EFFECTS OF LENDING METHODOLOGIES ON FINANCIAL PERFORMANCE OF MICRO FINANCE INSTITUTIONS IN KENYA

BY

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THIS PROJECT PROPOSAL IS SUBMITTED TO KCA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A MASTERS OF SCIENCE DEGREE IN FINANCE AND ECONOMICS

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DECLARATION

I do hereby declare that this research project is my work and that it has not been presented for examination purposes in any other institution for the award of a Master's degree or any other academic qualification.

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Supervisors' Declaration

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

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The project has been submitted with my approval as the faculty dean.

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ABSTRACT

In spite of the developments and innovation in microfinance institutions today, their financial performance continues to be dismal due to high default risks. There is little that has been done to study and understand the impact of lending methodologies on the financial performance of microfinance institutions in Kenya. This study was guided by individual lending, group lending and gender based lending methodology as independent variables while financial performance was the dependent variable.

The population of the study was licensed microfinance institutions in Kenya. A sample of 9deposit taking micro financial institutions were selected. The study adopted a descriptive research design. The selected microfinance institutions were registered before the year 2012.

The study found that the three methodologies of lending affects financial performance of microfinance institutions. Individual lending affects financial performance negatively while group and gender lending methodology affects financial performance positively.

DEDICATION

I dedicate this project to my family. Without their moral support, tolerance and understanding, this project could not have been possible in my academic journey and I highly acknowledge their assistance.

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I would like to sincerely acknowledge the tireless effort of my supervisor Dr. Abraham Rotich for his insights and high standards that have enabled me to write this thesis. Also, I would like to acknowledge my fellow classmates for their moral support. Lastly I would like to acknowledge my dean a KCA University for encouraging us to pursue high level degrees.

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LIST OF ACRONYMS

MFIs	Micro-finance institutions
CBO	Community Based Organizations

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DEFINITIONS OF OPERATIONAL TERMS

Microfinance:

Provision loans, deposits, payment services as well asinsurance and other financial products that are targeted at low income clients (Daley Harris, 2002)

Micro Credit:

Provision of small loans to the poor to engage in productive activities or expand their tiny businesses (Josily, 2006)

Profitability:

This is the degree to which firms exceed their expenses. It is one of the measures of business financial performance (Manasseh, 2005).

Moral hazard:

A situation in which there is taking undue risks just because the party taking risks is bearing the costs and may occur where the behavior of one party may bring change to the loss of the other after the transaction has taken place (Dembe & Leslie, 2000).

CHAPTER ONE

INTRODUCTION

1.1.Background of the Study

According to James et al (2004), poor people in many parts of the world are excluded from the formal banking services due to lack of collateral. This exclusion has led the poor to develop a wide variety of informal community based financial arrangements to meet their financial needs. In addition to these informal arrangements, more formal organizations have been created by non-governmental organizations, government and the private sector to meet these same needs. Microfinance is the term generally used to refer to such formal and informal arrangements that provide financial services to the poor and was an innovative way to help overcome the lack of collateral James et al (2004). Microfinance is distinguished from other financial institutions because of its unique lending methodologies. In formal finance organizations, borrowers pledge collateral; however, in microfinance institutions, borrowers can use other lending methods where collateral is not required e.g. use of group lending methodology where members of a group of borrowers guarantee each other.

The micro finance institutions started as charitable organizations were they were donor driven. However, because of the quest for sustainability, microfinance institutions have become commercial driven. The defining characteristics of microfinance are: Short term loans usually up to one year, small amounts of savings and no security based collateral. Loan repayment installments are made up of both interest and principal (Muray U. & Boros, 2002). According to Nourse (2001), most microfinance firms had been focusing on providing enterprise lending but in the recent past there is an increased product offering that includes savings and insurance.In

order for a robust economic growth to take place, there must be well-focused programs in place to reduce poverty by way of empowering people through increasing their access to factors of production like credit; microfinance is about providing such service to the poor. According to Adjei, (2010), those who are considered poor who are excluded from the formal banking services and microfinance emerged to address this challenge. Microfinance can be seen as a development tool to empower the poor financially and this will reduce poverty by providing them with finance to start or expand small scale enterprises in developing countries (Kyereboah-Coleman, 2007).

In spite of the inherent risk associated with lending to the poor, microfinance institutions still provide financial services such as insurance, credit and savings to the poor and those seen to live below the poverty line and provide them with insurance and savings opportunities. Microfinance institutions establish themselves in an area and form a semi-formal financial environment that offers their clients credit and other product offerings they have as and when they need them.(Beck & Demirguc-Kunt et al, 2008).

The biggest challenge for creditors and policy makers is making sure that microfinance institutions are properly used as a poverty reduction tool and increase the earning potential of a household through access to finance Sharma and Buchenreider (2002) and Wright (2000). Lending program sustainability determines the long term performance of microfinance and thus will include the poor in banking services, which will in turn benefit the overall economy by increasing the poor household’s ability to manage crises and economic shocks that most governments cannot do due to shortage of public resources (Zeller, 2001; IFAD 2003).

1.1.1. Lending Methodologies in Microfinance

According to Armenddariz et al (2000), many financial institutions have developed alternative lending modes to ensure profitable lending. According to Kota (2007) and Harper (2007), financial institutions have devised different lending methodologies to lend to the such as; government, lending, customer lending and related party and insider lending. Studies show that microfinance institutions do offer an individual contract if a loan is big.

According to Armendariz et al (2010), some innovations have helped spread the reach and financial performance of microfinance world over through progressive lending whereby the lenders first issue out a smaller loan to borrowers and once they repay through the agreed installments, a larger loan is issued after the client has demonstrated their ability to pay back. Another innovation is use of mobile phones to apply, get and pay back loans, as well as the expansion of product offering to include insurance to the microfinance clients.

1.1.2. Individual Lending Programs

Individual lending programs are those where the borrower has to provide for collateral in order to access credit facility since the borrower has more information than the lender about his business. Then the lender will check the financial status of borrowers businessto evaluate his capacity to pay back the loan. This will reduce the credit risk by the lender. This usually leads to close relationship between the microfinance and individual borrowers because periodically the microfinance institution keeps close evaluation of borrower's repayments. Usually, the lender evaluates carefully about the status of collateral and makes sure the asset cannot be transferred to third parties without consent. The lender cannot lose because in case of default they will dispose the collateral. (Brandt et al, 2012).

In individual lending, the microfinance institution must do careful analysis prior to loan disbursement. They must define terms for each individual client, evaluate the loan proposal and all this takes a lot of time and is generally costly to the microfinance institution. However, the operational costs of individual lending are cheaper than group lending and due to the fact that the loan is secured it's not as riskier as compared to group lending and thus can attract less interest rate than group lending (Waterfield, 2006)

Group Lending Programs

In group lending programs, collaterals are not used and instead, collective responsibility from the group and peer pressure is used. In addition to this, the roles typically played by micro finance credit officers are delegated to the group i.e. determining who will join the group, peers screen clients and assessing each other's business within the group to determine loan amount to be disbursed Waterfield et al (1996). The advantage of this lending methodology is that it can reach the poor who have no collateral hence increases clientele of the microfinance institution (Brandt et al., 2012).

Group lending is further divided into two categories namely; solidarity groups and community based organizations. According to Brandt et al (2012) the difference between these two is the future relationship between the lending institution and the group. Solidarity groups are those programs that do not anticipate the graduation of the borrower from the lending institution. In contrast, community based organization approaches always make a goal towards eventual independence of the borrower group from the lending institution (Brandt et al., 2012).

According to Zeller (1996), each group member is held responsible for repayment of loans of other members and any other credit is disbursed after all the group members pay their loans in full. This goes a long way in ensuring members pay and monitors the individual borrower's effort on loans repayment. According to Conning and Urdy (2005), group lending is an innovation that has enabled the poor to borrow since it replaces physical collateral which is used by commercial banks with social collateral.

1.1.3. Gender Based Lending

According to Yunus (2003) microfinance institutions also have a structure that targets borrowers according to their gender. Yunus decided that his institution (Grameen bank) will set a goal of having at least half of its borrowers as women and this structure succeeded given that women were previously discriminated against by commercial institutions. The study showed female borrowers were more likely to pay back loans than men borrowers and this translates to better financial performance of microfinance institutions. However, studies by World Bank (2010), show return on equity on business owned by men was 11% while those owned by women was zero or negative. By lending to the women who are discriminated against in other banking services, microfinance increases their clientele base and thus profitability.

Another innovative method used by microfinance institutions is progressive lending where they initially lend out to borrower's small amounts of loan and once paid back, according to the agreed terms a larger loan is advanced to borrowers (Armendariz et al., 2010). The rationale here is that for the borrower to qualify for a bigger loan, they must prove their ability to pay the smaller loans advanced to them by the microfinance. The loans according to this study are given in cycles which actually motivate borrowers to push the individual members to pay their loans

and get new bigger loans but if they fail to pay their dues, the cycle is broken and they can therefore not qualify for another loan progressively. This increases the financial performance of the microfinance institution which employs this method in lending to their borrowers (Armendariz et al., 2010).

The concept of firm performance

In the to the business dictionary financial performance is defined to involve measuring the results of the policies and operations of a firm in monetary terms. The results of which are reflected in the return on investment of the firms, return on assets of the firms and their value added. According to Stoner (2003), financial performance is the ability of the firm to operate efficiently, profitably, achieve good growth and react to the available environmental opportunities and react to threats they meet. Sollenberg and Anderson (1995) agreed with the definition that performance is a measure of efficiency of the enterprise is in the use of its resources in achieving its objectives. According to Hitt,et al (1996), many firm perform poorly as a result of poorly performing assets.

Revenue from loans is the main income of MFIs. However, they earn income from other financial services in the form of interest fees, penalties, and commissions. At times, financial revenue come in the form of income from other financial assets, including investment income. Micro finance institutions have a number of expenses, such as operating expenses, the cost of borrowing from other banks and provisioning for the potential loss from defaulted loans. If profitable the institutions earn positive net income from their operations

The goal of Microfinance institutions is financial sustainability. Many MFIs are pursuing financial sustainability and finance through their structures to achieve sustainable growth.

Sustainability is the capacity to stay financially stable and viable even without financial subsidies and aids are cut off (Woolcock, 1999). It a situation where a firm generates sufficient profit to pay its expenses in absence of all subsidies.

1.2.Problem Statement

Lending methodologies are important tools in managing credit risk in microfinance institutions. In this regard, a number of lending methodologies such as group lending and gender based lending have been devised by microfinance. However, in spite of these developments, microfinance institutions still face a high default risk rate. Various studies e.g. Sadoulet (2000) and Besley and Coate (1995), indicate that there is no clear line of thought as to which lending methodology is effective than the other and this leads us to this study that seeks to answer the question of how effective are lending methodologies in order to manage credit risk and enhance financial performance of microfinance in Kenya? Previous studies about lending methodologies suggest that joint liability increases repayment rates in microfinance institutions Sadoulet (2000). Some other studies like Besley and Coate (1995) shows that group lending may in some instances lead to collusion among members and undermine the ability of the bank to use social collateral and negatively affect loan repayment. According to Stewart (2012), there is no evidence that shows microfinance institutions have a large impact on poverty eradication and empowerment. Rather, the study suggests micro credit makes some clients richer while others poorer. This review observed that there is less risk if microfinance services being offered to those clients who already have some financial security like savings which in essence allows them to make loan repayments even if their ventures don't generate profit. However, according to the same review by Stewart (2012), the micro savings have a positive result on clients without

necessarily causing greater harm to them. The importance of lending methodologies in microfinance cannot be gainsaid. They are key to managing credit risk and thus improving overall financial performance. However, in spite of innovation and advances in microfinance lending methodologies, microfinance in Kenya still faces a high default rate.

1.3.Research Objectives

1.3.1. General Objective

The general objective of this study was to investigate the effectiveness of lending methodologies in financial performance of microfinance institutions in Kenya.

1.3.2. Specific Objectives

The study also included the following specific objectives:

1. To assess the effect of individual lending on financial performance of microfinance institutions in Kenya.
2. To examine the effect of group lending on financial performance of microfinance institutions in Kenya.
3. To determine the effect of gender based lending on financial performance of microfinance institutions in Kenya.

1.4.Research Questions

This study sought to investigate the effects of lending methodology on financial performance on microfinance institutions through answering the following questions:

1. What is the effect of individual lending on financial performance of microfinance institutions Kenya?

2. What is the effect of group lending on financial performance of microfinance institutions Kenya?
3. What is the effect of gender based lending on financial performance of microfinance institutions Kenya?

1.5.Scope of the Study

The area of the study was limited to the lending methodologies and their relationship to the performance of the microfinance institutions in Kenya. The study used quantitative variables which will be measured numerically. The study time period was based on the financial information and The Bank Supervision Annual Report by the Central Bank of Kenya from 2012 to 2016

1.6.Significance of the Study

This study provided insights on the lending methodologies that microfinance institutions can use to improve their performance. The study also informed of the best methods of lending given no study has conclusively given the best lending method. Managers and credit officers in microfinance institutions will benefit from this study by knowing the best lending methodology and apply it in their credit risk management and this will in turn reduce non-performing loans and thus make their services more effective.

The study will help the government in policy making in regard to the best lending practices and in formulating loan requirements policies that will go a long way in poverty eradication and empowerment of the poor people in Kenya.

To the borrowers of microfinance institutions, this study will assist in deciding the appropriate method of borrowing that suits them.

To the academia, the study will add on to the literature on lending methodologies and their effectiveness to the microfinance institution's performance. The findings will aid researchers who may in one way or another use this study as foundation to carry out further research.

1.7.Justification of the Study

In Kenya and indeed in the world today, there is an increased need and urgency to empower the poor and microfinance institutions are believed to be on the frontline of this campaign given that they provide access to credit facilities to the poor. There is need therefore, to understand and shed light on the lending methodologies used by microfinance institutions and which in turn affect their performance as they play the role of empowering the poor by giving them credit facility. This study will therefore be very helpful to such efforts and the findings will definitely be of value to the sector.

CHAPTER TWO

LITERATURE REVIEW

2.1.Introduction

This chapter explores the theoretical framework, and brings in the empirical review based on the objectives of the study. The chapter also includes an illustrated conceptual framework.

2.2.Theoretical Review

A theoretical framework refers to a collection of interrelated consent which helps the reader in making logical sense of relationships of the variables and factors relevant to the problem Ravitich and Riggan (2012). This section of the study discusses the theories that are relevant to effectiveness of lending methodologies in the financial performance of microfinance institutions in Kenya Ravitich and Riggan (2012). The theories discussed include:

2.2.1. Markowitz Portfolio Theory

This theory originated from Markowitz seminar and holds that for every level of expected risk, a portfolio should be constructed to achieve the highest rate of return or for every level of expected return, and portfolios can be constructed to have the lowest expected risk. This theory has the effect that, microfinance institutions cannot make one asset class decisions in isolation by viewing risks and returns because they must take into account how the assets (loans disbursed) co-relates with all the other assets in their portfolio (Nara Hari, 2007).

Microfinance firms need to balance many risks within its rank such as credit risk, liquidity risk and interest rate risk in order to maintain a quality portfolio (Nara Hari, 2007). Among such risks

is credit risk which originates from borrower's inability to pay or unwillingness to pay the loans advanced to them by microfinance institution. According to this theory, credit risk brings about degradation of a microfinance institution portfolio, increases their operating expenses and thereby reducing their revenues. Also, there is liquidity risk that originates from not having enough cash (loan portfolio) at reasonable cost and lastly, interest rate risk that originates from any changes in market rates during the loan term of borrowers. Markowitz showed that an important measure of risk is the variance of the rate of return put under reasonable assumptions and he came up with a formula of calculating the variance of the portfolio and the use of this method showed the importance of diversification to reduce risks and how to effectively diversify. Also, he rejected that investors should maximize discounted returns and chose their portfolio accordingly because this rule failed to illustrate diversification, no matter how the projected returns were formed. This theory helps this study in identifying the lowest expected risks in relation to lending methodology to lower default rates and therefore increase financial performance of microfinance institutions (Nara Hari, 2007).

2.2.2. Risk Aversion Theory

The theory explains that investor's desire to avoid participating in riskier behavior or investments (Fischer, 1972). This is because investors would like to maximize their return at take the least risk possible. The micro finance institution are adopting various methods of lending including government lending which has a low level of risk compared to customer lending, (The Bank Supervision Annual Report by the Central Bank of Kenya (2012-2016)). Risk aversion theory may be the main driver of this diversification of their lending behavior.

An investor driven by risk aversion tend to avoid or reduce their investment in risky investment even if such investment has high return. They instead choose an investment with low return which many at times may be a low return investment such as government bonds, treasury bills etc. A risk averse investor is much concerned about security of return than the rate of return.

2.2.3. Modern Portfolio Theory

Modern portfolio theory attempts to explain the relationship between portfolio risk and return. It explains where there is maximum portfolio expected return considering a given level of portfolio risk. The theory also explains how to minimize risk within a level of expected return. The objectives in this theory can be achieved through portfolio selection. It has a mathematical formulation for diversification concept in investing. The concept helps in selecting a investments from a pool to form a low risk portfolio for the considered level of expected return. That is as long as the investments within a portfolio are not exposed to the same risks (Merton, 1973).

Ideally diversification lowers risk assets risk even if the assets belong to the same risk class. Modern Portfolio theory considers the standard deviation of return as a measure of risks associated with the returns and weighted combination of assets, as the measure of return of a balanced portfolio. The microfinance institutions considered for this research combines various categories of individual lenders, group lending and lender based lending. Therefore, their return on investment would be considered to be the weighted average return of the assets invested in. Also, the overall portfolio risk is the risk of the three investments they have.

2.3.Empirical Review

This part of the study looks at the empirical review based on the three objectives; group lending and financial performance of microfinance institution, individual lending and financial performance of microfinance institution and lastly gender based lending and financial performance of microfinance institutions.

2.3.1. Group Lending and Financial Performance of Microfinance Institutions

Due to lack of collateral, many borrowers are excluded from credit facilities in microfinance institutions. This has led to an innovation by microfinance institutions to give loans to group of borrowers who are jointly liable. Members of the group act as guarantors to each other (Ghatak, 1999).

According to Wenner (1995), microfinance institutions give loans to groups without collateral due to the fact that most borrowers lack collateral and do not therefore qualify for credit facilities. The underlying theme in group lending methodology is joint liability where group members knows well that incase of default by some members to pay their loan, other members are liable to pay on their behalf of the defaulters. This makes members of the group to monitor and enforce members to pay. Borrowing from Ghatak and Van Tassel (1999), the study emphasizes that group members know each other and identify safe borrowers and as a result efficiency and repayments rates are higher in group lending than in individual lending.

The high repayment rates and low default rates in group lending can be attributed to group members who have the information of each other's project where they monitor each other to ensure success of each member. Also, it illustrates that monitoring in group lending reduces moral hazard issues Varian, (1990). Stiglitz (1990) also illustrates that monitoring in group lending reduces moral hazard issues that may exist while lending to borrowers with no collateral. Stiglitz model shows that group lending actually increases the choice of a safer venture because borrowers can be encouraged to advice fellow members chose a project with less risk in order to

be a success to both microfinance institution and borrowers. A study by Banerjee, Besely and Guinnaine (1994), shows that the burden of moral hazard between the lender and borrower falls on monitoring members who themselves are repaying the loan taken by a group member who might have defaulted or is unwilling to pay their dues. According to Ghatak and Guinnine (1999), self-selection of borrowers in group lending acts as a screening device and therefore it might be feasible given that there are lower interest rates because of cross subsidization of borrowers. Armendariz (1999), shows that benefits from each other monitoring amongst group members are biggest when risks are positively correlated among borrowers. Above paper further argues that group lending may perform worse than individual lending because of restrictions placed on group lending contracts given that the amount owed by a member for their defaulting partner is not optimally determined and furthermore the penalty is the same for members who pay and those who don't. However, this is not the case if group lending contracts restrictions are relaxed and the resulting flexible group performs much better than individual lending methodology.

2.3.2. Individual Lending and Financial Performance of microfinance institutions

According to Champagne,et al, (2007), the microfinance institution must screen individual borrowers and their businesses creditworthiness before they provide collateral. This method is strong because in the event that a borrower defaults, the microfinance institution charge on collateral and reduces the bank risk. Since the borrower has more information than microfinance institution, screening of client can sometimes not be feasible given that potential borrower may hide some information making microfinance institutions do monitoring on borrowers after loan disbursement so that borrowers use the loan for the purpose intended. This in turn increases microfinance institutions cost of loans to individuals.

Borrowers may sometimes divert a loan to consumption needs that may be urgent than what the loan was initially intended for Gine et al., (2006). To counter this problem, Champagne et al (2007), insists on the importance of visiting borrowers regularly to reduce the probability of channeling development loans to consumption needs. Gine and Karlan, (2006) conducted an experiment and found out that by offering out individual loans, microfinance institutions attract

more new borrowers. Madajewicz (2008), illustrates that borrowers who prefer individual loans are wealthier; nonetheless the study demonstrated that group loans are larger than individual loans for very low levels of borrower's wealth and that enterprises funded with individual loans are more successful than those businesses funded using group loans.

2.3.3. Gender Based Lending and Financial Performance of Microfinance Institutions

According to Farley (2003) and Schaefer (2004), men are more successful in business either as employees or as business owners. However, other studies differ and actually state that women are more successful in business through microfinance institutions than men. There are five theories that illustrate this gender situation; Armendariz and Morduch (2004) and Bird, Sapp and Lee (2001). The theory of human capital suggests that women are more likely to spend their time in family unlike men who are viewed to spend most of their time in business (Jacobsen, 1998). Secondly, the organized ecology theory suggests businesses owned by women fall disproportionately into small less well established businesses than men owned enterprises. (Armendariz and Morduch, 2004). Thirdly, social network theory states that social network of women put an emphasis on interpersonal relationships over instrumental relationships and thus is exposed to less relevant sources of business Goethals and Olson (2002). Fourthly, feminist theories state that there is systematic biases that obstruct women owned enterprises from being as good as men Ely and Padavic (2007). Finally, socialization theory illustrates that gender socialization has shaped women business experiences in a way that women have different business styles of management and objectives and therefore they won't be as successful as men Schaefer (2004).

Despite these theories, there exists numerous studies that illustrate exceptions that women supported by microfinance institutions are successful than male owned businesses Morduch (1999). First microfinance programs run by Grameen Bank showed that women clients have a greater impact socially and having them more as clients reduces financial risk Armendariz and Murdoch (2005) and that women have low risks of default and have higher repayments rates than men all over the world (Remenyi, 2000).

2.3.4. Summary of Literature Review

As the studies have shown there exists questions on the success of group methodology which relies on group pressure instead of incentives and penalties and this may give rise to corruption and disincentives within the group (Mayoux, 2001). Whether gender based lending is effective as a method to disburse loans to borrowers in a microfinance institution and whether this actually empowers women remains debated given that microfinance reinforces rather than transforms the gender gap of power and labor. Rankin (2002) observed that microfinance institution replaced supervisory control with peer control which was more effective and could force borrowers to pay because they know each other better. This peer group pressure influences women to a great deal than it does men and this makes women groups more successful Armendariz and Murdoch (2005). Microfinance institutions use many mechanisms to overcome the screening and repayment enforcement challenges and this in turn reduces the risk to default and increase repayment rates.

For individual lending methodology, the microfinance institutions must do close monitoring of borrowers so as not to divert the loan to consumption expenditure and this increases the costs to a microfinance institution because monitoring is individual based. Poor borrowers may sometimes divert a loan to consumption needs that may be urgent than what the loan was initially intended for Gine et al (2006). This review observed that there is less risk if microfinance services offered to clients with some financial security like savings which in essence allows them makes loan repayments even if their ventures don't generate profit. However, according to the same review, Stewart (2012), the micro savings have a positive result on clients without necessarily causing greater harm to them. All these methodologies and efforts are in an effort to cut the exposure of microfinance institutions to default risks that may render them perform dismally financially and therefore an in-depth study on their impact is needed.

In group lending methodology, members act as guarantors of each other and in the event of default by one or more members the rest will have to meet the burden of repaying the loan. In

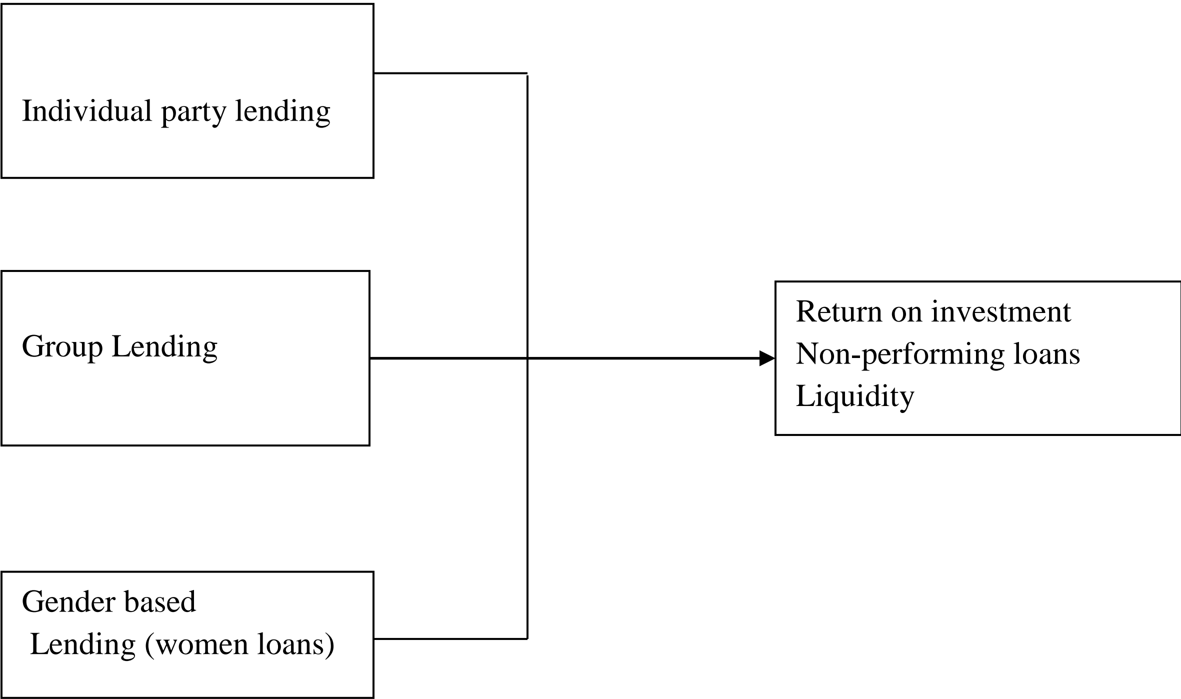
individual lending a lot of people will be excluded from accessing credit facilities due to lack of collateral hence unpopular method to masses. Gender based lending is discriminative in nature because some people will be denied credit facility just because of their gender.

2.4.Conceptual Framework

Figure 1 shows the conceptual framework. The independent variables are lending methodologies, defined group lending, individual lending and gender based lending while the dependent variable is financial performance of microfinance institutions measured by profitability, size of bad debts and customer numbers.

Figure 1: Conceptual framework

(Source: Author, 2016)



2.5.Operationalization of Variables

2.5.1. Individual lending

Individual lending means loans to individual customers both men and women, both people and businesses. It is represented by lending to customers who do not have group guarantee and are not considered for any specific product meant for men or women.

2.5.2. Group lending

Group lending is used to represent customers who prescribe to a given group loan criterion. Whether this loan is ultimately divided among the members or used for a group project. This study considers at the time of application whether the applicants guarantee one another as a group or as individuals.

2.5.3. Women lending

Gender based lending was represented in the study. In some microfinance organizations, there is a special amount set aside to be advance as loans to women or men specifically. This constitute the gender based lending. In others there is no amount set aside however they encourage women participation in loans through other means considered to be gender based lending.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1.Introduction

In this chapter, the methodology used to gather data, analyze results and reporting of the same was be discussed including the research design, sampling methods, and sample sizes from the population.

3.2.Research Design

This study will adopt a descriptive research design as the overall plan used to obtain answers to study questions encountered during the research process. This study was conducted through the use of descriptive design which portrays an accurate profile of events, people or situations and therefore has the best strategy to meet the objectives of this study. Descriptive design is appropriate to this study because it is fast, utilizes resources optimally in terms of finances required, time, labor and transport Kothari (2004) and descriptive statistics allow for data to be presented in a meaningful way that allows simpler interpretation of data (Cooper and Schindler , 2011).

3.3.Population of the Study

The target population was microfinance institutions in Kenya. There are 12 deposit taking microfinance institutions registered by the Central Bank of Kenya thus bringing the total population to 12. According to Mugenda and Mugenda (2003), the population of a study includes all elements that meet the criteria for inclusion in a particular study. Since this is a small population study, a census approach will be undertaken. Israel (2012) posits that although cost

considerations make census technique impossible for large populations, a census is attractive for small populations.

3.4.Sampling procedure

Purposive sampling approach was adopted to select the units for the study. This is because not all the MFI's had the desired characteristics. Some were registered after the study period while others are not covered in the central bank report. 9 out of 12 deposit taking microfinance Institution organizations were sampled in the study.

3.5.Procedure for Data Collection

This study used secondary data derived from the financial statements of the firms and the Bank Supervision Annual Report by the Central Bank of Kenya (2012-2016). This was collected from the websites and publications of individual MFI's as well as central bank of Kenya publications during the same period.

3.6.Data Analysis Techniques

The researcher used both quantitative and qualitative techniques. Data from this study was analyzed using Stata version 13. Inferential statistics like correlation analysis and regression were used.

3.7.Analytical Model

The study employed a panel data regression method to test the significance of the influence of the independent variables on the dependent variable. Hausman test was used to decide whether to use fixed or random effect regression models. The model used was in the form:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

Where:

Y= Financial performance of microfinance institutions

X_1= Individual lending

X_2= Group lending

X_3= Women lending

β_0= the constant.

$\beta_{1,2,3}$= regression coefficients

e=error term

3.8.Ethical Issues

In all stages of the research design, the researcher considered moral standards by upholding three principles of ethics which are respect for human dignity, beneficence and justice. This ensured that there was informed consent from respondents and sensitivity to the emotions of the respondents will be observed (Polit et al., 2003).An approval from the University was obtained and permission from microfinance institutions sought after getting a research permit from the relevant authority.

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter discusses data analysis and presentation of the research findings. It gives a detailed explanation of the processes, techniques and procedures applied in analysis and presentation of data. The data analysis sought to determine effectiveness of lending methodologies on financial performance of micro finance institutions in Kenya. The analysis was done using panel data regression.

4.2 Descriptive Statistics

The table below is a summary of data that was used in the regression. The data was collected from financial statements of the selected MFI's from the Bank Supervision Annual Report by the Central Bank of Kenya (2012-2016) is customer lending.

Table 1: Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
roi	overall	-.01775	.0599139	-.2690355	.0380435	N = 45
	between		.0521885	-.1526156	.017017	n = 9
	within		.0333713	-.13417	.1348656	T = 5
liquid~o	overall	.3759111	.3367016	0	2.17	N = 45
	between		.1681483	.234	.716	n = 9
	within		.2960818	-.1900889	1.829911	T = 5
netnon~s	overall	237.7111	551.7701	-27	3150	N = 45
	between		428.3507	3	1319.6	n = 9
	within		371.0072	-620.8889	2068.111	T = 5
GroupL~s	overall	1491.547	2412.799	0	9249.55	N = 43
	between		2304.524	48.85	7016.858	n = 9
	within		921.0422	-2225.981	3724.239	T-bar = 4.77778
WomenL~s	overall	4037.761	7212.563	0	25992.94	N = 43
	between		7131.136	56.372	20963.63	n = 9
	within		2063.568	-2461.827	9067.073	T-bar = 4.77778
indivi~s	overall	3978.778	6691.623	0	22189	N = 45
	between		6643.708	75	18108	n = 9
	within		2156.753	-3612.422	9393.578	T = 5

Source: Author (2017)

4.3 Study Variables

The study employed a panel data regression model to test the significance of the influence of the independent variables on the dependent variable. This model used the following form:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

Where:

Y= Financial performance of microfinance institutions measured by

X_1= Individual lending

X_2= Group lending

X_3= Gender based lending

β_0= the constant.

β_1,β_2,β_3= regression coefficients

e= Error term

4.4 Model Fitting

Three regressions were run in the study to determine the relationship between the lending models of the microfinance institutions and the financial performance of the firms. The first model and was for a relationship between the lending models and the Return on Investment of the Institutions. The second Model was for the relationship between the lending models adopted by the microfinance institutions and their liquidity ratio and the third was the relationship between the lending models and the non-performing loans of the microfinance institutions. The results of the three models are presented in Table 2 below.

4.4.1 Findings on effectiveness of lending methodologies on Return on Investment

Figure 1 Hausman Test

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
individual~s	-7.56e-06	-7.33e-06	-2.34e-07	6.67e-06
GroupLoans	6.68e-06	6.06e-06	6.18e-07	.0000135
WomenLoans	4.97e-06	6.28e-06	-1.31e-06	4.04e-06

```
                  b = consistent under Ho and Ha; obtained from xtreg
         B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.45
                Prob>chi2 =      0.9302
```

The Hausman test for fixed and random effect failed to reject the null hypothesis. Meaning the fixed effects panel data regression should be used.

Figure 2 Effects between lending methodologies and ROI

```
Fixed-effects (within) regression               Number of obs      =        43
Group variable: mfinumber                       Number of groups   =         9

R-sq:  within  = 0.0055                         Obs per group: min =         4
       between = 0.0405                                        avg =       4.8
       overall = 0.0179                                        max =         5

                                                F(3,31)            =      0.06
corr(u_i, Xb)  = -0.2564                        Prob > F           =    0.9818

------------------------------------------------------------------------------
             roi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
individualloans  |  -7.56e-06   .0000192    -0.39   0.697    -.0000468    .0000316
      GroupLoans |   6.68e-06   .0000215     0.31   0.758    -.0000372    .0000506
      WomenLoans |   4.97e-06   .0000142     0.35   0.729     -.000024     .000034
           _cons |  -.0171172   .0133616    -1.28   0.210    -.0443683    .0101339
-----------------+------------------------------------------------------------
         sigma_u |  .05368716
         sigma_e |  .03950131
             rho |  .64877981   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(8, 31) =     7.73              Prob > F = 0.0000
```

When the relationship between the suggested lending methodologies and Return on Investment (ROI) was tested, the model showed an insignificant relationship. The lending methodologies used were individual lending, group lending and gender based lending represented by women loans. From the analysis individual lending, group lending and gender based lending do not have significant effects on ROI. There may be other factors that affects ROI other than these lending methodologies. Specifically, the study found that individual lending has a insignificant negative relationship with ROI while group and women lending have insignificant positive relationship with ROI.

4.4.2 Findings on effectiveness of lending methodologies on Liquidity of Micro finance institutions

Figure 3 Hausman test

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
individual~s	.0000168	.0000471	-.0000302	.0000622
GroupLoans	.0000199	-.000053	.0000728	.0001446
WomenLoans	-.0000244	-.0000401	.0000157	.000035

```
                  b = consistent under Ho and Ha; obtained from xtreg
       B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                 chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                         =        0.51
               Prob>chi2 =      0.9165
```

According the Hausman test for the relationship between lending methodologies and liquidity, the null hypothesis should not be rejected. This therefore suggested that the fixed effects panel data regression should be used.

Figure 4 Effects between lending methodologies and Liquidity

```
Fixed-effects (within) regression               Number of obs      =        43
Group variable: mfinumber                       Number of groups   =         9

R-sq:  within  = 0.0042                         Obs per group: min =         4
       between = 0.0014                                        avg =       4.8
       overall = 0.0000                                        max =         5

                                                F(3,31)            =      0.04
corr(u_i, Xb)  = -0.3958                        Prob > F           =    0.9878
```

liquidityratio	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
individualloans	.0000168	.0001665	0.10	0.920	-.0003227	.0003564
GroupLoans	.0000199	.0001865	0.11	0.916	-.0003606	.0004003
WomenLoans	-.0000244	.0001232	-0.20	0.844	-.0002756	.0002268
_cons	.392218	.1157513	3.39	0.002	.1561417	.6282943
sigma_u	.17823637					
sigma_e	.34220036					
rho	.21339662	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(8, 31) =      0.90              Prob > F = 0.5260
```

When liquidity ratio was regressed against lending methodologies individual lending, group lending and gender based lending represented by women loans, the study found that the model does not significantly explain liquidity. This means liquidity of microfinance institutions are explain better by some other factors other than the lending methodologies. None of the selected lending methodologies significantly affects liquidity of microfinance firms in Kenya.

Specific finding of this analysis is that individual lending and group lending have insignificant positive relationship with liquidity while women lending has insignificant negative relationship with liquidity of the firms.

4.4.3 Findings on effectiveness of lending methodologies on Non-Performing Loansof Micro finance institutions

Figure 5 Hausman test

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
individual~s	.6701192	.4855779	.1845413	.
GroupLoans	-.9176652	-.4141818	-.5034834	.
WomenLoans	-.2279402	-.2887763	.0608362	.

```
                        b = consistent under Ho and Ha; obtained from xtreg
         B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =      205.52
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)
```

The Hausman test results suggested rejection of null hypothesis. In this case therefore the random effect panel regression was used.

Figure 6 Effects of lending methodologies on non-performing loans

```
Random-effects GLS regression                   Number of obs      =        43
Group variable: mfinumber                       Number of groups   =         9

R-sq:  within  = 0.6583                         Obs per group: min =         4
       between = 0.9719                                        avg =       4.8
       overall = 0.7711                                        max =         5

                                                Wald chi2(3)       =     94.15
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

netnonperfloans	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
individualloans	.4855779	.1250674	3.88	0.000	.2404503	.7307055
GroupLoans	-.4141818	.0984151	-4.21	0.000	-.6070719	-.2212917
WomenLoans	-.2887763	.0955114	-3.02	0.002	-.4759753	-.1015774
_cons	10.57558	67.43593	0.16	0.875	-121.5964	142.7476
sigma_u	55.352476					
sigma_e	124.88129					
rho	.1642027	(fraction of variance due to u_i)				

In the final model, Non-Performing Loans were regressed against regressed against lending methodologies individual lending, group lending and gender based lending represented by women loans. The finding of the analysis was that all the lending methodologies have a significant effect on non-performing loans. Specifically, individual loans are positively related to non-performing loans while group loans and women loans are negatively related to non-performing loans.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

The study purpose was to establish the effect of lending methodology and financial performance of microfinance institutions in Kenya. This chapter presents the summary, conclusions and recommendations from the study.

5.1.Summary

5.1.1. Individual lending methodology

The first objective of the study was to assess the effects of individual lending methodology on financial performance of microfinance institutions in Kenya. The findings from the analysis showed that individual lending has an insignificant negative relationship with ROI.Individual lending also has insignificant positive relationship with liquidity and a significant positive relationship with non-performing loans. This suggest that most of the non-performing loans are extended to individuals and not groups or women.

5.1.2. Group lending methodology

The second objective of the study was to assess the effects of government lending methodology on financial performance of microfinance institutions in Kenya. The findings from the analysis showed that group lending have insignificant positive relationship with ROI liquidity while women lending has insignificant negative relationship with liquidity of the firms and a significant negative relationship with non-performing loans. Group loans extended by microfinance institutions are paid more promptly than individual loans.

5.1.3. Gender based lending methodology

The third objective of the study was to determine the effects of gender based lending on financial performance of microfinance institutions in Kenya. Results revealed that women lending positively affects financial performance of microfinance firms in Kenya. Women loans have insignificant positive relationship with ROI, insignificant negative relationship with liquidity of the firms and a significant negative relationship with non-performing loans. This shows that women loans are paid more promptly.

5.2.Conclusions

5.2.1. Individual lending methodology

On the first objective of the study, the conclusion is that individual lending methodology affects financial performance of microfinance institutions in Kenya. The microfinance banks that has high individual lending as compared to other lending methodologies suffers a lot non-payment of loans however individual interest rate is higher due to this risk making ROI to increase but insignificantly.

5.2.2. Group lending methodology

The conclusion for the second objective of the study is that group lending methodology affects financial performance of microfinance institutions in Kenya. The study found out that the group loans have low risk associated with group guarantee making loan repayment prompter than in individual borrowing. This also increases ROI of the firm. Group loans at times have a long grace period making the firms liquidity to decrease but insignificantly.

5.2.3. Gender based lending methodology

Lastly, the study concludes that Gender based lending methodology affects financial performance of microfinance institutions in Kenya. The study found out that in the firms with high women lending there is low default rate of loans. This shown by the significant negative relationship between women lending methodology and non-performing loans. The effect of women lending of other aspects of performance are insignificant.

5.3.Recommendations

The following recommendations based on the findings of the study are suggested to help improve financial performance of microfinance institutions in Kenya. The study found out that financial performance of microfinance institutions was affected negatively by individual lending methodology. However, this lending methodology cannot be avoided because many clients prefer individual financial dealings. It is therefore recommended that the management of various microfinance firms should create a balance between individual and group lending to improves loan repayment rates.

The study also recommends that since group lending methodology affects financial performance of microfinance institutions, by reducing the risks associated with cash flow, the firms should encourage groups to take more loan. However, group lending is associated with low interest rates and low loan application rates.

Lastly, the study also recommends that microfinance institutions should encourage women lending maybe through creating special women products. From the study women loans have high

repayment rate as indicated by the significant positive relationship between women lending methodology and non-performing loans.

5.4.Limitations of the study.

The main limitation of the study was that it focused on only the licensed microfinance firms in Kenya. This left out Sacco's and other credit providers to the small and medium enterprises that could have provided greater insights to the topic under study.

5.5.Areas of further research

The study's objective was to assess the effects of lending methodologies on financial performance of microfinance institutions in Kenya. This called for analysis of only licensed microfinance banks in Kenya, therefore areas of further studies could include even unlicensed or yet to be licensed microfinance institutions and other institutions including Sacco's that offer credit to medium and small enterprises in Kenya.

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