CREDIT RISK MANAGEMENT STRATEGIES, ORGANIZATIONAL FACTORS AND PERFORMANCE OF MICRO FINANCE INSTITUTIONS IN KENYA

PRESENTED BY

GOKO TABBY W.

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SUPERVISOR

MR. LUTHER OTIENO

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DECLARATION

This research project is my original work and has not been submitted for the award of any academic qualifications in any institution of higher learning.

Signature.. Date... 10|11|12 .

Goko Tabby Wanjiru (D61/63478/2010

CERTIFICATION.

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

Signature.......................................Date.... 10.11.2012

Mr. Luther Otieno

Department of Accounting and Finance, UoN.

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ABSTRACT

The study was on the credit risk management strategies, organizational factors and performance of micro finance institutions in Kenya. The study was anchored on the asymmetric information theory which brings about problems of moral hazard and adverse selection. As a result, risk management is increasingly becoming an important indicator of success of financial institutions. The study had two objectives; first, the effect of credit risk management strategies on performance of MFIs and secondly, to determine the effect of organizational factors on the relationship between credit risk management strategies and MFI performance. Credit risk management strategies were operationalized as borrower screening and monitoring, long-term customer relationship, credit rationing and loan product diversification. Performance was measured in terms of volume of loans, number of loanees, volume of delinquent loans and ratio of non-performing loans to performing loans. Organizational factors were age, size and management structure of MFIs. The study adopted a descriptive cross-sectional correlation survey design. The target population of the study was all the 33 MFIs registered with Association of micro finance institutions in Kenya (AMFI) with the target respondents being the credit /loan officers. The study analysed data through descriptively as well as through zero order correlation, first order partial correlation and multiple regression. Factor analysis was employed to determine underlying factors for credit risk management strategies, management structure and performance. The study found out that there is a significant negative correlation between borrower screening and monitoring and volume of delinquent loans (P-value=0.001). The portion of performance that does not depend on the credit risk management strategies was also significant (P-value=0.03). In addition, the organizational factors significantly moderate the relationship. However, the direction and magnitude of moderation varies. The study recommends that MFIs keen on improving performance should aim at enhancing borrower screening and monitoring and size as well as adopt inflexible structure. The policy implication of the study is that policies to enhance borrower screening and monitoring should be incorporated into the processes and system design of MFIs. Suggestions for further research are also given.

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ABBREVIATIONS AND ACRONYMS

AIBUMA   African International Business Management

AIDS   Acquired Immunodeficiency Syndrome

AIRMIC   Association of Insurance and Risk Managers

AMFI   Association of Micro Finance Institutions in Kenya

CGAP   Consultative Group for Assisting the Poor

CBK   Central Bank of Kenya

EADN   East Asian Development Network

GDP   Gross Domestic product

GTZ   Deutsche Gesellschaft fur Technische Zusemmenarbeit

HIV   Human Immunodeficiency Virus

IADB   Inter-American Development Bank

IBRD   International Bank for Reconstruction and Development

IRIS   Institutional Reform and Informal sector

IRM   Institute of Risk Management

MBA   Masters of Business Administration

MFI   Micro Finance Institution

MSE   Micro and Small enterprise

NGO   Non-Governmental organization

PAR   Portfolio at Risk

SACCO   Savings and Credit Cooperative Society

SPSS   Statistical package for Social sciences

UoN   University of Nairobi

USAID   United States Agency for International Development

MSE   Micro and Small enterprise

NGO   Non-Governmental organization

PAR   Portfolio at Risk

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CHAPTER ONE

INTRODUCTION

1.1 Theoretical Anchorage of the Study.

This study is an assessment of whether credit risk management strategies adopted by microfinance institutions in Kenya affect their performance and if so how. In addition the study assesses whether organizational factors have an influence on the effect of credit risk management strategies on performance.

The study is based on asymmetric information theory. One party in a financial system may not know enough about the other party to make accurate decisions. For instance, a borrower who takes a loan usually has better information about the potential risks and returns associated with the intended investment project. This inequality is known as asymmetric information and according to Mishkin and Eakins (2006) it creates problem in financial systems in two ways.

Adverse selection is a problem created by asymmetric information before the financial transaction occurs. It occurs when the potential borrowers, who are more likely to result to an undesirable outcome – credit risk- are the ones who most actively seek for a loan. Consequently, they are more likely to be selected. Because of the possibility of adverse selection, lenders may decide not to make loans even though they carry less credit risk. Moral hazard on the other hand is a problem created by asymmetric information after the loan transaction. This is the risk that borrowers may engage in activities that are undesirable, such as risky investments from the lender's point of view which reduces the possibility of the loan being repaid back. (Mishkin and Eakins, 2006).

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1.1.1 Credit Risk Management Strategies.

Risk is defined as the combination of probability of occurrence of an event and its consequences, which may have positive or negative effects (IRM, 2002). Credit risk is the risk of a borrower defaulting on loan repayment obtained from a financial institution wholly or partially on the principal, interest or both (Saunders and Cornett 2008). Coyle (2000) and Kithinji (2010) define credit risk as the likelihood of loss from refusal or inability of credit customers to pay what is owned in good time. According to Kithinji (2010), this may result from among other factors, inappropriate credit policies, poor credit assessment, low capital and liquidity. The study adopts the definition by Saunders and Cornett (2008) of credit risk as the risk of a borrower defaulting on loan obtained from a financial institution wholly or partially on the principal, interest or both.

Risk management is the process through which an organization methodically addresses risks facing its activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities (IRM, 2002). This is achieved through a number of steps which include risk identification, measurement, monitoring and risk control (Coyle, 2000). Strategy is as a plan of action or policy designed to achieve a major or overall aim. It is a method or plan chosen to achieve a given goal or solve a problem. Credit risk management strategies are the plans of action and policies adopted by a financial institution in order to actively manage credit risks facing it. The study operationalizes credit risk management strategies as; borrower screening and monitoring, long-term customer relationship, credit rationing and loan product diversification.

1.1.2 Organizational Factors

These are factors that are unique to an organization, that affect its performance. They are factors characteristic to a particular organization that have an influence on the level of performance. These factors range from size of the organization, age, infrastructure, employee motivation and management structure. This study adopts organizational size, age and management structure as the organizational factors. Size is operationalized in terms of the number of MFI clients. Age is operationalized in terms of the number of years the MFI has been in operation while management structure is the extent of centralization or decentralization and management flexibility in adopting credit risk management policies.

1.1.3 Performance of Micro Finance Institutions

Micro finance institution (MFI) is an organization that offers financial services to the low income earners as well as Micro and Small Enterprises (MSEs) that are not able to access formal financing. They vary in their legal structure and regulatory authority (CGAP, 2008). In this study, MFIs comprise of both the formally constituted deposit taking MFIs regulated by micro finance Act and formally constituted credit only MFIs that accept cash as collateral tied to loan contracts regulated by the Companies' act and NGO act.

Performance is the ability of an organization to use resources in an efficient and effective manner. It is the ability of an organization to achieve its goals and objectives. There are no universally accepted measures of MFI performance. They vary from outreach, quality of portfolio, profitability, and efficiency measures (Stauffernberg, 2002; CGAP, 2008). This study adopts client outreach and portfolio

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quality as measures of performance. Specifically, volume of loans advanced, number of loanees, volume of delinquent loans and ratio of non-performing loans to total loans advanced.

1.1.4 Micro Finance Institutions in Kenya.

The Kenyan MFI industry comprises well over thirty three MFIs). According to a survey by FinAccess (2007), only 55% of the Kenyan population has access to formal financial services. MFI's by their very nature exist to bridge this gap and provide capital access to the poor who have no access to formal financial services, particularly in the agricultural sector and the MSE's. This target group had been considered uncreditworthy by the commercial banks (Kombo *et al.*, 2011). The MFI industry has continued to expand geographically by opening branches in various parts of Kenya and also in terms of outreach. The MFIs in Kenya vary in their legal structure and regulatory authority. They comprise of the formally constituted deposit taking MFIs regulated by micro finance Act, formally constituted credit only MFIs that accept cash as collateral tied to loan contracts regulated by the Companies' act and NGO act. There are also the informally constituted MFIs like the rotating savings and credit associations (ROSCAs), pool clubs and Financial services associations (FSA) that are not regulated by any government agency (Micro finance Act 2008 ; Omino, 2005).

The MFI industry has shown resilience despite drought and inflation in the year 2010 and 2011.It is also strengthened by progressive policies and innovative approaches to delivering financial services such as the Microfinance Act, M-Pesa and credit referencing bureaus. The industry is thus one of the most developed in sub-Saharan Africa. However, high portfolio at risk ratios continues to raise concerns on riskiness of overall loan portfolio (Market mix, 2012).

1.2 Statement of Research Problem

Credit risk is an integral part of a financial institution. As they advance credit, there is the likelihood of default on the part of the clients. The micro finance institutions, whose main focus group is the Micro and small enterprises, are no exception. A slight deterioration of the cashflows will affect this groups' ability to repay loan advanced by MFIs. Loan portfolio constitutes a large portion of the overall assets of a MFI. A slight deterioration in repayment may have a substantial effect on the performance of the MFI (White *et al.*, 2006). The performance of MFIs also depends on organizational factors such as size, age and its management structure. Traditionally, MFI's relied on donor funding as their major source of funds. In recent years, MFI's are increasingly relying on market driven sources of funds such as from client deposits, savings, product insurance and interest income to fuel their growth and financial performance. As a result, good financial management and avoidance of unexpected losses is essential in maintaining access to these funds (GTZ, 2000). Risk management is continuously becoming an important indicator of long-term success of financial institutions. More emphasis is being put on credit risk management strategies by investors, donors, lenders and regulators, with the focus being on the organization's ability to identify and manage credit risks effectively (GTZ, 2000). Most MFI's therefore continue to channel their resources into developing strategies to reduce credit risk.

Kenya's MFI industry continues to increasingly face challenges that affect their loan portfolio as evidenced by the increased Portfolio at risk (PAR) ratio of MFIs loans, limited outreach and lack of performance standards (Fernando, 2008; Omino, 2005). This can be explained partly by the changing dynamics of the business environment.

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With the recent global financial crisis, growth rate in Sub Saharan Africa declined to 1.7 per cent from 5.5 per cent in 2008, with foreign investment to MFI's dropping by almost half in 2009 compared to US$ 15 billion in 2007 (Dokulilova et al., 2009). Coupled with inflation, which according to Business Daily (October, 2011) rose from 12.95% in May to 17% in September 2011, the share of income spent on food by MFI's clients have continued to rise. These changes increase the risk of loan default by MFI clients. This has necessitated focus on credit risk management strategies by MFIs. In addition, the MFI industry has continued to diversity their sources of funds from the traditional donor funding to client saving, deposits, and interest income. Effective credit risk management is therefore paramount if MFIs are to maintain access to the diversified sources of funding. Whether the increased emphasis on credit risk management strategies in MFI's by investors, donors and regulators have an effect on performance of MFI's continue to be issue of concern.

Risk management has been found by various researchers to affect the performance of financial institutions as well as non-financial institutions. In their study on the relationship between corporate governance, risk management and bank's performance in Indonesia, Tandelin et al., (2007) found that there is a significant relationship between risk management and bank performance. In a study on how various risk management strategies affect the performance of agricultural co-operatives in Canada, Manfredo (2003) found that the use of risk management strategies specifically options, futures and product insurance has a positive effect on performance of which was operationalized as expected return and return on assets. In their study on relationship between effective risk management and company performance, Jafari (2011) report a positive and significant relationship between total risk management

and company performance. The study focused on companies that invest in research and development, innovation and intellectual capacity. Relating to credit risk management in financial institutions, CBK (2010) in its Risk management survey indicates credit risk as a major risk facing banking institutions. Kithinji (2010) in her paper on the relationship between credit risk management strategies and profitability of commercial banks in Kenya reported that for the period between 2004 and 2008, a large portion of bank's profits are not influenced by credit risk management in terms of amount of credit and non-performing loans. Thus, there is no relationship between credit risk and profitability of banks. In their study on the effect of risk management strategies on financial sustainability of selected MFI's in Kisii municipality, Kombo et al., (2011) reported that risk management, in particular risk transfer, avoidance and mitigation greatly contribute to MFI's financial sustainability. The study operationalized risk management strategies as reconciliation of loan accounts, large repeat loans and payment incentives. In assessing credit risk of MFI's Arvelo et al (2008) states that among the most important factors to consider are the loan portfolio, profitability, sustainability and growth potential.

Resulting from the above discussion, there is no certainty as to how credit risk management strategies affect the performance of MFI's and also how organizational factors specifically, age, size and management structure influence the relationship between credit risk management strategies and performance of MFIs. In particular, it is not clear how borrower screening and monitoring, long-term customer relationship, credit rationing and loan product diversification as credit risk management strategies impacts on the performance of MFI's. It not certain if MFI's that have comprehensive credit risk management strategies perform better that those MFI's

whose credit risk management strategies lag behind the scale and scope of their operations.

This study therefore attempted to fill this knowledge gap by conducting a study on credit risk management strategies, organizational factors and performance of MFI's in Kenya by answering the following question; what is the effect of credit risk management strategies on performance of MFIs in Kenya?

1.3 Research Objectives

The research objectives were;

i. To determine the effect of credit risk management strategy on performance of MFIs in Kenya

ii. To determine the influence of organization factors on the effect of credit risk management strategies on performance of MFIs in Kenya.

1.4 Value of the Study

This study will give a useful insight to MFI's on the effect of various credit risk management strategies on their performance. Loan portfolio is the largest asset of a MFI. Non-payment of loans can deteriorate the portfolio quality and consequently the performance of the MFI

The study is also significant to the regulators of the Micro finance industry such as the Central bank and the government, as it will give insight on formulation of policies governing management of credit risk in MFI's and how they impact their performance.

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In addition, the researcher hopes that the study will form a basis of further study in the area of effect of various credit risk management strategies adopted by MFI's and also on performance indicators of the microfinance industry, as there are no universally accepted performance indicators of MFI's. The findings of this research will be useful to the academicians in filling the knowledge gap on credit risk management strategies and their effect on performance of MFI's in Kenya.

To the SME's clients the study will give insights as to the credit risk management strategies that the MFI's adopt in advancing loans to them.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter reviews the theoretical as well as empirical literature on credit risk management strategies and performance of microfinance institutions.

2.2 Credit Risk in Financial Institutions.

Risk is an inherent part of financial mediation. In a lending transaction, the financial institution is faced with the risk that the borrower may default in repayment of the loan principal amount, interest or both, either wholly or partially. This is known as credit risk. According to Saunders and Cornett (2008), credit risk arises due to the possibility of the promised cashflows on financial claims (loans) held by Financial institutions not being paid in full. Financial institutions making long term loans, such as commercial banks and thrifts are more exposed than money market mutual funds. Financial institutions advance several types of loans; commercial and industrial, real estate, consumer loans as well as other loans such as farming and micro loans advanced to MSE's.

To be profitable, financial institutions must overcome the adverse selection and moral hazard problems that make loans defaults more likely. The Basel II committee's capital adequacy guidelines aim at encouraging financial institutions to promote sound credit risk management practices. The guidelines include; establishing appropriate credit risk environment, having a sound credit granting process, maintaining appropriate system of credit monitoring and evaluation; exercising proper

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controls over credit risks. This leads to a number of strategies that financial institutions employ to manage credit risks (Saunders and Cornett. 2008).

2.3   Credit Risk Mitigation

According to Santomero and Oldfield (1997), credit risk facing financial institutions is in two forms; individual risk, inherent in individual loans and portfolio risk on the other hand, that is inherent in a loan portfolio. Further, financial institutions are in the risk business and they face several financial risks with credit risk being a major risk. The institutions can mitigate the credit risks they face through risk avoidance, risk transfer or actively managing the risks within the institution.

Risk avoidance involves actions meant to reduce the chance of loss from financial institution's activities through eliminating risks that are not essential to the firm's basic purpose. This is achieved through a well-diversified portfolio across products and sectors. In addition, an employee incentive system that encourages them to actively seek to avoid unnecessary loss through borrower default is appropriate Santomero and Oldfield 1997).

Financial institution can opt to transfer part of its risks to third parties through instruments such as swaps, derivatives, netting off and collateralized securities. This strategy is appropriate for mitigating interest rate risk inherent in loan products originated by financial institutions. Netting off involves matching the duration of accounts receivables with accounts payable such that they set each other off at the due dates (Dun and Bradstreet, 2009). Risk mitigation can also be through active risk management within the firm. Financial Institution uses its financial resources to

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manage the risks. The institution absorbs those risks that are inherent to its core business or activity (Santomero and Oldfield 1997).

2.4   Credit Risk Management Strategies

According to Saunders and Cornett (2008), Mishkin et al., (2006) Financial Institutions manage credit risk both at the individual loan level as well as at the loan portfolio level using diverse strategies.

2.4.1   Borrower Screening and Monitoring

Effective screening and information collection form an important principle of credit risk management, to ensure that financial institutions fund the most credit worthy loans (Dun et al., 2009, Mishkin et al., 2006; Saunders et al., 2008). According to Saunders et al., (2008), credit risk inherent in consumer loans and real estate loans is managed through credit rationing and client monitoring.

Borrower screening involves collecting information about the borrower which then assist the financial institution decide on whether to make the loan or not. According to Dun et al., (2009), two important aspects considered in borrower screening are repayment capacity and cashflows. In assessing repayment capacity, the industry's risk is analysed, followed by an analysis of financial statement and cashflows projections. Client screening has been suggested by several studies as a major credit risk management strategy employed by MFI's (GTZ, 2000; Wenner et al., 2007;; Fernando, 2008). In their study on managing credit risk in rural financial institutions in Latin America", Wenner *et al.* (2007) identifies two broad methods of screening clients and determining their credit worthiness. Asset backed lending which focuses on quality and quantity of assets pledged as collateral and appraisal of repayment

ability on the other hand, which focuses on integrity, character, repayment capacity and management ability.

After making a loan, the Financial Institution must monitor the borrower to ensure they do not engage in risky activities. This is achieved through provisioning or restrictive covenants that prevent borrowers from engaging in overly risky activities. Through monitoring whether a borrower is adhering to the restrictive covenant, financial institutions are able to reduce the risk of default which may consequently lead to credit risk. (Mishkin *et al.*, 2006).

2.4.2 Long-Term Customer Relationship

Enhancing long term customer relationship enables lenders obtain information about borrowers. In a case where a borrower has a previous loan, checking or savings account with the financial institution, it is easier to evaluate the liquidity position as well as his/her cash requirements. In addition where the borrower has a previous loan with the financial institution, record of loan payment and monitoring procedure for the loan is available to the lender. This reduces the cost of loan collection as well as makes it easy to screen out bad credit risk. Long term customer relationship enables lenders deal with even unanticipated moral hazard contingencies. The borrower, in an attempt to enhance the long-term relationship, has the incentive to avoid risky activities that would impact negatively on this relationship (Mishkin *et al.*, 2006; Kombo et al., 2011).

2.4.3 Credit Rationing

Credit rationing limits the amount of loan advanced to individual borrowers or a given sector. The authority of an officer to execute or approve a loan transaction is one form

of limit. The lender must also reduce the exposure from a given borrower, industry or loan product. Limit setting should take in consideration the organizational structure of the lender. A proper limit monitoring mechanism must also be in place (Dun *et al.*, 2009; Mishkin *et al.*, 2006). According to Saunders *et al.*, (2008), financial institutions use interest rates to manage credit risk inherent in lending where high-risk borrowers are charged a rate higher than the prime rate to compensate for the additional credit risk exposure. However, at high interest rates, the borrower is more likely to default in loan repayment. Consequently, beyond a certain interest rate level, financial institutions result to credit rationing rather than using interest rates to manage credit risk (Lown, Morgan and Rohatgin, 2000).

2.4.4   Loan Product Diversification

Credit risk inherent in loan portfolio can be managed through a well-diversified loan product portfolio. Loans with high credit risk are combined with loans bearing a low credit risk. By offering a diverse loan products portfolio to its customers depending on their needs, an MFI is able to reduce its unsystematic risk associated with lending (Ho and Yossuff, 2009). In designing the loan product the MFI takes into consideration the client's changing needs and cashflow patterns are taken into consideration (USAID, 2008).

2.5   Organizational Factors

These are organization specific factors that affect organizational performance. Financial institutions may perform better than others due to their size, age or management structure. A large firm in terms of number of clients may realize higher performance, not only because of its credit risk management strategies but because of

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its large client base. Similarly, an organization that has been in existence for long may record high performance, not because of the credit risk management strategies it adopts but due to its long period of operations which give it a competitive edge. Management policies may also affect the performance of an organization. High level of centralization and inflexible of policies may affect the credit risk management strategies and hence the performance of an organization.

In their study, Hopkins and Hopkins (1997) conclude that size affects the performance of an organization through economies of scale and market power. In his study, Kosson (2008) indicate firm's size and age as the organizational factors that affect it's endeavours towards organizational change. On structure, Fazil and Alishahi (2012) in their study on relationship between organizational factors and performance through knowledge management indicate that there is no significant relationship between structure and performance. In their study Cheng and Huang (2010) on the other indicate that decentralization and flexibility lead to high organizational performance.

2.6   Performance of MFIs

By their very nature and history, MFI's exist to extend financial services to the low income earners as well as the rural and urban Small and medium enterprise who have no access to formal financial services (Soltane, 2012;CGAP,2003). The aim is to allow greatest number of people to access financial services on a sustainable basis (Soltane, 2012). MFI's have traditionally relied on donor funding, but due to increased demand, they have diversified their funding sources to savings, diverse loan products, investors funding and loan insurance. As a result they must inspire confidence and trust to the investors through sound risk management strategies. The

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target group, which is the MSEs and low income earners, have little or no assets to act as security against loans borrowed. The MFI's are necessitated to develop credit risk management strategies to minimize the risk of default. It is from this objective and nature of MFI operations that measures of performance can be developed.

Ability to offer loans or credit facilities is a measure of MFI performance. According to Stauffenberg (2002) and CGAP (2003), volume of loans disbursed by an MFI is a key measure of its performance. According to Arlvero et al., (2008) loan portfolio constitutes a large portion of MFI's total assets. Equally important is the number of active clients who access MFI loans as it is an indicator of the MFI outreach (CGAP, 2003)

Volume of delinquent loans is another important measure of MFI performance (Stauffenberg 2002; CGAP, 2008). Most MFI loans are payable on a weekly and monthly basis and thus, loans with payment arrears exceeding thirty days are considered delinquent (Micro rate, 2003).The frequency and promptness of repayment pattern is an indicator of effectiveness of credit risk management strategies. Lastly, ratio of non-performing loans to total loans is another dimension on which performance on MFI's can be evaluated. If the borrower is not in a position to repay the loan or the MFI considers a loan as non-recoverable, it becomes a non-performing loan. MFI's should strive to maintain a high loan recovery rate, with successful ones reporting over 95% recovery rate (Fernando, 2008).

2.7 Credit Risk Management Strategies, organizational factors and Performance.

Risk management has been found by various studies to affect the performance of financial institutions as well as non-financial institutions. In their study Tandelin, et al., (2007) investigated the relationship between corporate governance, risk management and bank's performance in Indonesia found that there is a significant relationship between risk management and bank performance. In their study Manfredo, et al., (2003) analysed how various risk management strategies affect the performance of agricultural co-operatives in Canada. Risk management strategies were operationalized as futures, product insurance, options and swaps. The study found out that the use of risk management strategies specifically options, futures and product insurance has a positive effect on performance while use of swaps had negative effect on performance.

Jafari et al., (2011) investigated relationship between effective risk management and company performance. The study focused on companies that invest in research and development, innovation and intellectual capacity and reported a positive and significant relationship between total risk management and company performance. Kosson (2008) in his study on factors that affect organizational innovation, indicate that size and age have impact on an organization's endeavours towards organizational change where large and old firms are more inclined to attempting change, with small firms benefiting most from such attempt. In their study on the relationship between strategic planning and financial performance of banks, Hopkins and Hopkins (1997) found a negative relationship between organizational factors, specifically bank size and structural complexity and strategic planning intensity.

Kithinji (2010) in her paper investigated the relationship between credit risk management strategies and profitability of commercial banks in Kenya for the period

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between 2004 and 2008. Credit risk management strategies were operationalized as amount of credit which was measured by total loans divided by total assets and non-performing loans measured by non-performing loans to total loans. Profitability was operationalized by return on total assets. The study found out that there is no relationship between credit risk and profitability of banks since a large portion of bank's profits are not influenced by amount of credit and non-performing loans. Kombo et al., (2011) in their study on the effect of risk management strategies on financial sustainability of selected MFI's in Kisii municipality reported that risk management, in particular risk transfer, avoidance and mitigation greatly contribute to MFI's financial sustainability. The study operationalized risk management strategies as reconciliation of loan accounts, large repeat loans and payment incentives. Risks were operationalized as credit, liquidity and operational risks.

Resulting from the above discussion on credit risk management strategies, organizational factors and performance of MFIs it is not clear how credit risk management strategies affect the performance of MFIs and also the influence that organizational factors have on the relationship between credit risk management strategies and performance of MFIs. This study will therefore attempt to fill this gap.

Fig. 2.1 <u>Conceptual Model</u>

Independent variable   Dependent variable

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┌─────────────────────────────┐          ┌─────────────────────────────┐
│ CREDIT RISK MANAGEMENT      │          │ MFI PERFORMANCE             │
│ STRATEGIES                  │          │                             │
│                             │          │   •  Volume of loans        │
│   •  Borrower screening and │          │                             │
│      monitoring             │          │   •  Number of loanees      │
│                             │          │                             │
│   •  Long term customer     │──────────│   •  Volume of delinquent   │
│      relationship           │      ┌──▶│      loans                  │
│                             │      │   │                             │
│   •  Credit rationing       │      │   │   •  Ratio of non-          │
│                             │      │   │      performing loans to    │
│   •  Loan product           │      │   │      total loans            │
│      diversification        │      │   │                             │
│                             │      │   │                             │
└─────────────────────────────┘      │   └─────────────────────────────┘
                                      │
                     ┌────────────────┴──────────────┐
                     │ ORGANIZATIONAL FACTORS        │
                     │                               │
                     │   •  Management structure of  │
                     │      MFI                      │
                     │                               │
                     │   •  Age of MFI               │
                     │                               │
                     │   •  Size of MFI              │
                     │                               │
                     └───────────────────────────────┘
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Moderating variable

Source: Self conceptualization, 2012

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This chapter discusses the research design, population of study, data collection, and data analysis techniques.

3.2   Research Design.

The study adopted a descriptive cross-sectional correlation survey design.   A descriptive study enabled the researcher ascertain and describe the credit risk management strategies employed by MFIs (Sekaran and Bougie, 2010). In particular, borrower screening and monitoring, long-term customer relationship, credit rationing and loan product diversification.

The study entailed collection of data at one point in time across the study units. Correlation design was used to explain relationships among the variables of the study. Specifically, the effect of credit risk management strategies on performance of MFIs and the influence of organizational factors on this relationship. Survey design enabled the researcher generalize the findings of the study on the MFIs registered with AMFI in Kenya.

3.3   Population of the Study

The target population of the study was all MFIs in Kenya which are registered with AMFI. There are thirty three (33) MFIs in Kenya. See appendix two (2). The study employed a key informant approach where one person, credit officers was targeted in every MFI. The key informants, credit/loan officers were suitable because they are

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deemed knowledgeable on the aspects of the study. A total of thirty three respondents were targeted by the study.

3.4 Data Collection

The study collected both primary and secondary data on the key variables. In this study the key variables were the credit risk management strategies as the independent variable, performance of MFIs as the dependent variable and organizational factors (MFI specific factors) as the moderating variable. Risk management strategies were operationalized as client screening and monitoring, long-term customer relationship, credit rationing and loan product diversification. Performance was operationalized as volume of loans, number of loanees, volume of delinquent loans and ratio of non-performing loans to total loans. Organizational factors were operationalized as the management structure, age of the MFI and size of MFI in terms of number of clients.

The researcher collected primary data from the key respondent in every MFI using questionnaires. The questionnaire had both open ended and closed ended questions. They were administered by the researcher through a 'drop and pick' technique. This gave ample time to the respondents to fill in the questions. Secondary data was be collected from publications and Journals of MFIs in Kenya.

3.5 Validity and Reliability of Data Collection Instruments

An extensive review of theoretical as well as empirical literature on credit risk management in financial institutions as well as MFI's gave an indication of the framework for measuring the credit risks management strategies. The same measures were be used to construct the questionnaire. To ensure content validity of the data collection instrument, the researcher used expert opinion. To ensure reliability, the

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Cronbach's Alpha Coefficient was calculated to determine how the items in the questionnaire correlate with each other. The measure was preferred to other measures of reliability since it gives a more conservative estimate of data reliability (Mugenda and Mugenda, 1999).

3.6   Data Analysis

The collected data was first be cleaned and edited to ensure consistency and completeness. Data was then be analysed using both descriptive and inferential statistics by use of SPSS. Frequencies and percentage tables were used to describe any patterns in the data variables. The study used simple correlation analysis (Pearson product-momentum correlation, r) and regression analysis to infer the relationship between the independent and dependent variables. Zero order correlation was used to determine the effect of credit risk management strategies on performance of MFIs. First order partial correlation was used to determine the effect of organizational factors on the relationship between credit risk management strategies performance of MFI. Multiple regression analysis will be used to predict the relationship between credit risk management strategies on performance of MFIs. The regression model is as follows;

$$P = a + b_1\text{BSM} + b_2\text{LTR} + b_3\text{CR} + b_4\text{LPD} \pm \text{E}_{of}$$

Where; P = Performance of MFI, CSM = Borrower screening and Monitoring, LTR =Long-term customer relationship, CR= Credit rationing, LPD = Loan Product diversification, E_{of} = Error term due to effect of organizational factors while a , b_1, b_2, b_3 and b_4 are constants.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1   Introduction

This chapter presents the results of the study in form of descriptive analysis which is in frequency as well as percentage tables. The results of zero order and first order correlation analysis, as well as multiple regression analysis are presented. A discussion of the results as well as the regression model is also presented.

4.2   Statistical Characteristics of the data

This section presents a discussion of the important patterns observed in the research variables.

4.2.1   Age of MFI

To determine the age of the MFI, respondents were required to state on a nominal scale the number of years the MFI has been in existence (Table 4.1).

Table 4.1: Age of MFI

Years	Frequency	Percent	Cumulative percent
1-3 years	6	20.0	20.0
4-6 years	6	20.0	40.0
7-10 years	5	16.7	56.7
Above 10 years	13	43.3	100.0
Total	30	100.0	

Source: Research data, 2012

Of all the responding MFIs' 20 percent were aged between 1 and 3 years, while a further 20 percent were aged between 4 and 6 years. 16.7percent were aged between 7 and 10 years while 43.3% have been in existence for more than 10 years. This implies that 60 percent of the MFIs have been in existence for more than 7 years.

4.2.2 MFI clients by sectors

The respondents were required to indicate the sectors of the clients that they advance loans to. From table (4.2) below, over 80 percent of the respondents advance loans to the Jua kali, retail, agricultural and wholesale sectors, with the manufacturing being the unpopular sector among the MFIs attracting only 56.7 percent of the respondents.

Table 4.2: MFI clients by sectors

Sector	No		Yes	
	Frequency	Percent	Frequency	Percent
Manufacturing	13	43.3	17	56.7
Agriculture	5	16.7	25	83.3
Service	2	6.7	28	93.3
Jua kali	1	3.3	29	96.7
Education	10	33.3	20	66.7
Retail	2	6.7	28	93.3
Wholesale	6	20.0	24	80.0

Source: Research data, 2012

4.2.3 Number of active clients

To determine the size of the MFI. respondents were required to state on a nominal scale the number of active MSE clients. (Table 4.3 below). From the total respondents, 63.3 percent have over 1500 active clients with 6.7 percent indicating

that they have less than 500 active clients. This implies that over 85 percent of the responding MFIs have potential for better performance resulting from the large active client base.

Table 4.3: MFI Active clients

	Frequency	Percent	Cumulative percent
100-500 clients	2	6.7	6.7
501-1000	2	6.7	13.3
1001-1500	7	23.3	36.7
Above 1500	19	63.3	100.0
Total	30	100.0	

Source: Research data, 2012

4.2.4 Client screening

To determine whether the MFs screen clients and if so the category of clients that are screened, respondents were required to state the category of clients that they screen. The results are shown in the table (table 4.4) below:

Table 4.4: Client screening

Screening	No		Yes	
	Frequency	Percent	Frequency	Percent
New clients only	29	96.7	1	3.3
Existing clients only	29	96.7	1	3.3
Both new and existing clients	0	0.00	30	100.0
No screening at all	30	100.0	0	0.0

Source: Research data, 2012

From the above table, all the respondents indicated that they screen both new and existing clients, while 3.3 percent of the respondents indicated that they screen only their new clients and a similar percentage indicating that they only screen their existing clients. This implies that screening of both new and existing clients is an important component of credit risk management strategies among MFIs. This resonates with argument by Mishkin et al (2007) that client screening is an essential principle of risk management to ensure that financial institutions only fund credit worthy loans.

To determine aspects that MFIs consider in screening clients, respondents were asked to state their level of agreement with aspects that they consider when screening clients on a 5 point likert scale with 5 representing strongly agree and 1 representing strongly disagree. This is summarized in the table below (Table 4.5):

Table 4.5: Aspects of borrower screening

	N	Min	Max	Mean	Std. Deviation
Borrower character	30	2	5	4.03	0.89
Borrower repayment capacity	30	4	5	4.8	0.407
Collateral	30	2	5	4.53	0.73
Credibility of business or investment	30	3	5	4.67	0.547
Borrower financial condition	30	2	5	4	0.91
Borrower capacity	30	2	5	4	0.788

Source: Research data, 2012

On average, respondents strongly agreed that they consider collateral, repayment capacity and credibility of business. Further, they agreed that they consider borrower character, financial conditions and capacity. This is in line with findings by Mwirigi

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(2006) and Wenner *et al.*, (2007) that in screening clients, MFIs largely consider Collateral, repayment capacity, character and credibility of business.

4.2.5   Borrower monitoring

To determine aspects that MFIs consider to ensure that clients do not default, respondents were asked to state their extent of agreement or disagreement with the various aspects on a five point likert scale. The results are summarized in table 4.6 below.

Table 4.6: Aspects of borrower monitoring

	N	Min	Max	Mean	Std. Deviation
Restrictive covenants adherence monitoring	30	2	5	3.93	0.98
Monitoring quality of loan portfolio	30	3	5	3.97	0.85
Frequent internal audit	30	2	5	3.73	0.907
Monitoring repayment pattern	30	3	5	4.47	0.681
Monitoring client cashflow pattern	30	2	5	3.57	1.04
Financial ratios analysis	30	1	5	3.6	1.102
Incentive to clients on prompt payment	30	2	5	2.97	0.964
Staff incentive on prompt collection of dues	30	1	5	3.07	1.112

Source: Research data, 2012

On average, Respondents agreed that they monitor clients through ascertaining whether they adhere to restrictive covenants, ascertaining quality of loan portfolio, frequent internal audit, monitoring client cashflow pattern and clients' financial ration analysis. In addition, respondents moderately agreed that they give incentive to clients on prompt loan repayment and staff on prompt collection of dues. Mishkin *et al.*,

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(2006) indicates that monitoring on whether borrowers adhere to restrictive covenants reduces the risk of default.

4.2.6 Type of loan product to MSE clients

To determine the type of loan products that MFIs offer their MSE clients, respondents were asked to indicate the type of loan products that they have on offer. Table 4.7 below summarizes the results.

Table 4.7: Loan product to MSE clients

Type of loan product	No		Yes	
	Frequency	Percent	Frequency	Percent
Individual	3	10.0	27	90.0
Long term	23	76.7	7	23.3
Group	6	20.0	24	80.0
Short-term	7	23.3	23	76.7
collateralized	9	30.0	21	70.0
Customized	25	83.3	5	16.7
uncollateralized	28	93.3	2	6.7
Start-up	21	70.0	9	30.0

Source: Research data, 2012

Over 70 percent of respondents indicated that they advance individual, group, short-term as well as collateralized loans. However, only less than 30 percent advance start-up, long-term and customized loans. This shows a diversified loan product portfolio to cater for different clients' needs. However, the MFIs avoid start-up, uncollateralized and customized loans which are considered more risky. The MFI management is thus risk averse.

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4.2.7 Average monthly loan applications

To determine the volume of loans, respondents were asked to indicate in a categorical scale the average loan applications per month. The results are summarized in table 4.8 below.

Table 4.8: Average monthly loan applications

Number of applications	Frequency	Percent	Cumulative percent
Less than 50	2	6.7	6.7
51-100	8	26.7	33.3
101-150	1	3.3	36.7
151-200	6	20.0	56.7
Over 200	13	43.3	100.0
Total	30	100.0	

Source: Research data, 2012

Of all the respondents, a cumulative of 57 percent receive an average of upto 200 monthly loan applications, with 43 percent receiving an average of over 200 loan applications per month.

4.2.8 Monthly outstanding loans

To establish the volume of outstanding loans respondents were asked to indicate in a categorical scale the number of outstanding loans on a monthly basis (Table 4.9).

Table 4.9: Monthly outstanding loans

Monthly outstanding loans	Frequency	Percent	Cumulative Percent
Less than 50	11	36.7	36.7
51-100	9	30.0	66.7
101-150	2	6.7	73.3
150-200	5	16.7	90.0
Over 200	3	10.0	100.0

Source: Research data, 2012

A cumulative of 90 percent of the respondents indicated that the monthly outstanding loans is upto 200, with a cumulative of 10 percent of the respondents indicating that the number of outstanding loans is over 200 in a month.

4.2.9: Volume of Delinquent loans

To determine the volume of delinquent loans, respondents were asked to indicate on a categorical scale the average number of loans that are behind payments on a monthly basis. The results are shown in table 4.10 below.

Table 4.10: Volume of delinquent loans

	Frequency	Percent	Cumulative Percent
Less than 20	13	43.3	43.3
20-40	14	46.7	90.0
41-60	2	6.7	96.7
Over 80	1	3.3	100.0
Total	30	100.0	

Source: Research data. 2012

From the table above, a cumulative of 90 percent of respondents indicate that they have forty or less delinquent loans monthly, with only 3 percent indicating that they have more than eighty delinquent loans monthly. Compared with the monthly outstanding loans, this represents twenty percent of the outstanding loans as being delinquent. This is a measure of portfolio at risk and it indicates that 20 percent of MFI loans are at risk of default. A portfolio at risk more than 10 percent should be a cause of alarm as most MFI loans are not backed by bankable collateral (IADB and MicroRate, 2003).

4.2.10 Ratio of non-performing loans to performing loans

Respondents were required to indicate the ratio of non-performing loans to performing loans. The mean of non-performing loans to performing loans was 0.1473 with a standard deviation of 0.13. This means that non-performing loans are 0.1473 times of the performing loans. The level of non-performing loans is lower than the delinquent loans which are twenty percent of monthly outstanding loans.

4.2.11 Long term customer relationship

To determine how MFIs enhance long-term customer relationship, respondents were asked to state their extent of agreement of disagreement with aspects of maintaining long-term customer relationship on a five point likert scale. The results are shown in the table 4.11 below;

Table 4.11: Enhancing long-term customer relationship

	N	Minimum	Maximum	Mean	Std. Deviation
Larger loans to repeat customers	30	2	5	4.20	.961
Lower interest rates to repeat customers	30	1	5	2.90	1.322
Incentive to customers for prompt payment	30	1	5	3.10	1.094
Client training and financial advice	30	2	5	4.17	.874
No screening repeat clients	30	1	4	1.93	.868

Source: Research data, 2012

On average, respondents agreed that they enhance customer relationship through giving large repeat loans to repeat clients and training and financial advice. They

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moderately agreed that they give incentives to customers for prompt payments. Further, they disagreed that they do not screen repeat clients. Mishkin et al., (2006) advances that long-term customer relationship enables MFIs deal with even unanticipated moral hazard contingencies. MFIs can easily assess the liquidity position and repayment patterns of a long-term customer.

4.2.12 Credit rationing

Respondents were asked to state their extent of agreement or disagreement with statements that sought to seek the nature of credit rationing in MFIs on a five point likert scale. The results are shown in table 4.12 below.

Table 4.12: Nature of credit rationing

	N	Minimum	Maximum	Mean	Std. Deviation
Advance entire loan applied for	30	1	5	2.63	.964
Advances dependent on funds availability	30	1	4	2.90	1.062
Advances dependent on client sector/industry	30	1	5	3.37	1.066
Advances dependent on client repayment pattern	30	3	5	4.50	.572
Advances dependent on nature of business	30	2	5	4.00	.695

Source: Research data, 2012

On average, respondents strongly agreed they ration credit based on the client repayment pattern. They further agreed that rationing is dependent on nature of business and nature of loan applied for. However, they moderately agreed that

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rationing depend on funds available and client's sector. In addition, they moderately agreed that they advance the entire amount applied for. Kithinji (2010) states that credit should be made available based on repayment capacity and current performance of business. However the findings contradict with Wenner *et al.*, (2007) who indicates credit rationing based on client sector minimizes MFI exposure to loss.

4.2.13 MFI lending policy

To determine the lending policy adopted by MFIs respondents were asked to state their extent of agreement or disagreement with statements on lending policy on a five point likert scale. The results are summarized in the table 4.13 below.

Table 4.13: MFI lending policy

	N	Min	Max	Mean	Std. Deviation
Loans to all applications	30	1	5	2.2	0.925
Largest portion of loanees are repeat clients	30	2	5	4.1	0.845
Larger portion of loans advanced to repeat clients	30	1	5	3.9	0.995
Delinquent loan is 30 or more days behind schedule	30	1	5	4.1	1.242
Delinquent loan dependent on number of loans advanced	30	1	5	3.63	1.189

Source: Research data. 2012

On average respondents disagreed that they advance loans to all applications. They moderately agreed that they advance a larger portion of loans to repeat clients. They agreed that large portion of loanees are repeat clients, they consider loans delinquent of they are 30 days or more behind schedule and delinquent loans depend on number

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of loans advanced. However the standard deviation on delinquent is high showing lack of agreement on this aspect of lending policy. This indicates that MFIs have a strict lending policy in terms of loans advanced and collection of outstanding loans. According to Kithinji (2010), with stringent lending policy, credit is restricted to carefully determined customers and it minimizes the amount of delinquent and non-performing loans.

4.3   Inferential analysis

Inferential analysis was carried out in accordance to the objectives of the study. The objectives were to determine the effect of credit risk management strategies on performance of MFIs in Kenya and to determine the effect of organizational factors on the relationship between credit risk management strategies and MFI performance. Factor analysis was used to reduce the number of variables for each measure of credit risk management strategies, management structure and performance by identifying the underlying factors. For management structure, flexible management structure was the underlying factor. For borrower screening and monitoring, the underlying factors were: borrower repayment capacity, adherence to restrictive covenants and staff incentives. For long-term customer relationship, larger loans to repeat clients and client training were the underlying factors. For credit rationing, rationing depending on sector, repayment patterns and nature of loan were the underlying factors. For performance volume of loans applied for, outstanding loans, ration of non-performing loans to performing loans, volume of clients and delinquent loans were the underlying factors, (For details see appendix 2.1). These are the factors that the researcher used to carry out regression analysis.

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4.3.1 Effect of credit risk management strategies on MFI performance

A multiple regression analysis was carried out to determine the effect of credit risk management strategies on each of the underlying factor measuring MFI performance. The credit risk management strategies were regressed against each of the underlying factors of performance (for details see appendix 2.2). The relationships between credit risk management strategies and volume of loans applied for, volume of outstanding loans, ratio of non-performing loans and volume of clients were found to be insignificant (P-value=0.215, 0.271,0.144 and 0.603 respectively). Only the relationship between credit risk management strategies and volume of delinquent loans was significant (p-value=0.001). The results are summarized in the tables 4.14 (a) and (b) below.

Table 4.14 (a): Results of multiple regression analysis

Model summary				
Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.851[a]	.724	.600	.785

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

Table 4.14(b): Significance test results of multiple regression analysis

	ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.	
1 Regression	32.364	9	3.596	5.830	.001[a]	
Residual	12.336	20	.617			
Total	44.700	29				

a. Predictors: (Constant). Proportion of MSE loan products. Client training and financial advice. Staff incentive on prompt collection of dues. Larger loans to repeat customers. Amount advanced dependent on nature of loan. Amount advanced dependent on client sector/industry. Amount advanced dependent on client repayment pattern. Borrower capacity. Restrictive covenants adherence monitoring

b. Dependent Variable: Delinquent loan is 30 or more days behind schedule

Source: Research data, 2012

The regression results above indicate that there is a significant relationship between credit risk management strategies and volume of delinquent loans (P-value=0.001). Over 70 percent of the volume of delinquent loans, as a measure of MFI performance can be explained by the credit risk management strategies.

The relationship followed a multiple regression model of the nature: P= 5.862 + 0.173BC-0.925RC-0.492SI+0.042CT+0.608LR-0.455RP+0.260NL+0.301CS+0.05PLP+E, where; BC is borrower character, RC is restrictive covenants, SI is staff incentive, CT is client training, LR is larger loan to

repeat clients, RP is rationing depending on repayment pattern, NL is rationing based on nature of loan, CS is rationing based on sectors, PLP is proportion of loan products while P is volume of delinquent loans. 5.862 is a constant intercept term while 0.173, 0.925, 0.492, 0.042, 0.608, 0.455, 0.260, 0.301 and 0.05 are betas or slope coefficients.

The results of zero-order correlation indicate that there is significant correlation between restrictive covenants adherence monitoring and volume of delinquent loans (P-value =0.001) as well as between staff incentives and volume of delinquent loans (p-value =0.018). Restrictive covenants and staff incentives are measures of borrower screening (For details see appendix 2.3). From the regression analysis results there is a significant negative relationship between Borrower screening and monitoring and volume of MFI delinquent loans. As borrower screening and monitoring is intensified, volume of delinquent loans reduces, thus enhancing performance. This coincides with argument by Kombo et al., 2011 that risk management greatly affects financial sustainability of MFIs and Tandelin *et al.*, (2007) that there is a significant relationship between a firm's credit risk management and performance. The findings however contradict with Kithinji (2010) who reported that there is no significant relationship between credit risk management and profitability. In addition, the portion of delinquent loans that does not depend on borrower screening and monitoring is significant (P-value=0.03). Therefore, volume of delinquent loans is affected by other factors other than borrower screening and monitoring. This coincides with findings by Kithinji (2010) that the portion of profits that does not depend on credit risk management is significant.

4.3.2 Effect of organizational factors on the relationship between credit risk management strategies and MFI performance.

To determine the effect of organizational factors on the relationship between credit risk management strategies and MFI performance, a first order partial correlation analysis was carried out for each of the organizational factors; change of strategies by management, age and size of MFI (for details see appendix 2.4). The results are summarized in table 4.15 below.

Table 4.15: Summary of effect of organization factors on the relationship between credit risk management strategies and MFI performance

Organizatio nal factor	Zero order correlation	Zero order correlation	First order correlation	Moderating effect of organization al factor
Flexible Management Structure	Restrictive covenant against volume of delinquent loans	-0.561 (p-value=0.01)	-0.549 (P-value=0.02)	Slightly negative
	Staff incentives	-0.43 (P-value=0.018)	-0.424 (P-value=0.022)	Slightly negative
Age of MFI	Restrictive covenant against volume of delinquent loans	-0.561 (P-value=0.01)	-0.534 (P-value=0.003)	Slightly negative
	Staff incentives	-0.43 (P-value=0.018)	-0.406 (P-value=0.027)	Slightly negative
Size of MFI	Restrictive covenant against volume of delinquent loans	-0.561 (P-value=0.01)	-0.569 (P-value=0.001)	Slightly positive
	Staff incentives	-0.43 (P-value=0.018)	-0.428 (P-value=0.021)	Slightly negative

Source: Research data, 2012

Based on the summary above, the presence of flexible management structure and age of MFI slightly suppresses the relationship. However, Cheng and Huang (2010) indicates that flexibility enhances organizational performance. Size of MFI slightly enhances the correlation between restrictive covenants and volume of delinquent loans (P-value = 0.001). This is in agreement with findings by Hopkins and Hopkins (1997) that size affects performance of an organization through economies of scale and market power. However it slightly suppresses the relationship between staff incentives and volume of delinquent loans (P-value=0.021). This is true as the size of MFI increases the staff may be overwhelmed in collecting loans, which may impact on their ability to collect outstanding loans.

4.3.3. Summary of inferential analysis results

In conclusion, Based on results of zero-order correlation analysis, there is significant correlation between restrictive covenants and staff incentives against volume of delinquent loans. Based on multiple regression results, there is a significant negative relationship between borrower screening and monitoring strategies and MFI performance in terms of volume of delinquent loans. The proportion of delinquent loans that is not explained by credit risk management strategies is also significant. The presence of organizational factors affects the relationship. However, the direction and magnitude of the effect differ. The presence of flexible management structure and age of MFI suppress the relationship while presence of size of MFI enhance relationship between restrictive covenants and volume of delinquent loans while it suppresses the relationship between staff incentives and volume of delinquent loans.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1   Introduction

This chapter presents a summary of the study findings, conclusions and the recommendations made from the findings of the study.

5.2   Summary and key findings

This study on the credit risk management strategies, organizational factors and performance of MFIs in Kenya had two objectives which were analysed using descriptive statistics, zero order and first order correlation as well as multiple regression analysis.

Based on descriptive analysis, the study found out that most of the MFIs were more than seven years old, with most of them advancing loans to MSEs in the Jua kali, wholesale, retail, service and agricultural sectors. However, only a small number of MFIs advance loans to the manufacturing sector. The largest portion of loan products is constituted of individual, group, short-term and collateralized loans with start-up, long-term and customized loans constituting a small portion of the loan products portfolio. The ratio of non-performing loans to performing loans was low (with mean of 0.147). Further, the proportion of outstanding loans was slightly low, indicating that clients adhere to the repayment patterns. In screening clients, most MFIs indicated that they consider collateral, repayment capacity and credibility of business. To ensure that clients do not default, MFIs monitor adherence to restrictive covenants, frequent audit and analysis of financial ratios. MFIs enhance long-term customer

relationship through advancing larger loans to repeat clients as well as through training and giving financial advice. Further, most MFIs Ration credit which is largely informed by the repayment pattern of clients but not by the available funds.

The first objective was to determine the effect of credit risk management strategies on performance of MFIs in Kenya. Factor analysis was used to identify the underlying factors explaining borrower screening and monitoring, long-term customer relationship, credit rationing, performance and management structure. The study used these underlying factors to carry out correlation as well as regression analysis. Based on results of correlation analysis, there was significant correlation between restrictive covenants and volume of delinquent loans as well as significant correlation between staff incentives and volume of delinquent loans. Adherence to restrictive covenants and staff incentives were measures of borrower screening and monitoring. From the results of multiple regression model, there was significant negative relationship between borrower screening and monitoring and MFI performance, in terms of volume of delinquent loans. In addition, the proportion of performance that is not explained by the credit risk management strategies was also significant.

The second objective of the study was to determine the effect of organizational factors on the relationship between credit risk management strategies and performance. Based on results of first order partial correlation, organizational factors moderate the relationship between credit risk management strategies and MFI performance. However, the magnitude and direction of the moderation effect varied. Flexible management structure and MFI age suppresses these relationship. Presence of MFI size suppress the relationship between staff incentive and performance while it enhances the relationship between restrictive covenants and performance.

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5.3   Conclusion

In conclusion, there is a significant negative relationship between borrower screening and monitoring and MFI performance in terms of delinquent loans. As borrower screening and monitoring is enhanced, the volume of delinquent loans reduces, which leads to enhanced performance. This is in line with findings of Tandelin *et al.,* (2007) that risk management has a significant relationship with performance. In addition, the findings of Kombo *et al.,* (2011) point out that risk management greatly contribute to financial sustainability of MFIs in Kenya. The findings however contradict with Kithinji (2010) who points out that there is no significant relationship between credit risk management and profitability. The portion of performance that is not explained by credit risk management strategies is also significant. This means that there are other variables other than credit risk management strategies that affect MFI performance.   This resonates with findings by Kithinji(2010) that the portion of profitability of banks that is not explained by credit risk management is significant. Organizational factors have a moderating effect on the relationship between credit risk management strategies and MFI performance. However, only two of these factors can be controlled by a MFI; management structure and size. Flexibility in change of the credit risk management strategies is not desirable as it has a negative moderating effect on the relationship. A large size is desirable for an MFI managing credit risks as it has a positive moderating effect. This is in agreement with findings by Hopkins and Hopkins (1997) that size affects performance of an organization through economies of scale and market power. However, Cheng and Huang (2010) argue that flexibility enhances organizational performance.

5.4   Recommendations of the study

The recommendations made are based on the findings and conclusions of the study. First and foremost, the study recommends that MFIs keen on improving their performance in terms of volume of delinquent loans should focus on borrower screening and monitoring. With respect to borrower monitoring, MFIs should focus on enhancing adherence to restrictive covenants and giving staff incentives for prompt collection of loans. In screening clients, MFIs should focus on borrower's repayment capacity, collateral and credibility of business. In addition, MFIs should focus on other factors other than credit risk management strategies as the portion of delinquent loans that does not depend on credit risk management strategies is also significant.

In addition, MFIs keen on improving their performance should not freely change their credit risk management strategies as flexibility has a negative moderating effect. On the other hand, they should aim at increasing their size in terms of client numbers as it has a positive moderating effect. This can be achieved through advancing start-up loans to cater for MSEs looking for start-up capital as well as MSEs in underserved sectors such as manufacturing and consequently increase the number of clients.

MFIs should also aim at strengthening policies on collection of loans as the portion of portfolio at risk was found to be high. This can be achieved through incorporating loan collection strategies into the processes and systems within the MFI.

5.5   Limitations of the study.

Financial constraints limited the researcher in covering all the MFIs in Kenya. In addition, the MFIs are widely dispersed throughout the country. Thus accessing them was cumbersome for the researcher. Further, some respondents were not co-operative

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as they feared that the information they were sharing was sensitive and might be leaked to competitors. The researcher had however assured them of confidentiality of the information shared.

5.6   Suggestions for further research

Based on the findings, the study recommends the following areas for further research:

i. An investigation on the effect of organizational factors on the performance of a MFI.

ii. An assessment of performance indicators in MFIs. There is no set of universally accepted measures of performance for the MFI sector.

iii. An investigation of the lending policies of MFIs and their effect on level of delinquency.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

My name is Goko Tabby Wanjiru a Masters of Business Administration student at University of Nairobi. I am conducting a study on the credit risk management strategies employed by Micro Finance institutions (MFI's) in Kenya in advancing loans to micro and small enterprises (MSEs).

I have selected you as a respondent in this study since you are most informed on the credit risk management strategies employed by your organization. I kindly request you to fill this questionnaire. The information provided will be treated with utmost confidence and the study is purely for academic purpose. Your participation will be highly appreciated.

Name of the MFI _____

SECTION A: ORGANIZATIONAL FACTORS

1. How long has your MFI been in existence? *(Please tick as appropriate.)*

☐   ☐   ☐   ☐   ☐

Less than 1 year   1-3 years   4-6 years   7-10 years   above 10 years

2. Describe the management structure of your MFI *(Please tick appropriately)*

	Strongly agree	Agree	Fairly agree	Disagree	Strongly Disagree
ii. Our management structure is decentralized					
iii. Our management freely changes risk management strategies					
v. Our MFI involves employees in formulating implementing risk management strategies					

3. We advance MSE loans in the following sectors *(Please tick where appropriate)*

Manufacturing ☐   ☐ Agriculture
Service   ☐   ☐ Jua kali
Education   ☐   ☐ Retail
Wholesale   ☐

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4. How many active MSE clients does your MFI have? (*Please Tick appropriately*)

☐ ☐ ☐ ☐ ☐

Less than 100   100- 500   501- 1000   1001- 2000   above 2000

SECTION B: CREDIT RISK MANAGEMENT STRATEGIES

1. Borrower screening and monitoring

Client screening enables a financial institution to obtain adequate information about the client so as to be in a position to determine whether to advance a loan or not.

a. Our MFI conducts client screening in advancing loans to MSE`s; *(please tick appropriately)*

On new clients only	☐
On existing clients	☐
On existing as well as new clients	☐
Not at all	☐

b. In screening clients, our MFI considers the following borrower information; *(Please tick as appropriate)*

	Strongly agree	Agree	Fairly agree	Disagree	Strongly disagree
i. Borrower character					
ii. Repayment capacity of the borrower					
iii. Collateral					
iv. Credibility of the business or intended investment					
v. Borrower financial condition(financial position and cashflows)					
vi. Capacity to run successful business					

c. After advancing loan, client monitoring is essential to ensure that the client does not default. Our MFI monitors MSE clients to ensure they do not default on loan repayment through the following: *(please tick as appropriate)*

	Strongly agree	Agree	Fairly agree	Disagree	Strongly Disagree
i. monitoring whether clients adhere to restrictive covenants					
ii. monitoring the aging and quality of SME loan portfolio					
iii. frequent internal audit					
iv. monitoring the individual client's repayment pattern					
v. monitoring the client's cashflow pattern					
vi. Continuous analysis of client's financial ratios such as liquidity, Solvency and efficiency ratios					
vii. Incentives to Clients for prompt payment					
viii. Staff incentives on prompt collection of instalments due from clients					

2. **Long-term client relationship**

Our MFI enhances long-term relationship with our clients through the following. Please tick the section that best fits your view.

	Strongly agree	Agree	Fairly agree	Disagree	Strongly Disagree
i. We give a larger loan to repeat customers					
ii. We charge lower interest rates to repeat customers					
iii. We give incentives to customers for prompt payment					
iv. We offer training and financial advice to our clients					
v. We do not screen repeat customers					

3. **Credit rationing**

(Credit rationing limits the maximum amount of loan advanced to individual borrowers or a given sector/industry.)

a. Does your MFI ration credit to individual MSE clients? Yes [ ] No [ ]

b. Please describe by ticking the policy that best describes your MFI on credit rationing.

	Strongly agree	Agree	Moderately Agree	Disagree	Strongly disagree
i. We advance entire loan applied for by a client always					
ii. Amount advanced depends on availability of funds					
iii. Amount advanced depend on the industry/sector of the client					
iv. We consider previous repayment pattern to determine amount to advance					
v. Nature of client business determines amount to advance.					
vi. We consider the nature of loan applied for in determining the amount to advance.					

c. Please indicate by ticking the appropriate box below, the proportion of MSE loans as a percentage of your MFI's total loan portfolio;

[ ] [ ] [ ] [ ] [ ]

Less than 10% 11-30% 31-50% 51-70% Above 70%

4. **Loan product diversification**

What type of loan products does your MFI offer MSE clients? (Please tick where appropriate)

[ ] Individual loans   [ ] long term loans

[ ] Group loans   [ ] short term loans

[ ] Collateralized loans   [ ] Customized loans

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☐ Uncollateralized loan   ☐ Start- up loans

b. What is the proportion of MSE loan products in your total loan product portfolio?

☐   ☐   ☐   ☐   ☐

Less than 10%   10-20%   20-30%   30-40%   over 40%

C. MFI PERFORMANCE

1. On average, how many loan applications do you receive per month? (Please tick where applicable)

☐   ☐   ☐   ☐

Less than 10   10-50   50-100   over 100

2. On average, how many loans are behind payment (in arrears) per month? (Please tick where applicable)

☐   ☐   ☐   ☐   ☐

Less than 10   10-20   20-30   30-40   over 40

3. On average how many outstanding loans does your MFI have on a monthly basis?

☐   ☐   ☐   ☐

Less than 20   21-50   51-80   over 80

4. What is the ratio of non-performing loans to performing loans?

   (*Please specify*)_____of performing loans

5. Please describe the lending policy of your MFI to MSE's by ticking the section that best suits your view.

	Strongly agree	Agree	Fairly agree	Disagree	Strongly disagree
i. We grant loans for all applications we receive always.					
ii. Repeat clients constitute largest proportion of our loanees compared to first time loanees.					
iii. We grant a larger proportion of loans to repeat clients that first time clients					
iv. Delinquent loans with payments behind schedule by 30 days is large					
v. Number of delinquent loans depends on number of loans advanced.					

APPENDIX 2: OUTPUT FOR FACTOR AND REGRESSION ANALYSIS

2.1: Factor analysis for management structure

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.458	48.587	48.587
2	.979	32.618	81.206
3	.564	18.794	100.000

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Extent of decentralization	.447
Change of Management strategies	.843
Employee involvement	.740

Extraction Method: Principal Component Analysis

a. 1 Components extracted.

Source: Research data. 2012

2.2: Factor analysis for borrower screening and monitoring

Rotated Component Matrix[a]

	Component		
	1	2	3
Borrower character	.388	.532	-.047
Borrower repayment capacity	.039	.087	.793
Collateral	.096	-.141	.813
Credibility of business or investment	.666	-.225	.177
Borrower financial condition	.480	.683	.319
Borrower capacity	.798	.201	.208
Restrictive covenants adherence monitoring	.802	.214	-.101
Monitoring quality of loan portfolio	.544	.428	.418

Frequent internal audit	.570	.493	.181
Monitoring repayment pattern	.695	.409	.052
Monitoring client cashflow pattern	.619	.579	.095
Financial ratios analysis	.650	.583	-.182
Incentive to clients on prompt payment	.200	.881	-.173
Staff incentive on prompt collection of dues	-.063	.885	.046

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.
Source: Research data, 2012

2.3: Factor analysis for long-term customer relationship

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1.768	35.363	35.363
2	1.132	22.640	58.003
3	.871	17.422	75.425
4	.759	15.182	90.607
5	.470	9.393	100.000

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component	
	1	2
Larger loans to repeat customers	-.086	.767
Lower interest rates to repeat customers	.256	.728
Incentive to customers for prompt payment	.740	.172
Client training and financial advice	.824	-.188
No screening repeat clients	.548	.343

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.
Source: Research data

2.4: Factor analysis for credit rationing

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.872	26.745	26.745
2	1.657	23.671	50.415
3	1.144	16.346	66.762
4	.922	13.171	79.933
5	.632	9.027	88.960
6	.486	6.943	95.903
7	.287	4.097	100.000

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component		
	1	2	3
Advance entire loan applied for	.015	-.267	.785
Amount advanced dependent on funds availability	-.479	.717	.079
Amount advanced dependent on client sector/industry	.093	.097	.801
Amount advanced dependent on client repayment pattern	.771	-.105	.120
Amount advanced dependent on nature of business	.605	.595	.121
Amount advanced dependent on nature of loan	.161	.717	-.286
Proportion of MSE loan	.770	.084	-.024

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotated Component Matrix[a]

	Component		
	1	2	3
Advance entire loan applied for	.015	-.267	.785
Amount advanced dependent on funds availability	-.479	.717	.079
Amount advanced dependent on client sector/industry	.093	.097	.801
Amount advanced dependent on client repayment pattern	.771	-.105	.120
Amount advanced dependent on nature of business	.605	.595	.121
Amount advanced dependent on nature of loan	.161	.717	-.286
Proportion of MSE loan	.770	.084	-.024

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 5 iterations.

Source: Research data, 2012

2.5: Factor analysis for performance

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2.323	25.808	25.808
2	1.736	19.286	45.094
3	1.407	15.632	60.726
4	1.137	12.631	73.357
5	1.002	11.134	84.490
6	.598	6.647	91.137
7	.437	4.850	95.988
8	.210	2.338	98.326
9	.151	1.674	100.000

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Average monthly loan applications	.178	-.179	-.039	.888	-.024
Average loans behind payments monthly	-.136	.158	.686	.589	.187
Monthly outstanding loans	.117	-.169	.896	-.112	-.116
Ratio of Non-performing loans to performing loans	-.034	.800	-.182	-.026	.076
Loans to all applications	-.168	-.736	-.201	.270	.335
Largest portion of loanees are repeat clients	.132	-.036	-.023	.002	.969
Larger portion of loans advanced to repeat clients	.861	-.082	.215	-.145	.262
Delinquent loan is 30 or more days behind schedule	.843	.131	-.064	.251	-.109
Delinquent loan dependent on number of loans advanced	.582	.547	-.164	.252	.357

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

2.6: Multiple regression analysis results

i. Volume of delinquent loans

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.851[a]	.724	.600	.785

a. Predictors: (Constant), Proportion of MSE loan products. Client training and financial advice. Staff incentive on prompt collection of dues. Larger loans to repeat customers. Amount advanced dependent on nature of loan. Amount advanced dependent on client sector/industry. Amount advanced dependent on client repayment pattern. Borrower capacity. Restrictive covenants adherence monitoring

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.364	9	3.596	5.830	.001[a]
	Residual	12.336	20	.617		
	Total	44.700	29			

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

b. Dependent Variable: Delinquent loan is 30 or more days behind schedule

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.862	1.748		3.354	.003
Borrower capacity	.173	.247	.110	.699	.493
Restrictive covenants adherence	-.925	.218	-.730	-4.243	.000
Staff incentive on prompt collection	-.492	.141	-.441	-3.492	.002
Client training and financial advice	.042	.192	.030	.219	.829
Larger loans to repeat customers	.608	.166	.471	3.665	.002
Amount advanced dependent on client repayment pattern	-.455	.316	-.210	-1.440	.165
Amount advanced dependent on nature of loan	.260	.189	.180	1.380	.183
Amount advanced dependent on client sector/industry	.301	.176	.258	1.711	.103
Proportion of MSE loan products	.005	.180	.004	.028	.978

a. Dependent Variable: Delinquent loan is 30 or more days behind schedule

ii. Ration of non-performing loans

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.663[a]	.440	.187	.11679

a. Predictors: (Constant). Proportion of MSE loan products. Client training and financial advice. Staff incentive on prompt collection of dues. Larger loans to repeat customers. Amount advanced dependent on nature of loan. Amount advanced dependent on client sector/industry. Amount advanced dependent on client repayment pattern. Borrower capacity. Restrictive covenants adherence monitoring

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.214	9	.024	1.743	.144[a]
	Residual	.273	20	.014		
	Total	.487	29			

a.Predictors: (Constant). Proportion of MSE loan products. Client training and financial advice. Staff incentive on prompt collection of dues. Larger loans to repeat customers. Amount advanced dependent on nature of loan. Amount advanced dependent on client sector/industry. Amount advanced dependent on client repayment pattern. Borrower capacity. Restrictive covenants adherence monitoring

b. Dependent Variable: Ratio of Non-performing loans to performing loans

Source: Research data, 2012

iii. Monthly outstanding loans

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.498[a]	.248	-.090	1.460

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.064	9	1.563	.734	.674[a]
	Residual	42.603	20	2.130		
	Total	56.667	29			

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

b. Dependent Variable: Monthly outstanding loans

Source: Research data, 2012

iv. Volume of loanees

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.520[a]	.270	-.058	.869

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.595	9	.622	.823	.603[a]
	Residual	15.105	20	.755		
	Total	20.700	29			

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

b. Dependent Variable: Largest portion of loanees are repeat clients
Source: Research data, 2012

v. Volume of loan applications per month

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635[a]	.403	.134	1.346

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.448	9	2.716	1.500	.215[a]
	Residual	36.219	20	1.811		
	Total	60.667	29			

a. Predictors: (Constant), Proportion of MSE loan products, Client training and financial advice, Staff incentive on prompt collection of dues, Larger loans to repeat customers, Amount advanced dependent on nature of loan, Amount advanced dependent on client sector/industry, Amount advanced dependent on client repayment pattern, Borrower capacity, Restrictive covenants adherence monitoring

b. Dependent Variable: Average monthly loan applications

Source: Research data, 2012

2.7 Zero order correlation results

	Borrower repayment capacity	Restrictive covenants adherence	Client training and financial advice	Staff incentive for prompt collection	Advances dependent on client sector	Advances dependent on client repayment pattern	Amount advanced dependent on nature of loan	Proportion of loan
Borrower repayment capacity	1	-.035	-.097	.107	-.223	.296	-.138	.210
Restrictive covenants adherence		1	.335	.162	.519**	.184	.063	.465**
Client training and financial advice			1	.059	.265	-.241	.146	.013
Staff incentive for prompt collection				1				
Amount advanced dependent on client sector					1	-.028	-.092	.208
Advances dependent on client repayment pattern						1	-.035	.402*
Advances dependent on nature of loan							1	.250
Proportion of MSE loan products								1
Delinquent loans								

MSE loan products								
Delinquent loans	-.232	.561** −	-.079	-.430*	-.159	-.170	.184	-.260	1

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

*Correlation is significant at the 0.05 level (2-tailed)

2.8 : First order partial correlation

i. **First order partial correlation**

ii. **Partial Correlation (control variable: flexibility in change of strategies)**

Variable		Borrower repayment capacity	Restrictive covenants adherence	Staff incentive on prompt collection	Client training and financial advice	Advances dependent on client sector	Advances dependent on client repayment pattern	Advances dependent on nature of loan	Delinquent loan
Borrower repayment capacity	Correlation	1.000	-.035	.107	-.099	-.234	.313	-.139	-.235
	Significance (2-tailed)		.856	.580	.610	.222	.098	.472	.220
Restrictive covenants adherence	Correlation	-.035	1.00	.151	.311	.495	.262	.085	-.549
	Significance (2-tailed)	.856		.580	.100	.006	.028	.660	.002
Staff incentive on prompt collection	Correlation	.107	.151	1.000	.045	.258	.028	.085	-.424
	Significance (2-tailed)	.580	.435		.818	.176	.887	.536	.022
Client training and financial advice	Correlation	-.099	.311	.045	1.000	.220	-.192	-.120	-.052
	Significance (2-tailed)	.610	.100	.818		.251	.318	.373	.789
Advances dependent on client sector/industry	Correlation	-.234	.495	.258	.220	1.000	.080	.172	-.120
	Significance (2-tailed)	.222	.006	.176	.251		.680	.172	.680
Advances dependent on client repayment pattern	Correlation	.313	.262	.028	-.192	.080	1.000	-.077	-.234
	Significance (2-tailed)	.098	.028	.887	.318	.680		.692	.222

	Correlation / Significance (2-tailed)							
Advances dependent on nature of loan	Correlation	-.139	.085	-.120	.172	-.060	-.077	1.000	.170
	Significance (2-tailed)	.472	.660	.536	.373	.757	.692		.377
Delinquent loans	Correlation	-.235	-.549	-.424	-.052	-.120	-.234	.170	1.000
	Significance (2-tailed)	.220	.002	.022	.789	.536	.222	.377	

ii. Partial correlation (Control variable: Age of MFI)

		Borrower repayment capacity	Restrictive covenants adherence monitoring	Staff incentive on prompt collection	Client training and financial advice	Advances dependent on client sector/industry	Advances dependent on client repayment pattern	Advances dependent on nature of loan	Delinquent loans
Borrower repayment capacity	Correlation	1.000	-.018	.121	-.092	-.212	.338	-.149	-.257
	Significance (2-tailed)		.926	.532	.633	.269	.073	.441	.178
Restrictive covenants adherence monitoring	Correlation	-.018	1.000	.126	.329	.489	.115	.098	-.534
	Significance (2-tailed)	.926		.514	.082	.007	.553	.553	.003
Staff incentive on prompt collection of dues	Correlation	.121	.126	1.000	.048	.238	-.060	-.108	-.406
	Significance (2-tailed)	.532	.514		.806	.214	.758	.615	.003
Client training and financial advice	Correlation	-.092	.329	.048	1.000	.256	-.280	-.063	-.064
	Significance (2-tailed)	.633	.082	.806		.180	.141	.576	.029
Advances dependent on client sector/industry	Correlation	-.212	.489	.238	.256	1.000	-.118	.156	-.106
	Significance (2-tailed)	.269	.007	.214	.180		.542	.747	.585
Advances dependent on client repayment pattern	Correlation	.338	.115	-.060	-.280	-.118	1.000	.418	-.099
	Significance (2-tailed)	.073	.553	.758	.141	.542		.007	.608
Advances dependent on nature of loan	Correlation	-.149	.098	-.108	-.063	.156	.418	1.000	-.160
	Significance (2-tailed)	.441	.098	.615	.576	.747	.007	.972	.608

		Borrower repayment capacity	Restrictive covenants adherence	Staff incentive on prompt collection	Client training and financial advice	Advances dependent on client sector	Advances dependent on client repayment pattern	Advances dependent on nature of loan	Delinquent loans
...on nature of loan	Significance (2-tailed)	.441	.615	.576	.418	.747	.972	.	.408
Delinquent loan	Correlation	-.257	-.534	-.406	-.064	-.106	-.099	.160	1.000
	Significance (2-tailed)	.178	.003	.029	.740	.585	.608	.408	

Source: Research data, 2012

iii. Partial correlation (Control variable: Size of MFI)

		Borrower repayment capacity	Restrictive covenants adherence	Staff incentive on prompt collection	Client training and financial advice	Advances dependent on client sector	Advances dependent on client repayment pattern	Advances dependent on nature of loan	Delinquent loans
Borrower repayment capacity	Correlation	1.000	-.013	.101	-.110	-.136	.128	-.280	-.211
	Significance (2-tailed)	.	.946	.601	.571	.483	.710	.141	.272
Restrictive covenants adherence	Correlation	-.013	1.000	.164	.335	.522	.216	.072	-.569
	Significance (2-tailed)	.946	.	.394	.075	.004		.508	.001
Staff incentive on prompt collection	Correlation	.101	.164	1.000	.059	.284	-.016	-.137	-.428
	Significance (2-tailed)	.601	.394	.	.759	.135		.478	.021
Client training and financial advice	Correlation	-.110	.335	.059	1.000	.269	-.257	.149	-.081
	Significance (2-tailed)	.571	.075	.759	.	.157	.179	.440	.678
Advances dependent on client sector/industry	Correlation	-.136	.522	.284	.269	1.000	.053	-.056	-.185
	Significance (2-tailed)	.483	.004	.135	.157	.		.772	.336
Advances	Correlation	.128	.216	-.016	-.257	.053	1.000	.784	-.143

dependent on client repayment pattern	Significance (2-tailed)	.508	.260	.936	.179	.784		.565	.459
Advances dependent on nature of loan	Correlation	-.280	.072	-.137	.149	-.056	-.111	1.000	.207
	Significance (2-tailed)	.141	.710	.478	.440	.772	.565		.280
Delinquent loans	Correlation	-.211	-.569	-.428	-.081	-.185	-.143	.207	1.000
	Significance (2-tailed)	.272	.001	.021	.678	.336	.459	.280	

APPENDIX 3: LIST OF MICRO FINANCE INSTITUTIONS IN KENYA

S.No	Micro finance institution	Registered office/location of head office.
1.	Kenya Women Finance Trust (KWFT)	Muchai Drive, Nairobi
2.	Small and Medium Enterprises Programme (SMEP)	Kirichwa road, Nairobi
3.	Faulu Kenya	Ngong lane, Nairobi
4.	K-Rep	Naivasha road, Nairobi
5.	KADET	Capital Hill towers, Nairobi
6.	Ecumenical Loans Fund (ECLOF)	Royal offices, Nairobi
7.	Rafiki deposit taking Microfinance ltd	Central office, Riverside
8.	Opportunity International (OI)	Geomaps centre, upper hill, Nairobi
9.	Rupia Kenya	View park towers, Nairobi
10.	BIMAS	BIMAS complex Embu
11.	One Africa capital ltd.	Ratansi Education Trust building, Koinange street, Nairobi
12.	SISDO	Ngong lane, Nairobi
13.	Pamoja Women Development programme	Kikinga house, Kiambu
14.	Micro Africa ltd.	Cape office park, Kilimani-Nairobi
15.	Adok Timo	Sifa house, Kisumu
16.	Sumac credit ltd	Consolidated bank building, Nairobi
17.	YEHU micro finance Trust	Tom Mboya avenue, Mombasa
18.	Canyon Rural credit Ltd.	Studio house, 3rd floor, Nairobi
19.	Kenya Entrepreneurs empowerment Foundation (KEEF)	Mapa house, Kiambu

20.	Micro enterprises support fund (MESTF)	Vision towers, Westlands-Nairobi
21.	Micro credit Limited	Ojijo plaza, Nairobi
22.	Molyn credit ltd.	Bruce house, 9th floor, Nairobi
23.	Taifa option Microfinance	Ruiru
24.	U & I microfinance	Arrow house, Nairobi
25.	Aga khan first Micro finance agency	Mpaka plaza, 3rd floor, Nairobi
26.	IndoAfrica Finance	Museum Hill centre, Nairobi
27.	Jitegemee trust ltd.	Roshan maer place, Nairobi
28.	Oiko credit	Methodist ministries centre, Nairobi
29.	Ngao credit	NHIF building, Nairobi
30.	Musoni credit	Cape office park, Kilimani-Nairobi
31.	SEED development group	Mayo business centre, Kisumu
32.	Remu DTM ltd	Finance house, Nairobi
33.	Uwezo DTM ltd	Park plaza, Nairobi

Source: Association of Micro Finance Institutions in Kenya. June 2012