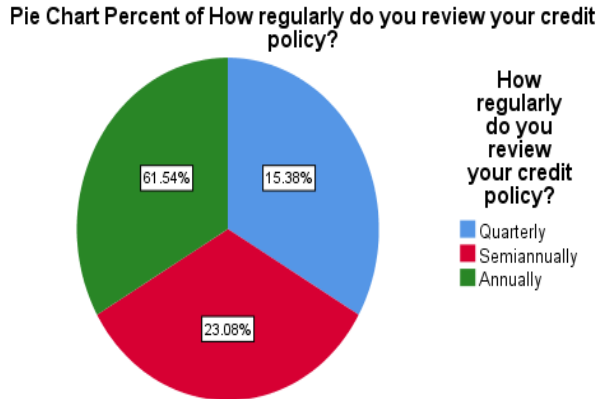
Source; Researcher 2017

4.3.3.2 Risk Mitigation Technique

Risk mitigation techniques used by microfinance institutions were determined through the study. A five point Likert scale (a 5 point scale ranging from strongly agree (5), Agree (4), Undecided (3), Disagree (2), and strongly disagree (1)) was used to evaluate this information. The table 4.1.9 below shows that collateralization is the mostly used risk mitigation technique as it had a mean of 4.77. Personal Guarantors followed with a mean of 3.62 then the risk base pricing and account insurance with a mean of 2.23. This means that the microfinance banks mitigate their risks through use of collaterals.

Table 4.1.9 Risk Mitigation Techniques

	Mean	Std. Deviation
Collateralization	4.77	.599
Personal Guarantors	3.62	1.387
Risk Base Pricing	2.23	1.641
Account Insurance	2.23	1.739

Source; Researcher 2017

4.3.3.3 Reminders

As a form of risk monitoring borrowers need to be reminded to make their loan repayments. The study inquired how often the microfinance institutions send reminders to their borrowers. The figure 4.2 below shows all of the microfinance institutions send reminders to their borrowers after 1 to 3 months. This was explained to be shorter some citing they send the reminders after one or two weeks.

Figure 4.2 Reminders
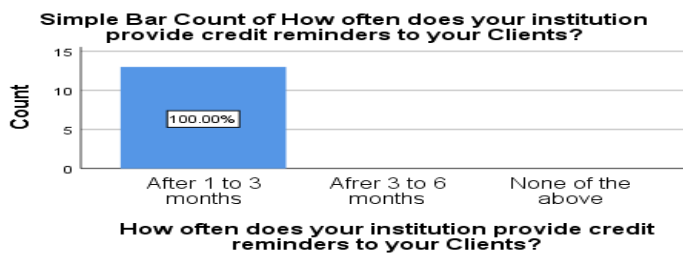
Source; Researcher 2017

4.4 Loan Default Rates

The loan default rates were determined by dividing gross non-performing loans by the total loans advanced to customers in the year. Study finding revealed the loan default rates for the year 2016 for microfinance banks as shown below in table 5.0. The data below shows that loan default rates have been constant since 2011 to 2013. It reduced in the year 2014. However it has been increasing since 2014 and it has greatly increased in 2016.

Table 4.2 Microfinance Banks Loan Default Rates Analysis (2011-2016)

	2016	2015	2014	2013	2012	2011
	sh'000	sh'000	sh'000	sh'000	sh'000	sh'000
Net Advances	47,047.00	45,749.00	39,184.00	27,476.00	19,908.00	16,060.00
Gross Non-Performing Loans	7,371.00	4,264.00	2,348.00	2,047.00	1,465.00	1,094.00
Loan Default Rates	16%	9%	6%	7%	7%	7%

Source, CBK

The study used the loan default rates for each of the 26 microfinance institutions for the year 2016 in order to determine the relationship between credit risk management practices and non-performing loans.

4.5 Inferential Statistics

The study applied inferential statistics to analyze the relationship between credit risk management techniques and loan default rates. The study used SPSS Statistical Data Editor to code, enter and compute the measurements. These statistics include the Pearson correlation and the regression analysis.

4.5.1 Pearson Correlation

This research applied the Pearson correlation to determine the relationship its significance between the credit risk management techniques (risk identification, risk analysis and risk monitoring) as the independent variables and loan default rate as the dependent variable.

Table 4.3 Correlations

		Loan Default Rate	Risk Identification	Risk Analysis	Risk Monitoring
Loan Default Rate	Pearson Correlation	1	-.231	.094	-.044
	Sig. (2-tailed)		.257	.648	.829
	N	26	26	26	26

Source; Researcher 2017

According to the data obtained above in table 4.3 above, the study infers that risk identification and risk monitoring have a weak negative relationship with loan default rates while risk analysis has a weak positive relationship with loan default rates. The weak relationship is signified by the person correlation of these variables being less than 1 in all the three variables while the negative relationship is represented by the negative sign. There is no statistically significant correlation between the variables as the Sig. (2-tailed) value is greater than 0.05.

4.5.2 Regression Analysis

In performing the regression analysis, the coefficient of determination (R square), the Analysis of Variance (ANOVA) and the regression coefficients were determined. The coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Loan Default Rates) that is explained by all the three independent variables (Risk Identification, Risk Analysis and Risk Monitoring). This is shown by table 4.4 below.

Table 4.4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.295[a]	.087	-.038	11.539
a. Predictors: (Constant), Risk Identification, Risk Analysis, Risk Monitoring				

Source; Researcher 2017

The correlation coefficient was 0.295 which shows that there is a weak relationship between risk identification, risk analysis, risk monitoring and loan default rates. The value obtained for the coefficient of determination was 0.087 and the value of the adjusted R Square was -0.038. This means that only 8% of the variations in the loan default rates are determined by the credit risk management techniques. The 92% is contributed by other factors which were not factored in this model.

Table 4.5 ANOVA Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	278.691	3	92.897	.698	.563[b]
	Residual	2929.463	22	133.157		
	Total	3208.154	25			
a. Dependent Variable: Loan Default Rate						
b. Predictors: (Constant), Risk Identification, Risk Analysis, Risk Monitoring						

Source; Researcher 2017

The ANOVA model was employed in testing the significance of the model further. On analysis of the outcome, it was revealed that the P-value was 0.563 which is greater than 0.05 which implies that the model was insignificant. It means that credit management

techniques in terms of risk identification, risk analysis and risk monitoring will not affect the loan default rates.

Table 4.6 Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.808	30.582		1.106	.281
	Risk Analysis	3.353	4.860	.145	.690	.497
	Risk Monitoring	.546	1.096	.128	.498	.623
	Risk Identification	-.963	.724	-.342	-1.331	.197

Source; Researcher 2017

The equation therefore is:

$Y = 33.80 + 3.353$ (units of risk analysis) $+ 0.546$(units of risk monitoring) $- 0.963$(units of risk identification)

From the equation it was established that risk analysis is held constant and the value of loan default rate when risk identification and risk monitoring is held constant is 3.354. Based on the findings above, a unit change in risk analysis will cause the loan defaults to increase by 3.353 units. It is a positive relationship and the relationship is insignificant. A unit change in risk monitoring will lead to an increase in loan default rates by 0.546 units. A unit change in risk monitoring will lead to a decrease in loan default rates by 0.963 units. The p value for all the variables analyzed are greater than 0.05 indicating that the credit risk management variables were insignificant. Therefore, they have no effect on the loan default rates.

4.6 Interpretation of Findings and Discussion

The study established that microfinance institutions offer both secured and unsecured loans. It also established that they consider credit risk as the most important type of risk. Another important aspect that was deduced from the study was that all the microfinance institutions that participated in the study have a credit risk management system. The study also revealed the credit risk management techniques usually used by the microfinance institutions as risk analysis and assessment, loan policies and procedures, risk identification and credit scoring mechanisms.

4.6.1 The Impact of Risk Identification on Loan Default Rates

In assessing risk identification the study focused on individuals involved in credit policy formulation, borrower screening and risk identification techniques. In terms of individuals involved in credit policy formulation the study established that in most institutions the executive management is mostly involved in credit policy formulation.

In borrower screening the study focused on the 5 'Cs' of credit analysis as depicted by Altman, Resti and Sironi (2004). These are character and reputation of the borrower, capital of the borrower, the conditions of the loan, the capacity of the borrower to pay and the collateral given for the loan. According to the study microfinance institutions focus on the capacity of the borrower to repay the loan. This conforms to the study by Ahamad (1997) cited by Munyua (2016) who established that causes of loan defaults are the lack of a borrower's willingness to pay, diversion of loan funds, deliberate negligence and lack of proper loan appraisal. The collateral given for the loan was also highly considered during borrower screening because this is a representation of what will be used to recover

the loan in case of default. Some institutions also consider capital of the borrower and conditions of the loan while very few consider the character of the borrower. This is because they usually deal with the loan application forms therefore it is difficult to determine the character of the borrower at first instance. Character of the borrower is usually established in the second application.

In terms of risk identification techniques, the study found out that most microfinance institutions visit their client's premises. This is because most of the loans given are business loans and they perform client visits to ensure there are no loan diversions. This is according to Munyua (2016) who established that loan diversion greatly affects loan defaults in microfinance institutions. According to this study risk identification has a weak negative relationship with loan default rates.

4.6.2 The Impact of Risk Analysis on Loan Default Rates

In performing credit risk analysis the study established that microfinance institutions have a sound credit granting system. According to the information received, the credit granting system is computerized. The executive management approves and formulates the credit risk policies for identification, measurement and monitoring of risk and subjects new credit products and activities to risk management procedures and controls before being introduced. The borrowers are also effectively analyzed and assessed before a loan is issued.

The loan design and loan conditions are assessed to ensure the borrower receives the loan according to his or her capacity to repay. The information system ensures that the

borrower's information is up to date in terms of his or her repayments and it also assists in loan collection. This is according to the study conducted by Okorie (1986) cited by Korankye (2014) who explained that the design of the loan, time taken to disburse it, loan supervision and the client's business profitability lead to inability of repayment ability and high default rates. According to this study risk analysis has a weak positive relationship with loan default rates.

4.6.3 The Impact of Risk Monitoring on Loan Default Rates

The study established that risk monitoring involves credit policy reviewing, risk mitigation techniques and sending reminders to borrowers. The study found out that most microfinance institutions review their credit policies annually. Reminders are sent to the borrowers after 1 to 3 months. Most microfinance institutions cited making reminders every two weeks. This corresponds to Muigai (2010) who found out that poor/lack of loan supervision and follow up could lead to loan defaults.

The credit risk mitigation techniques mostly used is collateralization. This is because all secured loans must be collateralized. According to the study the forms of collateralizations are land title deeds, log books and household items. Personal guarantors are also used however not often as they usually apply to group loans. According to this study credit risk monitoring has a weak negative relationship with loan default rates.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

From the analysis of the data collected, the following discussions, conclusions and recommendations were made.

5.2 Summary of Findings and Conclusions

The main objective of the study was to determine the relationship between credit risk management techniques and loan default rates in microfinance institutions. The study focused on 26 microfinance institutions which responded to questionnaires issued to them. Based on the data analysis on types of risks that face financial institutions, it was concluded that microfinance institutions face Credit Risk. This is because one of the basic functions of microfinance institutions is to issue loans. The study concluded that most of these institutions offer both unsecured and secured loans.

The study also revealed that these microfinance institutions have a sound credit risk management system. In their explanations of the system, they cited that they have a credit office or department that deals with effective credit risk identification, analysis and monitoring. According to this study the credit risk management techniques used by the microfinance institutions are risk analysis, loan policies, risk identification, credit scoring

and risk monitoring. The study focused on risk identification, risk analysis and risk monitoring.

In risk identification the study established that loan policies are formulated by the executive management. However the credit officers and credit committees play a role in implementation of the policies and performing risk identification. The study also looked at borrower screening in terms of analyzing the borrower's character and reputation, his or her capacity to repay, the capital of the borrower and conditions of the loan. According to the study most microfinance institutions consider the capacity of the borrower to repay, the collateral, then the capital of the borrower and the conditions of the loan. They are unable to determine the character of a first time borrower during the application process. However, when the borrower requests for a second loan they are able to accept or deny the application based on the character.

The risk identification techniques that are used by the microfinance institutions are visiting client's premises, credit referencing bureau (CRB) ratings, credit scoring mechanisms and looking at audited financial statements. Visiting the clients' premises was cited to be the major technique as most borrowers use their businesses and home applications as collateral and their values have to be established. The CRB rating was cited to be a must when a client is borrowing a loan. The institutions have an internal credit scoring mechanism which they use to rate the borrowers depending on the amount of the loan. The audited financial statements of the borrower are also requested however it is not a requirement depending on the type of loan therefore not a necessity. The study revealed that risk identification techniques correlate negatively with loan default rates.

In terms of risk analysis, the study revealed that all microfinance institutions have a sound credit granting process. The credit granting process is based on a computerized system. The executive management approves and formulates the credit risk policies for identification, measurement and monitoring of risk and the institutions subject new credit products and activities to risk management procedures and controls before being introduced. The borrowers are also effectively analyzed and assessed before a loan is issued. According to the study all the institutions perform credit risk analysis and it has a weak positive effect on loan default rates.

In terms of risk monitoring, the study established that most microfinance institutions review their credit policies annually. It also established that all the institutions have a system for monitoring the condition of individual credits. As a form of monitoring, credit mitigation techniques used by these institutions are collateralization and personal guarantors. Secured loans have to have collateral such as title deeds, log books and other assets. Other collaterals used are household items for small loans. Personal guarantors are used for group loans. Reminders to borrowers are also done at least after one month. This is good as it ensures those with pending amounts are repaying their loans. According to the study risk monitoring has a weak negative effect on loan default rates.

The study also revealed some challenges experienced in appropriate credit administration, measurement and monitoring process. They cited false information being given out by the borrowers when applying for the loans for example false title deeds, most loans are unsecured therefore recovering them is quite a challenge, defaulted loans collateralized by household items pose a challenge in recovering due to the valuation of

the items and loan diversions. Internal challenges include high credit staff turnover therefore inability to effectively administer credit policies, high pressure to lend by the staff which may lead to ineffective risk assessment and high operational costs in credit risk administration.

In terms of loan default rates the study revealed that advances to customers have been increasing since 2011, from Ksh. 16,060,000 in 2011 to Ksh. 47, 047,000 in 2016. This is as a result of increase in number of licensed microfinance banks in Kenya from 6 in 2011 to 13 in 2016. The gross non-performing loans have also increased from Ksh. 1,094,000 in 2011 to Ksh. 7,371,000 in 2016. The loan default rates have increased from 7% in 2011 to 16% in 2016 meaning that the number of loan defaulters is on the rise. The study concludes that there is a negative relationship between credit management techniques and loan default rates. This means that better credit management techniques reduce loan default rates.

5.3 Recommendations

Due to the increase in loan default rates in the financial sector, the management of financial institutions should ensure they practice effective credit risk management techniques.

In terms of risk identification the credit officers should be involved in the policy formulation as they are more involved in dealing with the borrowers. Risk identification techniques such as visiting the client's premises and using the CRB ratings should be done effectively to identify high risky borrowers. Determining the actual values of the

collaterals being used should also be done effectively to ensure there are is no falsification of documents.

It is commendable that most institutions practice risk analysis. However the credit granting process should be reviewed regularly to ensure that risk analysis is effective and efficient. The credit granting system should consider the nature, size and complexity of the institution and also consider economic conditions.

In terms of risk monitoring, review of policies should be done more often to ensure they correspond with the nature of the credit products offered. The credit risk mitigation techniques should be effectively analyzed to ensure there is no falsification of the documents and personal guarantors. The management of the microfinance institutions should come up with other mitigation techniques that consider unsecured loans.

Credit risk and loan policies should be made known to all credit staff and the management should ensure that they are effectively and efficiently used. The policies should apply to all the loan products being offered by the microfinance institutions.

The central bank should monitor the credit risk management techniques of the microfinance institutions to ensure that non-performing loans do not increase. The challenges facing microfinance institutions in credit management should be looked into to ensure that the credit risk management techniques efficient and effective.

5.4 Limitations of the Study

The study only focused on only 56% of the microfinance institutions due time and locational constraints in that collection of data as only 26 out of 46 microfinance institutions were focused on. This means that it is difficult to assume that the study reflects the whole microfinance sector.

Challenges were experienced during data collection as the study was conducted in terms of questionnaires. Some institutions did not want to fill the questionnaire as they cited the information is confidential. The questionnaires were dropped and picked. This led to some questionnaires getting lost or not being returned.

The study was also performed through interviews which had positive and negative results. The positive result was more information was given which was not highlighted in the questionnaire. The negative result was that some questions in the questionnaire were not answered.

There could have been cases of subjectivity in the responses as the questionnaire was only filled by one person in the credit department. The use of self-reported data may induce social desirability bias, although the assurance of anonymity can reduce such bias when responses concern sensitive topics (Hair et al., 1999).

The study focused on credit risk management techniques in terms of risk identification, risk analysis and risk monitoring. Other techniques such as loan policies, credit scoring mechanisms and portfolio management could also form a basis of study.

5.5 Suggestions for Further Research

The study suggests that there is need to focus on other factors that affect loan default rates. This is because credit risk management techniques in terms of risk identification, risk analysis and risk monitoring only affect loan default rates by 8%.

There is need to determine the relationship between the other credit risk management techniques apart from risk identification, risk analysis and risk monitoring and loan default rates in all financial sectors.

There is need to establish the challenges the management of microfinance institutions face when handling loan default rates in microfinance institutions. This is because many institutions face diverse challenges while handling credit.

There is need to also establish how the different types of loan products offered by the microfinance institutions affect the loan default rates. This is important as it will differentiate how financial institutions manage the different loan products they offer.

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APPENDIX 1: LETTER OF INTRODUCTION

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-2059162 Telegrams: "Varsity", Nairobi Telex: 22095 Varsity	P.O. Box 30197 Nairobi, Kenya

DATE.....29/09/2017

TO WHOM IT MAY CONCERN

The bearer of this letter ......Mwaura Virginia Mukami

Registration No.............DG1/80590/2015

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

PATRICK NYABUTO
SENIOR ADMINISTRATIVE ASSISTANT
SCHOOL OF BUSINESS

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APPENDIX 2: QUESTIONNAIRE

Instructions: Tick appropriately or write down your answer in the space provided below. Your cooperation and feedback is valued and highly appreciated.

Part A: General information

1. Name of Micro Finance Institution (optional)…………………………………..

2. Type of loan products offered by the Institution:

Secured Loans [ ]   Unsecured Loans [ ]

Both Unsecured and Secured Loans [ ]

3. How important are the risks listed below to your institution? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

	1	2	3	4	5
Foreign exchange risk					
Market rate risks					
Credit risk					
Any other specify					

Part B: CREDIT RISK MANAGEMENT

a) Does your institution have a sound credit risk management system?

   Yes   ( )   No   ( )

b). Explain your answer

……………………………………………………………………………………………

…………………………………………………………………….

c) The following are techniques used in credit risk management, please indicate the extent to which your institution adopts. Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree

	1	2	3	4	5
Credit Scoring Mechanism					

Risk identification					
Risk analysis and assessment					
Portfolio Asset Quality/Portfolio Management					
Loan Policy Procedure					

RISK IDENTIFICATION

1. To what extent do you involve the following parties in risk identification and formulation of credit policy? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

Executive management	1	2	3	4	5
Employee suggestions					
Board of directors					
Credit manager					
Credit analyst					
Credit committee					

2. Kindly rate the credit criteria (s) your institution adopts to test credit worthiness of your clients. Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree

	1	2	3	4	5
The Character and Reputation					
Amount of Outstanding debt					
Capacity to Repay					
Length of credit history					
Inspecting late payments					

3. Which Credit Risk identification technique (s) does your institution use identifying risk for the different clients? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is

Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

Credit Referencing Bureau	1	2	3	4	5
Visiting clients' premises					
Audited Financial statements					
Credit Scoring mechanism					

RISK ANALYSIS

1. To what extent do you agree with the following statement on risk analysis in your institution? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

	1	2	3	4	5
The board of directors approves the credit risk strategy and significant credit risk policies of the institution					
The credit risk strategy reflect the institution's tolerance for risk					
The senior management in our institution develops policies and procedures for identifying, measuring, monitoring and controlling credit risk					
The credit risk policies and procedures developed to address credit risk in all the institution's activities and at both the individual credit and portfolio levels					
Our institution identifies and manages credit risk inherent in all products and activities.					
The institution subjects new credit products and activities to adequate risk management procedures and controls before being					

introduced or undertaken					

2. Does your credit risk management system operate under a sound credit granting process?

   Yes ( )   No ( )

Explain your answer

………………………………………..……………………………………………………

…………………………………………………………………

3. To what extent do you agree with the following statements about the on the operating credit process in your institution? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

	1	2	3	4	5
Our institution must operates within sound, well-defined credit-granting criteria					
Our institution has established overall credit limits both at individual borrowers and counterparties level.					
Our institution has a clearly established process for approving new and refinancing of existing credits					
All extensions of credit must be made on an arm's-length basis.					

4. On overall, to what extent does a sound credit granting process affects non- performing loans?

 Very great extent ( )   Great extent   ( )   Moderate extent ( )

 Little extent ( )   No extent   ( )

b) Explain your answer

………………………………………………………………………………………………

RISK MONITORING

1. How regularly do you review your credit policy?

Quarterly …………………… [ ]

Semiannually………………… [ ]

Annually…………………….. .[ ]

Others specify………………. .[ ]

2. To what extent does institution maintain an appropriate credit administration, measurement and monitoring process?

Very great extent ( )   Great extent   ( )   Moderate extent ( )

Little extent ( )   No extent   ( )

3. Which are the challenges experienced in maintain an appropriate credit administration, measurement and monitoring process in your institution?

………………………………………………………………………………………

.…………………………………………………………………

4. To what extent does the credit management information system influence the level of nonperforming loans? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

	1	2	3	4	5
Our institution has a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves					
The rating system is consistent with the nature, size and complexity of our institution's activities					
Our institution has information systems and analytical techniques that enable management to measure the credit risk inherent in all on- and off-balance sheet activities					
The management information system should provide adequate information on the					

composition of the credit portfolio					
Our institution takes into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios					

5. How does an appropriate credit administration measurement, monitoring process affect non-performing loans?

…………………………………………………………………………………………
…………………………………………………….

5. Which of the following credit risk mitigation techniques of managing loan losses does your institution use? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree

	1	2	3	4	5
Collateralization					
Personal Guarantor					
Risk based pricing					
Deposit/Savings account Insurance					

6. Credit reminders are part of the credit monitoring procedures. How often does your institution provide credit reminders to your Clients?

 After 1 to 3 months ( )   After 3 to 6 months ( )

After 6 to 9 months ( )   After one year ( )

7. In general, to what extent does the credit risk management practices adopted by your institution influence the level of non-performing loans?

To a very great extent ( )   To a great extent ( )

To a moderate extent ( )   To a little extent ( )   To no extent ( )

THANK YOU FOR YOUR PARTICIPATION

APPENDIX 3: LIST OF MFIs IN KENYA

MICROFINANCE BANKS

1. Kenya Women Microfinance Bank
2. Rafiki Microfinance Bank Ltd
3. Faulu Kenya Microfinance Bank
4. SMEP Microfinance Bank Ltd
5. Remu Microfinance Bank Ltd
6. Century Microfinance Bank Ltd
7. Sumac Microfinance Bank Ltd
8. U&I Microfinance Bank Ltd
9. Caritas Microfinance Bank Ltd
10. Daraja Microfinance Bank
11. Maisha Microfinance Bank

CREDIT ONLY INSTITUTIONS

1. Eclof Kenya
2. Vision Fund Kenya Limited
3. BIMAS
4. SISDO
5. Letshego Kenya Ltd
6. PAWDEP
7. YEHU Microfinance Trust
8. Jitegemea Credit Scheme
9. AAR Credit Services
10. Juhudi Kilimo Co.Ltd
11. Musoni Kenya Ltd
12. Select Management Services Ltd
13. Greenland Fedha Ltd
14. Platinum Credit Limited

APPENDIX 4: LOAN DEFAULT RATES

YEAR 2016	GROSS NONPERFORMING LOANS	GROSS LOANS ADVANCED	LOAN DEFAULT RATE
	SH'000	SH'000	
KENYA WOMEN MICROFINANCE BANK	3,861,892.00	22,188,550.00	17%
FAULU MICROFINANCE BANK	1,657,385.00	17,954,979.00	9%
SMEP MICROFINANCE BANK	336,000.00	1,677,000.00	20%
SUMAC MICROFINANCE BANK	33,000.00	538,000.00	6%
MAISHA MICROFINANCE BANK	1,000.00	27,000.00	4%
U&I MICROFINANCE BANK	13,599.00	271,270.00	5%
CHOICE MICROFINANCE BANK	4,000.00	35,000.00	11%
CARITAS MICROFINANCE BANK	-	141,000.00	0%
RAFIKI MICROFINANCE BANK	1,268,810.00	3,660,922.00	35%
REMU MICROFINANCE BANK	83,000.00	244,000.00	34%
CENTURY MICROFINANCE BANK	31,000.00	107,000.00	29%
DARAJA MICROFINANCE BANK	7,000.00	51,000.00	14%
UWEZO MICROFINANCE BANK	74,000.00	151,000.00	49%