

**THE EFFECT OF FINANCIAL RISK MANAGEMENT
PRACTICES ON EFFICIENCY OF MICRO FINANCE
INSTITUTIONS IN KENYA**

BY

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DECLARATION

STUDENT'S DECLARATION

I declare that this project is my original work and has never been submitted for a degree in any other university or college for examination/academic purposes.

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

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DEDICATION

I dedicate this project my parents who have supported me through my academics. I also dedicate it to my siblings Joy Muthoni and David Munene and to my future family; to be their inspiration throughout life.

ABSTRACT

Microfinance stands as one of the most promising tools in the fight against poverty globally, particularly to the disadvantaged population. Microfinance Institutions face risks that have to be managed efficiently and effectively so as to be successful. Various studies have been done on how financial risk management affects financial accomplishment of financial institutions in Kenya, but little has been done on the consequence that financial risk management practices have on efficiency of MFIs in Kenya. This research sought to find out how financial risk management practices affect the efficiency of MFIs. The objectives for this study were to identify financial risk management practices of MFIs in Kenya, to establish levels of efficiency in Microfinance institutions in Kenya and to analyze how financial risk management practices affect efficiency of MFIs in Kenya. A survey approach was employed of all the licensed MFIs that are registered with of Association of Microfinance Institutions in Kenya (AMFI), to come up with a conclusion on the objectives of the study. Drop and pick afterwards method was used for distribution and collection of questionnaires to the relevant employees of the MFIs. The research targeted 47 MFIs. Statistical Package for Social Sciences (SPSS) and a Likert scale were utilized for analyzing quantitative data. Regression model was employed to show how financial risk management practices affect efficiency of MFIs. Regression analysis showed that the R-square was 0.977 which is the same as 97.7%, showing that there was 97.7% variation in dependent variable because of alterations in the independent variables which included Credit Risk Management systems, Behavioral Detection and Predictive Analysis Systems, Structured Finance Systems and Risk Management Systems. Risk management systems was found to be utilized to the most extent ,followed by structured finance systems ,credit risk management systems and behavioral detection and predictive analysis systems respectively. The results obtained from the study indicated that there existed an absolute association between financial risk management practices and efficiency of MFIs. The study recommended a research to be done to establish the vital conditions of ensuring sustainability of the microfinance industry in Kenya. The researcher also recommended a study to be done on how management can create a positive environment through better control mechanisms in which every employee has a stake in refining the internal control system for risk management. The study further recommended that MFIs in Kenya should take on a multifarious approach to risk management in order to attain better benefits from their risk management efforts.

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LIST OF ABBREVIATIONS

AMFI	-	Association of Microfinance Institutions in Kenya
APT	-	Arbitrage Pricing Theory
CAPM	-	Capital Asset Pricing Model
DEA	-	Data Envelopment Analysis
DMU	-	Decision Making Units
FRM	-	Financial Risk Management
FRMS	-	Financial Risk Management Systems
MFI	-	Microfinance Institutions
NGO	-	Non-governmental Organization
ROA	-	Return on Assets
ROE	-	Return on Equity
SPSS	-	Statistical Package for Social Science

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Risk idea is a fundamental part of an organization since the financial distress and inequity that can result from ignoring it can be dire. Risk terminology varies from organization to organization, and different people may use different terms to refer to the same risk, or use the same terms for completely different risks. One of the definitions of risk is: It is the possibility of an actual yield on an investment being lower than the expected return (ActEd, 2013). Risks that microfinance institutions face, must be managed efficiently and effectually so as ensure these institutions are successful to meet financial and social objectives. The management of these risks is vital and is crucial for the efficient functioning of the financial institutions, their profitability, and eventually their survival in the market. There's therefore need for MFIs to put in place effective risk management tools or systems to help keep the risk exposure within acceptable boundaries.

Some of the effects of risks faced by financial institutions include: the marketability of investments that cannot be sold quickly enough to meet the organization's objectives (liquidity risk). Financial institutions are at times unable to pay due obligations on its debt obligations; financial viability and long term sustainability is affected by this (credit risk). Business decisions that are unfavorable, or erroneous execution of those decisions, governance and oversight that is incompetent or deficient leadership, as well as apparent risks, for example modifications in the competitive or business environment (strategic risk). Intentional deception by an employee or client which leads to loss of earnings or capital (fraud risk). Unexpected losses due to technology that is incompetent and systems of particulars, operational difficulties, inadequate human resources, or infringement of integrity, for example fraud (operational risk) (SampleRisk Rating Model, 2000).

This sector has experienced the effects of poor risk management in the past years, in various forms for example depreciation of local currency and foreign exchange losses that are unwarranted in Kenya (Risk Management initiative in microfinance (RIM). The consequence of poor management of these are financial losses and loss of confidence of savers in the organization. It is therefore vital for microfinance institutions base supervision and internal audits on risk management and become risk focused (Alibés, 2006). Making educated decisions about how to direct the real risks that are part of the business, how much risk to tolerate and how to mitigate the risks are the essence of risk management (Kinuthia, 2013).

Given the foregoing business environment of the financial sector, only the most resilient institution in the sector remains in business (Njeri, 2010). In this regard, questions have persisted on the efficiency of MFIs, especially given that MFIs target small and medium enterprises. There is therefore need to research on the effect that risk management practices have on day to day activities of MFIs. This study will focus on how financial risk management practices influence efficiency of MFIs, and will be mostly confined to variables related to performance of MFIs and risk management practices in place.

1.1.1. Financial Risk Management Practices

One of the definitions of Financial Risk Management is; the process of spotting possible risks in advance, examining them and implementing preventive measures to curb or lower the hazard (Economic Times, 2017). Various authors including Stulz (1984) and Smith et al (1990) have given justifications why active management of risks should be of focus to managers in their organizations. Maximization of anticipated profits taking into account its variability/volatility (financial risk) is the prime goal of risk management in MFIs.

Financial peril is caused by external and internal vulnerabilities and as much as it has adverse negative effects, it can be managed through certain practices referred to as risk management practices. In these practices, a course of establishing priorities has to be pursued in which the hazard with the highest loss and highest possibility of happening is managed first and risks with smaller loss are managed later (Stulz, 2003) and (Kiochos, 1997). These are the practices that ensure organizations have early internal warnings and management responses that prevent the

small risks from exploding to unmanageable risks. In case the risks are poorly managed in organizations, financial losses occur and loss of sureness by those who save in the organization. There is however, no particular model to control the balance between risks with greatest possibility of occurrence and loss and those with smaller loss, hence causes management of risk to be problematic. A proper management of a possibility of suffering loss therefore makes it possible for a firm to minimize its exposure to hazards and be ready to hold up after any unforeseen crisis (Omasete, 2014).

1.1.2. Efficiency

Most micro finance institutions seek financial efficiency; and reconstitution has been done in many of the MFIs so as to attain financial efficiency and fund their development. Drucker (1966) describes efficiency as the means of doing things properly. This indicates minimal devotion of the available inadequate resource to facilitate achievement of a goal. Carl (1969) also presents efficiency as the extent of how well in the use of its financial resources, an organization has handled certain trading's (liquidity, risk and return and profitability).

Efficiency estimates production of gross revenues by the proper utilization of the assets of a business. Effectiveness of production, pricing and marketing resolutions are also measured by efficiency. Monitoring the firm's performance can also be utilized to measure efficiency. Profitability levels of companies are evaluated and monitored periodically so as to use profitability measures to evaluate their financial performance. Two most popular measures of profitability are ROE and ROA (Virambhai, 2010).

1.1.3. Financial Risk Management Practices and Efficiency

Institutions encounter risks that they must take charge of efficiently and effectively to be successful. Various financial risks that institutions face affect institutional efficiency. Risk management therefore plays an important role in enhancing institutional efficiency. Management of perils entails repetitive process that constitutes steps that when taken will facilitate better performance and improved decision-making. The system should involve: identifying, examining,

evaluating, treating, monitoring and communication of risks. Organizations are therefore able to maximize the profits and minimize the losses (COSO Enterprise Risk Management Framework, 2004).

According to Bikker (2015), the ultimate objective of risk management implementation in commercial organizations is to maintain proper financial performance and efficiency. Companies also manage financial risks so as to minimize the instability of earnings or cash flows as a result of financial risk exposure. This enables the companies to keep away from financial distress and the costs associated with it (Dhanini, 2007). In addition, Bobakovia (2013) argues that the competence of a firm relies on its capability to predict and mitigate risks, and possibility of provisions to cover losses brought about by risk that arises. The actual financial situation of a company should therefore determine the attention of the risk management. After the occurrence of the associated risks, firms that have effectual risk management structures exceed their peers as they are more ready for these moments.

1.1.4. Micro Finance institutions in Kenya

In global debates on poverty reduction, microfinance has become one of the major subjects of discussion. It stands as one of the most promising and cost-effective tools of the war against poverty globally. Christen (1997) describes microfinance as the use of market-driven and commercial approaches to offer various financial services to the poor. Provision of other financial services like savings, transfer of money, payments, remittances, and insurance, among others are encompassed in this description. Concerted efforts have been made to encourage access of these services to the poor using micro finance institutions (MFIs) all over the world.

In Kenya, the low income target market is generally ignored and has for a long time not had access to appropriate microfinance products (Mbogo, 2010). While over 90% are exposed to many risks in Kenya, with the poor being the most exposed; only 13% of the total population is served by MFIs. MFIs of Kenya are registered under 2006, MFI Act. Microfinance Act of 2006 regulates the provision of microfinance services in Kenya. Downscaling commercial banks, non-bank financial institutions, saving and credit cooperatives that are licensed and NGOs are some

of the chief kinds of microfinance service givers in Kenya. Currently, there are 53 registered MFIs in Kenya (Association of Microfinance Institutions of Kenya, 2011).

Structural weaknesses, fraud by both employees and clients, fall down of some firms caused by deficiency of liquidity, slow economic increase, and inefficient governance, slow entrance of microfinance services and permeation of the industry are some of the numerous queries facing the microfinance industry. Increased incorporation into countries' financial systems means increased awareness by regulatory authorities and a higher exposure to liquidity risk and interest rates. Effective financial risk management is therefore critical for the efficient functioning, growth and sustainability of a microfinance institution and hence the need to develop a way of mitigating the risk (Abhay, 2010).

1.2. Research Problem

Each and every financial institution seeks to work productively to ensure its enhancement and expansion and to sustain its stability and function efficiently. Microfinance institutions provide financial products and services like savings, insurance, transfers and credit services to entrepreneurs and small business people who lack access to banking services (Holt, 1994). There has been a decline in the number of MFIs over the years and these businesses represent more than one half of the economic activities countries in the Sub-Saharan region by availing 34% and 12% of urban and rural employment opportunities in Kenya (Kenya, The Kenya Financial Sector Stability Report, 2016). There is therefore need to identify the reasons for this decline and advice on ways to revive these businesses to a sustainable level. Risk management has been identified as one of the major causes of slowdown of microfinance activities. An incorporation of hazard management into the companies' processes, systems and culture is therefore vital for all MFIs. Stulz (1984) argues that a firm can get comparative advantage through opportunities exhibited by some risks, therefore warranting it to upgrade efficiency in operation and financial performance.

KPMG (2015) report indicates that poor management of financial peril led to collapse of many companies in Kenya in the last 20 years. This is also includes microfinance institutions. Institutions with more developed risk management practices tend to bring on the greatest

improvement in revenue, outshine their equals financially and function more efficiently and (Ernst, 2012). Financial risk management facilitates ensuring that from a risk return perspective, an undertaking or business is suitable and hence is essential for microfinance institutions (Kinuthia, 2013) . Financial risk management system (FRMS) aids in the utilization using collateral management systems, behavioral detection and predictive analysis systems, structured finance systems and risk management systems. Winfred (2013) therefore concludes that FRMS to most extent increases profitability and efficiency in the companies studied.

The Kenyan vision 2030 blue print identifies financial sector stability as one of the key factors in the attainment of the objectives of the strategy and point out that the sector should grow by 8% over the next 20 years to help the country achieve its objective. This can only be achieved if there is growth in and stability in the financial sector and cases of the institutions insolvency or financial crisis happening should be prevented at all cost. This is done by ensuring financial institutions not only are profitable but also function efficiently (Muteti, 2014).

Locally, Muteti (2014) did a study on the how financial risk management commands financial performance of commercial banks in Kenya, and revealed that capital management risk, bank deposits and the size of the bank had a positive relationship with financial performance of commercial banks in Kenya. The research also concluded that financial performance of commercial banks in Kenya is negatively affected by credit risk, interest rate risk, foreign exchange and liquidity risk. However, how risk management practices influence the performance of banks in Kenya was not identified by this study.

Koduk (2015) did a research on the relation betwixt banking electronically and financial performance of Nairobi County savings and credit cooperative societies. This research revealed that adoption of electronic banking had a positive relationship with financial performance of the SACCOs and hence led to the inference that application of innovative approaches enhance financial inclusivity and subsequently financial performance of financial institutions. Kipkemboi (2013) led a study on the how credit risk management practices influence Kenya's micro finance institutions' financial performance. The research concluded that credit risk management practices positively affected financial performance of Kenya's MFIs. However, the study did not

seek to establish the influence of risk management actions on performance and efficiency of microfinance institutions.

Omasete (2014) did a study on how financial performance of insurance companies in Kenya is affected by risk management practices. The study concluded that financial performance of insurance companies is most significantly influenced by risk identification and mitigation. The study also concluded adoption of risk management practices has a strong positive relationship with financial performance of Kenyan insurance companies. Wanjiku (2016) conducted a research on the effect of financial risks on institutional efficiency of listed institutions in the Nairobi securities exchange. It concluded that foreign currency, interest rate risk, and credit risk, influenced institutional efficiency of listed companies in Nairobi Securities Exchange. However, this study did not seek to identify the risk management practices of the companies under study.

Various studies have been conducted on how financial performance is commanded by practices of financial risk management of companies in Kenya but little has been done on the influence of financial risk management practices on efficiency of microfinance institutions. This research sought to answer the research question so as to fill the existent research gap; does financial risk management practices influence efficiency of microfinance institutions in Kenya?

1.3. Research Objectives

1.3.1. General Objectives

This study sought to investigate the relation betwixt financial risk management practices and efficiency of Micro finance institutions in Kenya.

1.3.2. Specific Objectives

- i. To identify financial risk management practices of MFIs in Kenya
- ii. To establish levels of efficiency in Microfinance institutions in Kenya
- iii. To analyze how financial risk management practices influence efficiency of MFIs in Kenya

1.4. Value of the Study

It was expected that the conclusions of this study would give contributions from both a speculative and practical overview and therefore be of value to the general public, students and microfinance institutions. The study sought to document the effect of financial risk management on MFIs efficiency in Kenya. It sought to establish how FRM practices affect efficiency and hence show the need for MFI'S to avoid unforeseen surprises and losses by strengthening their internal capacity to recognize and anticipate potential risks. Techniques which MFIs might additionally take in to mitigate the financial risks they face were also summarized in this paper.

The general public benefitted from the research through improved management of perils and enhanced services by microfinance institutions. The study was also helpful to government institutions like The Central Bank of Kenya in setting regulations in the financial sector and safeguarding the resources of the country. Lastly, academicians were furnished with more knowledge and facilitate more research on management of risk in financial sector. The study added to the literature on the relation betwixt handling of financial risk and efficiency of MFIs in Kenya and provide a foundation for more analysis.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

A general overview of the available literature on the effect of financial risk management practices on efficiency of MFIs is given in this chapter. This chapter will also present theory on risk rating in finance, hypotheses and a review of the existing literature on the topic. The researcher will also discuss a variety of empirical work in this chapter. A useful material will be developed from connecting together arguments and concepts from a variety of sources.

2.2. Theoretical review

Studying different ways by which industries and individuals raise money, as well as how money is distributed to projects while considering the risk factors associated with them are some of the ideas contained in of risk management theory. This chapter reviews the following theories; optimal capital structure theory, Capital Asset Pricing Theory and Arbitrage Pricing Theory.

2.2.1 Capital Asset Pricing Theory

CAPM was introduced by Sharpe (1964), and Lintner (1965); building on the earlier work of Markowitz (1952) on diversification and modern portfolio theory. (French, 2003). The basis of Sharpe (1964) and Lintner (1965) version of CAPM was the portfolio theory of Markowitz of one period mean variance. This theory assumes that investors are only concerned about risk (variance) and return (mean) of theory one period investment return and are unwilling to take risks (Kinuthia, 2013). Asset's sensitivity to non-diversifiable risk (also known as systematic risk or market risk), are taken into account by the approach and are often depicted by the quantity beta (β), as well as the anticipate market return and the return that is expected of a theoretical risk-less asset.

Some assumptions of CAPM in the basic form are: The target of all investors is to make utmost use of economic utilities (Asset amounts are given and fixed). All investors are well reasoned and are not willing to take risks. Investors take up market prices and are widely varied across a range of investment, i.e., they cannot command prices. The risk free rate of interest allows them to lend and borrow great amounts and trade without transaction or taxation costs. Another assumption of the approach is that investors handle securities whose divisibility into small parcels is high (All assets are perfectly divisible and liquid). Lastly, CAPM assumes that the expectations of all people who invest are similar and that they presume all information is available at the same time to them (Arnold, 2005). CAPM utilizes the estimates of systematic perils that can be likened to other assets in the market. Theoretically the use of this measure of risk can allow investors to enhance their portfolios and managers to find their required return rate.

In their 2004 review, Fama and French (2004) argue that implication that most applications of CAPM model are invalid is as a result of failure of the CAPM in empirical tests. Empirical tests also show market irregularities like the size and value effect that cannot be explained by the CAPM. For these reasons, the model does not clearly show how MFIs can control hazards and therefore the model cannot be used in management of credit risks in microfinance institutions.

2.2.2. Arbitrage Pricing Theory

The arbitrage theory of capital asset pricing was developed by Ross (1976) as an alternative to the mean-variance capital asset pricing model (CAPM). It incorporates a variety of factors in explaining the movement of asset prices. Portfolio risk in APT model is shown by a model factor that is aligned, in which the total of perils factor returns are the returns. Sensitivities to variation in each part weigh the variation of factors from macroeconomic to fundamental market indices. Elements may be; economic factors (for example interest rates, inflation, GDP) financial factors (for example market indices, yield curves, exchange rates) fundamentals (like price/earnings ratios, dividend yields), or statistical for example analysis of principal component and factor analysis (Ugirase, 2013).

Implementation of APT involves three steps: Identifying the factors, estimating the factor loading of assets and estimating factor premia (Wang, 2006). According to Defusco et al (2007), APT has the following assumptions; among well varied portfolios in the market, there are no arbitrage opportunities; there are similarities what investors expect; Stock markets are perfect (there are no costs of transactions and there exists perfect competition); and lastly, there is a linear relationship between expected returns and risk-factor (Ugirase, 2013) . The weakness of this theory is that it doesn't explain what the right factors are and its assumption of linearity is quite restrictive. This theory is relevant to this study in that it emphasizes on the portfolio investments. However the limitation of this theory is that it does not give a clear approach on how MFIs can manage risks.

2.2.3. Financial Economic Theory

Financial economics approach builds upon classic Modigliani-Miller paradigm (Miller and Modigliani, 1958) which states conditions for irrelevance of financial structure for corporate value. This strategy argues that hedging causes lower volatility of cash flow and hence value of the firm becomes less volatile. Irrelevance conditions that facilitated rationales for corporate risk management included: advanced tax rates, lower expected costs of bankruptcy (Smith and Stulz, 1985) greater debt capacity (Miller and Modigliani, 1963), securing internal financing (Froot et al., 1993), asymmetries in information systems (Geczy et al., 1997) and relative advantage in information. If indeed hedging is beneficial to the firm, its ultimate result should be greater value of hedging premium (Marek, 2007). This approach was later stretched to the field of risk management.

As claimed by Carter et al. (2006), risk management can grow shareholder value by harmonizing investment policies and financing. Underinvestment costs can be mitigated by a credible risk management system through reduction of the volatility of the firm value. As the underinvestment problem which includes financial risk management is likely to be more critical for firms with significant opportunities of growth and investment, multiple estimate for instance the market-to-book ratio, development and research to sales ratio, expenses on capital to sales, acquisition of net assets to size which are indicators of financial outcomes are utilized for investigating the

underinvestment hypothesis (Sammy, 2014). This theory is relevant to this study since it endeavors to show the importance of risk management.

2.3. Determinants of Efficiency of Microfinance Institutions

Various efforts have been tackled so as to measure efficiency of MFIs. Lafourcade et al (2005) and Farrington (2000) have used ratio analysis approach to measure efficiency of MFIs; whereas Desrochers and Lamberte (2003) used stochastic frontier analysis for the measurement of efficiency in MFIs. Both of these methods are limited by the use of inputs that are multiple and multiple outputs in estimating MFIs efficiency that is linked. This can be countered by using the Data Envelopment Analysis (DEA) (Cairn.info, 2013) . The DEA program allows one to discover the correct weights which exploits the competence of decision making units and computes the competence score as well as frontier of output for a specified level of inputs (Farrell, 1957). The weights for the ratio are established by the limit that comparable ratios for each decision making unit ought to be equal or less than the unity, hence lowering multiple outputs and inputs to a particular virtual output without involving weights that are pre-assigned. Thus, the efficiency score acts as a function of a combination the weights of virtual input output and is given as follows;

$$Efficiency = \frac{\text{Weighted sum of output}}{\text{Weighted sum of inputs}}$$

Inputs=Total Assets (TA), Cost of raw materials and cost of sales expenses (CRSE)

Outputs = Net Sales (NA) and Net Profit (NP).

Every DMU chooses weights of input that exploit its efficiency score. Usually, a DMU is assumed to be competent if it gets a score of 1.00, suggesting 100% competence while a score which is below 1.00 indicates that it is incompetent (Wanjiku, 2016). Capability of the institution to repay the opportunity cost of all inputs as well as assets to generated income is dictated by efficient functioning of MFIs and hence is vital for long term sustainability (Chavez, 1996).

2.3.1. Financial Risks

Financial risk does not have a unified definition that is accepted universally. The issues start with the overall description of risk. With regard to this, two conceptions of risk exist- one that is

unfavorable, and another that is neutral. The negative conception of risk describes it as the potential to incur a loss - hence is a threat that has to be eliminated. The second conception describes risk as an opportunity that has to be handled with some sense of mitigation, in case of potential, known outcome that will pose a threat. In this view, risk is the probability of obtaining results that differ from the original (Horcher, 2011). The theory of finance describes financial perils as any variation in the cash flows, financial results and the company's value as a result of the effect of various types of factors, mostly market ones, for example: interest rates, prices of stock, exchange rates, and commodity prices (Alibés, 2006). Therefore, according to this definition, financial risk is in charge of any changes in the conditions of finance of the business (Tarantino, 2009). The components of financial risk analyzed in past researches include: liquidity, credit, market, and interest rate risks.

2.3.2. Liquidity Risk

It is associated with the potential of the company to use assets that can be speedily converted into cash (current assets) to settle up its short term liabilities. Efficient control of liquidity entails giving out loans while also investing proceeds to maximize value and managing cash reserves to meet client needs (MicroFinance Network, 2000). A very crucial component in the determination of the level of sufficient cash levels that MFI's should hold per time is liquidity management. It is necessary for MFIs to establish the optimal level of retaining cash for immediate needs and the funds needed for investment purposes. This caters for the costs connected to continue being competitive and the costs of its operations in its industry. Sustaining a sufficient return on investments and staying in business while providing access to credit for the unbanked is aided by effective liquidity management in MFIs (Alele, 2014).

2.3.3. Credit Risk

It is a financial risk emerging from the utilization of capital of debt to finance part of the company's assets. It is the potential that a borrower or counterparty will fail to meet its obligation in accordance with the agreed terms (Bank for international Settlements, 2000). Credit risk management alludes to an organized approach utilized for overseeing vulnerabilities

through hazard assessment, creating ways to deal with, oversee it, and easing of hazard using administrative asset (Husni, 2011) . The techniques include exchanging to an alternate gathering, avoiding the hazard, diminishing the unconstructive impacts of hazard, and also tolerating all or a portion of the outcomes of a given hazard. Financial institutions should see the need to identify, measure, monitor and control credit risk since it is the leading source of problems especially to banks and MFIs (Bank for international Settlements, 2000).

2.3.4. Market Risk

It is the possibility of incurring losses, due to the forces that affect the financial market as a whole. It is the hazard of adverse variation of market value enterprise as a result of movements in the market during the time required to liquidate or off set positions (Bank Negara Malaysia, 2014).

2.3.5. Interest Rate Risk

This is caused by the possibility that a change in the value of assets and liabilities is relative to the changes in interest rates. Financial institutions employ it as a standard to set maturity schemes and risk profiles of their financial intermediation business and hence it is a critical part of treasury variable (Alele, 2014). Interest rate risk affect project finance in that if the rate of interest rise, funding may not be available for a new loan for a project. Other markets affected by interest rate risk include the bonds market and long term and fixed income securities market.

2.4. Empirical Review

Pagadala & Arif (2017) did a research on practices of risk control on select microfinance institutions in Telangana state in India. The research employed a survey technique. The paper concluded that microfinance institutions in Telangana state were in the process of establishing sound risk management practices. The study additionally concluded that a positive relation existed betwixt risk management practices of micro finance institutions and variables of risk such as understanding risk and risk management, identification of risk, risk analysis and assessment and risk monitoring and control. Further, it also concluded that there was no

association between number of years in operation of a micro finance institution in Telangana state and number of active borrowers and gross loan portfolio.

Wanjiku (2016) conducted a research on effect of financial risks on institutional efficiency. The study concludes that foreign currency, interest rate risk, and credit risk, influenced institutional efficiency of companies listed in Nairobi Securities Exchange. Adopting financial risk quantified by foreign currency risk has positive or negative foreign currency risk or positive (negative) abnormal returns during results publication. The study also concluded that the coefficient for interest rate risk was 0.654, meaning that interest rate risk positively and significantly influenced the institutional efficiency of companies listed in Nairobi Securities Exchange. The study finally concluded that the coefficient liquidity risk size was 0.456, meaning that liquidity risk positively and significantly influenced the institutional efficiency.

Muteti (2014) did a research on how financial risk management commands financial performance of banks in Kenya. From the conclusions, it was revealed that there existed a negative relation between credit risk, foreign exchange, interest rate risk, liquidity risk and financial performance of 36 commercial banks in Kenya; thus the research concludes that financial performance of commercial banks in Kenya is negatively affected by credit risk, foreign exchange risk, interest rate risk and liquidity risk. The study also revealed that capital management risk, bank size and bank deposits positively affected financial performance of commercial banks in Kenya, and thus the research concludes that there existed a positive relationship between capital management risk, bank size bank deposits and financial production of commercial banks in Kenya.

Kinuthia (2013) did a paper on the relationship between financial risk management systems and financial performance of micro finance institutions in Kenya. According to the analysis of the findings, it was concluded that most respondents indicated that financial risk management practices brings effectiveness to organization performance. In establishing on whether the institution has a financial risk management department that handles collection of credit in default; the results concluded that most respondents indicated yes and further noted that there exist standardized procedures for handling financial risk management systems. However, the

study is different from our paper as it did not show the connection of financial risk management practices and efficiency.

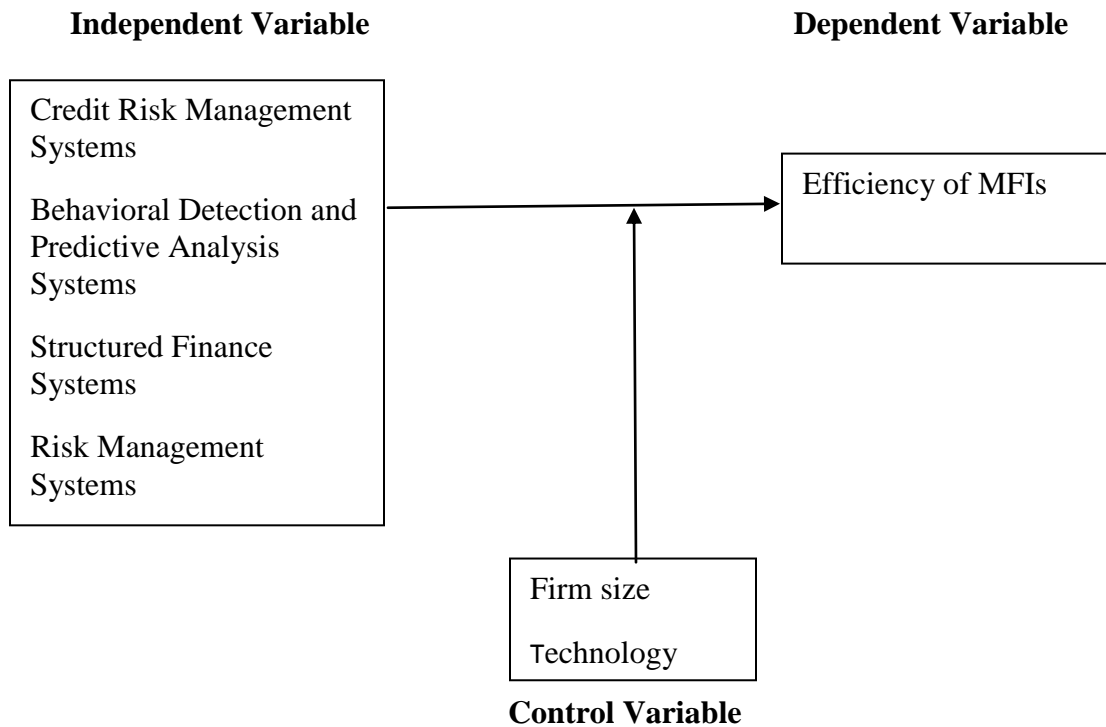
Ugirase (2013) did a research on the influence of credit risk management on the financial performance of commercial banks in Rwanda. The paper adopted structured questionnaires to obtain primary data. From the findings, the study concluded that credit risk control was essential as 81% of the respondents indicated that management of credit risk would improve financial performance. The study also unveiled that the measures that were employed to analyze credit risk management were; credit risk analysis and assessment, credit monitoring, credit risk identification, and credit scoring mechanism. More than 70% of the respondents affirmed that credit risk identification was used as a key indicator of credit risk management to warrant better financial performance. This paper is different from our research as it did not address the link between practices of financial risk control and efficiency.

Singh, Goyal & Kumar (2012) wrote a journal of innovation, economics and management on the determinants of technical efficiency and efficiency in microfinance institutions. DEA was used in the paper for evaluating efficiency of 41 MFIs in India by the use of input oriented and output oriented methods. The results suggest that output of MFIs can be raised by 59.4% without raising the quantum of inputs. This means that similar level of gross loan portfolio can be obtained by reducing the inputs. The study differed significantly from the present study in that it covered technical efficiency and its determinants as opposed to how financial risk control practices affect efficiency of MFIs.

Kombo, Wesong, & Murumba (2011) conducted a study to assess the influence that risk management strategies have on micro-finance institutions' financial sustainability in Kisii Municipality, Kenya. The study took on a survey design. Only MFIs within Kisii Municipality were covered by the research, and were selected by the use of purposive sampling. Descriptive statistics such as percentages were utilized to analyze data. Some of the conclusions were that the most preferred sources of funding by the sampled MFIs were; donor funding, revolving fund and government subsidies. The most frequent risks were strategic risk, liquidity risk and credit risk whereas subsidy reliance and reputation occur at a very low incidence.

Njeri (2010) carry out a paper on strategic practices risk control by large commercial banks in Kenya. The research was a census survey on 13 large commercial banks in Kenya. The objective of the study was to determine the strategic risk management practices adopted by large commercial banks and the challenges faced by these banks in their strategic risk management practices. The study found out that banks have adopted strategic risk management practices and though there was a slight variance in approach between the banks, the most commonly adopted practice centered on strategic risk assessment, evaluation, monitoring, reporting and control.

2.5. Conceptual Framework



The framework presents a diagrammatic representation of the conceptualization of the study which seeks to investigate how financial risk management practices affect efficiency of microfinance institutions in Kenya. The independent variable in this case are the financial risk management practices which include: credit risk management systems, behavioral detection and predictive analysis systems, structured finance systems and risk management systems; while the dependent variable is efficiency. This relationship is controlled by firm size and technology.

2.6. Summary of Literature Review

This chapter reviewed literature regarding the effect of financial risk management practices. This study is inclined on the capital asset pricing theory, arbitrage pricing theory and financial economic theory. The various types of financial risks that will be evaluated include; Liquidity, credit, market and interest rate risks.

Studies have been done on influence of risk management strategies on financial sustainability of micro-finance institutions (Kombo, Wesonga & Murumba, 2011); Strategic risk management practices by large commercial banks (Njeri, 2010); The impact of financial risk management strategies on financial performance of micro finance institutions (Kinuthia, 2013); influence of financial risks on institutional efficiency (Wanjiku, 2016). From the studies above, little has been researched on the impact of financial risk management practices on efficiency of microfinance institutions. In the global arena, most materials were on influence of financial risk management practices on performance of microfinance institutions. Less has been done on effects of FRM practices on efficiency of MFIs. Therefore, there is need to do further research on the impact of financial risk management practices on efficiency of microfinance institutions.

Table 2.6. Summary of literature Review

Author of study	Focus of Study	Methodology	Results	Knowledge Gaps	Focus of current study
Kombo, Wesonga, & Murumba, (2011)	Impact of risk management techniques on financial sustainability of micro-finance institutions	Survey technique	The most frequent risks are strategic risk, credit risk and liquidity risk	The Risk management practices of MFIs in the area of study	Risk management practices of MFIs
Wanjiku, (2016)	Effect of financial risks on institutional efficiency among companies listed in the	Descriptive and inferential statistics to analyze data	Foreign currency, interest rate risk, and credit risk, influenced institutional efficiency of	The Risk management practices of companies under study	Risk management practices

	Nairobi Stock Exchange'		companies listed in Nairobi Securities Exchange		
Njeri (2010)	Strategic risk management practices by large banks in Kenya	Census survey	Banks have adopted strategic risk. Management practices and the most commonly adopted practice is centered on strategic risk assessment, evaluation, monitoring, control and reporting.	The effect of risk management practices on efficiency of the institutions	Impact of financial risk management practices on efficiency of MFIs
Kinuthia, (2013)	The influence of financial risk management systems on financial performance of micro finance institutions in Kenya	Both qualitative and quantitative technique(descriptive analysis)	The results concluded that most participants indicated that FRMS affect performance of their institution for example better FRMS systems increase profitability	Effect of the risk management practices on efficiency of MFIs	Effect of FRM practices on efficiency of MFIs

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This section presented the methods of analysis and approaches that were applied in conducting the research, the population of study, and the techniques that were utilized for gathering data that was pertinent in answering the research and data analysis.

3.2. Research Design

Descriptive research design was employed in the study as it sought to determine the effect of financial hazard management practice on efficiency of Micro Finance Institutions of Kenya. Kothari (2004) states that the main reason for descriptive research is description of matters as they prevail presently; adding that it entails survey and enquiries of facts finding. Research design that is descriptive employs methods that are both quantifiable and qualitative. It entails bringing together quantifiable information that will be analyzed in number form. Brink & Wood (1998), states that the aim of a research design is to lay out a plan for giving reasonable answers to the research question and is a blue print for any move.

3.3. Target Population

The study population consisted of all 47 registered MFIs and is registered with Association of Micro finance Institutions of Kenya (AMFI). The study reviewed information obtained from journals and other relevant secondary sources on the Micro Finance Institutions. This data was used to strengthen the information from primary data which at times may be inaccurate and subjective based on the respondents' predisposition at the time of data collection. As for inferential statistic, regression analysis was utilized to establish how practices of financial risk management have influence efficiency of MFIs.

3.4. Sample Design

The study used survey method for the purposes of collecting data. The surveys constituted 47 registered MFIs that registered with Association of Microfinance Institutions in Kenya. The method is practical, easy, cost efficient, and fast and does not need a detailed sampling setting that is not readily accessible (Kipkemboi, 2013). The technique was appropriate as it ensured that all the targeted registered MFIs were captured.

3.5. Data Collection

This research utilized both primary and secondary data. Primary data was gathered by the utilization of questionnaires. Drop and pick afterwards technique was employed to distribute questionnaires which consisted of structured questions. A questionnaire is an overall phrase that entails all data gathering methods in which there are similar set of questions in a predetermined manner in which each person is asked to answer (Saunders & Thornhill, 2009). Secondary data was collected from various documents as was voluntarily provided by the respondents and others obtained from other sources. The documents obtained for the purposes of obtaining secondary data included company policy documents, brochures, newsletters, and annual financial statements.

3.6. Data Analysis

Both illustrative and inferential statistics were utilized in the paper to analyze data.

3.6.1. Analytic Model

The researcher used qualitative and quantitative technique (descriptive analysis technique) in analyzing the data. The figures were inspected for comprehensibility and reliability. The figures were then reviewed, summed up and indexed. Statistics that was descriptive included the utilization of total and relative (percentages) frequencies, standard deviation and estimations of reliability mean. Independent and dependent variables were analyzed by the use of Statistical Package for Social Sciences (SPSS). Tables and other graphs were also employed properly to

present the gathered data for ease of apprehending and interpretation. The following regression equation was established:

$$Y = \mu + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where

Y – Efficiency of MFIs

μ - Constant

β -Beta co-efficient

X_1 –Credit Risk Management systems

X_2 - Behavioral Detection and Predictive Analysis Systems

X_3 - Structured Finance Systems

X_4 - Risk Management Systems

e –Error term

Credit risk management systems put emphasis on the alleviation of credit risk with equivalents. Behavior detection pro-actively identifies tendencies that may cause unacceptable risks or non-compliance. Structured financial systems are a collection of management systems that involve the utilization a number of software, systems and tools that change cash flows into acquiring financial instruments that work together to calculate, measure and analyze an organizations threat and to keep the information for further examination (Kinuthia, 2013). Risk management systems aids an organization to the risks and safety issues associated with their business and assets.

3.6.2. Measurement of Efficiency

The study used Data Envelopment Analysis to measure efficiency of MFIs in Kenya. According to Ochola (2016), DEA is a tentatively new approach that is data-oriented for examining the efficiency of a set of peer entities called Decision Making Units (DMUs). DEA provides a single measure and easily deals with multiple inputs and multiple outputs to point out both inadequate DMUs and the significance of efficiency. The inputs that were used in this study included total assets and total

expenses while the factors that were treated as outputs included financial revenue and gross loan portfolio.

Table 3.1 Operationalization of study variables

Variables	Indicators	Measure	Adopted from
Efficiency	Data Envelopment Analysis (DEA)	$\frac{\text{Weighted sum of output}}{\text{Weighted sum of inputs}}$	Ochola (2016)
Credit Risk Management system	Mean score of the responses on each likert scale data for each MFI	Mean score of the responses	Kinuthia (2013)
Behavioral Detection and predictive Analysis systems	Mean score of the responses on each likert scale data for each MFI	Mean score of the responses	Kinuthia (2013)
Structured Finance systems	Mean score of the responses on each likert scale data for each MFI	Mean score of the responses	Maiti (2015)
Risk Management Systems	Mean score of the responses on each likert scale data for each MFI	Mean score of the responses	Asemeit (2014)

3.6.4. Test of Significance

F-test was tested for joint significance of all coefficients. F-test was utilized to test the essentialness of the general model at a 95 percent level of significance. The p-values were defined for significance. The F-test and ANOVA indicated the model goodness of fit that was used in the research.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. Introduction

The chapter shows analysis of data and the research findings on how financial risk management practices influence efficiency of MFIs. Statistical package for Social Sciences (SPSS) and Likert scale were employed to facilitate entry and analysis of data obtained through questionnaires. Regression analysis was also used to analyze data.

4.2. Response Rate

The research targeted 47 MFIs that are registered with Association of Microfinance Institutions of Kenya (AMFI) out of which 34 responded. This represents a rate of response of 72%. Mugenda and Mugenda (1999), states that 50% pace of response is satisfactory for analysis and reporting, 60% response pace is good while a speed of response of 70% and above is excellent.

4.3. Descriptive Statistics

A model was established to analyze influence of financial risk management practices on efficiency of MFIs that included four independent variables and one dependent variable. Descriptive data analysis was then done on the efficiency of MFIs in Kenya, credit risk management systems, structured finance systems, behavioral detection and predictive analysis systems and risk management systems. The descriptive statistics findings are shown below.

4.3.1. Efficiency

The study utilized secondary data so as to determine efficiency of the MFI's. Data was examined by utilization of Data Envelopment Analysis.

DEA is calculated shown by:

$$Efficiency = \frac{\text{Weighted sum of output}}{\text{Weighted sum of inputs}}$$

Inputs that were used in this study included total assets and total expenses while the factors that were treated as outputs included financial revenue and gross loan portfolio.

Table 4.1 Descriptive statistics for efficiency

Year	N	MAX(Efficiency)	MIN(Efficiency)	MEAN
2013	34	1.0000	0.0222	0.3000
2014	34	1.0000	0.0245	0.5314
2015	34	1.0000	0.0398	0.4367

Table 4.1 above shows a summary efficiency of MFIs over 3 years. Lowest minimum value for efficiency was 0.0222 in year 2013 and the highest minimum value was 0.0398 in 2012. The constant increase in the minimum efficiency shows efficiency of MFIs in Kenya has been improving over the years. A mean of 0.5314 in 2014 shows that efficiency of most companies in that years was above average.

Further analysis of DEA is shown in appendix 3 and is our dependent variable. The data for the year with DEA near 1 was used for dependent variables.

4.3.2. Financial Risk Management Practices

The research further investigated independent variable. Questions on risk identification, financial risk management systems and risk mitigation investigated and conclusions drawn.

The responses were rated on a 5-point Likert scale where: 5- Agree strongly, 4-Agree, 3-Not Sure, 2-Disagree, and 1- Disagree Strongly. The findings were as follows

Table 4.2 Illustrating agreement level with the statements with regards to risk identification techniques

	Number	mean	Std. Deviation
Risk inspection is done by managers	34	4.18	.797
Roles and responsibilities are defined	34	4.35	.849
Auditing enhances risk identification	34	4.50	.615
Risk rating enhances risk identification	34	4.29	.676
Risks are subdivided into individual levels	34	4.26	.618

Probed on the agreement level with statements indicated above, it was clear that most of the respondents strongly agree that auditing enhances risk identification in the various companies, as shown by the mean of 4.5 in the table 4.3 above.

The research further enquired to what extent various risk management practices were being utilized and the effectiveness of various risk management practices. The feedback was rated by a 5-point Likert scale where: 5-Most extent, 4-More Extent, 3-Moderate Extent, 2-Less Extent, and 1-Least Extent.

Table 4.3 Illustrating the Extent of Utilization of each financial risk management practice

Extent of utilization of each risk management practice	Number	Mean	Std. Deviation
Credit Risk Management Systems	34	3.971	.7972
Behavioral Detection and Predictive Analysis	34	3.853	.7439
Structured Finance Systems	34	4.417	.7429
Risk Management Systems	34	4.500	.5075

From the table above, structures of risk management are utilized to the most extent as indicated with the mean 4.5. Structured finance systems are also utilized to more extent. It can be therefore concluded that credit risk management systems, behavioral detection and predictive analysis systems and risk management systems are all utilized by MFIs since their means are all above the average mean which is 3, indicating above average utilization of these risk management practices.

Table 4.4 Illustrating the effectiveness of various risk management practices on increasing profitability of the business

The research further probed the effectiveness of financial risk management systems in increasing profitability of the business. The responses were rated on 5-point Likert scale where: 5-Most Effective, 4-More Effective, 3-Effective, 2-Less Effective, 1-Least Effective

Financial Risk Management Practices	Number	Mean	Std. Deviation
Credit Risk Management	34	4.454	.5056
Behavioral Detection and Predictive Analysis	34	3.852	.8213
Structured Finance Systems	34	4.117	.9133
Risk identification	34	4.235	.6540

It was observed that credit risk management is most effective in increasing profitability of the business. It was also observed that risk identification is more effective in increasing profitability. It therefore can be decided that utilization of financial risk management practices is effective in increasing profitability of the business. This is shown by all the means that are above the mean of effective which is 3; in increasing profitability of any business.

The paper further sort to determine effectiveness of financial management practices and their effectiveness on the organization's performance. The findings were that risk analysis and assessment obtained mean of 3.75; standard deviation of .9024, risk monitoring got mean of 4.06; standard deviation of .7156, risk management systems got mean of 3.94; standard deviation of .9192, while credit risk management procedures got mean of 4.47; standard deviation of .6147. According to the analysis of the findings, it can therefore be concluded that financial risk management practices brings effectiveness to organization performance.

Parties to risk Identification

The study further determined parties involved in the risk identification process. The feedback was rated on a 5-point Likert scale where: 5-Great Extent, 4-Good Extent, 3-Average Extent, 2-Minimal Extent, and 1-No Extent

Table 4.5 Illustrating Parties to risk Management

Parties to Risk Management	Number	Mean	Std. Deviation
The Board	34	4.062	.7156
Executive Management	34	4.411	.8208
Senior ICT Employees	34	3.941	.9192
External Auditors	34	3.757	.9024
Internal Auditors	34	4.470	.6147

The results were as shown in table 4.6 above. Internal auditors are involved in risk management to a great extent with a mean of 4.47. The executive management and the board are also involved to a good extent. However, the respondents divulged that the credit team and other line staff were parties to risk identification to an average extent. It can therefore be concluded that internal auditors, the executive management, the board, Senior ICT Employees and External auditors are all parties to risk management as they are all above average extent of involvement in risk management as shown by their means that are above 3.

On whether the institution gives credit reminders to customers 80% of the respondents indicated that credit reminders are indeed provided to clients after one to three months. The respondents also indicated that in case a customer defaults, the institution uses collateral as security and also blacklists the customer with the Credit Reference Bureaus (CRB)

4.4. Data Validity and reliability

A small scale preliminary study was done to establish the changes that would need to be made in the instruments. In addition, questionnaires were sent to as many respondents as possible so as to

minimize bias. The questionnaire which was self-administered was validated using, a sequence of set analysis that entails detailed and careful examination of contents in the questionnaire referred to as content validity. The questionnaire was validated by officers of selected respondents who were interrogated.

Test retest technique was used in the study to test for reliability. Result obtained was tested for correlation co-efficient. The higher the correlation co-efficient the more reliable the test retest. Correlation co-efficient was also used to test the reliability of the questionnaire.

4.5. Correlation Analysis

Table 4.6 Illustrating Correlations

	Efficiency(DEA)	Credit Risk Management Systems	Behavioral Detection and Predictive Analysis	Structured Finance Systems	Risk Management Systems
Efficiency (DEA)	1				
Credit Risk Management Systems	0.381**	1			
Behavioral Detection and Predictive Analysis	0.199**	0.150	1		
Structured Finance Systems	0.152**	0.274	0.189	1	
Risk Management Systems	0.591**	0.485	0.287	0.196	1

**Correlation is significant at 0.01 level (2 tailed test)

As shown in table 4.6 above, there are statistically significant positive associations between efficiency and structured finance systems ($r=0.152$), behavioral detection and predictive analysis ($r = 0.199$), credit risk management systems ($r = 0.381$) and risk management systems ($r=0.591$).

The research establishes a statistically significant positive relation betwixt Credit risk management systems and risk management systems ($r=0.485$) which shows that credit risk management systems is positively supported by risk management systems put in place.

4.6. Regression Analysis

The research used regression analysis to model the research framework. The study also used the following to analyze and estimate the effects of each and every variable in the respective models on efficiency of MFIs:

Ordinary least square (OLS) method of estimation of coefficients: The OLS model treats each observation the same and does not take into account individual and time effects.

F-Value: It is a probability value employed in statistical significance testing to aid in determination of significance of including a specific changeable in the model.

4.6.1. Model Summary

R-Gui and SPSS where used to conduct the analysis of the regression model, to show the relation betwixt financial risk management practices and efficiency of MFIs in Kenya.

Table 4.7 Illustrating Model Summary

<i>R</i>	0.9887
<i>R-Squared</i>	0.97753
<i>AdjustedR-Squared</i>	0.645
<i>Standard Error</i>	0.24356

R-square, which is the coefficient of determination, indicates the variation in dependent variable as a result of changes in the independent variables. From the results of the research, the R-square was 0.977 which is the same as 97.7%, showing that there was 97.7% variation in dependent variable because of alterations in the independent variables which included Credit Risk Management systems, Behavioral Detection and Predictive Analysis Systems, Structured Finance Systems and Risk Management Systems. The model was therefore considered dependable for examining the relation betwixt risk management practices and efficiency.

R is correlation coefficient .It shows the strength of how financial risk management practices influence efficiency of MFI's. From table 4.8 above, the R value was 0.9887 therefore indicating a sturdy positive correlation betwixt the financial risk management practices and efficiency in the MFI's.

4.6.2. ANOVA Results

Table 4.8 Illustrating ANOVA of the regression

	<i>d.f.</i>	<i>SS</i>	<i>MS</i>	<i>f-value</i>	<i>sig</i>
Regression	3.	0.5450	0.180	3.45	0.0034
Residual	1.	0.054	0.057		
Total	4.	0.61574			

The significance value of 0.0034 is smaller than 0.05; therefore the model is notable statistically in forecasting how financial risk management practices affect efficiency of MFIs in Kenya. The F value at 5% significance level was found to be 3.45. This showed that F calculated was greater than the F value and hence therefore means that the overall model was significant. The model is therefore good for prediction. The significance level being lower than our threshold of 0.05 proves the significance of financial risk management practices on efficiency of MFI's in Kenya is great and this is validated by the F test.

4.6.3. Results Interpretation

Table 4.9 Regression coefficients

	Coefficient	Standard Error	T-Stat	P-Value
Intercept	0.987	0.1045	7.0520	<0.0001
Credit risk Management systems	0.399	0.0153	6.7416	<0.0001
Behavioral detection and predictive systems	0.205	0.0569	4.5618	<0.0001
Structured finance systems	0.177	0.0462	3.8395	<0.0001
Risk management system	0.489	0.1032	11.7890	<0.0001

An independent variable is significant to a regression model if the p-value tends to zero. In this study; Credit risk Management systems, Structured finance systems, Behavioral detection and predictive systems and Risk management system are all significant to the study. Thus the equation of best fit can be summarized as follows:

Efficiency of MFIs = 0.987 + 0.399 * Credit risk Management systems + 0.205 * Behavioral Detection and predictive Systems + 0.177 * Structured finance systems + 0.489 * Risk management system.

Therefore ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$) translates to: ($Y = 0.987 + 0.399X_1 + 0.205X_2 + 0.177X_3 + 0.489X_4 + \epsilon$)

From the regression equation, if all variables (Credit risk management systems, behavioral detection and predictive analysis systems, structured finance systems and risk management systems) are sustained at zero, efficiency of MFIs will be 0.987. In addition, the findings of this research indicated that holding the rest of independent factors at zero, 1 unit improvement of credit risk management systems would induce 0.399 improvement of efficiency of MFIs.; 1 unit enhancement of behavioral detection and predictive analysis systems will cause 0.205 enhancement in proficiency of MFIs in Kenya; while 1 unit advancement in structured finance systems will cause 0.177 advancement in efficiency of MFIs in Kenya; and 1 unit growth of risk management systems would cause 0.489 growth in efficiency of MFIs in Kenya.

4.7. Interpretation of Findings

The research established that auditing enhances risk identification as indicated by mean of 4.5 which showed that many of the people who gave feedback strongly agreed to this. The MFIs utilize risk management systems to the most extent as shown by a mean of 4.50 which indicated utilization to the most extent. This showed that most MFIs had in place risk management systems to minimize perils. The study established that credit risk management procedures were most effective and most effective to the organization's performance as shown by mean 4.47 and standard deviation .6147. This study found most MFIs were also applying risk management systems, risk monitoring and risk analysis and assessment; as shown by means of 3.94, 4.06 and 3.75 respectively. The study also established that internal auditors were parties to risk

management to a great extent with a mean of 4.47. It was also established that MFIs give credit reminders to clients after one to three month. Those who default are listed with the Credit Reference Bureaus (CRB) and the institution uses collateral as security.

The research revealed that the maximum mean for efficiency was 0.5314 in the year 2014 and the minimum mean was 0.3000 in year 2013. Lowest minimum figure for efficiency was 0.0222 in year 2013 and the highest minimum value was 0.0398 in 2012. The constant increase in the minimum efficiency indicated that efficiency of MFIs in Kenya had been improving over the years. From the findings of the study, the R-square was 0.977 which is the same as 97.7%, indicating that there was 97.7% change of variable that is dependent as a result of alterations of independent variables which included Credit Risk Management systems, Behavioral Detection and Predictive Analysis Systems, Structured Finance Systems and Risk Management Systems. The R value was 0.9887 indicating a strong positive correlation betwixt financial risk management practices and efficiency of the MFI's. Significance value was found to be 0.0034 is smaller than 0.05; thus the model was found to be statistically significant in forecasting how financial risk management practices affect efficiency of MFIs in Kenya.

The regression model took the form ($Y = 0.987 + 0.399X_1 + 0.205X_2 + 0.177X_3 + 0.489X_4 + \epsilon$) From the regression equation, if all variables (Credit risk management systems, behavioral detection and predictive analysis systems, structured finance systems and risk management systems) are sustained at zero, efficiency of MFIs will be 0.987. In addition, the study found that there was notable positive associations betwixt efficiency and structured finance systems ($r=0.152$), behavioral detection and predictive analysis ($r = 0.199$), credit risk management systems ($r = 0.381$) and risk management systems ($r=0.591$). There is therefore statistically significant positive relation betwixt financial risk management practices and efficiency of MFIs in Kenya. This research results presented, correlation coefficients for every service taken into account in this study, is in line with William Sharpe (1964), research on the capital asset pricing theory (CAPM). Further, the findings are in line with the findings of a research by Aon Risk Solutions and Wharton School (2011), whose findings unveiled that there exists a positive relation betwixt an organization's framework of managing hazards and its efficiency and performance.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.1. Introduction

The study sought to determine how financial risk management practices influence efficiency in MFIs in Kenya. The below summary, conclusions and recommendations were obtained from the data that was collected.

5.2. Summary of Findings

The study sought to determine how financial risk management practices influence efficiency in MFIs in Kenya. Survey method was employed to obtain primary data and secondary data was obtained from Central bank reports and AMFI reports. SPSS together with regression analysis were then employed for data analysis. Conclusions and findings of the research indicated that risk management systems were utilized to the most extent with a mean of 4.5 and internal auditors were involved in risk management to a great extent with a mean of 4.47. The research also sought to know what actions are taken in case a customer defaults the loan. The findings indicate that that it's mostly through taking collateral as security and the most vital component of financial risk management strategies is risk mitigation. According to the analysis of the findings, it was also concluded that financial risk management practices brings effectiveness to organization's efficiency.

The study sought to know whether financial risk management was a key factor in the business policy formulation. According to the analysis of the findings, it was concluded that most respondents indicated yes indeed risk management was a key factor in business policy formulation and auditing enhances risk identification. The researcher explored whether the MFIs had a financial risk management department which handles collection of credit in default. The research results concluded that most respondents said yes and the MFIs had standardized procedures for handling financial risk management systems. The study also established that utilization of financial risk management systems increases profitability of the business to a great extent.

R is the correlation coefficient and it shows the fortitude of the relation betwixt financial risk management practices and efficiency in MFIs in Kenya. From the analysis of the results, regression analysis showed that the R-square was 0.977 which is the same as 97.7%, showing that there was 97.7% variation in dependent variable because of alterations in the independent variables which included Credit Risk Management systems, Behavioral Detection and Predictive Analysis Systems, Structured Finance Systems and Risk Management Systems. The model was therefore considered dependable for examining the how financial risk management practices have an influence on efficiency. The F value at 5% significance level was found to be 3.45. This indicated that F calculated was greater than the F value and hence therefore means that the overall model was significant. The model is therefore good for prediction

The results obtained from the study indicated statistically significant positive associations between efficiency and structured finance systems ($r=0.152$), behavioral detection and predictive analysis ($r = 0.199$), credit risk management systems ($r = 0.381$) and risk management systems ($r=0.591$). This observation imply that where the MFI's utilize financial risk management systems, efficiency is enhanced. In addition, from the regression equation, if all variables (Credit risk management systems, behavioral detection and predictive analysis systems, structured finance systems and risk management systems) are sustained at zero, efficiency of MFIs will be 0.987. This implies that the more enhanced the financial risk management practices the more improved the efficiency. The study also found that MFIs have adopted utilization of financial risk management systems so as to mitigate against losses resulting from financial risk.

5.3. Conclusions

From the results of the study the general objective which sought to ascertain the relation betwixt financial risk management practices and efficiency in MFIs in Kenya was met. The research concluded that there was an positive relation betwixt FRM practices and efficiency of MFIs in Kenya. With regard to the first specific objective which was to identify financial risk management practices of MFIs in Kenya, the findings of the research showed that risk management systems is the most utilized FRM practice with a mean of 4.5. The research also established that MFIs have adopted various financial risk management practices in order to improve proficiency. Practices adopted include improvement of credit risk management systems and

structured finance systems. The second specific objective which was to establish levels of efficiency in MFIs in Kenya was also met. The findings of the study indicated that the lowest minimum value for efficiency was 0.0222 in year 2013 and the highest minimum value was 0.0398 in 2012. The constant increase in the minimum efficiency indicated that efficiency of MFIs in Kenya has been improving over the years.

The analysis of the results revealed that most of the respondents showed they utilized risk management systems to a great extent. The study also established that utilization of financial risk management systems increases profitability of the business to a great extent. It was concluded that most vital component of approaches of financial risk management was risk mitigation. The paper determined level of effectiveness of financial risk management practices and their effectiveness on organization performance. From the results of the findings, it was concluded that most respondents indicated that yes indeed financial risk management practices causes effectiveness to organization accomplishment.

The research established that there existed constant improvement in minimum efficiency which indicated that efficiency of MFIs in Kenya had been improving over the years. The significance value was found to be 0.0034 which was smaller than 0.05; thus the study concluded that the model used was statistically significant in forecasting how financial risk management practices affect efficiency of MFIs in Kenya. There was also a statistically significant positive relation between practices of financial risk management and efficiency of MFIs in Kenya. The research therefore concluded that enhancement of financial risk management practices will lead to improved efficiency in MFIs in Kenya.

5.4. Recommendations

With regard to conclusions of this research, MFIs need to create a better environment through improved control techniques in which every employee has a stake in refining the internal control system for risk management. This research focused how financial risk management practices command efficiency of MFIs in Kenya. It is therefore recommended that similar studies should be repeated in other institutions and the findings be compared to determine if consistency is

present in the effect of practices of financial risk management on efficiency in institutions of Kenya .

The paper recommends that there is need for MFIs to improve their financial risk management practices, and provide regular training to all their employees on the same so as to enhance efficiency; as the study established that there is present a positive relationship between FRM practices and efficiency. Microfinance Institutions also need to do proper background check on customers so as to avert higher rates of default. The study also recommends that it is important that MFIs work on their client appraisal techniques so as to enhance their financial performance.

Microfinance Institutions should readily discuss risk rating criteria so as to enhance risk management. The study further recommended that MFIs in Kenya should take on a multifarious approach to risk management in order to attain better benefits from their risk management efforts.

5.5. Limitations of the study

Various challenges were encountered in the course of the study that included respondents were hesitant to give some information needed because of confidentiality and competitive importance. There was also unavailability of relevant authorities to give such information. In addition, a number of potential respondents did not fill or return their questionnaires. The researcher elaborated to management that the material they gave was to be regarded with much confidentiality and would be used only for study purposes.

The research also used secondary data, which was gotten from Central Bank and Association of Microfinance Institutions (AMFI) financial reports. This data was used as obtained and the researcher had no means of independently substantiating the validity of the data which was taken to be right for the purpose of the study. The intensity of exactness of the data obtained from the secondary source therefore restricted the research. While verifiability of the data was assured since it was obtained from publications of the firm, it nonetheless would be still inclined to errors. Research findings are, therefore, relatively subject to the validity of the secondary data used.

The study also faced another challenge of time and resource constraint. The data collection period was overstretched; this is because employees operate on tight schedules and hence some of the people who were giving feedback were unable to finish the questionnaire in good time. This could not allow the research to be done in a more comprehensive manner.

5.6. Suggestions for Further Research

A research should be carried out to establish the vital conditions of securing sustainability of the microfinance industry in Kenya; as recommended by this study. There is need for a research to be done on the difficulties facing the implementation of financial risk management practices which will improve sustainability of the institutions.

The researcher also recommends further studies to be done on the role of the government or regulative framework in reinforcing the acceptance of FRM practices and the effect of FRM practices to the financial sector growth or financial insertion and other relevant studies.

Finally, the study suggests that a similar research should be conducted on how financial risk management practices influence efficiency of financial institutions in Kenya, challenges facing implementation of financial risk management policies of MFIs and effectiveness of financial risk management practices in MFIs in Kenya.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

The purpose of this study is to collect data that will assist in determining the effect of financial risk management practices on efficiency of microfinance institutions. The information provided will be confidential and used for the purpose of the study only

SECTION I: GENERAL INFORMATION

- 1) Name of the institution:
- 2) Respondents' job title.....
- 3) How long has the company been in operation (in years)
 - 0-10 Years
 - 11-20 Years
 - 21-30 Years

SECTION II: RISK IDENTIFICATION

1. Does the management consider financial risk management as a key factor in the business' policy formulation? Yes No
2. Indicate your level of agreement with the following statements as regards risk Identification techniques used by your company. Use a scale of 1-5, where:

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

STATEMENT	1	2	3	4	5
Risk inspection is done by managers					
Roles and responsibilities for risk identification are clearly defined					

Auditing of the risk department enhances risk identification					
Risk rating enhances risk identification					
Risks are subdivided into individual levels for further analysis					

SECTION III: FINANCIAL RISK MANAGEMENT SYSTEMS

1. Does your organization have the following financial risk management systems for managing loan risks; credit risk management systems, behavioral detection and predictive analysis systems, structured finance systems and risk management systems?

Yes

No

If yes, to what extent do your MFI use the below financial risk management systems? Use a scale of 1 to 5 where 1 is the least extent and 5 is to the most extent

Extent of Utilization of each Financial Risk management System	1	2	3	4	5
Credit risk management systems					
Behavioral detection & Predictive analysis systems					
Structured finance systems					
Risk management systems					

2. Kindly rate the effectiveness of the following financial risk management practices on increasing profitability in your line of business Use a scale of 1 to 5 where; 1 is the least effective and 5 most effective

Financial risk management practices	1	2	3	4	5
Risk identification					
Credit risk management					
Behavioral detection & Predictive analysis					

Structured finance systems					
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3. Does your institution have a financial risk management department that handles collection of credit in default

Yes

No

i. Are there any standardized procedures for handling financial risk management systems

Yes

No

4. To what extent does the utilization of financial risk management systems increases your profitability in your line of business?

Very great extent

Great extent

Least extent

Very least extent

5. Kindly rate the effectiveness of the following financial risk management practices and their effectiveness on the organization performance Use a scale of 1 to 5 where; 1 is the least extent and 5 is to the most extent

Risk analysis and Assessment

Risk Monitoring

Risk management systems

Credit Risk management procedures

SECTION IV: RISK MITIGATION

1. To what extent does the institution involve the following parties in the risk Management? Use a scale of 1 to 5 where 1 is to no extent and 5 is to great extent.

Parties to risk management	1	2	3	4	5
The Board					

Executive management					
Senior ICT employees					
External Auditors					
Internal Auditors					
Others(specify)					

2. Which risk rating model/criteria is preferred by your organization?

i. What are the possible reasons for using it?

.....

3. Which business sectors are your clients involved in? Please tick as appropriate.

Juakali

Sales & Marketing

Retailing

Manufacturing

Service industry e.g. restaurants, hairdressing etc

4. Credit reminders are part of credit monitoring procedures of financial risk management systems. 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

5. What actions does your institution take in case a customer defaults the loan

Sue customer in court

Public auction

Claim with insurance

Ask customers to pay loan without interest

Use collateral as security

6. To what extent do you agree with the following statement about the importance of risk management? Use a scale of 1 to 5 where; 1 strongly disagree and 5 I strongly agree

Importance of risk management	1	2	3	4	5
Risk management helps minimize losses to the company					
Risk management has no implication to the efficiency of the company					
Risk management is a continuous process rather than a one-time event					
Others (specify)					

7. The application of up-to-date approaches to risk management, particularly to mitigate against credit risk, is very vital for financial performance of MFIs. To what extent do you agree with this statement in view of risk management practices by MFIs?

Strongly agree

Agree

Not sure

Disagree

Strongly disagree

THANK YOU

APPENDIX 2: LIST OF LICENSED MFIs IN KENYA

Sidian Bank

Post Bank

Century DTM Ltd

Faulu DTM Ltd

Kenya Women Trust Fund DTM Ltd

Rafiki Deposit taking Microfinance Ltd

REMU DTM Ltd

SMEP DTM

SUMAC Credit DTM Ltd

AAR Credit Services

BIMAS

Greenland Fedha Ltd

Jitegemea Credit Scheme

Juhudi Kilimo Co. Ltd

Musoni

Pamoja Women Development Programme

Platinum Credit Ltd

Yehu Microfinance Trust

SISDO

U & I Microfinance Ltd

Micro Africa Ltd

Opportunity Kenya Ltd

Rupia Ltd

Samchi Credit Ltd

Milango Finserve Ltd

KEEF - Kenya Entrepreneurship Empowerment Foundation

Jubilant Kenya Ltd

Vision Fund Kenya

Taifa Option Microfinance

ECLOF Kenya

Uwezo DTM Ltd

Real People

Letshego

Spring Board Capital

**APPENDIX 3: EFFICIENCY CALCULATED BY DATA ENVELOPMENT
ANALYSIS METHOD (2013 – 2015)**

2013 (In millions Ksh)

Year	----- Outputs -----		----- Inputs -----		Weighted	Weighted	Efficiency
	Financial Revenue	Gross Loan Portfolio	Total Expenses	Total Assets	Output	Input	
Sidian Bank	211,788.6	7,265.9	7,987.7	9,318.7	213.0	2,303.4	0.0925
Post bank	213,077.7	886.2	21,291.3	23,864.7	136.1	6,127.5	0.0222
Century DTM	29,600.0	1.5	2.8	88.8	17.4	1.9	1.0000
Faulu DTM	24,714.4	3,308.5	4,584.3	5,140.6	54.8	1,319.4	0.0415
KWFT DTM	24,725.4	11,456.6	15,111.0	17,035.8	154.0	4,350.1	0.0354
Rafiki DTM	24,483.3	105.6	306.0	440.7	15.7	89.3	0.1757
REMU	8,450.0	16.8	24.8	101.4	5.2	8.1	0.6414
SMEP	8,649.3	1,260.2	1,741.5	1,859.6	20.4	500.0	0.0409
SUMAC	9,128.6	103.3	28.3	127.8	6.6	9.4	0.7081
AAR Credit Services	8,682.5	373.4	522.5	547.0	9.7	149.9	0.0644
Bimas	8,965.0	402.0	315.7	537.9	10.2	93.2	0.1091
Greenland Fedha	8,818.0	530.7	373.1	537.9	11.6	108.9	0.1070
Jitegeme Credit Scheme	8,822.6	413.6	428.0	467.6	10.2	123.0	0.0831
Juhudi Kilimo	8,843.3	163.8	259.9	265.3	7.2	74.5	0.0966
Musoni	8,910.0	79.0	103.4	89.1	6.2	29.4	0.2108
PAWDEP	8,873.8	663.4	646.3	709.9	13.3	185.8	0.0715
Platinum Credit	8,906.7	1,033.8	862.4	1,202.4	17.8	251.2	0.0710

YEHU	8,846.5	206.2	291.1	380.4	7.7	84.5	0.0913
SISDO	8,818.9	295.0	308.5	467.4	8.8	90.3	0.0972
U & I	8,600.0	20.5	8.4	51.6	5.3	3.0	1.0000
Micro Africa	8,872.5	442.3	552.6	905.0	10.6	162.6	0.0652
Oppurtunity Kenya	8,883.8	413.9	474.9	604.1	10.3	137.6	0.0746
Rupia	8,100.0	18.7	23.0	24.3	5.0	6.6	0.7563
Samchi	8,700.0	-	-	17.4	5.1	0.2	1.0000
Milango FinServe	8,735.0	142.7	136.9	174.7	6.9	39.7	0.1733
KEEF	8,828.6	28.6	6.4	61.8	5.5	2.5	1.0000
Subilant Kenya	-	-	-	-	0.0	-	-
Vision Fund Kenya	-	-	-	-	0.0	-	-
Taifa Option Microfinance	35,300.0	26.5	0.9	35.3	21.1	0.7	1.0000
ECLOF Kenya	34,304.3	448.3	613.9	789.0	25.6	178.0	0.1440
Uwezo	-	-	-	-	0.0	-	-
Real PPLE	-	-	-	-	0.0	-	-
Letshego	-	-	-	-	0.0	-	-
Spring Board Capital	9,900.0	25.7	29.7	29.7	6.1	8.5	0.7217
Average	23,039.1	886.3	1,677.5	1,937.5			
Weights	0.0006	0.0122	0.2736	0.0126			

2014(In millions Ksh)

	----- Outputs -----		----- Inputs -----		Weighted	Weighted	
Year	Financial Revenue	Gross Loan Portifolio	Total Expenses	Total Assets	Output	Input	Efficiency
Sidian Bank					239.7		0.1036

	251,213.2	7,556.1	8,018.9	9,546.1		2,314.8	
Post bank	254,232.7	972.4	22,879.8	25,677.5	161.4	6,585.1	0.0245
Century DTM	46,800.0	26.0	19.3	93.6	27.8	6.5	1.0000
Faulu DTM	45,193.5	5,052.4	7,023.1	7,637.7	88.1	2,018.2	0.0436
KWFT DTM	45,298.7	13,168.9	18,081.4	20,384.4	186.9	5,205.2	0.0359
Rafiki DTM	44,834.1	520.2	1,698.2	1,838.2	32.7	487.9	0.0670
REMU	45,425.0	88.9	78.9	181.7	27.8	23.9	1.0000
SMEP	44,882.4	1,573.2	1,669.7	2,289.0	45.5	485.8	0.0938
SUMAC	45,375.0	103.5	22.0	181.5	27.9	8.3	1.0000
AAR Credit Services	45,128.6	447.8	606.9	631.8	32.0	174.0	0.1838
Bimas	46,461.5	401.0	350.4	604.0	32.2	103.5	0.3112
Greenland Fedha	45,783.3	1,256.1	1,188.5	1,373.5	42.2	342.6	0.1232
Jitegeme Credit Scheme	44,450.0	398.8	474.5	533.4	31.0	136.6	0.2270
Juhudi Kilimo	46,900.0	355.5	465.0	469.0	31.9	133.2	0.2396
Musoni	43,025.0	161.4	227.4	172.1	27.3	64.4	0.4235
PAWDEP	45,875.0	696.9	672.6	734.0	35.5	193.3	0.1835
Platinum Credit	44,723.5	1,391.3	1,028.0	1,520.6	43.2	300.5	0.1439
YEHU	45,027.3	269.4	388.3	495.3	29.8	112.5	0.2645
SISDO	43,900.0	304.5	343.1	526.8	29.5	100.5	0.2937
U & I	54,400.0	24.8	10.8	54.4	32.3	3.6	1.0000
Micro Africa	-	751.4	-	1,281.7	9.1	16.2	0.5647
Oppurtunity Kenya	44,812.5	439.8	599.0	717.0	31.7	173.0	0.1833
Rupia					17.6		1.0000

	29,300.0	26.1	27.5	29.3		7.9	
Samchi	174,000.0	15.3	1.1	17.4	102.5	0.5	1.0000
Milango FinServe	41,250.0	111.8	141.8	165.0	25.6	40.9	0.6267
KEEF	50,000.0	72.5	28.2	100.0	30.3	9.0	3.3731
Subilant Kenya	64,000.0	-	4.5	6.4	37.6	1.3	1.0000
Vision Fund Kenya	45,363.2	425.8	708.2	861.9	31.9	204.7	0.1557
Taifa Option Microfinance	67,200.0	32.3	0.7	67.2	39.9	1.0	1.0000
ECLOF Kenya	45,800.0	470.4	636.3	824.4	32.7	184.5	0.1770
Uwezo	39,300.0	45.1	23.2	78.6	23.7	7.3	1.0000
Real PPLE	45,400.0	1,058.1	1,452.7	1,362.0	39.6	414.7	0.0954
Letshego	45,775.0	751.4	952.2	1,281.7	36.1	276.7	0.1303
Spring Board Capital	56,900.0	54.9	56.9	56.9	34.1	16.3	1.0000

Average **61,118.5** **1,147.8** **2,055.3** **2,405.7**

Weights

0.0006	0.0122	0.2736	0.0126
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2015 (In millions Ksh)

Year	----- Outputs -----		----- Inputs -----		Weighted	Weighted	Efficiency
	Financial Revenue	Gross Loan Portfolio	Total Expenses	Total Assets	Output	Input	
Sidian Bank	-	-	-	-	0.0	-	-
Post bank	-	-	-	25,677.5	0.0	324.5	0.0000
Century DTM	45,533.3	88.5	73.2	93.6	27.9	21.2	1.0000
Faulu DTM	57,301.4	88.5	11,636.6	7,637.7	34.8	3,280.6	0.0106
KWFT DTM	57,393.4	14,932.0	18,854.7	20,384.4	215.5	5,416.8	0.0398

Rafiki DTM	57,481.3	1,902.0	3,186.2	1,838.2	57.0	895.1	0.0636
REMU	56,116.7	165.4	203.8	181.7	35.0	58.1	0.6031
SMEP	57,916.3	1,970.1	1,838.6	2,289.0	58.0	532.0	0.1091
SUMAC	61,400.0	203.8	121.4	181.5	38.6	35.5	1.0000
AAR Credit Services	56,075.0	524.3	633.7	631.8	39.4	181.4	0.2170
Bimas	58,325.0	432.3	465.2	604.0	39.6	134.9	0.2932
Greenland Fedha	57,500.0	1,661.8	1,537.4	1,373.5	54.0	438.0	0.1234
Jitegeme Credit Scheme	59,833.3	425.9	466.0	533.4	40.4	134.3	0.3007
Juhudi Kilimo	57,900.0	506.2	681.4	469.0	40.2	192.4	0.2090
Musoni	55,500.0	240.1	238.7	172.1	35.6	67.5	0.5270
PAWDEP	59,261.5	727.0	704.6	734.0	43.7	202.1	0.2163
Platinum Credit	56,860.6	1,482.4	1,364.8	1,520.6	51.5	392.7	0.1311
YEHU	57,572.7	358.3	484.7	495.3	38.2	138.9	0.2752
SISDO	56,572.7	281.1	360.2	526.8	36.7	105.2	0.3488
U & I	80,200.0	38.6	35.1	54.4	47.6	10.3	1.0000
Micro Africa	-	-	-	1,281.7	0.0	16.2	0.0000
Oppurtunity Kenya	57,457.1	526.3	571.8	717.0	40.2	165.5	0.2429
Rupia	37,900.0	24.7	35.7	29.3	22.6	10.1	1.0000
Samchi	47,500.0	39.0	28.5	17.4	28.4	8.0	1.0000
Milango FinServe	68,300.0	83.7	142.6	165.0	41.2	41.1	1.0000
KEEF	60,800.0	149.6	38.6	100.0	37.6	11.8	1.0000
Subilant Kenya	33,600.0	-	17.0	6.4	19.8	4.7	1.0000

Vision Fund Kenya	57,812.5	510.1	673.0	861.9	40.2	195.0	0.2062
Taifa Option Microfinance	-	-	-	67.2	0.0	0.8	0.0000
ECLOF Kenya	57,361.1	600.6	875.3	824.4	41.0	249.9	0.1642
Uwezo	53,350.0	79.8	40.1	78.6	32.3	12.0	1.0000
Real PPLE	56,890.7	2,437.0	1,589.8	1,362.0	63.1	452.2	0.1396
Letshego	58,360.9	843.3	792.5	1,281.7	44.6	233.0	0.1913
Spring Board Capital	48,150.0	91.2	43.8	56.9	29.4	12.7	1.0000

Average 49,594.9 923.9 1,404.0 2,124.9

Weights 0.0006 0.0122 0.2736 0.0126