

**EFFECT OF RISK MANAGEMENT STRATEGIES ON PROFITABILITY
OF MICROFINANCE INSTITUTIONS IN KENYA: A CASE STUDY OF
FAULU KENYA NAKURU COUNTY**

MARGARET CHEPCHIRCHIR

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DECLARATION AND APPROVAL

Declaration

This is my own work and has never been presented anywhere else before for the purpose of examination or for the award of degree of Master of Business Administration. Any information given is my entire work and effort and all sources used and quoted are acknowledged in the reference.

Signature _____

Date: _____

Margaret Chepchirchir

GMB/NE/1131/09/11

Approval

This project has been submitted with our approval as the University Supervisors.

Signature _____

Date: _____

Dr. Cheruiyot Peter Kimutai

School of Business and Economics

Department of Accounting, Finance and Economics

University of Kabianga

Signature _____

Date: _____

Dr. Otuya Robert

Department of Business Management

University of Eldoret

DEDICATION

First and foremost, this project is dedicated to my God whose provision, grace, and care I cherish. Secondly, this project is dedicated to my husband, Daniel Bii for his continued support and encouragement. Thirdly, this project is dedicated to my in-law Linner and my sons Vincent, Victor, Ken, Alan, Alex, Caleb and Mark and my daughter Joy. I also dedicate this project to my dear Mum Rachel Cholyo and my brothers and sisters. My father in-law, William Chepkwony and all my in-laws for their continued support, encouragement and prayers throughout the program.

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ABSTRACT

Since the 1990s, poverty reduction has taken priority at both national and international development levels. Within this framework, various initiatives have been taken. Microfinance has caught the attention of many Aid donors, Non-Governmental Organizations and Governments as an effective tool for poverty reduction. The successful use of microfinance is considered as victory for the poor to escape the poverty traps. In the Kenyan context, this same initiative and hope has been adopted. The popular assumption is that it enables poor households to access credit. Households begin small businesses which would enable them improve their incomes and eventually overcome poverty. The study sought to find out the effects of risk management strategies on profitability of Microfinance Institutions. The Specific objectives of the study were to determine how regulatory risk affects profitability of Microfinance Institutions; examine the effects of operational risk on profitability of Microfinance Institutions; evaluate how interest rate risk affect profitability of Microfinance Institutions and assess the effects of credit risk on profitability of Microfinance Institutions. The research methodology employed a survey design where collection of primary data was done using questionnaires containing closed ended questions for ease of analysis. Data was analyzed using descriptive and inferential statistics with the aid of SPSS software (SPSS version 21.0). The study focused on Faulu Kenya within Nakuru County. A census of 42 respondents consisting of 7 managers and 35 credit officers was done. The study findings indicated that regulatory risk, operational risk, interest rate risk and credit risk ($\beta_1 = 0.007$, p-value= 0.011), ($\beta_2 = 0.228$, p-value = 0.000), ($\beta_3 = 0.031$, p-value = 0.009) and ($\beta_4 = 0.048$, p value=0.001) was found to have a significant effect on profitability of Microfinance Institutions. The results indicated that when all the variables are combined contribute to 56.4% of the Microfinance profit. From the findings it can be concluded that operational risk had the greatest effect on profitability of Microfinance Institutions followed by credit risk, interest rate risk and regulatory risk in that order. The researcher recommends further investigations be conducted to determine whether other risks apart from the one researched affect profitability of Microfinance Institutions and that Microfinance Institutions should continue using risk management strategies as a tool for increasing profitability hence enhances their expansion. The study is significant to Microfinance Institutions, small businesspersons and small entrepreneurs and the government in its efforts to alleviate poverty and the achievement of vision 2030.

Keywords: *Microfinance Institutions, Faulu Kenya, Risks and Profitability*

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ABBREVIATIONS

CAPM	-	Capital Asset Pricing Model
CBK	-	Central Bank of Kenya.
Fin Access	-	Financial Access.
IT	-	Information Technology
KWFT	-	Kenya Women Finance Trust
MFIs	-	Micro-finance Institutions
MPT	-	Modern Portfolio Theory
NGOs	-	Non-Governmental Organizations
PMPT	-	Post-Modern Portfolio Theory
RMS	-	Risk Management Strategies
SHG	-	Self-help Group
SMEs	-	Small and Medium Enterprises
SPSS	-	Statistical Package for Social Sciences
VaR	-	Value at Risk

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Small scale entrepreneurs who include agriculture and rural businesses have contributed greatly to the growth of the Kenyan economy. The sector contributes to the national objective of creating employment opportunities, generating income and providing a source of livelihood for the majority of low income households in the country accounting for 12-14% of GDP (Republic of Kenya, 1999, 2002, 2005). Kenya's development challenge therefore largely remains that of identifying sustainable ways of enabling the main sectors (which include agriculture and rural business) of the rural economy to improve its performance.

The government recognizes that the challenge of sustainable development in Kenya is eradication of poverty and the achievement of sustained broad based economic growth (Sessional Paper no.2 of 1992). It is for this reason that the government in the 1990's through the Central Bank of Kenya (CBK) relaxed the entry requirements of the non-banking financial institutions to promote locally owned financial institutions. This was aimed at ensuring accessibility of credit facilities to Small and Medium entrepreneurs. Later, the regulatory differences led to the mushrooming of the non-banking financial institutions and this forced the government to harmonize capital requirements and interrelations for both banks and the non-bank financial institutions. This led to the decline in the number of the non-bank financial institutions that were converted to commercial banks (Atieno,2001) However; commercial banks have their restrictions of credit to specific activities, making it difficult to compensate for losses through other forms of enterprises, and their policies have not permitted the majority of the SMEs to access credit facilities.

A survey conducted by Finance Access found out that, Kenya's financial sector is probably the most advanced in East Africa, but to date, only an estimated 55% to 60% of the population has access to financial service. Unsurprisingly, the Fin Access Survey found that the key issue for access to financial services is income, driven by three determinants which are being able to afford the minimum balance and costs for a bank

account, being able to afford bus fare to the bank, and finally having sufficient 'excess' cash to justify having a bank account (Murdoch, 2007).

The commercial banks have used these criteria to categorize their customer as either being creditworthy or not creditworthy. The not creditworthy are risky to lend to and accessing credit facilities means exposing themselves to more risks. On the other hand, the Central Bank of Kenya (CBK) in its policies and guidelines (CBK Prudential Guidelines Basel II) advises financial institutions on the common risks that they are exposed to. These risks include: strategic risks, credit risk, liquidity, currency or foreign exchange risk, interest rate risk, operational risk, regulatory risks and reputation risks. According to the CBK, it is apparent that every firm is subject to operational risks in any one of its operations that may arise from inadequate or failed internal processes, human behavior, external or internal disasters or from the systems. The financial institutions should realize that risks are unavoidable part in their operations and the main role should be to mitigate and manage them. They should be able to minimize the probability of risks occurring and if they occur how the effects can be minimized. If the risks are not managed well, MFIs are likely to fail to meet their social financial objectives. Risks not well managed leads to financial losses hence resulting to capital erosion (Central Bank of Kenya, 2009).

In Nakuru County, there are a number of MFIs which include; Kenya Women Finance Trust (KWFT), Women Development Corporation (WDC), Faulu Kenya among others. These MFIs are providing services to the people engaged mainly in agricultural activities and small scale businesses. Most of the SMEs are accessing credit facilities from these institutions, which in turn have boosted growth of small scale businesses in the region.

If the microfinance Institution (MFI) does not manage its risks well, it will likely fail to meet its social and financial objectives. When poorly managed risks begin to result in financial losses, donors, investors, lenders, borrowers and savers tend to lose confidence in the organization and funds begin to dry up. When funds dry up, a Microfinance Institutions (MFI) is not able to meet its social objective of providing services to the poor and quickly goes out of business. The study therefore sought to establish the relationship

between the risk management strategies employed by the Microfinance Institutions (MFIs) and profitability.

1.2 Statement of Research Problem

Risk is an integral part of financial services. When financial institutions issue loans, there is a risk of borrower default. When banks collect deposits and on-lend them to other clients (that is, conduct financial intermediation), they put clients' savings at risk. Any institution that conducts cash transactions or makes investments risks the loss of those funds. Financial institutions should neither avoid risk nor ignore risk. Like all financial institutions, microfinance institutions (MFIs) face risks that they must manage efficiently, effectively and economically to be successful. However some clients borrow loan either to start a new enterprise or expand the existing one. Sometimes the enterprise is mismanaged hence running at a loss rendering the borrower unable to repay the loan borrowed. When the borrowers fail to pay, they may disappear with their guarantor(s) leaving the loan burden to immediate relatives who may be aged or have a lot of responsibilities thereby unable to payback. Despite the above challenges, Microfinance Institutions have not ceased to exist. The research therefore seeks to identify various risk strategies employed by the Institutions and their effects on profitability.

1.3 Objectives of the Study

The main objective of the study was to establish the effect of risk management strategies on profitability of Microfinance institutions.

1.4 Specific objectives

- i. To determine how regulatory risk affects profitability of microfinance Institutions in Nakuru County.
- ii. To examine the effects of operational risk on profitability of Microfinance Institutions in Nakuru County.
- iii. To evaluate how interest rate risk affects profitability of Microfinance Institutions in Nakuru County.
- iv. To assess the effects of credit risk on profitability of microfinance Institutions in Nakuru County.

1.5 Research Hypothesis

H₀₁: There is no significant effect of regulatory risk management on profitability of Microfinance Institutions in Nakuru County.

H₀₂: There is no significant effect of operational risk management on profitability of Microfinance Institutions in Nakuru County.

H₀₃: Interest rate risk management has no significant effect on profitability of Microfinance Institutions in Nakuru County.

H₀₄: There is no significant effect of Credit risk management on profitability of Microfinance Institutions in Nakuru County.

1.6 Significance of the Study.

The financial institutions benefited from the effective strategies suggested by the study and shall enable them to develop new products that can be accessed by the majority of Kenyans who are small scale entrepreneurs and businesspersons. The borrowers on the other hand have a better understanding on the importance of the policies and procedures applied by Microfinance Institutions (MFIs). Above all, the government in its efforts to alleviate poverty and achieve the 2030 VISION shall be able to come up with better legal and operational framework that can support the Microfinance Institutions (MFIs). In addition, this research is useful to other scholars who may be interested in this area of study to use the research findings as a framework in their research which adds value to the existing pool of knowledge.

1.6.1 Scope of the Study.

The study was conducted on Faulu Kenya limited in Nakuru County that offers these services to small scale entrepreneurs and businesspersons. 42 respondents were selected through stratified random sampling technique. Specifically, the respondents consisted of managers and credit officers of this institution.

The rationale for focusing on Faulu Kenya was motivated by its existence in almost every village in Kenya despite the outcry by the public that loan from Faulu Kenya makes the loan borrower poorer than before. In addition, its clients are both men and women unlike Kenya Women Finance Trust whose clients are only women.

This research focused on the effect of risk management strategies on profitability of Microfinance Institutions. Special attention was on regulatory risk, operational risk, interest rate risk and credit risk. These are the frequent risk on an institution.

1.6.2. Limitations and Delimitations of the Study

The area of study was only limited to Nakuru County of which it may not be a true representative of the country as a whole. The respondents were reluctant at first to give information fearing that the information sought might be used to intimidate them. The researcher sought to explain purpose of the study and eliminate the fears. A letter of introduction from the university was also used to assure them that information provided will be strictly used for academic purposes.

1.7 Definition of Operational Terms

Concessionary: Oxford business dictionary (2008) defines it as reduced or cut rates. In this research it means reduced interest rate.

Cost effective: According to Zimmerer (2010) it is the relationship between monetary inputs and the desired outcome, such as between the expenditure on an advertising campaign and increase in sales revenue daily operations that can ultimately result in the loss of its assets. It is applied in the research as the relationship between microfinance loan and interest rates.

Credit risk: According to Atieno (2001), it is an investor's risk of loss arising from a borrower who does not make payments as promised. It is operational in this research as MFI risk of loss arising from microfinance's clients who borrow funds and does not make payments as agreed.

Entrepreneur: According to Watkins (2008) he defines it as a person who organizes and manages a business undertaking, assuming the risk for the sake of profit. It is applied in this research as a person who manages a business undertaking, assuming a well calculated risk in order to earn profit.

Grameen bank model: According to Yunus (2000), it means various lending ways for the poor. It is operational in this research as Microfinance Institutions various lending ways to its clients.

Interest rate risk: Microenterprise (2005) defines it as the absolute level of interest rate. It is applied in this research to mean change of MFI funds due to absolute change in interest rate.

Loan delinquency: According to Barnes (2006), it is when a borrower has missed payments, but has not missed it enough to be considered a default. In this research it mean a Microfinance client who have borrow loan and does not repay the loan according to the agreement made.

Mushrooming: According to oxford business dictionary (2008), it means fast growing. In this research it is taken to mean increased non-banking financial institutions.

Operational risks: According to Chen (2002), it means an adverse event or outcome, which occurs as a consequence of an organization's activity. It is operational in this research as an adverse outcome which occurs as a result of Microfinance Institution's activity.

Proactive: Chua (2007) defines it as to step up and do something to solve a problem before it becomes an issue. It is taken in this research to mean steps a Microfinance Institution can take to avoid the problem in the first place.

Recourse: According to Dollinger (2005), it means legal right of a lender to seek repayment of the loan from the borrower's (and the guarantor's) unpledged personal property, in addition to the property pledged to the lender as collateral. It is operational in this research as microfinance Institutions having legal right to seek repayment of the loan from the borrower's unpledged personal property, in addition to the property pledged to the Microfinance Institutions as collateral.

Regulatory risk: According Coster (2001), it is an exposure to financial loss arising from the probability that regulatory agencies will make changes in the current rules (or will impose new rules) that will negatively affect the already-taken trading positions. It is taken in this research to mean financial loss arising from the probability that regulatory agencies of Microfinance Institutions will make changes in the current rules (or will impose new rules) that will negatively affect the already-taken trading positions.

Risk management strategy: According to Bwisa (2004), it is an organized, technical approach to identify what might cause harm or loss (identify risks). In this research it is taken to mean an organized, technical approach to identify risks by Microfinance Institutions.

Risk Management: Yunkell (2009) define it as the process of taking calculated risks. In this research, it is the process Microfinance Institutions take well calculated risks.

Risk: According to Burgess (2003), it is an exposure to a chance of loss. In this research, it is taken to mean Microfinance Institutions exposure to a chance of loss of funds due to loan defaulters.

Strategy: According to Gregory (2011) it is a plan of action or policy designed to achieve a major or overall aim. It is operational in this research as Microfinance Institutions plan of action to achieve the objective of the Institution.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines and exploits a number of studies which have been done on the performance of microfinance institutions. Management practices especially the risk management strategies the Microfinance Institutions (MFIs) have employed and theories relating to microfinance institutions. It brings the picture of theories and tries to compare them and finally comes up with a conceptual framework so as to establish a relationship between risk` management strategies employed by Microfinance Institutions (MFIs) and profitability of Microfinance Institutions (MFIs).

2.2 Theoretical Framework

Various theories have been advanced to explain risk and return. Environmental influences and differences may make a theory work in one place while making it irrelevant in another. In this section, relevant theories to this study are reviewed with an aim of helping the researcher understand risk better.

2.2.1 Value at a Risk (VaR) Theory

This is a technique used to estimate the probability of portfolio losses based on the statistical analysis of historical price trends and volatilities. Value at risk is commonly used by banks, security firms and companies that are involved in trading energy and other commodities. VaR is able to measure risk while it happens and is an important consideration when firms make trading or hedging decision (Manganelli and Engle, 2001). Value at risk (VaR) has been called the "new science of risk management", but you do not need to be a scientist to use VaR. Here, we look at the idea behind VaR and the three basic methods of calculating it. Basically, VaR is represented by;

Value at risk = Mean *HPR+ [Z-score*Std Dev*SQRT (HPR)]

Where mean is the average expected (or actual) rate of return, HPR is the holding period, Z-score is the probability, Std Dev is the standard deviation and SQRT is the square root (of time). For financial institutions, risk is about the odds of losing money given out as loans, and VaR is based on that common-sense fact. By assuming financial institutions

care about the odds of a really big loss on loans, VaR answers the question, "What is my worst case scenario?" According to Jorion (2001), VaR measure the worst expected loss over a given horizon under normal market conditions at a given level of confidence. For instance, a bank might say that the daily VaR of its trading portfolio is \$1 million at 99 percent confidence level.

In other words, under normal market conditions, only one percent of time the daily loss will exceed \$1 million (Jorion, 2001). More formally, VaR describes the quantile of the projected distribution of gains and losses over the target horizon. If c is selected confidence level, VaR corresponds to $1-c$ lower tail level.

2.2.2.1 Portfolio Theory

The portfolio theory provides a normative approach to investor of investing their entire wealth in a single asset or security. This theory is significant in this study in that if Microfinance Institutions lend loan to only one particular group and if the group incur loss due to an unavoidable circumstances, they may likely fail to repay the loan hence reducing the funds of the institution. For example if the MFIs had advanced loan to a group who utilize the loan in planting potatoes, but due to drought the potatoes dried up and hence the group run at a loss making them unable to repay the loans they had borrowed.

2.2.2.2 Modern Portfolio Theory

Modern portfolio theory (MPT) proposes how decision to invest in assets or securities under risk. It is based in the assumption that investors are risk-averse (Pandey, 2001). This implies that investors hold well-diversified portfolio instead of investing their entire wealth in a single asset or security. Modern portfolio theory proposes how rational investors will use diversification to optimize their portfolio and how a risky asset should be priced (Markowitz, 1959 and Pandey, 2001). Microfinance Institutions should manage their loan portfolio quality in order to reduce risk and increase profits. MFIs with poor portfolio quality will have difficulty in distinguishing between bad loans and fraudulent loans because of the large number of loans in arrears. If very few loans are in arrears the chances that the Microfinance Institutions is experiencing frauds in its lending activities are significantly reduced. The handful of delinquent loans can be easily checked to determine if they are fraudulent. But when large volumes of loans are in arrears and a

delinquency management system gets overloaded, the fraudulent loans may go undetected for long period of time which may breed more fraudulent loans.

2.2.2.3 Post-Modern Portfolio Theory

It is an extension of the traditional modern portfolio theory also called mean-variance analysis. Both theories propose how rational investors should use diversification to optimize their portfolios and how a risk asset should be priced. Harry Markowitz laid the foundation of MPT the greatest contribution of which is the establishment of a formal risk or return framework for investment decision making. It has long been recognized that investors typical do not view as those returns above the minimum they must earn in order to achieve their investment objectives. They believe that risk has to do with bad outcome that are returns below the required target. The good outcome is return in excess of the target and that losses weigh more heavily than gains. This theory is significant in this study in that Microfinance Institutions should use diversification to optimize their portfolio. MFIs should monitor their loan portfolio composition and quality by region business sector, loan circle number and loan size to reduce the institution's vulnerability to external threats that may affect a large portion of their clients. For example, if 25% of the portfolio goes to coffee farmers and price of coffee beans drops, a quarter of the portfolio will likely be at risk (Markowitz, 1959).

In order to monitor portfolio quality, Microfinance Institutions should monitor portfolio quality ratio on a monthly basis. These include portfolio at risk, loan loss ratio, and reserve ratio. Additionally, all MFIs should be aware of the number and value of loans that have been rescheduled and should maintain a report clearly distinguishing between regular and rescheduled loans (Waterfield, 2000).

2.3.1 Microfinance Operation in Kenya

A microfinance unit has been established at the Ministry of Finance. Two of the institutions transformed into a bank to collect deposit and offer other banking services to the population considered unbankable (K-rep and Equity). The rest operate as either a microfinance institutions, Trusts or NGO'S. Currently five institutions have scaled up their outreach and have country wide network (K-rep, Equity, KWFT, Faulu and SMEP.) The rest are limited in some areas in Districts and town centre main operations are loans

and savings with those turned into banks having extra services like forex and remittances. Kenya has a population of 30 million and per capita income of us \$260. Its the 20th poorest country in the world. 49% of Rural population and 29% of the urban population live under conditions of absolute poverty. Unemployment rate is between 25-35%. It is estimated that 3.8 million Kenyans depend on informal associations and groups for services country wide. Micro enterprise is supposed to play a crucial role in the creation of jobs in Kenya. However it is recognized that the sector's growth potential is inhibited by several constraints. These include poor access to markets, lack of credit and a poor policy environment. There are estimated 3460 legally constituted microfinance providers as of June 2003. 3897 savings and credit cooperatives, 56 microfinance Institutions and 4 commercial Banks (K-rep, Equity, post bank and co-op Bank, 2 building societies. Some microfinance Institutions are members of international forums like K-rep Bank, Equity Bank, SMEP, Faulu. K-Rep Bank received the CGAP (Consultative Group to Assist the Poor) Award for the second time running (CBK, 2009). The government has created a rural finance Department at the central Bank of Kenya. Microfinance is faced with myriad of challenges as indicated by Cooper (2013). Among these challenges include; unsupportive legal and regulatory environment, limited Donor funding, little support from the government, lack of right technical skills for the managers and staff of these institutions, poor infrastructure are hindering the operations of these institutions and lack of capital.

Microfinance institutions have become an important contributor to the Kenyan economy. The sector contributes to the national objective of creating employment opportunities, training entrepreneurs, generating income and providing a source of livelihood for the majority of low income households by financing the businesses that they run. The government and its development partners have spent considerable amount of resources in crafting policies and programs to build the growth of micro finance institutions. However results to date have been largely unsatisfactory (Chen, 2002).

As MFIs in Kenya continue to increase in numbers, their survival in the market economy will greatly be influenced by the impact their products and services have to their recipients. This will include; the empowerment of family, generation of income and

improvement of welfare, the increase in business performance, training and business skills provided to clients, terms and conditions for loan repayment and servicing among others (Coster, 2001).

Even though microfinance bodies are meant to serve those who have been left out of the formal banking system, there is a growing concern that many Kenyans still lack credit facilities. Statistics from Association of Microfinance Institutions (AMFI) indicate that over 60 percent of Kenyans lack access to formal banking services. This is because most micro-credit companies are concentrated in cities and towns. Most of the people who lack credit are in rural areas (Burgess, 2006).

According to the Poverty Reduction Strategy Paper (PRSP) of 1999, a large number of Kenyans derive their livelihood from small and micro-enterprises. Therefore, development of this sector represents an important means of creating employment, promoting growth, and reducing poverty in the long term. However, in spite of the importance of this sector, experience shows that provision and delivery of credit and other financial services to the sector by formal credit institutions, such as microfinance institutions has been below expectation. This means that it is difficult for the poor to climb out of poverty due to lack of finance for their productive activities. Therefore, new, innovative and pro-poor modes of financing low income households and SMEs based on sound operating principles need to be developed (CBK, 2002).

As MFIs in Kenya continue to increase in numbers, their survival in the market economy will greatly be influenced by the impact their products and services have to their recipients. This will include; the empowerment of family, generation of income and improvement of welfare, the increase in business performance, training and business skills provided to clients, terms and conditions for loan repayment and servicing among others (Craig, 2007)

2.3.2 Methods of Delivering Financial Services by MFIs

MFIs around the world follow a variety of different methodologies for the provision of financial services to low-income clients (Robinson, 2006). These methodologies are overwhelmingly based on the principle of financial services being related to the cash

flows of the low-income client groups and thus aim to facilitate relatively frequent and very small or micro-loan and savings transactions (Ronge,2006). The following is a typology of major methodologies employed by MFIs for the delivery of financial services to low income clients.

2.3.3 Self-help Group (SHG)

The SHG is the dominant microfinance methodology in Kenya and other parts of the world. . The operations of member SHGs are based on the principle of revolving the members' own savings (Robinson, 2008). External financial assistance by MFIs or banks augments the resources available to the group-operated revolving fund. Savings thus precede borrowing by the members. In many SHG programmes, the volume of individual borrowing is determined either by the volume of member savings or the savings of the group as a whole (Daniel, 2009). Some NGOs operate microfinance programmes by organizing federations of SHGs to act as the MFI which obtain external loan funds in bulk to be channeled to the members through the SHGs.

2.3.4 Individual Banking Programmes (IBPs)

IBPs entail the provision by MFIs of financial services to individual clients though they may sometimes be organized into joint liability groups, credit and savings cooperatives or even SHGs (Robinson, 2008). The model is increasingly popular for microfinance particularly through cooperatives. In the case of cooperatives, all borrowers are members of the organization either directly or indirectly by being members of primary cooperatives or associations which are members of the apex society (Kiiru, 2001). Kiiru further adds that creditworthiness and loan security are a function of cooperative membership within which member savings and peer pressure are assumed to be a key factor. Though the magnitude and timing of savings and loans are largely unrelated, a special effort is made to mobilize savings from members.

2.3.5 Grameen Model

This model was initially promoted by the well known Grameen Bank of Bangladesh (Robinson, 2006). These undertake individual lending but all borrowers are members of 5-member joint liability groups which, in turn, get together with 7-10 other such groups from the same village or

Neighborhood to form a centre. Within each group and centre peer pressure is the key factor in ensuring repayment. Each borrower's creditworthiness is determined by the overall creditworthiness of the group. Savings are a compulsory component of the loan repayment schedule but do not determine the magnitude or timing of the loan.

2.3.6 Mixed Models

Some MFIs started with the Grameen model but converted to the SHG model at a later stage. However they did not completely do away with Grameen type lending and smaller groups. They are an equal mix of SHG and Grameen model. Others have chosen to adapt either the Grameen or the SHG model to cater to their markets while some organizations use a number of delivery channels and methodologies (including lending to SHGs) to provide financial services. Such MFIs are still relatively few but with increasing innovation becoming the norm in world of microfinance, their numbers are growing 'savings', to a fund managed either by her group or by the MFI with direct access of the member limited or even barred (The Microenterprise,2005).

2.4 Risk Management

Risk management, or the process of taking calculated risks, reduces the likelihood that a loss will occur and minimizes the scale of the loss should it occur (Coster, 2001). Risk management includes both the prevention of potential problems and the early detection of actual problems when they occur. As such, risk management is an ongoing three-step process. The steps are: one, Identify Vulnerabilities. Before managing risks, it is necessary to identify the Organization's vulnerability points, both current and future. An important aspect of assessing risk is to predict exposure in the short, medium and long term. Two, is to Design and Implement Controls. Once an MFI has identified its vulnerability points, then it can design and implement controls to mitigate those risks. Because Microfinance Institutions (MFIs) operate in different environments; the controls tend not to be specific or prescriptive. By understanding why a certain control should be in place, Microfinance Institutions (MFIs) managers and directors can tailor the control to their local environment. For example, taking collateral to control credit risk may be appropriate in some markets, whereas in other markets a group guarantee is a more appropriate control. Three is to Monitor Effectiveness of Controls. Once the controls are in place, then the Microfinance Institutions (MFIs) needs to monitor their effectiveness.

Monitoring tools consist primarily of performance ratios that managers and directors need to track to ensure that risks are being managed (Churchill, 2002).

This three-step risk management process is ongoing because vulnerabilities change overtime. Risks also vary significantly depending on the institution's stage of development. MFIs with 2,500 borrowers will experience different challenges from an organization with 25,000 outstanding loans. As participants in a new industry, MFIs cannot afford to become Complacent if they want to avoid being toppled by innovations, competition, and new regulations among other things. How often is "ongoing"? That will vary by country context, but at the very least the board should conduct an annual risk assessment update (Coster, 2001).

MFIs that follow the principles of good banking will also be the ones that alleviate the most poverty. The assumption being that with good banking practices it is possible to cover costs and operate in a sustainable manner to continue serving clients and alleviating poverty (Morduch, 2000). The increased emphasis on risk management reflects a fundamental shift among bank managers and regulators to better anticipate risks, rather than just react to them. This approach emphasizes the importance of "self-supervision" and a proactive approach by board members and managing directors to manage their financial institutions. They should neither avoid nor ignore risks, but should learn how to manage them. The benefits of effective risk management include identifying positive opportunities as well as avoiding negative threat (Chan, 2007).

Successful MFIs incorporate risk management into their organizational design, lending methodologies, savings services and operational procedures (Coster, 2001). According to Bowen (2009) Risk management should be a part of all line managers' jobs, not strictly a function of the internal audit department. A centralized risk control function can only succeed if the operational staff is supportive of risk management and perceives its value to the MFIs. By involving staff in the risk management design process, the MFI will naturally build employee support and increase their motivation to participate. Many process design improvements can come from staff suggestions and observations, so the MFI should encourage and reward ideas and input from all levels of the institution. MFIs

can further reinforce a risk management culture by building risk management into the employees' goals and performance incentives. For example, rather than reward loan officers simply for volume of disbursements, MFIs can reward staff based on a combination of loan disbursements, delinquency below a certain threshold and repayment rates within a certain range (Brigham,2008) Senior managers must also have well-designed performance incentives that incorporate the MFI's risk management goals. The alignment of performance objectives and incentives among investors, board members, management and staff is critical to effective and efficient strategy and execution organization has prioritized its risks, it can begin taking small steps to implement changes that improve risk management. Risk management is a continual and interactive process between the board and management, requiring constant improvements, adjustments, and refinements based on the information produced by internal audits and management reports (Buckely, 2006).

The financial manager, in a bid to maximize owners wealth, should strive to maximize returns in relation to the given risk, should seek courses of action that avoid unnecessary risks, ensure maximum returns, funds flowing in and out of the firm should be constantly monitored to assure investors that they are safeguarded and properly utilized (Pandey, 1999).

2.4.1 Regulatory Risk

The regulation and supervision of MFIs should be an integral part of a strategy to develop a market based financial system. Microfinance is not limited to lending and borrowing, but also includes other financial services such as savings, insurance and transfer facilities. Savings facilities are a particularly important question when considering prudential regulation of MFIs because the prospective microfinance target group is usually many times larger in deposit business than in lending (Buckley, 2006a).

A clear and transparent regulatory framework is necessary because MFIs' traditional fund sources usually cannot keep pace with their lending business, and thus need to have access to external finance to complement their own resources and those from donors in order to reach as many prospective borrowers as possible (Anita,2002). Possible sources

of funds are loans from other financial institutions, private savings or in an advanced microfinance sector securities issues on the formal capital market. MFIs could thereby advance from credit-only institutions to fully-fledged financial intermediaries. Heretofore, mobilization of savings from the general public has almost always been contingent on MFIs complying with existing banking law. Access to the capital market, in turn, is contingent on MFIs complying with securities regulations (Churchill, 2005).

A primary reason for regulating and supervising traditional financial institutions is consumer protection for public depositors in financial institutions. Moral hazard issues arise because the interests of financial institutions vis-à-vis the interests of consumers per se are not necessarily compatible. Individual depositors and investors may not be in a position to judge the soundness of a financial institution (the issue of asymmetric information), much less to influence that institution's management (Dollinger, 2005). Thus, an impartial third party such as the state or one of its agencies is required to regulate and control the soundness of a country's financial institutions. Since bank failures and problems tend to be contagious and affect other banks regardless of their soundness, the protection of the whole banking and payment system becomes an additional objective of regulation and supervision (Hulme and Mosely, 2004).

A country's legal framework and governing principles of financial intermediation define the roles of its banking and financial sector regulatory authorities. Such institutions include: the central bank and ministry of finance. They set out rules for entry and exit of financial institutions, determining and limiting their businesses and products, and specifying criteria and standards for the sound and sustainable operation of the industry (Ronge, 2004). Regulation which usually refers to non-prudential regulation but may include prudential supervision in its broad general meaning is not limited to rules set by the state alone. Regulation may include forms of auxiliary regulation and self-regulation by governing boards of financial institutions, their networks and associations, or apex organizations. Prudential supervision encompasses all measures by which regulators enforce compliance by licensed financial institutions with a given legal and regulatory framework, because licensing implies that the financial authority is vouching for or is

prepared to assume responsibility for the soundness of the regulated financial institution which the public may be dealing with (Hulme and Mosley, 2001).

However, it is important to consider the benefits versus the costs associated with establishing and implementing a regulatory framework for microfinance. Regulation and supervision entail costs, not only for the regulator but also for the regulated institution. For instance, BancoSol's management estimates that complying with the bank superintendence's reporting requirements during its first year of operations generated a cost equivalent to 5% of the loan portfolio, even though this had declined to about 1% of loan portfolio as of the previous year (Mosley, 2008a). Educating clients of their rights and responsibility in the loan process is a strong tool for preventing Microfinance Institutions from exposure to regulatory risk. This is because target clients tend to be illiterate and under-educated. They are more vulnerable to being defrauded by loan officers and not identifying errors in the loan process. This is especially problematic because the loan officers – client relationship is important to the ultimate success of MFIs. Thus an essential control for preventing errors and potential fraud is to actively educate clients of their rights and responsibilities (Anita, 2000)

Differences in the organizational and operating characteristics of the various types of MFIs leave them vulnerable to certain risks. The risk-based approach to financial regulation shows that while there may be no major variances in the structure of their assets, MFIs are differentiated by the structure of their liabilities such as how their assets and operations are funded and the adequacy of capital in leveraging additional resources to fund operations (Kwame, 2007). Linking the wholesale funding, limited deposit-taking and unrestricted deposit-taking activities to an institution's qualifying capital base results in limits to the asset build-up that MFIs can prudently undertake, without having to instruct them on how to carry out their businesses. The authorization to mobilize funds from the public in turn carries related requirements to comply with prudential standards and guidelines on certain asset side activities, or example limits on concentration in loan exposure to sectors, restrictions on insider and related-party loans and provisions for possible loan losses (Brigham & Ehrhardt, 2008).

2.4.2 Operational Risk

Operational risks are the vulnerabilities that an MFI faces in its daily operations, including portfolio quality, fraud risk and theft. The investment portfolio must balance credit risks (for investments), income goals and timing to meet medium to long term liquidity needs. An aggressive approach to portfolio management maximizes investment income by investing in higher risk securities. A more conservative approach emphasizes safer investments and lower returns (Juan, 2000). Operational risk arises from human or computer error within daily product delivery and services. It transcends all divisions and products of a financial institution. This risk includes the potential that inadequate technology and information systems, operational problems, insufficient human resources, or breaches of integrity (i.e. fraud) will result in unexpected losses. This risk is a function of internal controls, information systems, employee integrity, and operating processes (Buckley, 2000).

Whenever fraud occurs within an organization, it reflects poorly on the whole MFI and everyone who works there. Fraud detection is therefore the implicit responsibility of all staff members, from the chairman of the board and executive director down to the cleaners and drivers. Once an organization reaches certain scale for instance 100 employees, it can justify having a person or department dedicated to the function of fraud detection (Coster, 2001). This responsibility is tasked to an internal auditor or internal audit department, which should report directly to the board of directors or the audit committee of the board. Fraud detection for financial institutions involves the following four elements; Operational audit, Loan collection policies, Client sampling, and Customer complaints (Dollinger, 2005). While loan collection policies are primarily seen as a response to credit risk, they also have a very important role in fraud detection. By involving several different persons in the collection process, MFIs not only escalate the pressure on the client, but also help to identify instances of fraud. If the loan officer is the only person who ever interacts with a delinquent borrower, he could easily be pocketing repayments (Barua, 2002).

Improving efficiency is a great challenge in most MFIs. This involves an organization's ability to manage costs per unit of output, and thus is directly affected by cost control and level of outreach (Burgess, 2003). According to Morkwowitz, 2004 inefficient MFIs waste resources and ultimately provide clients with poor services and products, as the costs of these inefficiencies are passed on to clients through higher interest rates and transaction costs. MFIs can improve efficiency in three ways: (1) increase the number of clients to achieve greater economies of scale, (2) streamline systems to improve productivity, and (3) cut costs. The first two goals are closely related; both seek to increase the number of clients, or units of output, the MFI serves by having staff work harder or, preferably, smarter. In microfinance organizations that are not managed in a business-like manner, employees often have excess capacity. And yet, as is human nature, they find ways of filling their days so they end up being very busy doing things that are not particularly important. A close analysis of time allocation and time management will often reveal waste. The third goal addresses the cost side of the equation. Administrative costs, including salaries and other operating expenses, represent the greatest component of the cost structure of an MFI. Reducing the delivery costs associated with providing financial services improves operating efficiency. If these costs can be reduced, the savings can be passed on to clients through more competitively priced products, ultimately improving customer satisfaction (Barnes, 2006). There are also important cost implications to consider, MFIs cannot eliminate losses due to operational risk. Some loans are bound to go bad and some staff members will undoubtedly succumb to temptation. Controls designed to minimize the losses from operational risk need to be carefully analyzed for their cost effectiveness. Some controls may be more expensive than they are worth (Manganelli and Engle, 2002).

2.4.3 Interest Rate Risk

Interest rate risk arises when assets and liabilities are mismatched, in terms of interest rates and terms. Interest rate risk is particularly problematic for MFIs operating in high inflationary environments. If inflation rises, the interest rate on loans may not be sufficient to offset the effects of inflation (Anita, 2000). Interest rate risk arises from the possibility of a change in the value of assets and liabilities in response to changes in market interest rates. Also known as asset and liability management risk, interest rate risk

is a critical treasury function, in which financial institutions match the maturity schedules and risk profiles of their funding sources (liabilities) to the terms of the loans they are funding (assets) (Chan, 2007). In MFIs, the greatest interest rate risk occurs when the cost of funds goes up faster than the institution can or is willing to adjust its lending rates. The cost of funds can sometimes exceed the interest earned on loans and investments, resulting in a loss to the MFI. Interest rate changes can also affect fee income, since most fee income is associated with loan products that are interest rate sensitive. Interest rate risk management is most important to MFIs that make longer-term loans and rely on capital markets for a large percentage of their funds. In most environments, the interest rates paid to savers tend to move more slowly (Kwame, 2007).

MFIs operating in inflationary economies face additional asset and liability management issues. An MFI's ability to adjust interest rates on its loans Churchill, 2007 argues is determined by the degree to which short-term liabilities are used to fund longer-term assets within the portfolio. If the rates on short-term liabilities rise before an MFI can adjust its lending rates, the spread between interest earnings and interest payments will narrow, seriously affecting the MFI's profit margin. MFIs should monitor interest rate risk by (1) assessing the amount of funds at risk for a given shift in interest rates, and (2) evaluating the timing of the cash flow changes given a particular interest rate shift (Chua, 2007). In MFIs, the greatest interest rate risk occurs when the cost of funds goes up faster than the institution can or is willing to adjust its lending rates. The cost of funds can sometimes exceed the interest earned on loans and investments, resulting in a loss to the MFI. Interest rate changes can also affect fee income, since most fee income is associated with loan products that are interest rate sensitive. Interest rate risk management is most important to MFIs that make longer-term loans and rely on capital markets for a large percentage of their funds. In most environments, the interest rates paid to savers tend to move more slowly. MFIs operating in inflationary economies face additional asset and liability management issues (Bowen and Mureithi, 2009).

Some MFIs operate in markets with large bent up demand for microfinance. To respond to demand, an organization may grow up quickly, only to realize that it does not have the

capacity to or the systems to satisfy the demand (Kiiru, 2010). These MFIs often experience bottleneck in the disbursement process and risk losing credibility in the market place. Before expanding, MFIs need to ensure that they have the systems to cope with the projected volume of applications. Robinson (2006) argue that if demand exceeds expectations, and it is not possible to expand capacity, then the MFIs need to find a way of tempering with demand, perhaps by raising interest rates, lengthening the pre-loan process, or limiting the number of applications a loan officer can submit each month. Changes in interest rates also affect the underlying value of the microfinance institutions' assets, liabilities and off-balance sheet instruments because the present value of future cash flows (and in some cases, the cash flows themselves) change when interest rates change (Bwisa,2004). MFIs to have an effective risk management process that maintains interest rate risk within prudent levels based on proper identification of the sources and effects of interest risk has the ultimate responsibility for understanding the nature and the level of interest rate risk taken by the microfinance institution. At minimum the board should approve broad business objectives, strategies and policies that govern or influence the management interest (Juan and Martinez, 2002).

All types of assets and liabilities do not respond to a change in interest rates in the same manner. Some are more sensitive to interest rate changes than others, a characteristic known as interest rate sensitivity. For example, small scale savings accounts tend not to be very sensitive, as low income clients typically maintain savings accounts more for reasons of liquidity and safety, than for rate of return. For this reason, if the interest rate falls, such clients will not necessarily withdraw their savings (Jorion, 2001). On the other hand, bank certificates of deposit are usually highly interest rate sensitive. Certificates of deposit, or other time deposits, are usually purchased by investors who are concerned with the rate of return on their investment, and will thus be more likely to withdraw their savings in the event of a decrease in interest rates. In other words, such investments tend to be more interest rate sensitive than small-scale savings accounts. This type of interest rate sensitivity analysis is important for Microfinance Institutions that mobilize funds from a variety of sources (Wright, 2003). Despite short-term successes, MFIs need to prepare for worst case scenarios, such as a downturn in the world economy, Microfinance Institutions should Microfinance Institutions that serve primarily low income clients,

interest rate sensitivity may be less important than responding to the timing of any cash flow shifts. Determining the gap between rate-sensitive assets and rate-sensitive liabilities, or gap analysis, provides a mechanism for identifying the timing of cash flow shifts. Rate-sensitive assets or liabilities are those that can be priced either upward or downward over the next few months (Waterfield, 2000). Microfinance institutions should have an effective risk management process that maintains interest rate risk within prudent levels based on proper identification of the sources and effects of interest risk (Chen, 2002).

2.4.4 Credit Risk

Credit risk, the most common and often the most serious vulnerability in a microfinance Institution, is the deterioration in loan portfolio quality that results in loan losses and high delinquency management costs. Credit risk relates to client failure to meet the terms of a loan contract (Ledgewood, 2009). The first great challenge in microfinance is to minimize the credit risk associated with providing unsecured loans. This is because they advance loans to its clients basing on their savings and their property such furniture and domestic animals (Nelson, 2004).

One microloan does not pose a significant credit risk because it is such a small percentage of the total portfolio. Since most microloans are unsecured, however, delinquencies can quickly spread from a handful of loans to a significant portion of the portfolio. This contagious effect is exacerbated by the fact that microfinance portfolios often have a high concentration in certain business sectors. Consequently, a large number of clients may be exposed to the same external threat, like a crackdown on street vending or a livestock disease. These factors create volatility in microloan portfolio quality, heightening the importance of controlling credit risk (Churchill, 2007). The main goal of every microfinance institution is to operate profitably in order to maintain its stability and improve growth and sustainability. However, existence of high levels of loan delinquency problem in microfinance industry negatively affect the level of private investment, increase in deposit liabilities and constrain the scope of microfinance institution credit to borrowers through reduction of MFIs' capital, following falling accumulation of losses to compensate for loan delinquency losses (Coster,2001). The

success of individual Microfinance Institutions (MFIs) in credit risk management is largely reflected in the proportion of delinquency's loans to gross lending. External and internal economic environments are viewed as critical drivers of loan delinquency occurrence (Nelson, 2004).

Better credit risk management results in better Microfinance Institutions performance. Thus, it is of crucial importance that Microfinance Institutions prudent credit risk management and safeguarding the assets of the Institution and protect the investors' interests. Microfinance Institutions are some of the predominant financial institutions whose changes in performance and structure have far reaching implications on the whole economy (Manganelli and Engle, 2000). One main reason for the development of Microfinance Institution Bwisa (2004) argues is that banking sector does not serve persons who cannot offer collateral while MFIs use peer groups, restrictive product terms and compulsory savings as collateral substitutes. Microfinance institutions are engaged in a wide range of activities like investment and advancing loans which exposes them to risk. Therefore the instability in financial performance especially in Microfinance Institutions emanates from the poor credit risk management. According to Churchill (2005), the firm's credit policies are the chief influences on the level of debtors, measuring the manager's position to invest optimally in its debtors and be able to trade profitably with increased revenue. Pandey (2004) pointed out that credit policy defines a firms' performance, meaning that once a firm adopts an optimal credit policy, it will be able to maximize its investment revenue in debtors and this improves and promotes its financial standing and performance therefore a good credit policy decision is positively related to high financial performance. Kwame (2007) observed that capital requirement can reduce the less moral hazard incentives by forcing shareholders to absorb larger portions, thereby reducing the value of deposit insurance put in option. Robinson (2006) argues that, to develop new way to evade the intended consequences, supervision alone cannot prevent microfinance institutions from gaining and manipulation of risk weights based on internal ratings. Therefore, as these institutions operate with a poor credit risk management their financial performance and position are affected. Banks may also use credit committee in the approval of loans. Credit committee is the body of persons charged with making decision as regards loans; this committee is essential control in

reducing credit risk and improving on loan recovery. Decision granting loan will have been arrived at after an analysis has been carried out by the committee of more than one person thus reducing the risk of one person abusing the authority granted to him by granting loans to friends and relatives easily as this would result to poor loan recovery and hence poor financial performance (Dollinger, 2005).

When integrated with risk management, internal audits can also determine whether the risks to the MFI are identified and minimized, whether resources are used efficiently and economically, and whether the organization's objectives are being met. To be most effective, internal auditors should report directly to the board of directors. Through field and client visits, internal auditors are the independent "eyes and ears" of management that assure risk management strategies are working effectively (Burgess, 2003). The investment portfolio must balance credit risks (for investments), income goals and timing to meet medium to long term liquidity needs. An aggressive approach to portfolio management maximizes investment income by investing in higher risk securities. A more conservative approach emphasizes safer investments and lower returns (Juan and Martinez, 2002).

The proper assessment tools, Jamieson argue in her thesis will be able to address the two major critiques of microfinance as a means to end poverty: that it doesn't serve the most destitute, and that it allows borrowers to persist in a life of poverty without ever really escaping it. In situations where microfinance institutions aren't found to be improving people's lives, the tools will help identify the need for changes in the services provided or alternatives to microfinance in general (Jamieson,2008).

To determine an institution's vulnerability to credit risk, one must review the policies and procedures at every stage in the lending process to determine whether they reduce delinquencies and loan losses to an acceptable level. These policies and procedures include the loan eligibility criteria, the application review process and authorization levels, collateral or security requirements (The Microenterprise, 2005). In addition to analyzing whether these policies and procedures are sound, it is also necessary to determine whether they are actually being implemented. The best policies in the world

are meaningless if staff members are not properly trained to implement them or choose not to follow them (Dunn, 2005).

Ultimately, the MFI's money is at risk, so loan officers and their immediate supervisors need to sign off on all credit decisions and feel comfortable that the money will be repaid. Loan officers should feel comfortable; rejecting entire groups if the members do not know and trust each other very well or if they do not appreciate the importance of joint responsibility, encouraging good group members to expel inappropriate members and promoting smaller loan sizes that members are confident that they can repay. To act in this way, loan officers need the tools and the training to conduct business and character assessments, group discussions, and to test the group's commitment (Chen, 2002). Microfinance Institutions should strive to find the appropriate balance between managing credit risk and cost and effectiveness of each control and the attainment of customer satisfaction. For example, many MFIs require new clients to repay their loans in weekly installments. This is considered an important control for credit risk because smaller installment sizes are easier to repay and frequent repayment are easy to monitor (Gregory, 2011). According to (Hulme and Mosely, 2004) Microfinance Institutions should inform their clients from day one that their ability to access more accommodating services depends on their repayment history. If they repay on time, they can access preferred product features such as loan sizes, lower interest rates and less frequent repayments periods (Juan and Martinez, 2002).

2.5 Profitability

Profit is the net income of an institution after reduction of taxes and total expenditures from total income of the institution over a given period of time. The degree of loan repayment affects the return and risk of MFIs. It may increase profit but it always increases risk. A proper balance will have to be struck between return and risk. When risk is managed effectively and efficiently, return is maximized with minimum risk (Pandey, 2001). Once the financial manager is able to determine the best risk management strategies, return or profit is maximized. The financial manager, in a bid to maximize the profit of the institution, should strive to maximize returns in relation to the given risk, should seek courses of action that avoid unnecessary risks, ensure maximum returns,

funds flowing in and out of the firm should be constantly monitored to assure investors that they are safeguarded and properly utilized (Pandey, 1999).

The capital asset pricing model specifies the relationship between risk and required rates of return on asset when they are held in well-diversified portfolios. According to Brigham (2008) examines the assumptions behind capital Assets Pricing Model (CAPM) which are: all investors focus on a single holding period and they seek to maximize the expected utility of their terminal wealth by choosing among alternatives portfolios on the basis of each portfolio expected return and standard deviation, all investors can borrow or lend an unlimited amount at a given risk-free rate and there are no restrictions on short sales of any assets; that is investors have homogenous expectations, all the assets are perfectly divisible and perfectly liquid, there are no transaction cost and taxes and finally the quantities of all assets are given and fixed. To boost profitability, MFIs may purposely “mismatch” assets and liabilities in anticipation of changes in interest rates. If the asset liability managers think interest rates will fall in the near future, they may decide to make more long-term loans at existing fixed rates, and shorten the term of the MFI’s liabilities (Pandey, 2006).

2.6 Empirical Literature Review

Various researches on Microfinance Institutions have been undertaken. A study carried out by (Adam & Von Pische, 2002), on the relevance of microfinance as a poverty reducing policy. He argued that debt is not an effective tool for helping most poor people to enhance their economic condition be they operators of small farms or micro entrepreneurs. The main argument of Adam and Von Pische (2002) is that there are other more important constraints that face small agricultural households and they include product prices, land tenure, technology, market access and risk. Also in support of the same view is Gulli (1998) who argues that credit is not always the main benefit but also there are positive spillover effects to the rest of the community.

In his study Khandker (2006) uses a panel household survey from Bangladesh and observes that access to microfinance contributes to poverty reduction, especially for female participants, and to the overall poverty reduction at the village level (Khandker 2006).

In her thesis, Jamieson evaluates a variety of the social performance indices that have been proposed, ultimately recommending a series of low-cost assessment tools — known as poverty scorecards — that measure a small number of observable and verifiable indicators of poverty. Jamieson argues that these inexpensive and easily replicable tools have the most potential for quick and effective deployment to microfinance institutions around the world. She proposes that these tools could be used to assess a borrower's status upon joining an organization and annually thereafter to assess change in the borrower's living situation (Jamiesson, 2008).

A study by Murumba (2011) on evaluation of the effect of risks on Microfinance financial sustainability. The research found out that MFIs are exposed to various risks. According to the study, credit risk is the very frequent and recommended that MFIs should integrate effective risk management into their culture and operations. They should systematically analyze their preparedness for potential events through building in sufficient caution for unexpected effect.

Warui (2007) investigated on external factors, MFIs and self help groups to establish which of these factors significantly affects loan delinquency performance in MFIs in Kenya. The study found evidence that there exist a negative and significant relationship between loan delinquency and MFIs. In addition, self help groups and external factors significantly affect loan delinquency performance among MFIs in Kenya. The study recommends that MFIs portfolios management strategies to focus more on the internal causes of delinquency which they have more control over and seek practical achievable solutions redress delinquency problems.

Research by Makworo (2012) on the frequent risks that affect general performance of MFIs. He found out that strategic risk, credit risk, liquidity and management risk frequent risks. These are both internal and external. He recommended that MFIs can anticipate for these risks and prepare for their impact although they cannot control external risks.

Wesonga (2010) researched on the effect of internal and external risk on the performance of commercial banks. He found out that risk affects daily operation of commercial banks and therefore affect the return on assets. Wesonga recommended that commercial banks should manage risk efficiently and effectively so that they can increase return on assets.

Mwangi (2013) did a study on the effect of risk management practices on the financial performance of commercial banks in Kenya. The objectives of this study were to analyze the risk management practices undertaken by Commercial Banks in Kenya and to determine and assess the effect of these risk management practices on their financial performance. From the research conducted it is evident that risk management and the related practices are considered significantly important to the operations and financial performance of these commercial banking institutions. This has been influenced to a large extent by guidelines put forward by the Central Bank of Kenya and also the nature of the banking industry. In most cases banks had adopted a proactive and enterprise wide approach to their risk management practices by having a risk department with a manager, and had a documented risk management policy which was fairly well communicated throughout all levels of the organization from the Board to Staff. The study also found that some risk management practices do have significant effect on financial performance more than others for example the existence of a risk management policy and the integration of risk management in setting of organizational objectives were considered to be the key risk management practices that had a direct effect on financial performance.

A study by Kombo, (2000) on whether MFIs are exposed to risk. The study found out that like any other financial institution, MFIs are exposed to various risks. According to the study, credit risk, regulatory risk, and operational risks are very frequent risk exposed to MFIs. Similarly liquidity, market and management risk are frequent but legal and compliance, reputation and subsidy dependency are not frequent risks. These risks are both internal and external. She recommended that while external risk is out of MFIs direct control, the Microfinance Institutions can still anticipate them and prepare for their impact.

Daniel (2006) did a study on the preventive and detective controls Microfinance Institutions employ and their effect on financial performance. Daniel found out that preventive and detective controls significantly affect financial performance of microfinance institutions and therefore an appropriate balance between preventive and detective controls should be arrived at. He further explained preventive controls as those controls taken to avoid problems before they occur, while detective controls involves identifying undesirable outcomes before they do happen and that they are easier to implement. He gave an example that it is easier to do monthly bank reconciliation than to prevent employees from pocketing repayments.

Kiriti (2005), concentrate on the impact of household assets. The finding were that poor households depleted households assets in the course of loan repayment since the income generating activities were not raising enough profits to repay loans on time.

2.7 Research Gap

Aghion and Morduch 2005, observe that microfinance can make a real difference in the lives of those served, but microfinance is neither a panacea nor a magic bullet against poverty, and it cannot be expected to work everywhere and for everyone. Much as there have been mixed statistical impacts of microfinance, there also has been no widely acclaimed study that robustly shows strong impacts, but many studies suggest the possibility of good welfare impact . More research should therefore be directed towards not just specific results but also the context within particular results is expected. What worked in a particular socio cultural and economic context may not necessarily work the same if the socio cultural and economic conditions are changed. From literature review, the effect of risk management strategies on profitability of Microfinance Institutions was recognized. This could lead to attainment of particular results. The outcome of this study was expected to guide MFIs on efficiently and effectively management of various risks so as to maximize profit.

2.8 Conceptual framework

The overall objective of the study was to determine the effects of risk management strategies on profitability of MFIs. To provide a link between risk management strategies and profitability of MFIs, a conception framework was developed to assist in analyzing

data. The independent variables were risk management strategies whose indicators were; regulatory risk, operational risk, interest rate risk and credit risk. The independent variable was profitability which was measured by net profit. Net profit is the net income of an institution after tax has been deducted from gross profit; Whereas Gross profit is the difference between income of an institution and the expenditure that particular institution incurs over a given period of time. It may be one year or six months. The framework also shows the intervening variables which are government policies and economic conditions. Government policies include laws and regulations that the MFIs should abide by. Economic conditions include inflation and stability. The framework is shown below:

Independent Variable

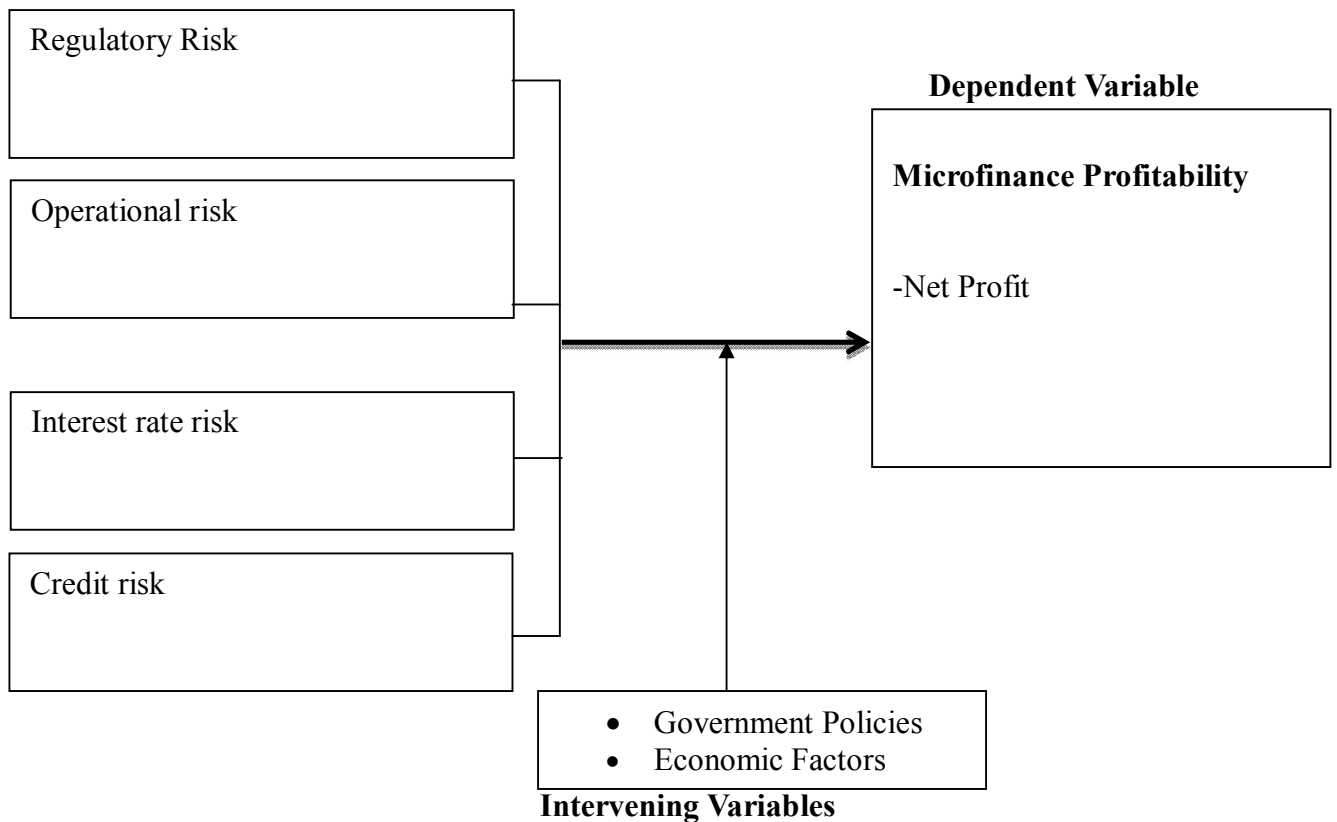


Figure 1: Conceptual Framework

Source: Author 2015

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the procedures that were used to assess effects of risk management strategies on profitability of Microfinance Institutions in Nakuru County. The research design, the study population, sampling procedures and sample size, instrumentation, validity and reliability of the research instruments, data collection, and data analysis procedures are discussed.

3.2 Research Design

According to Kothari (2006), a good research design which provides a quick, efficient and accurate means of accessing information about the population should be preferred. Also should be low on cost. In this case, the study used a survey design to evaluate the effects of risk management strategies on profitability of microfinance institutions. The design was selected for the reason that it uses standardized questions, which make Measurement more precise by enforcing uniformity and ensuring replication success.

3.3 Target Population

The research targeted all the forty five credit officers and the seven managers of the seven branches of Faulu Kenya in Nakuru County.

3.4 Sample Size and Sampling Design

The researcher stratified the target population into 2 strata of managers and credit officers. Since there were forty five credit officers and seven managers, the researcher applied a census on the population. The table below shows the sample size.

Table 3.1: Sample Size Distribution

BRANCHES OF FAULU KENYA IN NAKURU COUNTY			
NUMBER OF RESPONDENTS			
BRANCH	CREDIT OFFICERS	MANAGERS	
TOTAL			
OLENGURUONE	5	1	6
MOLO	7	1	8
MAKUTANO	5	1	6
NJORO	7	1	8
NAKURU	11	1	12
NAIVASHA	8	1	9
ELDAMA RAVINE	2	1	3
TOTAL	45	7	52

Source: Research data, 2015

3.5 Data Collection Instruments and Procedures

Primary data was collected through self-administered questionnaires to seek for a non-biased response from the respondents and ensured that results are favorable to the objective of the study. The self-administered questionnaires were considered the best in collection of primary data because they provide an avenue for the researchers to ask probing questions, they are fast, cheap and can be self-administered (Mugenda, 2003). The key variables under which data was collected was regulatory risk, operational risk, interest rate risk and credit risk in relation to the dependent variable the profitability of Microfinance Institutions.

3.6 Validity and Reliability of Research Instrument

Validity is the degree to which data in a research is accurate and credible while reliability is the degree to which an instrument will produce similar results at different periods (Gray, 2004). The researcher used Cronbach's alpha since it is a coefficient of internal consistency commonly used as an estimate of the reliability. The Cronbach's coefficient alphas were obtained from the SPSS to determine the internal consistency of the questionnaire in measuring efficiency in operating risk, regulatory risk, interest rate risk, credit risk and profitability. The obtained Cronbach's value was 0.961 implying it was above the recommended value by Gliem (2003) and therefore suitable for administration.

3.7 Data Analysis and Presentation

The collected data first checked for consistencies then coded. The data was analyzed using SPSS version 21 by descriptive statistics. Descriptive statistics involved the use of frequencies and percentages and chi-square test. Descriptive statistics results were presented using tables. Correlation and Regression analysis were used. Pearson's correlation was used to show the relationship between risk management strategies while regression analysis was used to determine to what degree the independent variables (risk management strategies) can explain a change in profitability of Microfinance Institutions.

The regression model used in this study is given as follows:

$$Y_{it} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where Y_{it} is the dependent variable (profitability)

β_0 is constant profits

β_1 is the coefficient of regulatory risk

β_2 is the coefficient of operational risk

β_3 is the coefficient of interest rate risk

β_4 is the coefficient of credit risk

X_1 is the cost of regulatory risk

X_2 is the cost of operational risk

X_3 is the cost of interest rate risk

X_4 is the cost of credit risk

t is the time

e is the error term

3.8 Ethical Consideration

The researcher purely used the information collected for the purpose of the study and was not forwarded to any party. The information from any individual was treated with high degree of confidentiality without disclosing the respondent's identity.

CHAPTER FOUR
DATA ANALYSIS, INTERPRETATIONS AND DISCUSSIONS

4.1 Introduction

This chapter presents the research findings, their analysis, interpretation and discussion on the effects of risk management strategies on profitability.

4.1.1 Response rate

Table 4.1 Response Rate of Credit Officers

No. of respondents targeted	No. of questionnaires returned	Respond rate (%)
45	35	77.78

Source: Research data, 2015

The study targeted all forty five credit officers of Faulu Kenya in Nakuru County but the actual number that participated in the study was 35. A response rate of 77.78% was obtained. This is acceptable proportion according to Mugenda and Mugenda (2003), who reports that a respond rate of 50% and above is acceptable, Mugenda (2003). The study also targeted all the seven managers of Faulu Kenya in Nakuru County and all of them filled and returned the questionnaires. Therefore the response rate for managers was 100%.

4.2 General Information of the Respondents

To present sample characteristics, cross tabulation and frequency distributions were used to indicate variations of respondents based on age, gender, education and work experienced.

Table 4.2 Age of Respondents

Respondents		Age			Total
		20-30 years	31-40 years	41 and Above years	
Credit Officers	Frequency	20	10	5	35
	Percentage (%)	57.1	28.6	14.3	100
Managers	Frequency	1	4	2	7
	Percentage (%)	14.3	57.1	28.6	100
Total		21	14	7	42

Source: Research data, 2015

As shown in table 4.1, twenty credit officers of Faulu Kenya in Nakuru county representing 57.1% are in the age between 20-30 years. Ten are in the age group of 31-40 years representing 28.6% and five are 41 and above years. From the findings the majority of credit officers respondents are in the age between 20-30 years. The general implication is that most credit officers have to travel from one place to another so as to serve Faulu Kenya clients and therefore at this age they are active. According to the same table there is only one manager age between 20-30 years representing 14.3%. This is because at this age most employees lack experience. Generally for one to become a manager he or she must have experience in the relevant field. Four managers representing 57.1% are in the age bracket of 41 and above. Only two employees of Faulu Kenya in Nakuru County who are managers representing 28.6% are in the age group of 41 and above. This implies that at this age employees seek employment elsewhere.

Table 4.2 Gender of Respondents

Respondents		Gender		Total
		Male	Female	
Credit officers	Frequency	20	15	35
	Percentage (%)	57.1	42.9	100
Managers	Frequency	6	1	7
	Percentage (%)	85.7	14.3	100
Total		26	16	42

Source: Research data, 2015

According to table 4.2, 35 credit officers filled the questionnaires of the researcher. Fifteen of them were female representing 42.9%. Twenty of them were male representing 57.1 %. The table also indicates that six respondents who were managers were male. This was 85.7% of the total. Only one of them was a female representing 14.3%. Therefore it shows that the institution employ more male than women.

4.2.1 Education level of Respondents

According to results in table 4.3 below, 28.6% of credit officers respondents attained college certificate, 37.1% attained university degree and 14.3% had CPA. The findings also indicate that all the managers' respondents attained university degree. This indicate that the institution employ qualified personnel

Table 4.4 Education level of Managers and Credit Officers

Education Level		Managers	Credit officers
College certificate	Frequency	0.0	10.0
	Percentage (%)	0.0	28.6
University Degree	Frequency	7.0	20.0
	Percentage (%)	100.0	57.1
CPA	Frequency	0.0	5.0
	Percentage (%)	0.0	14.3

Source: Research data, 2015

4.2.2 Work Experience of Respondents

The result in respect to the respondents work experience is represented in table 4.4. According to the findings, one manager representing 14.3% and five credit officers representing 14.3% had one year work experience. 42.9% of the managers had work experienced of more than one year. From the findings most credit officers had work experienced of 1-5 years while the least had work experienced of less than one year. The table also shows that there are twenty credit officers representing 57.1% who have between 1-5 years work experience and ten credit officers representing 28.6% have work experience of more than five years. In comparison, there are more credit officers with 1-5 years work experience than those with more than five years work experienced. This would be due to the fact that employees after working in a particular organization for a given period of time, usually seek for employment elsewhere in anticipation of better pay and most likely for a higher position or both.

Table 4.5 Work Experience of Respondents

Experience		Managers	Credit Officers
Less than 1 Year	Frequency	1	5
	Percentage (%)	14.3	14.3
1 - 5 Years	Frequency	3	20
	Percentage (%)	42.9	57.1
Above 5 Years	Frequency	3	10
	Percentage (%)	42.9	28.6
Total	Frequency	7	35
	Percentage	100	100.0

Source: Research data, 2015

4.3.0 Risk Management Strategies

Risk management strategies in MFIs are many. These risks are either internal or external. Internal risks are in direct control by MFIs while external risks are in-direct control by MFIs. The one researched constitute regulatory risk, operational risk, interest rate risk and credit risk. A study by Kombo, (2000) on whether MFIs are exposed to risk, found out that like any other financial institution, MFIs are exposed to various risks. According to the study, credit risk, regulatory risk, and operational risks are very frequent risk exposed to MFIs.

4.3.1 Regulatory Risk

Regulatory risk is an important influence on the profitability of MFIs. It is an external risk hence it is out of Microfinance Institutions control. The study sought to analyze the extent to which regulatory risk influenced the profitability of Faulu Kenya in Nakuru County. The objective was achieved by asking respondents questions that were rated on a 5-point Likert Scale ranging from: 1=Never to 5=Very Often and the results summarized below in table 4.6 and 4.7

Table 4.6 frequency of occurrence of Regulatory Risk by Credit Officers

Statement	Never Freq(%)	Rarely Freq (%)	Sometimes Freq (%)	Often Freq (%)	Very Often Freq (%)	χ^2	p-value
Formulation of laws and regulations	0 (0.0)	5(14.3)	10 (28.6)	5 (14.3)	15 (42.9)	7.857	0.049
Educating members on laws and regulations	0 (0.0)	0 (0.0)	5 (14.3)	10 (28.6)	20 (57.1)	10.00	0.007
Review of laws and regulations	0 (0.0)	0 (0.0)	4 (11.4)	6 (17.1)	25 (71.5)	23.03	0.00
Occurrence of misinterpretation of laws and regulations	0 (0.0)	30(85.7)	5 (14.3)	0 (0.0)	0 (0.0)	17.86	0.000

Source: Research data, 2015

According to table 4.6 and table 4.7, 30 credit officers and 6 managers agree that Faulu Kenya in Nakuru County often educate its members on laws and regulations. The results also indicate that

42.8% of credit officers and 14.3% of the managers agree that the Institution rarely formulate laws and regulations. It also indicates that the Institution very often review laws and regulations ($\chi^2=23.03$, $p<0.000$), ($\chi^2=4.571$, $p<0.102$). This concur with Brigham & Ehrhardt (2008) findings that most MFIs often review their laws and regulations. The Institution rarely formulate laws and regulations as illustrated in table 4.6 and table 4.7 with $\chi^2=0.286$, $p<0.049$ and, $\chi^2= 0.867$, $p<0.029$ respectively. In addition 57.1% creditors and 85.7% managers agreed that the institution very often educate its members on laws and regulations. This is in line with Anita (2000) suggested that educating clients of their rights and responsibility in the loan process is a strong tool for preventing MFIs from exposure to regulatory risk; because target clients tend to be illiterate and under-educated. They are more vulnerable to being defrauded by loan officers without identifying errors in the loan process. This is especially problematic because the loan officers-client relationship is important to the ultimate success of MFIs. Thus an essential control for preventing errors and potential fraud is to actively educate clients of their rights and responsibilities. In conclusion, there is likelihood that regulatory risk boost profitability of MFIs in Nakuru County.

Table 4.7 Frequency of occurrence of Regulatory Risk by Managers

Statement	Never Freq(%)	Rarely Freq(%)	Sometimes Freq (%)	Often Freq(%)	Very Often Freq (%)	χ^2	P-value
Formulation of laws and regulations	2 (28.6)	3 (42.8)	2 (28.6)	0 (0.0)	0 (0.0)	0.867	0.029
Educating members on laws and regulation	0 (0.0)	0 (0.0)	1(14.3)	0 (0.0)	6 (85.7)	3.571	0.059
Review of laws and regulations	0 (0.0)	0 (0.0)	1(14.3)	1 (14.3)	5 (71.4)	4.571	0.102
Occurrence of misinterpretation of laws and regulations	0 (0.0)	6 (85.7)	1 (14.3)	0 (0.0)	0 (0.0)	3.571	0.059

Source: Research data, 2015

4.3.2 Operational Risk

The study brings to light that operational risk affect profitability of Microfinance Institutions through performance of various practices like: performance of operational audit, review of loan collection policy and client probing. These were rated in 5-point Likert scale ranging from: 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often and results summarized in table 4.8 and table 4.9

Table 4.8 Frequency of Occurrence of Operational Risk by Credit Officers

Practices	Never Freq (%)	Rarely Freq (%)	Sometimes Freq (%)	Often Freq(%)	Very Often Freq (%)	χ^2	P-value
Performance of operational audit	0 (0.0)	0 (0.0)	5 (14.3)	10 (28.6)	20 (57.1)	10.0	0.007
Review of loan collection policy	0 (0.0)	0 (0.0)	0 (0.0)	10 (28.6)	25 (71.4)	6.429	0.011
Client probing	3 (8.6)	4 (11.4)	5 (14.3)	9 (25.7)	14 (40.0)	11.71	0.020

Source: Research data, 2015

Operational risk is an internal risk therefore Microfinance Institutions has directly control. The results in table 4.8 suggest that the respondents agreed ($\chi^2=10$, $p<0.007$) that performance of operational audit is very often done by Faulu Kenya in Nakuru County. On the other hand majority of them agreed ($\chi^2=6.429$, $p< 0.011$) that loan collection policy is reviewed very often. Barua (2002), states that loan collection policy have an important role in fraud detection. Three respondents representing 8.6% suggest that client probing is never done by the institution. According to table 4.9, Managers respondents agreed ($\chi^2=1.287$, $p=0.257$) that client probing, review of loan collection and performance of operational audit is very often done by Faulu Kenya in Nakuru County. Basing on the above outcomes, there is likelihood that operational risk affects the profitability of the institution.

Table 4.9 Frequency of Occurrence of Operational Risk by Managers

Practices	Never Freq (%)	Rarely Freq (%)	Sometimes Freq (%)	Often Freq(%)	Very Often Freq (%)	χ^2	P-value
Performance of operational audit				2 (28.6)	5 (71.4)	1.286	0.257
Review of loan collection policy				2 (28.6)	5 (71.4)	1.286	0.257
Client probing				2 (28.6)	5 (28.6)	1.287	0.257

Source: Research data, 2015

4.3.3 Interest Rate Risk

On interest rate risk, respondents reported on whether they assess funds at risk due to inflation, perform interest rate sensitivity analysis and do gap analysis. Table 4.10 and 4.11 show the findings. Analysis of respondents on frequency on interest rate risk practice, 20 credit officers of Faulu Kenya, representing 57.1% agreed that the institution very often assess funds at risk due to inflation 25 credit officers representing 71.4% agreed that the Institution very often perform interest rate sensitivity analysis as shown in table 4.10. This is in agreement with (Wright, 2003) suggestions that Microfinance Institutions should use sensitivity analysis to determine how the institution would fare in face of unforeseen risks, given its current structure and controls, and implement additional measures to ensure its survival. Only ten credit officers representing 14.3% agreed that sometimes the institution perform gap analysis.

Table 4.10 Frequency of Occurrence of Interest Rate Risk by Credit Officers

Practices	Never Freq (%)	Rarely Freq (%)	Sometimes Freq (%)	Often Freq(%)	Very Often Freq (%)	χ^2	P-value
Assessing funds at risk due to inflation	0 (0.0)	0 (0.0)	5 (14.3)	10 (28.6)	20 (57.1)	10.00	0.007
Interest rate sensitivity analysis	0 (0.0)	0 (0.0)	0 (0.0)	10 (28.6)	25 (71.4)	6.429	0.011
Gap analysis	0 (0.0)	0 (0.0)	10 (14.3)	25 (28.6)	5 (14.3)	22.86	0.000

Source: Research data, 2015

The results in table 4.10 suggest that managers respondents agreed ($\chi^2=2.00$, $p<0.368$) that Faulu Kenya in Nakuru County often assess funds at risks due to inflation and often carryout interest rate sensitivity analysis. The responses thus concur with Chua, (2007) that Microfinance Institutions should monitor interest rate risk by assessing the amount of funds at risk for a given shift in interest rate and evaluating the timing of the cash flow changes given a particular interest rate shift. Also the table show that the respondents agreed ($\chi^2=1.571$, $p< 0.667$) that gap analysis is sometimes done in the Institution. The general implication from the findings is that, Faulu Kenya in Nakuru County sometimes performs gap analysis.

Table 4.11 Frequency of Occurrence of Interest Rate Risk by Managers

Statement	Rarely Freq(%)	Sometimes	Often Freq(%)	Very Often Freq(%)	χ^2	P-value
Assessing funds at risk due to inflation		1(14.3)	4(57.1)	2(28.6)	2.00	0.368
Interest rate sensitivity analysis		1(14.3)	4(57.1)	2(28.6)	2.00	0.368
Gap analysis	1(14.3)	2(28.6)	3 (42.9)	1 (14.3)	1.571	0.667

Source: Research data, 2015

4.3.4 Credit Risk

Credit risk is an internal risk and therefore it is in direct control of Microfinance Institutions. On credit risk, respondents were asked on how frequent do loan delinquency occur and how frequent do loan portfolio quantity change in their daily operations. The results of the findings are summarized in table 4.12 and table 4.13

The results in table 4.12 suggest that the respondents agreed ($\chi^2=26.46$, $p < 0.000$) that loan delinquency rarely occur in the Institution. Other respondents agreed ($\chi^2=19.26$, $p < 0.000$) that loan portfolio quantity rarely change in the Institution. Generally, most credit officers agreed that loan delinquency rarely occur in Faulu Kenya in Nakuru County. Only one credit officer representing 2.9% agreed that loan portfolio quantity very frequently change. The results in table 4.12 suggest that the respondents agreed ($\chi^2=26.46$, $p < 0.000$) that loan delinquency rarely occur in the Institution. Therefore the institution is likely to be operating well because according to Coster (2001) existence of high levels of loan delinquency problem in microfinance industry negatively affect the level of private investment, increase in deposit liabilities and constrain the scope of microfinance institution credit to borrowers through reduction of MFIs' capital, following falling accumulation of losses to compensate for loan delinquency losses. Other

respondents agreed ($\chi^2=19.26$, $p<0.000$) that loan portfolio quantity rarely change in the Institution. Generally, most credit officers agreed that loan delinquency rarely occur in Faulu Kenya in Nakuru County. Only one credit officer representing 2.9% agreed that loan portfolio quantity very frequently change. From the findings it is evidence that Faulu Kenya in Nakuru County is exposed to credit risk. This is in agreement with Research by Makworo (2012) on the frequent risks that affect general performance of MFIs. He found out that strategic risk credit risk, liquidity and management risk frequent risks. These are both internal and external. He recommended that MFIs can anticipate for these risks and prepare for their impact although they cannot control external risk.

Table 4.12 Frequency of Occurrence of Credit Risk by Credit Officers

Statement	Very frequent Freq (%)	Frequent Freq (%)	Rarely Freq(%)	Never Freq(%)	χ^2	p-value
Loan delinquency		5 (14.3)	26 (74.3)	4(11.4)	26.46	0.000
Change in loan portfolio quantity	1 (2.9)	9 (25.7)	23 (65.7)	2 (5.7)	19.26	0.000

Source: Research data, 2015

On the frequency of occurrence of loan delinquency, three managers of Faulu Kenya in Nakuru County representing 42.9% agreed that loan delinquency rarely occur in the Institution. 28.6% agreed that it occur very frequently, 14.3% agreed that it occur frequently and 14.3% agreed that it never occur. As established by Nelson (2004) the success of individual Microfinance Institutions in credit risk management is largely reflected in the proportion of delinquencies loans to gross lending. Four managers representing 57.1% agreed that change in loan portfolio rarely occur in the Institution. 14.3% of them agreed that change in loan portfolio never occur in the Institution. In

consideration of the above outcome, there is likelihood that credit risk management affect profitability of Faulu Kenya in Nakuru County.

Table 4.13 Frequency of Occurrence of Credit Risk by Managers

Statement	Most frequent Freq (%)	Very frequent Freq (%)	Frequent Freq (%)	Rarely Freq(%)	Never Freq(%)	χ^2	p-value
Loan delinquency		2(28.6)	1 (14.3)	3(42.9)	1(14.3)	1.571	0.667
Change in loan portfolio quantity		1 (14.3)	1(14.3)	4 (57.1)	1(14.3)	3.857	0.277

Source: Research data, 2015

4.4.0 Inferential Statistics

Correlation and Linear regression analysis results are presented in this section to evaluate the relationship between the dependent variable and independent variable. ANOVA test was done to establish if there was significance in its means.

4.4.1 Correlation

Correlation and Linear regression analysis results are presented in this section to evaluate the relationship between the dependent variable and independent variable. ANOVA test was done to establish if there was significance in its means. Pearson’s correlation coefficient was used to determine the significance and the degree of relationship of the variables. The main result of a correlation is called the correlation coefficient. It ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related. If r is positive, it means that as one variable gets larger, the other gets larger. If r is negative, it means that as one gets larger, the other gets smaller (often called “an inverse” correlations).

Table 4.14 Summary of Correlation

		Regulatory	Operations	Interest	Credit	Profit
Regulatory	Pearson Correlation	1				
	P-value	.000				
Operations	Pearson Correlation	.678**	1			
	P-value	.000				
Interest	Pearson Correlation	.662**	.694**	1		
	P-value	.000	.000			
Credit	Pearson Correlation	.580**	.488**	.455**	1	
	P-value	.000	.001	.002		
Profit	Pearson Correlation	.566**	.774**	.587**	.435**	1
	P-value	.000	.000	.000	.004	

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research data, 2015

The correlation summary above in table 4.14 indicates a significant positive association between regulatory risks (0.566), operational risk (0.774), interest rate risk (0.587), and credit risk (0.435) and profitability. The correlation summary also shows a strong positive relationship between operational risk and regulatory risk (0.678), operational risk and interest rate risk (0.694), operational risk and credit risk (0.488), Credit risk and interest rate risk (0.455) and finally credit risk and regulatory risk (0.580). This strong positive relationship between the independent variables implies that the variables are inter-dependent and their efficient management has a significant effect on the general performance of Microfinance Institutions in Nakuru County. It also implies that the four independent variables depend on each other in the operation of Microfinance Institutions. The general implication is that each of the risk management strategies has a significant

effect on the other; hence, the need to incorporate the four risk management strategies in all the Microfinance Institutions in Kenya. From the correlation results it was found out that Operational risk exhibited the strongest association with profitability followed by interest rate risk then regulatory risk and finally credit risk.

4.4.3 Anova and Regression

Multiple regression analysis was used to determine how the independent variables affect the dependent variable. The degrees to which the independent variables affect the dependent variable and which of those factors more significant were determined. The results obtained are shown in Table 4.15

Table 4.15 Multiple linear Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error Estim
1	.779 ^a	.607	.564	

a. Predictors: (Constant), Credit, Interest, Operations, Regulatory

Source: Research data,2015

Result in table 4.15 shows that the value of adjusted $R^2=0.564$ indicates that when all variables are combined, the multiple linear regression model could explain for approximately 56.4% of the variation in profitability of MFIs in Nakuru County and that 43.6% of the profitability could be due to other factors not mentioned in this research. Comparing the value of R^2 and adjusted R^2 gives a difference of 0.043, which is too small. This show that the validity of the model is very good since its shrinkage is less than the 0.5 threshold as suggested by (Field, 2011).

Results of the Anova performed on the independent variables are summarized in table 4.16 while the regression analysis results are presented on table 4.17.

Table 4.16 Anova Model

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	12.378	4	3.095	14.266	.000 ^b
Within Groups	8.026	37	.217		
Total	20.405	41			

Source: Research data ,2015

The Anova results shown in table 4.16 indicated an overall significance of 0.000. The overall relationships between the dependent and independent variables will be of the most importance in a linear regression model. A negative value means that the expected value on the dependent variable will be less than 0 when all independent variables are set to 0. Multiple linear regression analysis was used to deduce a model that could be used to test the effect of risk management strategies on profitability of Microfinance Institutions.

Table 4.17: Multiple linear Regression Results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.775	.715		5.277	.000		
Regulatory	.007	.045	.023	2.146	.011	.412	2.426
Operations	.228	.053	.678	4.299	.000	.427	2.340
Interest	.031	.064	.075	2.288	.009	.449	2.225
Credit	.048	.109	.057	2.435	.001	.646	1.549

Source: Research data,2015

Table 4.16, the regression model show the contribution of four variables in explaining the profitability of Microfinance Institutions in Nakuru County as shown by unstandardized coefficients values, which assess the contribution of each variable towards the prediction of the dependent variable. Operational risk had the greatest effect on profitability of Microfinance Institutions followed by credit risk, interest rate risk and regulatory risk in that order. A unit change in managing operational risk holding regulatory risk management, interest rate risk management and credit risk management constant, result to a 0.228 increase in profit. A unit change in credit risk management holding regulatory risk management, interest rate risk management and operational risk management constant, result to a 0.048 increase in profit. A change in one unit in managing interest rate risk holding management of regulatory risk, credit risk and operational risk constant result to 0.031 increase in profit. Finally, a unit change in managing regulatory risk holding operational risk management, interest rate risk management, and credit risk management constant result to 0.007 increase in profit. The overall equation as suggested in the methodology can be represented by use of unstandardized coefficients as follows:

$$Y_{it} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

$$Y_{it} = 0.775 + 0.007x_1 + 0.228x_2 + 0.031x_3 + 0.048x_4 + 0.715$$

Where: $\beta_0 = 0.775$ are autonomous profits, which means these are profits which are constant not determined by any other independent variable. This show that even without the four variables under study, profit of Faulu Kenya could be 0.775.

$e = 0.715$ is the standard error of the coefficients.

4.5 Hypotheses Testing

In this section, the specific objective to the research is highlighted, hypotheses are tested and implications discussed.

4.5.1 Specific Objectives

H₀₁: There is no significant effect of regulatory risk management on profitability of Microfinance Institutions in Nakuru County.

Regression results on table 4.12 showed that regulatory risk management significantly

influence profitability of Microfinance Institutions ($\beta_1 = 0.007$, p-value= 0.011 and t value=2.146) and thus the null hypothesis was rejected and conclude that regulatory risk management has significant effect on profitability of Microfinance institutions.

H₀₂: There is no significant effect of operational risk management on profitability of Microfinance Institutions in Nakuru County.

Regression results showed that operational risk has a significant influenced on profitability of Microfinance institution at ($\beta_2 = 0.228$, p-value = 0.000 and t-value = 4.299) and thus the null hypothesis was rejected. Conclusion is that there is a significant effect of operational risk on profitability of Microfinance Institutions.

H₀₃: Interest rate risk management has no significant effect on profitability of Microfinance Institutions in Nakuru County.

Regression results showed that interest rate risk has no significant influenced on profitability of Microfinance Institution at ($\beta_3 = 0.031$, p-value = 0.009 and t= 2.288) thus the null hypothesis was not accepted. This implies that interest rate risk management has statistically significant effect on profitability of Microfinance Institutions in Nakuru County.

H₀₄: There is no significant effect of Credit risk management on profitability of Microfinance Institutions in Nakuru County.

Regression results showed that credit risk did not significantly influenced profitability of Microfinance Institution at ($\beta_4 = 0.048$, p value=0.001 and t = 2.435) thus the null hypothesis was accepted. The implication of this is that credit risk management statistically has significant effect on profitability of Faulu Kenya in Nakuru County.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to assess the effect of risk management strategies on profitability of Microfinance Institutions in Kenya. A case study of Faulu Kenya in Nakuru County. The chapter presents the summary of the study, conclusions drawn from the findings of the study and recommendations to improve management of various risk in Microfinance Institutions. The chapter also contains suggestions for further research.

5.2 Summary of Findings

On the regression model, adjusted $r^2 = 0.564$ shows that all the variables combined can explain approximately 56.4% of the variations in profitability of Faulu Kenya in Nakuru County while 43.6% may be attributed to other factors not explained by the variables.

The first objective of the study was to determine how regulatory risk affects profitability of Microfinance institutions in Nakuru County. Data analysis and interpretation of the questionnaires revealed that majority of the respondents agreed that the institution very often review laws and regulations. The findings also revealed that majority of managers and credit officers agreed that the Institutions often educate its members on laws and regulations. This means that members of the institution are well informed hence the rare occurrence of misinterpretation of laws and regulation as shown by the result of the research. From the correlation results, it was found that regulatory risk has a significant positive effect on profitability of microfinance Institution. Regression results show that regulatory risk has a significant effect on profitability of Microfinance Institutions in Nakuru County.

The second objective of the study was to examine the effects of operational risk on profitability of Microfinance Institutions in Nakuru County. Data analysis and interpretation of the questionnaires revealed that majority of the respondents agreed that the institution very often review loan collection policy and perform operational audit. However some respondents agreed that the institution rarely carryout client probing. From the correlation results, it was found that operational risk has a significant positive effect on profitability of Microfinance Institution in Nakuru County. Regression results

showed that it had a linear relationship with profitability and that it was the most important factor in the multiple linear regression model with standardized beta of 0.678 at p-value of 0.000.

The third objective of the study was to determine the effect of interest rate risk on profitability of MFIs in Nakuru County. Data analysis and interpretation of the questionnaires revealed that majority of the credit officers respondents agreed that the institution very often assess funds at risk due to inflation while 28.1% of the managers respondents agree on the same. 57.1% of the managers respondents agreed that the Institution often assess funds at risk due to inflation while 28.1% agree on the same. Generally, the Institution often assess funds at risk due to inflation. In addition most respondents agree that the institution often carry out interest rate sensitivity analysis. Also majority of the respondents agree that Microfinance Institutions in Nakuru County often perform gap analysis. From the correlation results, it was found out that interest rate risk has a significant positive effect on profitability of Microfinance Institution in Nakuru County. Regression results showed that it had a linear relationship and that it was the second most important factor in the regression model, hence needed to be taken into account in order to increase profitability of Microfinance institutions in Nakuru County. The study in conjunction with (Juan and Martinez, 2002) suggestion conclude that, MFIs to have an effective risk management process that maintains interest rate risk within prudent levels based on proper identification of the sources and effects of interest risk has the ultimate responsibility for understanding the nature and the level of interest rate risk taken by the microfinance institution. At minimum the board should approve broad business objectives, strategies and policies that govern or influence the management interest.

Finally the study sought to assess the effects of credit risk on profitability of microfinance Institutions in Nakuru County. This is the degree to which the Institution can manage its loan delinquency and manage loan portfolio among other factors. The findings revealed that majority of the credit officers and managers of Faulu Kenya agreed that the Institution rarely incur loan delinquency. They also agree that the Institution rarely change its loan portfolio quantity. Correlation results indicated a positive significant

relationship. Regression results also showed a positive relationship and that it was the third most important factor of the regression model.

Profitability of Microfinance Institutions is influenced by various aspects. The study findings have revealed that operational risk was the most important factor in boosting profitability while compared to other three variables; (regulatory risk, interest rate risk and credit risk) of Microfinance Institutions in Nakuru County. In particular performance of operational audit and review of loan collection policy had a strong influence on profitability of Microfinance Institutions in Nakuru County. Therefore better credit risk management results in better Microfinance Institutions performance. Thus, it is of crucial importance that Microfinance Institutions prudent credit risk management and safeguarding the assets of the Institution and protect the investors' interests. Microfinance Institutions are some of the predominant financial institutions whose changes in performance and structure have far reaching implications on the whole economy.

These findings concur with Wesonga, 2010 findings in that he found out that risk affects daily operation of commercial banks and therefore affect the return on assets. Wesonga recommended that commercial banks should manage risk efficiently and effectively so that they can increase return on assets. Commercial banks and MFIs are both financial Institutions. Many factors affect profitability of Microfinance Institution therefore managers or supervisors need to be aware of and work to improve at all times. Also the existence of a risk management policy and the integration of risk management in setting of organizational objectives were considered to be the key risk management practices that had a direct effect on financial performance. The outcome of this study was expected to guide MFIs on efficiently and effectively management of various risks so as to maximize profit. Based on these findings, the study concludes that all of them were important variables in the study beginning with the most crucial which in this case was operational risk.

5.3 Recommendation

As a result of the findings from the research, it is recommended that attention be given to the strong influences on profitability of Microfinance Institutions. These consisted of: performance of operational audit, review of loan collection policy and client probing.

Educating members on laws and regulation of Microfinance Institutions could boost profitability of the Institution. The management should evaluate results through internal audit, monitoring and analyzing trends and ratios to check the key indicators in the results. They also should institute good reporting on whether the risk management strategies are yielding the intended results such as monthly loan assets quality reports and fund management reports.

The first step in risk assessment is to identify risks. To identify risks, the MFI reviews its activities, function by function, and asks several questions. For example, the MFI examines the credit and lending operations, and reviews funding sources, loan transactions and portfolio management processes. Design policies and procedures to mitigate risks, implement and assign responsibility, test effectiveness, evaluate revise policies and results procedures, develop strategies to measure risk. Identify, assess and prioritize risks and identify risk exposures. It should also highlight the major risks that are most significant to the MFI and require management's close attention. For certain risks, MFIs should assign specific managers to oversee them. Risk management should be an explicit part of their line functions (for example program, financial, legal, among others). For example, branch managers are often responsible for managing the credit, operational and fraud risks associated with the branch's loan portfolio. Regulated MFIs often hire treasury managers to oversee the institution's investment portfolio and to manage the institution's overall investment funds risk. The MFI should be clear in assigning responsibilities to risk managers. The MFI should not assume that managers understand their role in managing risks simply because they fall under their areas of supervision, but should clearly state the expectations and limitations of their risk management responsibilities. In most cases, risk managers report to both the senior operating manager and to the risk management officer. This reinforces that risk management is part of operations and gives authority to the risk management officer. One of the most effective ways to integrate risk management at the operational level is to create employee and management incentive systems that tie effective risk management into job performance and employee compensation. In addition, management can solicit information from employees and clients about the effectiveness of current risk

management strategies and ideas for additional controls and strategies to monitor and mitigate risk.

There should be a continual risk management feedback loop which should give an interactive and dynamic flow of information in the institution. This will enable the management to take necessary actions to reduce the effects of the risks as and when they arise. Specifically this institution should adopt the following risk management guidelines; Lead risk management process from the top, incorporate risk management into process and system designs, involve all level of staff, align risk management goals with the goals of individuals and address the most important risk first. They should also design informative risk management reporting to the board, develop effective mechanisms to evaluate internal controls and manage risk continuously using a risk management loop. Regulatory risk is considered external risks because Microfinance Institutions particularly small to moderately size ones, tend to have little influence over the regulatory environment. Despite the above fact, Microfinance Institutions should educate their clients of their rights and responsibility in the loan process. This is because most of the Microfinance clients tend to be illiterate and under-educated.

The importance of risk management is gaining recognition in the microfinance arena. Donors, regulators, technical assistance providers and practitioner networks can all promote the concepts of risk management, but it is up to board of directors and managers of microfinance institutions to take the necessary steps to implement effective risk management strategies. Managers cannot monitor or manage risk without timely and relevant information. For example, MFIs that operate through a decentralized branch or unit office network should encourage branch-level cash reconciliation and management reporting to detect problems early and act quickly, reducing the risk that small problems grow into larger ones. Branch managers can review delinquent borrowers and reconciliation of cash and program numbers on a daily or weekly basis, allowing Prompt corrective action. Many MFIs hold branches accountable for being a profit center, giving branch managers responsibility for cash and program reconciliation, choosing whether to fund loans with savings or borrow from head office, and tracking expenses relative to interest and fee income. Since effective risk management begins at the top of

the organizational chart, the board must play an active role in communicating the importance of risk management to the rest of the institution. Therefore, the real starting point for effective risk management is for the MFI to have an active and clear communication channel.

Finally, the management and board of Microfinance Institutions should consider each of the risks identified as vulnerable points. It is their responsibility to assess the institution level of exposure, prioritize areas of greatest vulnerability, and to ensure that proper controls are in place to minimize Microfinance Institution exposure.

5.4 Recommendation for Further Studies

The research recommends further research should be attempted to collect data from other Microfinance Institutions such as Kenya Women Finance Trust. Also similar research can be conducted in the remaining forty six Counties. In addition research can be conducted to determine whether other risks apart from the one researched affect profitability of Microfinance Institutions. Also factors influencing use of the various sources of funding for Microfinance Institutions, challenges faced by Microfinance Institutions in use of various sources of funding and other factors that contributes to profitability of Microfinance Institutions can be researched on.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER

Kabarak University
School of Business
Private Bag
Nakuru.

Dear sir/Madam,

RE: MBA Research Project

This letter is to introduce you to Margaret Chepchirchir an MBA student who is carrying out a study on the effects of risk management strategies on profitability of microfinance institutions. This study is expected to be of importance to microfinance institutions, borrowers and government in its effort to alleviate poverty and achieve the 2030 vision.

I kindly request your cooperation and adequate information that will assist me, the researcher in attaining my objective. Please also provide further comments or suggestions that you consider necessary on risk management strategies adopted by microfinance institutions to increase their profitability.

Yours Faithfully,

Margaret Chepchirchir
Researcher

APPENDIX II: QUESTIONNAIRE

AN ASSESSMENT OF EFFECT OF RISK MANAGEMENT STRATEGIES ON PROFITABILITY OF MICROFINANCE INSTITUTIONS: A CASE OF FAULU KENYA.

Instructions

The information given on this questionnaire will be held with strict confidence and will be used only for the purpose of the study. Please answer all questions in the relevant sections honestly and exhaustively. Please tick where applicable.

SECTION A: GENERAL INFORMATION

1. Designation of the officer..... (Credit officer/branch manager)

Age bracket of the manager or credit officer	20-30 years	
	31-40 years	
	41 and above years	
Gender	Male	
	Female	
Highest level of education attained	College certificate	
	University Degree	
	Any other(please specify)	
Number of years' experience in Faulu Kenya	Less than one year	
	1-5 years	
	Above 5 years	

SECTION B: REGULATORY RISK.

2. How often do the following regulatory practices take place? Please indicate by putting a tick in the appropriate box.

	Likert scale	1.never	2. Rarely	3.sometimes	4.often	5.very often
A	Formulation of laws and regulations					
B	Educating members on laws and regulations					
C	Review of laws and regulations					
D	Occurrence of misinterpretation of laws and regulations					

SECTION C: OPERATIONAL RISK.

3. In a scale of 1-5 how often does the institution perform the following practices? Please indicate by putting a tick in the appropriate box.

	Practices	1.never	2.rarely	3.sometimes	4.often	5.very often
A	Performance of operational audit					
B	Review of loan collection policy					
C	Client probing					

SECTION D: INTEREST RATE RISK.

4. How often does the institution carry out the following practices? Please indicate by putting a tick in only one box in each practice.

		1.Never	2.Rarely	3.Sometimes	4.Often	5.Very often
A	Assessing funds at risk due to inflation					
B	Interest rate sensitivity analysis					
C	Gap analysis					

SECTION E: CREDIT RISK

5. In your opinion how frequent do the following occur in daily operations? Please indicate by ticking only one box in each row.

		1. Most frequent	2. very frequent	3. frequently	4. rarely	5. never
A	Loan delinquency					
B	Change in loan portfolio quantity					

SECTION F: PROFITABILITY.

6. I could wish to request for the annual growth in profit in your branch in percentage in the last three years. Please tick the appropriate box.

Percentage growth in profit	10-20	30-40	50-60	70-80	90-100
Year 1					
Year 2					
Year 3					

THANK YOU. GOD BLESS YOU ALL.