JOINT LIABILITY AND GROUP LOAN PERFORMANCE AMONG MICRO
FINANCE INSTITUTIONS: A CASE OF NYANDARUA COUNTY, KENYA

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JULY, 2018
DECLARATION

This Project is my original work and to the best of my knowledge has not been presented for a degree in any other university or for any other award to the best of my Knowledge.

Signature: ___________________________ Date: ________________

Newton Riunge Njoroge

D53/OL/NKU/24645/2014

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

Signature: ___________________________ Date: ________________

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School of Business.

Kenyatta University
DEDICATION

This research proposal is dedicated to all who played an instrumental role in the course of developing this document. I dedicate this to my entire family for their love and encouragement. I also dedicate this to the Almighty God who provided me with good health and the gift of life.
ACKNOWLEDGEMENTS

I acknowledge the support of one Dr. Abel Anyieni, my supervisor for his guidance in the course of preparing this research proposal. I further salute him for his devotion in ensuring that this task was completed within the set timelines. I acknowledge my university; Kenyatta University for the prestigious opportunity accorded to learn in such a prestigious college and for the life changing skills acquired from her high value resources.
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## ABBREVIATIONS AND ACRONYMS

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AHITI:</td>
<td>Animal Health &amp; Industry Training Institute</td>
</tr>
<tr>
<td>AMFI-K:</td>
<td>Associations of microfinance institutions of Kenya</td>
</tr>
<tr>
<td>CBK:</td>
<td>Central Bank of Kenya</td>
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<td>CBO:</td>
<td>Community Based Organization</td>
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<tr>
<td>CRB:</td>
<td>Credit Reference Bureau</td>
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<tr>
<td>DTM:</td>
<td>Deposit Taking Microfinance</td>
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<tr>
<td>FHI:</td>
<td>Food for the Hungry International</td>
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<tr>
<td>KARLO:</td>
<td>Kenya Agricultural &amp; Livestock Research Organization</td>
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<tr>
<td>K-REP:</td>
<td>Kenya Rural Enterprise Programme</td>
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<tr>
<td>MFIs:</td>
<td>Microfinance institutions</td>
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<td>MSMEs:</td>
<td>Micro, Small and Medium Enterprises</td>
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<td>PAWDEP:</td>
<td>Pamoja Women Development Programme</td>
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<td>NGOs:</td>
<td>Non-Governmental Organizations</td>
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<td>ROSCAs:</td>
<td>Rotating Savings and Credit Associations</td>
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<td>SACCO:</td>
<td>Savings and Credit Cooperatives</td>
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<td>SMEP:</td>
<td>Small and Micro Enterprise Programme</td>
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<td>UN:</td>
<td>United Nations</td>
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OPERATIONAL DEFINITION OF TERMS

Adverse Selection Control: Measures towards lessening the chances of adverse selection which represents an undesired result due to the situation where one party of a deal has more accurate and different information than the other and as such, the party with less information is placed at a disadvantaged position to the party with more information.

Appraisal: The act of evaluating and setting the value of a specific piece of personal or real property.

Cohesiveness: Groups that are well intergraded and unified.

Collateral: Borrowers pledge of specific property or chattels to a lender for purposes of securing the loan.

Deferred Payment: A payment postponed until a future date.

Group Lending: Where small groups of borrow collectively and guarantee each other’s loans.

Group Loan Performance: This reflects the extent to which the firm achieves its objectives on group loan portfolio management including loan book growth, growth in customer base, loan book quality, repayment rate and profitability.

Growth: The process of increasing sales, rate of capital, profit, staff and customer numbers for a business.

Incentive: A thing that motivates group customers to repay their loans.

Joint Liability: This involves an obligation for loan repayment that allows parties to share the risks associated the debt and comes up
when two or more parties apply jointly for credit as co-borrowers.

**Loan Book Quality**

The probability of loan advances being repaid by clients within agreed timelines which affects the relative worth or value of a loan portfolio.

**Loan Contract:**

An agreement between a borrower and a lender in which terms and conditions of a loan are set.

**Loan Monitoring:**

To observe the progress and quality of the loan book over time.

**Microfinance:**

A source of financing services for entrepreneurs and small business lacking access to banking and related services.

**Micro Finance Institution:**

This is a financial institution that offers microfinance services to customers.

**Moral Hazard Control:**

Measures in controlling the detriment of moral hazard which involves risk of diversion of funds to projects other than those documented at loan application.

**Performance:**

Refers to the extent to which an organisation meets or fulfils its goals and objectives.

**Social Sanctions:**

The measures used by a society to enforce its rules of acceptable behavior.
ABSTRACT

Group based lending has been synonymous with most borrowers of the lower economic end in the developing world and this is no exemption to borrowers in Kenya. For a long time low income earners had been left out and were previously unbanked. The microfinance model through group lending has ensured inclusion of these players to the economy. Group lending is done through self-organised groups of individuals mostly between 5 and 20 who lack mainstream collateral but can co-guarantee each other’s loans to ensure they access funding. Group lending most dominant feature is joint liability that involves the group members being responsible for all loans in the group and being obligated to take action against a non-paying member or paying the loan of such a member. Joint liability depends on sanctions that are imposed on a defaulter which include seizure of households that may have been pledged as security, discrimination on a non-paying member and denial of future funding. This study sought to investigate the effects of joint liability on group loan performance for Micro Finance Institutions in Nyandarua County, Kenya. The study was carried out using descriptive survey design. The study relied on a population of 11 Micro Finance Institutions with operations in Nyandarua County as gathered from the Association of Micro Finance Institutions of Kenya (2017). The study used the census study approach to identify the micro finance institutions to study alongside the purposive or judgemental sampling approach to sample the target respondents. The purposive sampling procedure targeted a total of 66 respondents comprising of branch managers, credit managers, finance and investment officers, customer care officers, operations managers and loan officers of Micro Finance Institutions offering group lending in Nyandarua County, Kenya. The research relied on primary data from questionnaires which highlighted various aspects of group liability lending and performance of the group loans. Validity and reliability of the instrument was assessed using Cronbach’s Alpha Reliability Test, pre-testing and expert opinion. The study adopted the drop and pick method for data collection. Data analysis involved use of both bivariate and multivariate analysis. Both descriptive and inferential statistics were useful for the study at hand. Correlation and Regression Analysis models were the key inferential statistical procedures in testing the research hypotheses. The study was important in bringing out the specific group lending practises and how such practises are impacting on the group borrowing. The group loan performance of the Micro Finance institutions in Nyandarua County was considered fairly good with the average group repayment of loans standing above two thirds but highlighting need to drive the organisations towards full group loan repayment. The average growth in group loan portfolio was also found to be fairly good although some players in the sector were not registering attractive figures in loan portfolio growth hence need to device ways to improve growth in loan book. On the same note, the average net profit margin stood just slightly above the quarter mark which calls for action towards the improvement in profitability. As demonstrated by the Coefficient of Determination or R square, more than three quarters (75.70%) of the variation in the Group Loan Performance of MFIs was explained by variability in the joint liability lending factors including enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control. The study recommends that MFIs rethink and redefine their lending strategies in order to ensure an improvement on profitability which was found not to be very attractive.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Banking has had a strong presence in the financial world since the 20th century where banks have played the role of financial intermediaries depending highly on the financial systems. One challenge of financial systems approach is that it relies on the market approaches, which may be thin and weak in marginal areas (Manandhar & Pradhan, 2005). Marginal areas carry a population of poor people who were previously left out of the economy as banks shunned them and considered them un-bankable while on the other hand the poor population feared banks and microfinance is the provision of a wide range of financial services ranging from savings credit facilities money transfer and micro insurance to the economically active poor, low income also avoided them. In these marginalized areas, market solutions can be found to overcome any challenges found and enhance financial inclusion (Hitchins, Elliott, & Gibson, 2004). Such solutions include the development of the microfinance model. According to Kwambai and Wandera (2013), households and small and micro scale enterprises (SMEs) in both rural and urban areas using innovative delivery methodologies and channels.

Various sources have cited different roots of microfinance but microfinance globally was put on the map and helped to develop and enjoy a huge success by Prof Professor Yunus through Grameen bank whose objectives was to reach the poor and the marginalized. Professor Yunus gave loans to groups of women who farmed rice from his own funds and help develop the Grameen model which was very successful and has been implemented worldwide in microfinance(Muhammad, 2009). Grameen model involved creation of groups of five who would save and the first two beneficiaries would receive loans and their payment would be monitored. The decision on whether the other 3
members of the group would receive loans was dependent on how the first 2 members paid their loans (Hazeltine & Bull, 2013). The microfinance model has a very large presence over the world especially in developing nations in Africa, Asia and South America. The microfinance model went through a lot of changes in the 1980s and 1990s. In the year 2005 the microfinance business was at its peak attracting investors from other sectors to invest in it (Sundaresan, 2008). Microfinance involves the following models which can conduct their activities formally or informally. Formally meaning their activities are regulated by the relevant authorities and informally meaning their activities are not regulated though such activities are not illegal.

1.1.1 Rotating and savings credit associations

This model involves contribution by every member where the contributions are collected and given to members in turns, each per cycle (Karlan, 2004). This model is mostly practiced by workmates, extended family members, villagers, church members and other social groups that may be formed. This model is very important as it offers a saving platform to people and ensures that the can achieve projects that require bulk savings. It offers credit in the form that the first beneficially has received money they have not saved. Monies in such groups are not returned with any additional interest, the group members continue to contribute their savings normally until the cycle is completed.

1.1.2 Village banking model

Village banking is a model where members of a certain village come together to offer themselves financial solutions. These groups are advanced ROSCAs. In ROSCAs members receive funds using a certain criteria maybe by selection of raffles or using other methods where the period in which the member receives funds is not matched with when the needs arise. A member may receive funds in a time they have no prevailing needs which may lead to impulse buying or fail to get funds at the time of need which
may lead to the member seeking alternative sources of funds. Village banking covers the problem by offering loans to willing members at a small interest rate. Village banking is a community managed Sacco established to access financial services by rural groups formed by villagers (Ledgerwood, 1999; Woller, 2000)The biggest advantage of village banking is that it lends money to people to cover obligations that the bank does not cater for like graduations, weddings and other social events. Village banking groups are borrowing from MFIs with a common project to purchase properties such as land that is subdivided among members.

1.1.3 Peer groups
These are the most common type of groups in the formal microfinance sector. They are made up of a group of 5-15 members depending on the organization. These members come together with the objective of borrowing loans from MFIs. The group members save money for a given period after which some members usually around a third of them get their first loans while the others get their loans depending on the repayment of the first members. The savings period is an incubation period where the bank officer trains the group on the bank products and on entrepreneurial skills as they observe the savings trends of the group before loan application (Mkpado & Arene, 2007). The liability of such groups is joined, if one of the members defaults their loan the rest of the members are obligated to pay for the defaulting customer. These groups are characterised by weekly meetings which are mandatory for all members. Most financial institutions require that for this kind of groups they must be practicing table banking which is basically what ROSCAs and Village banking do so that members who have difficulty paying to the bank can meet their obligations by being supported by the money from the table banking.
1.1.4 Individual microfinance

Individual microfinance is the newest addition to microfinance lending. Individual lending is defined as lending to individuals who are not in the group set up and liable jointly (Ledgerwood, 1999; Harper, Fisher, Sriram, & others, 2002). Most of the institutions require the customer to have used their account for a certain period. Some of the banks will ask for cash collateral while a third party guarantor is also a requirement for others.

1.1.5 Group Loan Performance

There are various indicators of group loan performance as advanced in past literature and studies. These include, growth in customers’ loan book, quality of the loan book and profitability of the firm. With regard to growth in loan book, Rosenberg (2009) present that growth in customer base and the size of loan book are positive indicators that the loans are being repaid Firms that have poor loan repayment will not grow in these parameters as a poor loan book does not allow the firm to continue lending. Additionally, the activities that follow poor loan repayment such as recovery by way of seizure of property have a negative effect on intake of new customers and in existing customers applying for new loans. Due to the nature of microfinance loans where clients are graduated to higher loan amounts after paying their loans well, the growth of the loan book is slow and pressure to grow the loan book rapidly may be counterproductive (Brau & Woller, 2004).

Loan book quality concerns the probability of the loans advanced being recovered when due. Once loans are issued to customers, the customers are required to pay back the monies to keep the MFIs moving. Poor repayment of loans is detrimental to the quality of the loan book. Loan default is one of the most critical issues of concern to all shareholders in an organization (Nawai & Shariff, 2010). A study by Bhatt, Painter, &
Tang (2002) on the challenges of outreach and sustainability for US microcredit programs found out that thirty percent of the domestic microfinance programs were no longer operational or were operational but not lending capital two years after their inception. As such, the quality of loans issued by MFIs plays a critical role towards assuring the survival sustainability and growth of those institutions. Guttman (2007) observes that loan default is the major cause of MFIs failure. As such, the success of loan repayment depends on the degree of arrears. An institution with low arrears will be said to have successful loan repayment. Loan default is caused by various factors some voluntary and other involuntary. There are various methods of dealing with default the most common one being seizure of property offered as security from the borrower.

Profitability of a financial institution is a major indicator of the performance of loan repayment. In banks the most common indicator of profitability is return on assets which shows the ability of a firm to be able to deploy its assets profitably (Rosenberg, 2009). Other methods of measuring the profitability of firms include return on equity, net profit margin and return on sales. If loans are not being paid they should be provided for against the profit which reduces the profitability. When measuring the profitability of microfinance we must also consider that some microfinance institutions receive funding from donors and hence adjust profits of such donor funded institutions against the grants they receive.

1.1.6 Joint Liability

According to Armendáriz and Morduch (2005), joint liability ideally represents a contract where customers are the borrowers and guarantors of other clients in the same borrowing group at the same time. Joint liability aims at ensuring that the group members push each other to meet their loan obligations. The ideal joint liability ensures
that all members pay their loans in the group meetings and those who do not have money to pay their loans have other group members pay their loans and a refund to the group members is done latter.

Adverse Selection Control represents measures aimed at improving access to client information in order to avoid or lessen lending to clients with bad credit history. Adverse selection problem is where borrowers mostly of low income brackets have some characteristics that cannot be identified by lenders due to their lack of financial statements and borrowing history. Such characteristics have an effect on the repayment trend of the borrower (Ghatak & Guinnane, 1999). To mitigate this problem collateral is introduced to cushion the borrower from the risks of nonpayment

Moral hazard control involves measures to lessen or control the risk of diversion of funds to projects other than those documented at loan application. Precisely moral hazard refers to situations where lenders cannot observe either effort or action taken by the borrower to ensure realization of the funded project returns (Armendáriz & Morduch, 2005). There are two types of moral hazards, one is ex ante moral hazard where the borrower cannot identify the actions taken by the borrower between the time the loan is disbursed and the time the project starts to bring in returns while the second one is ex post moral hazard where the lender cannot identify the actions of the borrower after the project has given results (Berger, Frame, & Ioannidou, 2011). In the group setup the ex ante moral hazard problem is arrested when group members ensure that every individual who has borrowed uses their loan in non-risky investments to ensure loan repayments (Jiang, Nelson, & Vyltalcil, 2014).

Loan monitoring involves measure undertaken to ensure that loans advanced to clients are repaid within the frameworks of the loan agreement (Ghatak & Guinnane, 1999). Loan monitoring reduces the risk of the borrowers diverting their money to other projects
which may cause default and consequently increase the loan cost hence high interest rates. Effective loan monitoring also leads to selection of profitable undertakings that ensure good repayments (Milgo, 2013).

Groups that have joint liability ensure that they put social sanctions on non-paying group members to ensure that they pay their loans. Such sanctions include loss of reputation for the defaulters, isolation and in rare cases physical violence (Armendáriz & Morduch, 2005). Social sanctions help as banks have very little power to sanction poor people. Neighbors are able to impose non-financial sanctions at a very low cost (Chowdhury, 2005).

1.1.7 Microfinance Institutions in Kenya

In Kenya microfinance services were started by NGOs in the 1980s and 1990s. NGOs like food for the hungry changed to Faulu deposit taking microfinance and now to Faulu microfinance bank and K-rep which was started in 1984 as a project to support small and micro enterprises, later in 1987 being incorporated as a local NGO and in 1999 we saw the establishment of K-rep bank now trading as Sidian bank. In Kenya microfinance facilities have for long been provided by mainstream banks like Equity bank, microfinance banks like KWFT DTMs like SMEP and microfinance institution like Juhudi Kilimo among other players in the industry. Competition and use of technology has seen mainstream banks introduce microfinance loans. An example is Equity bank which is a tier one bank that offers a variety of microfinance loans to individuals in various sectors of the economy.

Kenya has the second largest borrower base in the continent, a reason which makes microfinance presence in Kenya very huge (Lafourcade, Isern, Mwangi, & Brown, 2005). Kenya also has largest savings and credit cooperatives (SACCOS) movement.
which also a factor that has seen more inclusion of the economically active poor to the financial system (Johnston, 2006). Worldwide microfinance has developed serving over 10 million households worldwide (Gomez & Santor, 2008). Kenya has not been left behind and has seen microfinance institutions numbers increase day by day with the country having twelve licensed microfinance banks. Kenya has 62 institutions registered under Associations of microfinance institutions of Kenya a member based institution registered in 1999 under the societies ACT by Kenyan leading MFIs with the aim of building capacity for MFIs in Kenya (AMFI-K, 2016). Microfinance institutions in Kenya are regulated by the Microfinance Act which was recently amended in 2013. Microfinance banks are regulated directly by the CBK which ensures financial ensures sustainability and growth for the sake of the economy and the customers.

Microfinance institutions in Kenya are diversifying their products from the usual group lending based products and including individual microfinance products as most customers demand individual products to avoid the challenges associated with group lending. However group lending is still the biggest vehicle in delivering of microfinance products. Microfinance through groups is more than just lending but it also includes groups being trained on issues revolving around education, nutrition, empowerment of women and youth, home economics and entrepreneurial skills (Pretes, 2002). For example, groups were used by environmental organizations to reach out to homesteads on use of solar powered lighting solutions instead of fuel based methods like the use of paraffin to reduce pollution and also save money for the low income earners.

1.1.8 Nyandarua County

Nyandarua County is in Central Province of Kenya and is County number 18 on the list of counties in Kenya as per the new constitution of Kenya. The County covers an area of 3245.2 km² and has its headquarters in Ol-kalou Town. Nyandarua County neighbours
Nakuru, Laikipia, Nyeri, Muranga and Kiambu Counties. Nyandarua is divided into five sub counties that include Ol-joro-orok, Ol-kalou, Kipipiri, Ndaragwa and Kinagop with a total population of 596,268 according to the national census of 2009. Residents in this county are involved largely in agriculture, household goods trade, transport and informal sector businesses commonly referred to as Jua kali among other business activities. Nyandarua County is one of the leading counties in dairy production and is also home to agricultural institutes such as Kenya Agricultural & Livestock Research Organization (KARLO) and Animal Health & Industry Training Institute (AHITI). The number of registered traders in 2013 was 537 wholesalers and 12,900 retail traders (Nyandarua 2013). Nyandarua is served by several banks like Equity bank, Cooperative bank, Family Bank and Kenya Commercial Bank plus microfinance institutions like Faulu Micro finance bank, Kenya Women Finance Trust (KWFT), Sidain bank formerly K-rep bank, Small and Micro Enterprise Programme (SMEP), Real people, BIMAS, JuhudiKilimo, PAWDEP and Kenya Ecumenical Loan Funds (ECLOF), Letshego Micro Finance and Musoni Micro Finance Bank.

1.2 Statement of the problem

The fact that Micro Finance Institutions (MFIs) target mainly the financially excluded class of clients that lack collateral for credit advancement makes the business a very high risk engagement (Armendáriz & Morduch, 2005). Performance of the MFIs sector has not been very attractive mainly due to poor control of their lending activities and growing risk (Moti, Masinde, Mugenda, & Sindani, 2012). Bichanga and Aseyo (2013) have recommended the group lending model as a way of addressing default levels in MFIs by spreading the liability to all members. The group lending framework has been fronted as a way of diluting the risk of non-repayment of loans (Brau & Woller, 2004). However, default of group loans have also in some cases been reported to be very high in
MFIs with some being well above eighty percent (Amwayi, Omete, & Asakania, 2014). Recently, there has been a wave of corporate failures particularly in the financial sector with banks that also offered micro finance services such as Chase bank going under receivership. However, while studies have been done on this area, a lot remains to be done to support a case for joint liability lending.

Few studies have been done on joint liability with different researches coming up with varied results. Joint liability leads to high loan repayment and low default rate (Carpena, Cole, Shapiro, & Zia, 2012). Gomez and Santor (2003) also found empirical evidence that group lending does indeed lower borrower default rates more than conventional individual lending. However joint liability does not always work and it has been found that some members default under the group setting with joint liability while they would have paid under individual contracts (Besley & Coate, 1995). In group lending with joint liability and individual lending models with weekly repayments and no mandatory meetings the repayment is the same (Giné & Karlan, 2014).

Introduction of technology has seen a big change in how microfinance business is conducted. Kenya is one of the leading nations in mobile banking with products like M-pesa which is revolutionary mobile money transfer platform which is being used to transfer money internationally and M-shwari which allows customers to save and borrow soft loans. Kenya’s position in mobile banking has played a great role in ensuring financial inclusion of the citizens (Kpodar & Andrianaivo, 2011). Old microfinance products have been revamped to include mobile banking services where clients can save using their mobile phones, withdraw their loans and also borrow money either being in the group model or individually.
In Kenya researchers such as Milgo (2013) have studied the effects of joint liability among microfinance institutions in Kenya done several years ago when most MFIs had not adopted technology and society dynamics had not changed to where they are now. A knowledge gap exists as the environment under which previous researches were conducted has changed. This reason has fuelled the desire to undertake this research on the effects of joint liability on group loan performance among microfinance institutions in Nyandarua County.

1.3 Objectives of the Study
The study pursued the following objectives. The objectives are classified into the general and specific objectives.

1.3.1 General Objective
The objective of the study was to evaluate the effects of joint liability on group loan performance for MFIs in Nyandarua County, Kenya.

1.3.2 Specific objectives
The study was guided by the following specific objectives.

i. To establish the effect of adverse selection control on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

ii. To determine the effect of moral hazard control on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

iii. To establish the effect of loan monitoring on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

iv. To determine the effect of enforcement of social sanctions on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.
1.4 Research Hypothesis
The study sought to test the following hypothesis.

H₀₁: There is no significant effect of adverse selection control on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

H₀₂: There is no significant effect of moral hazard control on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

H₀₃: There is no significant effect of loan monitoring on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

H₀₄: There is no significant effect of enforcement of social sanctions on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya.

1.5 Significance of the study
The contribution of the microfinance industry in Kenya is noticeable to everybody. Since its inception we have seen great contribution to the economy that has seen financial inclusion for the low income earners while also creating jobs for the young people who are employed in these institutions. The findings of this study stand to benefit various stakeholders in the microfinance business in various ways. For MFIs they will find out the effects of joint liability as a dominant feature of group lending on loan repayment. Policy makers who directly influence how the microfinance business is run by way of policy creation are in a position to obtain information that will guide their policies regarding the microfinance sector business. Investor will also benefit greatly from this research as they can invest in microfinance institutions that have the right practices that ensure loan repayment. Innovators in the fast growing technology industry will get information that is of great importance to them as they develop new solutions geared toward achieving good loan repayments by group based customers. Finally fellow
scholars and academicians stand to benefit by getting knowledge on the effect of joint liability on group loan repayments and further such knowledge in future.

1.6 Scope of the study

On context scope, the study was carried out in Nyandarua County of Kenya and targeted all the 11 Micro Finance Institutions identified to have operations in the County. The choice of Nyandarua County was informed by the robust micro finance lending activities in the county proliferated by a booming agricultural economy of the county. On content scope, the study addressed joint liability and group loan performance of the Micro Finance Institutions. Group Loan Performance was indicated by loan book and customer growth, repayment rate, loan book quality and profitability. The specific objectives covered included an evaluation of the effect of moral hazard control, adverse selection control, loan monitoring and enforcement of social sanctions on group loan performance of the MFIs. On time scope, the study addressed the group loan performance of the Micro Finance Institutions against the joint liability models for a period of three financial years 2013/2014, 2014/2015 and 2015/2016.

1.7 Limitation of the study

The study involved getting information from senior staff in the organization who were hesitant to disclose information on fear that it may be used for other purposes. This problem was solved by getting authority to administer questionnaires to the respondents and assuring them that the information they gave would remain solely for the academic purpose while enhancing professionalism.

1.8 Organization of the study

Chapter one consist of the background of microfinance globally and locally while at the same time explaining the various models of microfinance. The objectives of the study,
research questions, scope of the study and limitations have also been covered on this chapter. The second chapter covers the literature review which puts in context what is already known on the topic. We also have the theoretical review, the empirical review and the conceptual framework. The third chapter includes the research design, research philosophy, target population, sampling design, data collection instruments, procedure, analysis and presentation. Chapter four covers the findings of the study and discussions thereof. Chapter five covers the summary, conclusions and policy recommendations.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The literature review examined what had been done by other researchers from various parts of the world regarding effects of joint liability on group repayments among MFIs. The theoretical review covers the underlying theories affecting this research while the empirical review sets the stone rolling for this research. Later in the chapter the research gaps are identified which culminate in the development of a conceptual framework.

2.2 Theoretical review

This section discusses some theories that influenced and guided this research.

2.2.1 Transaction cost theory.

Authored by Williamson (1981), the transaction cost theory provides an explanation as to why business entities exist, and why the firms expand or source out activities to the external environment. The basic premise of the transaction cost approach is that companies try to minimize the costs of exchanging resources with the environment. As such, the theorists argue that firms should work towards minimizing the bureaucratic costs of exchanges within the firm. The theory sees institutions and market as different possible forms of organizing and coordinating economic transactions. According to Tadelis and Williamson (2012), a transaction cost occurs when a product or service is transmitted across a technologically separable interface.

As such, transaction costs arise when a product or service is being transferred from one stage to another. Transaction costs are costs that are involved in administration of loans. Such costs include screening costs and loan monitoring costs. The high cost of credit due to transaction fees, legal fees and interest rates make it hard for entrepreneurs to access
funding (Saunders & Cornett, 2014). However, when loans are given in a group as opposed to individually, costs like processing cost, screening cost and monitoring cost are reduced. The theorists argue the group lending models can work out in helping firms achieve on efforts towards reducing transaction costs (Lamond, Dwyer, & Shankar, 2007). This factor underlines the big significance of the theory to the current study. Micro Finance institutions in their endeavour to offer loan services to clients should ensure optimal systems that minimise associated costs to minimum possible levels. As such, the transaction cost theory seems to support a case for joint lending frameworks as opposed to individual lending ones. Joint lending not only minimises the processing fees associated with lending but also significantly reduces the monitoring costs and collection costs of those loans (Ghatak & Guinnane, 1999). The theory was therefore useful in guiding the evaluation of joint liability lending model and specifically moral hazard control, adverse selection control, loan monitoring and social sanctions and the effect on group loan performance.

2.2.2 Structural Theory of Credit

Merton (1974) advanced the structural theory of credit also referred to as the credit risk theory. Cantor and Packer (1996) later presented the credit risk theory as the first readily available and effective portfolio model for evaluating credit risk. The structural theory of credit approach would allow Micro Finance Institutions to consolidate credit risk across the entire organization and guide formulation and implementation of effective mitigation strategies. The model also provides a statement of value-at-risk (VaR) as a result of credit triggered by upgrades, downgrades, and defaults in lent out funds. Credit risk model is useful to Micro Finance Institutions (MFIs) for their obvious exposure to credit risk in the course of their business. The basic foundation of the credit risk theory is the proposition that a firm should develop a methodology to quantify credit risk across a
A broad range of instruments including but not limited to traditional loans, fixed income instruments; commitments and letters of credit; commercial contracts such as trade credits and receivables; as well as market-driven instruments such as swaps, forwards and other derivatives (Raymond & Adigwe, 2015).

Lando (2009) posits that the credit risk theory presents two basic approaches of modelling credit risk exposures namely; the structural approach and the reduced form approach, also known as intensity-based approach. The structural approach shots at modelling explicitly the event or experience triggering default. On the other hand, the intensity based approach does not make any attempt to model default and therefore takes a credit risk event as completely unpredictable and volatile. As such, the timing of the manifestation of a credit risk event has a totally distant stopping time with respect to an underlying filtration (Bielecki & Rutkowski, 2013). To the study at hand, the theory was a critical resource in guiding an assessment of what triggers default which has an ultimate ramification not only on loan repayment condition of Micro Finance Institutions but also on their overall performance and ability to meet their objectives. The theory was also key in guiding appropriate remedies to lessen the level and impact of default and informed the decision and conclusion on whether organisations should emphasize more on joint lending models or individual lending models. For that reason the theory was useful particularly in the assessment of the relative role of loan monitoring, reinforcement of social sanctions, adverse selection control and moral hazard control in influencing the level of Group Loan Performance in the Micro Finance Institutions.

2.2.3 Information Asymmetry Theory

According to Eppy (2005), Information asymmetry represents a situation where the enterprise owners or managers and in this case the group borrowers are more
knowledgeable about the projections for, and risk hazards facing their enterprise, than lenders (MFIs) do. Information asymmetry theory is concerned with the study of decisions in transactions where one party has more or better information than the other especially in situations where the parties enter into binding contracts. Such a situation results to an imbalance of power in transactions, which can sometimes cause the transactions to disadvantage some parties. The theory will be critical in guiding the assessment of the impact of adverse selection control and moral hazard control on group loan performance in Micro Finance Context. According to Derban, Binner, and Mullineux (2005), borrowers should need to be subjected through a thorough screening process in order to understand their loan history and credit reference scores. Lin and Sun (2006) posits that an effective screening system as prescribed by symmetric information theory through collection of reliable information from prospective borrowers is critical in a micro finance institution context.

Frieden and Hawkins (2010) recommends the application of both qualitative and quantitative techniques screening group members in joint liability lending models. However, quantitative models are more appropriate and effective as qualitative models may be prone to abuse and bias as they are subjective in nature. Altman (2004) offers a remedy for addressing this condition where borrower’s attributes are assigned numbers with the sum of the values compared to a certain preset threshold to guide group loan approvals. The information asymmetry theory found application especially in the assessment of adverse selection control and moral hazard control and their influence on group loan performance which were key objectives to the study.
2.3 Empirical Review

2.3.1 Joint liability and Group Loan Repayment

Once a loan is given to a borrower, they become liable and obligated to meet the payments of the debt as agreed. Group lending however adds a new twist to liability by bringing in joint liability. Joint liability is said to be a contract where customers are the borrowers and guarantors of other clients in the same borrowing group at the same time (Armendáriz & Morduch, 2005). Joint liability aims at ensuring that the group members push each other to meet their loan obligations by way of creating social sanctions. The ideal joint liability ensures that all members pay their loans in the group meetings and those who do not have money to pay their loans have other group members pay their loans and a refund to the group members is done latter.

Emergence of joint liability enhanced hope for the poor people who were regarded as unbankable in the view of formal financial institutions (Laffont & Rey, 2000). Joint liability has been found to increase the entrepreneurial effort of peer groups assuming a case where monitoring costs are low and social sanctions are high. Entrepreneurial activities by borrowers increase as they do not want to face sanctions for failure of loan payment hence good loan repayment (Crépon, Devoto, Duflo, & Parienté, 2015).

In Thailand using experimental data, there was found to be an impact of joint liability on consumption but not investment (Kaboski & Townsend, 2005). Customers prefer individual loan the wealthier they are and customers with individual loans have their businesses grow more than those funded under the group methodology (Madajewicz, 1999). Joint liability leads to high loan repayment and low default rate (Carpena, Cole, Shapiro, & Zia, 2011). Joint liability does not always ensure good loan repayments.
Ideally joint liability is supposed to ensure payment by having members who have their businesses doing well pay for those members who have their businesses struggling, however the members with businesses doing well may default on their loans to avoid paying for those members struggling with repayment (Besley & Coate, 1995). Joint liability aims at arresting the moral hazard problem and the adverse selection problem.

2.3.2 Adverse Selection Control and Group Loan Performance

In mainstream lending, a financial institution can assess the ability of a borrower to pay their loan from the borrower’s bank statements and also from CRBs information. Group borrowers on the other hand lack bank statements and CRBs may lack information on such borrowers as mostly they come in as first time borrowers in formal financial organizations (Jullien, 2000). This situation causes a financial disadvantage on the lenders side causing a situation known as adverse selection. Adverse selection problem is where borrowers mostly of low income brackets have some characteristics that cannot be identified by lenders due to their lack of financial statements and borrowing history, such characteristics have an effect on the repayment trend of the borrower (Ghatak & Guinnane, 1999).

To mitigate this problem collateral is introduced to cushion the borrower from the risks of nonpayment. Unlike in mainstream lending where borrowers have conventional security like land title deeds and motor vehicle log books in group lending the most common types of security offered are household goods and livestock among other chattels. Collateral is introduced to try and sieve out the bad borrowers from the good ones as borrowers who pledge security show interest in repaying their loans (Milgo, 2013). A borrower who has no intention of repaying his or her loan will not be comfortable with pledging a collateral to secure the loan as they know failure to repay
the loan will lead to seizure of the pledged collateral. However it must be noted that such collateral may not be adequate, causing lenders to find other networks to gather information on the borrowers and also use different terms to separate the good borrower from the bad borrowers.

One of the ways a firm gathers information on borrowers is by asking them to form groups and latter borrowers are scanned using the characteristics of other borrowers in the group (Ghatak & Guinnane, 1999). Group members who are willing to repay their loans will not form groups with members who are not willing to repay their loans as they are aware that they will have to repay loans for the defaulting members which will pull them behind and also cause them to be denied future loans due to the arrears of the defaulting group members. Empirical evidence proves that a group formed by self-selection pays loans better than the opposite (Sharma & Zeller, 1997). However in a study done using data from 140 groups in Burkina Faso, it was established that homogeneous groups may collude against the lenders and give inaccurate information on fellow group members (Paxton, Graham, & Thraen, 2000).

In the findings of a research on determinants of repayment of youth enterprise development fund loans in Ol-kalou constituency, Nyandarua County, good screening methods by the group were seen to improve loan repayment (Ndirangu & Terer, 2016). MFIs also offer two different types of contracts with one contract having a low interest rate and high collateral and another having high interest rate and low collateral. Risky borrowers will prefer the contract with high interest rates and no collateral as they have little intention to repay their loans while good clients will prefer the contract with low interest rate and high collateral (Ghatak & Guinnane, 1999).
2.3.3 Moral hazard Control and Group Loan Performance

For some loans such as a school fees loan, construction loan and asset finance loan, a cheque is paid directly to the school, contractor and dealer respectively instead of issuing cash to the customer reducing the probability of diversion of funds by the borrower. However most group loans do not fall under the above categories. Procedurally after a borrower has received a loan facility it is important that the officer or group does a post disbursement visit to check if the funds are used for the intended purpose or not, to avoid the moral hazard problem (Mehmood, Ahmad, & Anjum, 2012). Moral hazard involves risk of diversion of funds to projects other than those documented at loan application. Precisely moral hazard refers to situations where lenders cannot observe either effort or action taken by the borrower to ensure realization of the funded project returns (Armendáriz & Morduch, 2005).

There are two types of moral hazards, one is ex ante moral hazard where the borrower cannot identify the actions taken by the borrower between the time the loan is disbursed and the time the project starts to bring in returns while the second one is ex post moral hazard where the lender cannot identify the actions of the borrower after the project has given results (Berger et al., 2011). In the group setup the ex-ante moral hazard problem is arrested when group members ensure that every individual who has borrowed uses their loan in non-risky investments to ensure loan repayments (Jiang et al., 2014). However this is not always the case as the group members and the bank officer may misquote the purpose of the loan if the borrower’s activities are forbidden by the bank.

At times the borrower may be taking a loan to buy household items which is not an investment and the group members and officer quote that the customer wants to add
stock to their business assuming that the current activities of the customer will be able to cater for the loan instalments even with the diversion of funds. The ex post moral hazard occurs when some borrowers decide to get returns from their projects and run away (Armendáriz & Morduch, 2005). This often occurs if the borrower knows that the group members will not enforce sanctions on him or her for defaulting. Groups formed through assorted matching end up with less risky borrowers hence reducing the moral hazard problem (Percival, 2006).

2.3.4 Loan Monitoring and Group Loan Performance

There are various factors that influence the repayment of microfinance loans, one of them being loan monitoring. Non-monitoring of loans causes default (Bichanga & Aseyo, 2013). Considering that SMEs are faced by various issues that may cause default such as lack of demand for products, livestock death and bad weather, MFIs need a system that highlights delinquency so that the loan officers and supervisors can act quickly before it gets out of hand (Warue, 2012). Most groups involve repayment of loans using specialized reports often referred to as client portfolio status and periodical transaction report that are issued to ensure that group clients are able to track their repayment progress and the remaining balances. If a MFI is sensitive to business development it must monitor the disbursed loans by the use of loan tracking sheets that check the amount of deposits and the remaining balance (Addae-Korankye, 2014).

In group lending most of the monitoring is passed to the borrowers who are charged with ensuring fellow group members repay their loans (Ghatak & Guinnane, 1999). Loan monitoring has been seen to work in various ways. First it reduces the risk of the borrowers diverting their money to other projects which may cause default and consequently increase the loan cost hence high interest rates. Monitoring costs is very high especially where the houses of group members are not close (Armendáriz &
Morduch, 2005. However because monitoring is costly, the borrowers are given incentives to monitor. Good monitoring leads to selection of profitable undertakings that ensure good repayments hence reduction of interest rates for group customers and also promise higher subsequent loans as an incentive. Group meetings are part of monitoring. Frequent meetings help in group repayment as it ensures monitoring of loans (Milgo, 2013).

Regular repayment schedules help to screen out the bad borrowers and give loan officers an early warning on any default. Monitoring in the group meetings will involve asking the nonpaying borrower to pay their installments and threatening to effect social sanctions on him or her upon failure of repayment. Monitoring may be difficult in groups formed by self-selection of members as the group may select bad members and collude against paying their loans (Paxton, Graham, & Thraen, 2000). Due to risks involving groups that may collude against the bank, loan officers should ensure that they are actively involved in loan monitoring. In Ol-kalou constituency the frequency of group meeting was seen to have an effect on loan repayment with groups that meet and are effectively managed recording better repayments than those that do not (Ndirangu & Terer, 2016).

2.3.5 Social sanctions and Group Loan Performance

Groups that have joint liability ensure that they put social sanctions on non-paying group members to ensure that they pay their loans. Such sanctions include loss of reputation for the defaulters, isolation and in rare cases physical violence (Armendáriz & Morduch, 2005). Social sanctions help as banks have very little power to sanction poor people. Neighbors are able to impose non-financial sanctions at a very low cost (Chowdhury, 2005). Some clients dislike the tension caused by social sanctions as they cause fear and
are inflexible. In individual contracts a customer can be allowed a few days past the loan due date without any action being taken on them, unlike in group lending where sanctions are implemented immediately after installment is not meet.

Social sanctions are also expensive to the good clients as they have to close their businesses to participate in implementation of the sanctions. Implementation of social sanctions has been a great challenge in some economies as the citizens are aware of their rights. Some borrowers will not pay even if they succeed in their undertakings as the legal system does not support sanctions as most of social sanctions are non-procedural and illegal (Ghatak & Guinnane, 1999). There has been cases where the group has resulted in destroying a defaulter’s house to repay their debt if the defaulter has already sold off the securities resulting to the defaulter suing the group members for damages.

In conclusions of a study done in Ol-kalau constituency of Nyandarua County, Ndirangu and Terer (2016) note that legal recovery measures are lacking and structures need to be put in place to ensure the same is achieved. In other situations the customers may collude against the bank and frustrate the social sanctions (Besley & Coate, 1995). Studies have shown that members who think they do not fit in the group may not repay their loans well. Members who believe they are taking their last loans may also not pay their loans on time or even default fully. Recently in Kenya, there are banks that have gone under liquidation and fears of MFIs too going down. Clients may default on their loans and fail to implement social sanctions because they believe that institutions may close down hence no future loans and they may lose their savings too (Che, 2002). Group lending involves small loans that are increased with subsequent loans where clients are graduated to higher amount loans often referred to as progressive lending. Progressive lending involves promising higher amounts to clients with good repayment history (Aghion, Armendariz, & Gollier, 2000). This is part of social sanctions where a customer who
pays poorly can be denied further loan, can be lend the same amount of loan as previous loan or may have the same loan as the amount of savings to reduce the risk to group members. When group members feel that they cannot have their loans increased they may opt to default their current loans which is a negative effect of social sanctions implementation. Incentives to repay have been found to increase the rate of group loans repayments in Ol-kalou Constituency in Nyandarua County (Ndirangu & Terer, 2016).

Imposing social sanctions depends on various factors. One of them is the group size and cohesiveness. Cohesiveness of groups influences the repayment mode. Groups pay either monthly or weekly. Cohesive groups usually have better repayment trends than non-cohesive groups due to their ability to enforce social sanctions (Karlan, 2004). Groups having more than 20 members are less cohesive than groups with lesser members. Studies in Nyandarua County show that large groups reduce the repayment of loans making it slow (Ndirangu & Terer, 2016). Often when groups have more than 20 members they are subdivided into smaller groups of five people for better administration. Large groups may not honour group meetings as smaller groups would.

The potential of moral hazards leads to innovations of group mechanisms such as frequent group meetings to ensure better repayments (Paxton et al., 2000). Groups need to meet and have their installments divided into smaller portions so that they meet them comfortably. For poor people it is hard for them to have a large chunk of money to repay their loans as there is a huge temptation to use the money to meet immediate consumption needs which makes low income borrowers find the incremental process easier than accumulating money to pay lump sum because their economic lives are always difficult. Studies in Nyandarua County’s Ol-kalou Constituency show that groups that meet and repay weekly have more effective repayments (Ndirangu & Terer, 2016).
Group loans are often small loans that are repaid back in short periods. However group loans increase in what is known as progressive lending that has been covered previously on this chapter causing some loans to be classified as large loans. The higher the loan sizes the more likely hood of loan default (Milgo, 2013). Other studies have different results. The loan size does not affect the repayment of a group loan (Onyeagocha, Chidebelu & Okorji, 2012). The difference in loan sizes has been seen to cause tensions especially where group members with small loans are not comfortable with signing loans for those group members seeking large loan amounts (Laffont & Rey, 2000). Such tension only serves to weaken the joint liability among the group members.

2.4 Summary of Literature Review and Knowledge Gaps

This chapter has covered the theoretical review putting on paper the theories that have significant influence on this research. In the empirical review, the various group lending practices and their influence on group lending are reviewed. Most researchers emphasize on joint liability as the dominant group procedure that is responsible for repayments in groups. Joint liability is of more importance than other group feature in ensuring repayment (Wenner, 1995). There has also been arguments that even with joint liability, the group may still suffer poor repayments due to other factors. Factors such as direct monitoring are as crucial as joint liability in ensuring that groups pay their liabilities without default (Armendáriz & Morduch, 2005). Situations where joint liability works in an ideal way are minimal and on the ground group lending is not very effective (Rai & Sjöström, 2000).

Some group dynamics have caused members who would have paid loans individually to default while in the group (Besley & Coate, 1995). This has suggested that joint liability is does not always ensure micro loans repayments. We find that various individual
microfinance products are being develop day after day and that some of the wealthier borrower’s prefer individual loans. Most institutions previously involved in group lending are ditching group lending for individual lending which is preferred by more wealthier and established borrowers, this is with no exemption of Grameen bank which is a pioneer of modern group lending in microfinance (Armendáriz & Morduch, 2005). However as much as individual loans are being propagated by MFIs there are certain low income earners especially the uneducated that are not for individual contracts and such borrowers may be left out and fail to access financial services if group lending us done away with (Attanasio, Augsburg, De Haas, Fitzsimons, & Harmgart, 2011). This suggests that group lending will continue in the foreseeable future. The debate on whether group payments are more effective through joint liability rages on with other researchers having varied views. The researches done on joint liability have been done in the past years. Maobe (2013) studied the effects of group liability lending on small and medium enterprises in Nairobi’s Uhuru market. The study focuses on SMEs and not repayment of loans presenting a methodological gap to be filled in the current study. Milgo (2013) studied the effect of joint liability on loan repayment of microfinance institutions in Kenya at a time when technology was not at its level and some of the MFIs had not integrated technology to its systems while the economic dynamics have changed with the introduction of the county government and various funds such as youth fund being offered by the government directly to citizens through the government institutions.

2.5 Conceptual framework

This study sought to conceptualize the subject being studied which was the effect of joint liability on group loan performance among microfinance institutions in Nyandarua County Kenya. Of essence, the conceptual framework presents the hypothesized
relationship between the independent variables; enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control and the dependent variable which was group loan performance.

The Schematic diagram represents hypothetical relationships between variables that the study sought to test. Adverse selection control involves measures to improve access to information about the group that is not known by the financial institution where the financial institution depends on other group members to known about the borrower. The success of the financial institution in knowing the borrowers information depends on the selection of group members, cohesiveness of group and risk profile of the group. Assorted matching in group formation

Moral hazard control involves methods of searching for information that the financier may not know after the disbursement of the loan. Moral hazard is influenced by the loan usage, accountability of customer towards group and ability to measure the risk of borrower’s project. Loan appraisal and monitoring involves ensuring loans are paid. It will depend highly on group involvement, cost of monitoring on group members and incentive for good repayment.

The enforcement, procedures of implementation and impact of social sanctions has a great influence on how joint liability affects group repayments in MFIs. Enforcement of social sanctions essentially entail measures to ensure repayment of loans by group members. This can be achieved through progressive or graduated lending, incentives for payment of loans, co-guarantee Models, member isolation and institution of loan size limits.
Group loan performance was indicated by customer and loan book growth, loan book quality, repayment rate and profitability. Group loans have had an impact in reducing default by monitoring of loans which is done by the members after they meet which is often weekly. Regular repayment weeds out bad borrowers and keeps the average loan repayment high (Armendáriz & Morduch, 2005).

**Figure 2.1: Conceptual Framework**

**Source:** Researcher (2018)
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the methodology used in undertaking the current study. The research methodology was designed in a manner that sought to effectively fulfil the objectives of the study and test the research hypothesis appropriately. This part covers the research design, target population, sampling design and procedures, data collection process and instruments, validity and reliability of the research instruments, data analysis and presentation as well as ethical considerations.

3.2 Research Design

According to Creswell (2013), a research design is the plan and structure intended to be used in answering research questions. The current study used a descriptive survey research design in effectively seeking to explain the effect of joint liability on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya. Mugenda and Mugenda (2003) argues that a descriptive survey research design involves the discovery of already existing relationships between the subject variables and does not in any way attempt to alter anything in the environment. In other words, Bulmberg, Cooper, and Schindler (2011) posit that the descriptive survey approach seeks to determine the ‘what, where and how’ of a given phenomenon. The design is concerned with the determination of what is happening with regard to the subject variables (Kothari, 2011).

One of the merits of descriptive statistics is that they portray characteristics of persons, events or situations. This study used this method as it allows survey through questionnaires which obtain information that describes existing phenomena by asking individuals about their perceptions and attitudes (Kothari, 2004). The choice of the
descriptive survey research design for the study on joint liability and group performance was also justified by the fact that the phenomena under study could not be manipulated as it involves an already existing state of affairs.

3.3 Target Population

Population is the total group of individuals, events or objects in a phenomenon to be investigated (Kumekpor, 2002). In other words, Ott and Longnecker (2015) posits that a target population comprises of the total group of elements, objects or individuals with the same features and from whom a sample might be drawn for purposes of conducting an empirical study. The target population consisted of all the 11 Micro Finance Institutions offering micro finance services in Nyandarua County who are registered with the Association of Micro Finance Institutions of Kenya (AMFI-K). The targeted respondents were 66 in total and comprised of all branch managers, credit managers, finance and investment officers, customer care officers, operation managers and loan officers of all the 11 MFIs in Nyandarua County.

3.4 Sample Design

Bryman and Bell (2015) describes a sample as a set of representative elements drawn from the larger target population. Sampling aims at selecting representative elements from the target population for purposes of fulfilling the study objectives by providing answers to the research questions or testing the hypothesis. Kumekpor (2002) asserts that sampling seeks to overcome the difficulties in studying the entire population which include scarcity of research related resources such as time and funds.

3.4.1 Sampling Technique

The study at hand utilised a census approach to identify the firms to subject to study alongside purposive sampling technique to select the choice respondents. A census study,
according to Ott & Longnecker (2015) involves the use of all the elements that have the same characteristics in the study. Using the census approach, the study subjected all the 11 Micro Finance Institutions with operations in Nyandarua County and registered with the Association of Micro Finance Institutions of Kenya (AMFI-K) to study. The study then purposively selected branch managers, credit managers, finance and investment officers, customer care officers, operations managers and loan officers of the Micro Finance Institutions as the choice participants of the study. The purposive or judgemental selection of this class of respondents was justified by the fact that they are well equipped with the information sought. Under purposive sampling, the researcher uses their own judgement to select the sample (Oso & Onen, 2005).

3.4.2 Sample Size

The proposed study used the census study approach to select all the 11 Micro Finance Institutions identified in the target population. The justification for the choice of the census approach was the fact that the population was considered small and as such, it was considered feasibly possible for the researcher to get contact with the respondents within a reasonable time and with minimal constraints. According to Kothari (2011), where economically feasible, a census study is ideal as it yields more accurate results besides minimising the errors associated with sampling. The study then purposively select branch managers, credit managers, finance and investment officers, customer care officers, operations managers and loan officers of the Micro Finance Institutions as the choice participants of the study. The study therefore targeted a total of 66 respondents which met and surpassed the threshold size of thirty (30), presented as ideal by Mugenda and Mugenda (2003) as a rule of thumb, as adequate to allow for normal approximations.
Table 3.1: Target Respondents

<table>
<thead>
<tr>
<th>Role</th>
<th>Number per MFI</th>
<th>Total for all MFIs in Nyandarua County</th>
<th>Proportion of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch Managers</td>
<td>1</td>
<td>11</td>
<td>100%</td>
</tr>
<tr>
<td>Credit Managers</td>
<td>1</td>
<td>11</td>
<td>100%</td>
</tr>
<tr>
<td>Finance and Investment officers</td>
<td>1</td>
<td>11</td>
<td>100%</td>
</tr>
<tr>
<td>Loan officers</td>
<td>1</td>
<td>11</td>
<td>100%</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Customer Care Officer</td>
<td>1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Total Respondents</td>
<td>6</td>
<td>66</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: AMFI-Kenya (2017)

3.5 Data Collection Instruments

The study used both primary and secondary data sources. Primary data was collected using questionnaires which were structured into two main sections. The first section covered background information regarding the respondents. The second section covered questions regarding the specific variables making up the study objectives. Secondary data was gathered from the annual financial statements of the Micro Finance Institutions in Nyandarua County. In order to successfully fulfil the research objectives, the study involved tests to appraise the validity and reliability status of the research instrument. Mugenda and Mugenda (2003) posits that validity and reliability tests seek to ensure that the research instrument is consistent and that it measures the parameters it was designed to measure.
3.5.1 Validity

The study undertook tests aimed at ensuring that the research instrument would actually measure what it was originally intended to measure. To achieve this, the study employed the pre-test method and expert opinion methods. The pre-test method involved administration of the instruments to five randomly selected respondents in one MFI in a neighbouring county, not being considered in the main study. Improvements were then made to mend the way the questions were perceived and understood by the respondents to match the desired information of the study. The researcher also sought expert opinion from the supervisor in a bid to further ascertain the validity condition of the research instrument. The study further took into account recommendations by the supervisor and made adjustments to the authority’s satisfaction. Mugenda and Mugenda (2003) argues that expert opinion and pre-testing methods are effective in assessing the validity of research instruments.

3.5.2 Reliability

The study undertook tests to evaluate the reliability status of the research instrument. Reliability tests are concerned with the extent to which a research instrument would yield consistent results when administered more than once. Kothari (2011) argues that the whole idea behind reliability is that any significant results must be more than a one-time instance finding. As such, the results of a study must be inherently repeatable. The Cronbach's Alpha Reliability test derived through the SPSS Software was applied in the assessment of reliability of the instrument.
### Table 3.2: Cronbach's Alpha Reliability Statistics

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
<th>Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enforcement of social sanctions</td>
<td>.713</td>
<td>.688</td>
<td>5</td>
</tr>
<tr>
<td>Loan monitoring</td>
<td>.711</td>
<td>.700</td>
<td>5</td>
</tr>
<tr>
<td>Moral hazard control</td>
<td>.720</td>
<td>.690</td>
<td>5</td>
</tr>
<tr>
<td>Adverse selection control</td>
<td>.776</td>
<td>.761</td>
<td>5</td>
</tr>
<tr>
<td>Group loan performance</td>
<td>.765</td>
<td>.760</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Survey Data (2018)

The Cronbach’s reliability coefficient stands at 0.737 which is greater than 0.70 which is considered “acceptable” in social science research circumstances as guided by Gliem & Gliem (2003).

#### 3.6 Data Collection Procedure

The study used the drop and pick method to administer the questionnaires in the Micro Finance Institutions. Using this method, the questionnaires were delivered to the participants in person but were picked at a later date. This was justified by the fact that the target respondents are a busy category of employees with a lot of duties and commitments and needed time to effectively respond to the questionnaire. It was considered quite hectic to secure sessions with all of them to fill questionnaires in the presence of the researcher. The researcher also filtered secondary data from the Audited Financial Statements of the Micro Finance Institutions.
3.7 Data Analysis and Presentation

Prior to the main analysis, data collected was cleaned. According to Mugenda and Mugenda, (2003), data cleaning also known as data scrubbing or data cleansing involves the process of detecting and correcting corrupt or inaccurate records from the data set. Data was then categorised in line with the study objectives. The study used both bivariate and multivariate analysis tools and sought to provide both descriptive and inferential statistics in order to effectively test the research hypotheses. Regression and correlation analysis were the key inferential statistics tools utilised in determining and explaining the nature, magnitude, direction and strength of relationships unveiled between joint liability and group loan repayment. The study adopted a regression model of the type indicated below as adopted from Kutner, Nachtsheim and Neter (2004).

\[ Y_{ij} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \]

Where, \( Y_{ij} = \text{Group Loan Repayment} \)

\( X_1 = \text{Enforcement of Social Sanctions} \), \( X_2 = \text{Loan Monitoring} \), \( X_3 = \text{Moral Hazard Control} \) and \( X_4 = \text{Adverse Selection Control} \). \( \beta_0 \) is the regression intercept representing the expected value of the dependent variable if all of the independent variables are zero. While \( \beta_1, \beta_2, \beta_3, \beta_4 \), are regression Coefficients and are essentially the slope of the regression line and \( \varepsilon \) is the error term. The results of the study were presented using tables, bar charts and pie charts as well as equations. Means, standard deviations, frequencies and percentages were presented to indicate the statistics on the tables and figures.

3.8 Ethical Considerations

According to Kothari (2011), research ethics entail the measures undertaken to ensure that the study is conducted in a manner that respects the privacy, confidentiality and
Ethical issues are different from legal constraints and involve standards that must be adhered to while conducting the research. Ethical issues are vital considerations a study must consider in order to protect the integrity of researcher and the respondents and also give high quality results (Mugenda & Mugenda, 2003). Before collection of data for this study, a research permit was sought from the University as well as the National Commission for Science and Technology (NACOSTI). A rapport was created with the respondents to ensure willingness for full participation. The respondents were assured that any information they provided would only be used for this study which is purely for academic purposes. No names were required on the questionnaires to ensure privacy and anonymity of the respondents. A letter was sent to the branch managers of the financial institutions whose employees were respondents for this study seeking their permission to allow their staffs to fill the questionnaires. Any respondent who required a copy of the findings was assured to get one free of charge after completion of the study.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction
This chapter covers a presentation of the results of the data analysis and discussions to that regard. The chapter covers the response rate, bio data which captures the respondent’s profile, descriptive as well as inferential statistics. The presentation in the chapter is done with the aid of tables and figures.

4.2 Response rate
Table 4.1 provides statistics on the response rate achieved by the study. A justification why the responses received were considered adequate is also given.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Targeted respondents</th>
<th>Responses received</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>48</td>
<td>72.72%</td>
</tr>
</tbody>
</table>

Source: Survey data (2018)

A total of 66 questionnaires were distributed to the various study participants. This was done by the researcher in person. Of these participants, 48 returned their questionnaires while 18 failed to do so. A response rate of 72.72% was attained which was considered acceptable for the current study. This decision was guided by conventional wisdom presented by Mugenda and Mugenda (2003), who prescribe a response rate of 50% as adequate, 60% as good and above 70% as very good.

4.3 Bio Data.
This section of the report presents a summary of respondents’ profiles including gender, leadership position, highest level of education, and working experience in the Micro Finance entities. Figure 4.1 provides a summary of the respondents’ gender. 75.00% of
respondents were male while the remaining 25.00% of respondents were female. The implication is that the management of the MFIs in Nyandarua County, Kenya was male dominated.

**Figure 4.1: Respondents' Gender**

Source: Survey data (2018)

Table 4.2 presents a profile of respondents’ leadership position for the MFI sector in Nyandarua County of Kenya.
Table 4.2: Respondents' Leadership Position in the MFI.

<table>
<thead>
<tr>
<th>Valid Position</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch Manager</td>
<td>5</td>
<td>10.4</td>
<td>10.4</td>
<td>10.4</td>
</tr>
<tr>
<td>Credit Manager</td>
<td>8</td>
<td>16.7</td>
<td>16.7</td>
<td>27.1</td>
</tr>
<tr>
<td>Finance and Investment Officer</td>
<td>10</td>
<td>20.8</td>
<td>20.8</td>
<td>47.9</td>
</tr>
<tr>
<td>Loan Officer</td>
<td>9</td>
<td>18.8</td>
<td>18.8</td>
<td>66.7</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>7</td>
<td>14.6</td>
<td>14.6</td>
<td>81.3</td>
</tr>
<tr>
<td>Customer Care Officer</td>
<td>9</td>
<td>18.8</td>
<td>18.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey data (2018)

Majority of the participants who successfully submitted their responses were finance and investment officers, loan officers and customer care officers. The branch managers constituted the least proportion of participating respondents. This could be attributed to the overwhelming nature of branch managers’ jobs as the stewards of the MFI branches.

Figure 4.2 presents responses on respondents’ highest level of education. Almost 90.00% of the respondents had either undergraduate degree qualifications or diploma level qualifications. The lower cut class made up of about 10.00% of the respondents had either college certificate qualifications or post graduate qualifications. Hence, the management team of the MFIs in Nyandarua County was highly educated.
4.4 Descriptive statistics.
This section covers the results of the descriptive analysis of the data collected. The presentation was done in line with the research objectives.

4.4.1 Group Loan Performance of the MFIs.
This section presents descriptive statistics on the group loan performance condition of the MFIs in Nyandarua County of Kenya. In particular, it covers aspects of the group loan repayment, loan book growth and profitability as indicated by net profit margin. Table 4.3 presents statistics on the average group repayment rate, loan book growth and net profit margin of the MFIs in Nyandarua County, Kenya.

![Figure 4.2: Respondents Highest Level of Education](source)

Source: Survey data (2018)
Table 4.3: Performance of the MFI

<table>
<thead>
<tr>
<th>Parameter</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Loan Repayment Rate (%)</td>
<td>48</td>
<td>.60</td>
<td>.90</td>
<td>.6869</td>
<td>.04590</td>
</tr>
<tr>
<td>Loan Book Growth (%)</td>
<td>48</td>
<td>.20</td>
<td>.85</td>
<td>.4467</td>
<td>.26319</td>
</tr>
<tr>
<td>Profitability indicated by Net Profit Margin (%)</td>
<td>48</td>
<td>.06</td>
<td>.24</td>
<td>.1604</td>
<td>.02790</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td></td>
<td></td>
<td></td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey data (2018)

The repayment of loans stands at 68.69% hence the need to drive this towards the 100% which is the goal of lending institutions. The loan book grows at an average of 44.67% which is considered okay but need for some players to work on this growth as the least has a loan book growth of 20.00%. The average net profit margin stood just slightly above the quarter mark which calls for action towards the improvement in profitability.

The group loan performance of the Micro Finance institutions in Nyandarua County can therefore be considered to be poor which calls for strategies to improve on repayment, loan uptake or growth and profit margins. These findings support earlier observations by Moti, Masinde, Mugenda, and Sindani (2012), Bichanga and Aseyo (2013) and Amwayi, Omete, and Asakania (2014) who all raise alarm over poor performance of the MFIs in Kenya.

4.4.2 Enforcement of Social Sanctions

This section covers descriptive statistics concerning enforcement of social sanctions as component of joint liability lending used as an objective of the study. The parameters assessed included use of graduated lending models, group incentives, co-guarantee models, member isolation, and loan limits as components of social sanctions. Table 4.4 presents statistics on various aspects of enforcement of social sanctions.
Table 4.4: Enforcement of Social Sanctions

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Micro Finance Institution uses progressive or graduated</td>
<td>48</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7708</td>
<td>1.01561</td>
</tr>
<tr>
<td>lending models as a social sanction on borrowers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Micro Finance Institution offers Incentives to group members</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5208</td>
<td>1.07168</td>
</tr>
<tr>
<td>to improve repayment of loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Micro Finance Institution uses co-guarantee models of the</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6042</td>
<td>1.10588</td>
</tr>
<tr>
<td>group members in seeking to improve loan repayment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Micro Finance Institution seeks member isolation in cases</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5833</td>
<td>1.10768</td>
</tr>
<tr>
<td>where they become naughty defaulters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Micro Finance Institution has well-structured loan size</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6875</td>
<td>1.03464</td>
</tr>
<tr>
<td>limits for any one category of borrowers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Survey data (2018)

As indicated by the mean of (3.77) and a fairly small standard deviation of (1.01561), the MFIs in Nyandarua County used progressive or graduated lending models to enforce social sanctions on borrowers. Similarly, the mean of (3.52) and standard deviation of (1.07) supports to a great extent, the proposition that MFIs offered incentives to group members in a bid to improve group loan repayment. On the same note, as demonstrated by the mean of (3.60) and standard deviation of (1.12), the institutions used co-guarantee models of the group members in seeking to improve loan repayment. Additionally, MFIs sought isolation of the defaulting members from the group as indicated by the mean of (3.58) and fairly small standard deviation of (1.11). Finally, as demonstrated by the mean of (3.69) and standard deviation of (1.03), it was evident that the MFIs had well-structured loan size limits for any one category of borrowers. The mean of the means of all the factors regarding enforcement of social sanctions stood at (3.63) affirming that
enforcement of social sanctions was a common practice in the MFIs. The average standard deviation stood at (1.06) which was indicative that the data was held close to the mean affirming the high level of application of the enforcement of social sanctions as a joint liability control tool. The findings follow the propositions of Armendáriz and Morduch (2005), Chowdhury (2005) and Ndirangu and Terer (2016) who prescribe social sanctions as a good practice in enhancing loan repayments for financial institutions.

4.4.3 Loan Monitoring

This section covers descriptive analysis results on the loan monitoring variable of the study. The components assessed include peer monitoring models, review of client’s portfolio status, incentives, delinquency management as well as follow up and collection systems. Table 4.5 presents statistics on descriptive statistics for various constituents of loan monitoring which was a key subject of the current study.

Table 4.5: Loan Monitoring

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Micro Finance Institution promotes Peer Monitoring Models for loans advanced to groups</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.520</td>
<td>1.03121</td>
</tr>
<tr>
<td>The Micro Finance Institution regularly reviews clients’ portfolio Status</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.708</td>
<td>.96664</td>
</tr>
<tr>
<td>The Micro Finance Institution offers Incentives for timely repayment of group loans</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.854</td>
<td>.85027</td>
</tr>
<tr>
<td>The Micro Finance Institution has a clear delinquency management for group borrowers</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.583</td>
<td>1.30194</td>
</tr>
<tr>
<td>The Micro Finance Institution has a clear and effective follow up and collection systems</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>4.104</td>
<td>1.17128</td>
</tr>
</tbody>
</table>

**Source:** Survey data (2018)
As represented by the mean of (3.52) and a low standard deviation of (1.03), the MFIs in Nyandarua County promote to a great extent peer monitoring models for loans advanced to groups. Likewise, it was evident that the MFIs in Nyandarua County regularly reviewed clients’ portfolio status as demonstrated by the mean of (3.71) and low standard deviation of (0.97). Additionally, as indicated by the mean of (3.85) and standard deviation of (0.85), it was clear that the institutions offered incentives for timely repayment of group loans. Similarly, the MFIs were found to have a clear delinquency management framework for group borrowers as indicated by the mean of (3.58) and standard deviation of (1.30). Finally, the mean of (4.10) and standard deviation of (1.17) demonstrated that the institutions had a clear and effective follow up and collection systems. In summary, the mean of the means of the individual loan monitoring factors stood at (4.05) with the average standard deviation being (0.85). This was generally indicative of high application of loan monitoring as a joint liability lending control tool. The low average standard deviation of (1.06) indicates that the responses were largely close to the mean and affirming that condition of high application of the loan monitoring in the MFI sector in Nyandarua County, Kenya. The findings demonstrate conformity with prescriptions of Bichanga and Aseyo (2013), Warue (2012) and Milgo (2013) who recommend close loan monitoring as a sure way to deliver superior loan performance.

4.4.4 Moral Hazard Control

This part covers descriptive analysis results for moral hazard control which was a variable of interest to the study. The specific components of moral hazard control assessed included post disbursement visits, direct supplier disbursement, incentives and penalties, project risk monitoring and involvement of group members. Table 4.6 presents statistics on the extent of application of moral hazard control as a tool for prudent joint liability lending by MFIs in Nyandarua County, Kenya.
Table 4. 6: Moral Hazard Control

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Micro Finance Institution conducts Post Disbursement visits to check diversion of funds to riskier projects</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7292</td>
<td>.84399</td>
</tr>
<tr>
<td>The Micro Finance Institution undertakes direct supplier disbursement initiatives to control funds diversion</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7292</td>
<td>.91651</td>
</tr>
<tr>
<td>The Micro Finance institution offers Incentives and penalties to control diversion of funds to risky projects</td>
<td>48</td>
<td>2.00</td>
<td>5.00</td>
<td>4.0625</td>
<td>.78296</td>
</tr>
<tr>
<td>The Micro Finance institution undertakes regular project risk monitoring to ensure funds are not subjected to very risky projects</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>4.5000</td>
<td>.82514</td>
</tr>
<tr>
<td>The Micro Finance Institutions involve group members to ensure funds are not diverted to risky projects</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.9375</td>
<td>.63267</td>
</tr>
</tbody>
</table>

Source: Survey data (2018)

As demonstrated by a mean of (3.73) and a low standard deviation of (0.84), it was clear that MFIs in Nyandarua County conducted to a great extent post disbursement visits to check diversion of funds to riskier projects. This was further enhanced by application of direct supplier disbursement initiatives as affirmed by a mean of (3.73) and a standard deviation of (0.92). The institutions also to a great extent offered incentives and penalties to control diversion of funds to risky projects as demonstrated by a mean of (4.06) and standard deviation of (0.78). On the same note, the MFIs ensured regular project risk monitoring as demonstrated by a mean of (4.50) and standard deviation of (0.83). Additionally, the firms involved group members to a large extent to curb or control diversion of funds to risky projects as indicated by a mean of (3.94) and standard deviation of (0.63). The mean of the means with regard to the moral hazard control factors stood at (3.99) indicative of high application of moral hazard control in the MFIs.
The average standard deviation for the moral hazard control factors was (0.80) which demonstrated that the responses were closely held about the mean affirming the condition of wide application of moral hazard control as recommended by Armendáriz and Morduch (2005), Jiang et al., (2014) and Percival (2006) who argued a case for moral hazard control as an effective joint liability control strategy.

4.4.5 Adverse Selection Control

This part of the report covers descriptive statistics on adverse selection control by the MFIs in Nyandarua County, Kenya. Specific components of adverse selection control assessed included the use of assorted matching approach, risk profiling, assessment of group cohesion, use of collateral and graduated lending models. Table 4.7 signposts statistics on the extent to which various aspects of adverse selection control were applied.

Table 4.7: Adverse Selection Control

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Micro Finance Institution recommends the use assorted matching in group formation</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6667</td>
<td>1.49230</td>
</tr>
<tr>
<td>The Micro Finance Institution applies group risk profiling approaches to screen group borrowers</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>4.1458</td>
<td>.96733</td>
</tr>
<tr>
<td>The Micro Finance Institution assesses group cohesion prior to lending</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>3.9792</td>
<td>1.06170</td>
</tr>
<tr>
<td>The Micro Finance attaches group and individual collateral to ensure capacity of members to repay</td>
<td>48</td>
<td>1.00</td>
<td>4.00</td>
<td>3.5000</td>
<td>1.01058</td>
</tr>
<tr>
<td>The Micro Finance Institution uses graduated lending models to ensure defaulters don’t receive funding in future</td>
<td>48</td>
<td>1.00</td>
<td>5.00</td>
<td>4.0417</td>
<td>1.09074</td>
</tr>
</tbody>
</table>

Source: Survey data (2018)

From the analysis results, it is clear as indicated by the mean of (0.37) and standard deviation of (1.49) that the MFIs recommended the use assorted matching in group formation as an adverse selection control tool. Further, as indicated by a mean of (4.15)
and standard deviation of (0.97), the institutions applied group risk profiling approaches in screen group borrowers. Further, as demonstrated by a mean of (3.98) and standard deviation of (1.06), the MFIs assessed to a large extent the cohesion of the group prior to lending as an adverse selection control tool. Additionally, the institutions to a large extent attached group and individual collateral to ensure capacity of members to repay as represented by a mean of (3.50) and standard deviation of (1.01). Finally, the MFIs applied to a great extent, graduated lending models to ensure defaulters don’t receive funding in future as shown by the mean of (4.04) and standard deviation of (1.09). The mean of the means of the various adverse selection control factors stood at (3.87) indicating a wide level of application of the adverse selection control activities in the MFIs. The average standard deviation for the individual factors under adverse selection control stood at (1.12) which demonstrated that the responses were largely held close to the mean affirming high level of application adverse selection control activities in the MFIs in Nyandarua County, Kenya in line with past results and theoretical recommendations presented in Ghatak and Guinnane (1999), Milgo (2013), Paxton, Graham, and Thraen (2000) and Ndirangu and Terer (2016) who present a case for adverse selection control as a joint liability control tool.

4.5 Inferential Statistics
This section presents statistics that allow inferences or generalisations on the entire population. This includes multiple regression analysis and Pearson correlation analysis. The results are then compared and contrasted with previous empirical studies and theoretical orientations to arrive at logical deductions.

4.5.1 Diagnostic tests
Diagnostic tests were conducted with a view to ascertain that the data sets met the general assumptions for regression analysis. The tests included Shapiro-Wilk test of
Normality, Test for multicollinearity, Test Glejser for heteroskedacity and Durbin Watson test for autocorrelation.

Table 4.8 summarises the results of the test of normality. Since the study achieved a total of 48 responses, the Shapiro-Wilk test of normality was preferred to Kolmogorov-Smirnov test since the value was less than 2000. If the responses were more than 2000, the Kolmogorov-Smirnov test would have been applied (Razali & Wah (2011)).

Key hypothesis for the normality test were developed as follows.

$H_0$: The observed distribution fits a normal distribution.

$H_a$: The observed distribution does not fit the normal distribution.

As such, rejecting $H_0$ would imply assumption of the normality status.

### Table 4.8: Shapiro-Wilk Test of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Group Loan Performance</td>
<td>.593</td>
<td>48</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction

**Source:** Survey data (2018)

The P value of the Shapiro-wilk test for Group Loan Performance of the MFIs stood at 0.059, a value that is greater than 0.05 (5% level of significance). As such, the study failed to reject $H_0$. To that effect, an assumption was made that the data set followed a normal distribution which essentially means that the data set did not significantly deviate from a normal distribution (Shapiro & Wilk, 1965; Razali & Wah 2011).

Table 4.9 presents statistics on the test for Multicollinearity. Multicollinearity concerns the possibility that one predictor variable could be linearly predicted from the others with a sizeable degree of accuracy.
### Table 4.9: Test for Multi Collinearity

<table>
<thead>
<tr>
<th>Model</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.</td>
</tr>
<tr>
<td>Enforcement of social sanctions</td>
<td>.788</td>
</tr>
<tr>
<td>Loan monitoring</td>
<td>.454</td>
</tr>
<tr>
<td>Moral hazard control</td>
<td>.587</td>
</tr>
<tr>
<td>Adverse selection control</td>
<td>.446</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Group Loan Performance

Source: *Survey data (2018)*

The Tolerance output for our predictor variables in this case are 0.788, 0.454, 0.587 and 0.446 for enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control respectively. The Tolerance values are all above the minimum threshold of 0.10 considered acceptable thus indicating the absence of the multi-collinearity problem in the data set. Tolerance signifies the fraction of variation in the predictor variable which cannot be accounted for by the other predictors in the multiple regression model (Liu, Kuang, Gong, & Hou, 2003). Extremely small tolerance values (below 0.10) means that a predictor could be redundant and would therefore warrant further investigation. Likewise, from the collinearity statistics output provided in table 4.9, the Variance of Inflation Factors (VIF) values for enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control stand at 1.269, 2.203, 1.704 and 2.242 respectively. The VIF values are all below the recommended cut off point of 10 indicative of absence of the multi-collinearity problem in the data set. Ideally, the Variance of Inflation Factors signifies the reciprocal of tolerance; i.e. \(1 / \text{tolerance}\). As the authors assert, a variable whose VIF values is greater than 10 may require further investigation. That means that such a variable would be associated with multi collinearity problem.
Table 4.10 shows the output of the test for autocorrelation. The Durbin Watson test was exploited for this purpose and was generated using SPSS.

**Table 4.10: Durbin Watson test for Autocorrelation**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.870a</td>
<td>.757</td>
<td>.743</td>
<td>2.519880</td>
<td>1.782</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Adverse Selection Control, Moral Hazard Control, Loan Monitoring, Enforcement Of Social Sanctions

b. Dependent Variable: Group Loan Performance

Source: Survey data (2018)

From table 4.10, the Durbin-Watson statistic $d = 1.782$, lies between the two critical values of $1.5 < d < 2.5$ meaning that the first order linear auto-correlation in the multiple regression data was absent (Durbin & Watson, 1971).

Table 4.11 presents statistics on the output of the test for Heteroskedacity using Test Glejser. According to Long and Ervin (2000), heteroskedasticity concerns the likelihood of there being differences in the residual variance of the observation over time. The decision rule for Test Glejser was developed as follows. If the value Sig. > 0.05; there is no heteroscedasticity problem. Alternatively, if the value Sig. <0.05; then there is heteroscedasticity problem.
Table 4.11: Test Glejser for Heteroscedacity

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.208</td>
<td>.176</td>
<td>1.115</td>
<td>.067</td>
</tr>
<tr>
<td>Enforcement of social sanctions</td>
<td>.522</td>
<td>.250</td>
<td>1.760</td>
<td>.058</td>
</tr>
<tr>
<td>Loan monitoring</td>
<td>.342</td>
<td>.237</td>
<td>.733</td>
<td>.082</td>
</tr>
<tr>
<td>Moral hazard control</td>
<td>.488</td>
<td>.132</td>
<td>3.253</td>
<td>.064</td>
</tr>
<tr>
<td>Adverse selection control</td>
<td>.287</td>
<td>.089</td>
<td>.257</td>
<td>.385</td>
</tr>
</tbody>
</table>

a. Dependent Variable: AbsUt

Source: Survey data (2018)

Based on the results of the heteroscedacity test, the obtained P values for enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control were 0.058, 0.082, 0.064 and 0.385 respectively which are all greater than 0.05 (> 0.05). As such, the heteroscedacity problem in the data set was absent (Glejser, 1969).

4.5.2 Regression Analysis

The study conducted the multiple linear regression analysis using SPSS as the analysis tool. Group loan performance was the dependent variable. On the other hand, joint liability lending variables (enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control) were the independent variables. Table 4.12 gives statistical output of F test performed using SPSS.
Table 4.12: F Test on ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4.117</td>
<td>4</td>
<td>1.029</td>
<td>3.091</td>
<td>.020</td>
</tr>
<tr>
<td>Residual</td>
<td>124.568</td>
<td>44</td>
<td>2.831</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>128.685</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), adverse selection control, moral hazard control, loan monitoring, enforcement of social sanctions
b. Dependent Variable: Group Loan Performance
Source: Survey data (2018)

At the 5% level of significance, the Analysis of Variance (ANOVA) output gives evidence to demonstrate that the slope of the regression line between group loan performance (dependent variable) and joint liability lending (independent variables) was not zero. This is because the P value of 0.020 is less than 0.05 level of significance, i.e. p value < 0.05. As such, a conclusion was reached that at least one of the independent variables enforcement of social sanctions, loan monitoring, moral hazard control, and adverse selection control was a useful predictor of group loan performance. Table 4.13 presents the regression model summary.

Table 4.13: Regression Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.870a</td>
<td>.757</td>
<td>.743</td>
<td>2.519880</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Adverse Selection Control, Moral Hazard Control, Loan Monitoring, Enforcement Of Social Sanctions
b. Dependent Variable: Group Loan Performance
Source: Survey data (2018)

The Coefficient of Determination or R square stands at 0.757 which implies that 75.70% of the variation in the Group Loan Performance of MFIs (the dependent variable) is explained by variability in the independent variables i.e. enforcement of social sanctions,
loan monitoring, moral hazard control and adverse selection control. As such, only 24.30% of the variation in MFIs’ group loan performance is explained by other factors not included in the model. Therefore, guided by conventional wisdom by Draper, Smith, and Pownell (1966) and Seber and Lee (2012), a conclusion was made that at least one of the joint liability lending variables under assessment were useful predictors of group loan performance. The results agree with past studies such as Kaboski and Townsend (2005) and Carpena, Cole, Shapiro, & Zia (2011) who indicated that joint liability would serve to enhance group loan performance.

Table 4.14 presents the Regression Model Coefficients. The Regression Model was a key tool for the study at hand in explaining the effect if any between the joint liability lending variables under assessment and group loan performance.

Table 4.14: Regression Model Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>1.790</td>
</tr>
<tr>
<td></td>
<td>Adverse selection control</td>
<td>.250</td>
</tr>
<tr>
<td></td>
<td>Moral hazard control</td>
<td>.421</td>
</tr>
<tr>
<td></td>
<td>Loan monitoring</td>
<td>.097</td>
</tr>
<tr>
<td></td>
<td>Enforcement of social sanctions</td>
<td>.163</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Group Loan Performance

Source: Survey data (2018)

From the regression analysis output, all the regression coefficients for the independent variables i.e. adverse selection control, moral hazard control, loan monitoring and enforcement of social sanctions are all statistically significantly different from 0 (zero).
This is because their P Values are all less than 5% or 0.05 level of significance. The study results match the propositions and past results by Armendáriz and Morduch (2005), Jiang et al. (2014) and Percival (2006) who demonstrated that moral hazard control helps to improve group loan performance.

The coefficient for adverse selection control (0.250) is significantly different from 0 because its p-value of (0.010) is less than 0.05 level of significance. This means that a unit improvement in adverse selection control activities would lead to a 0.250 unit improvement in the group loan performance of the MFIs. The coefficient for adverse selection control (0.421) is statistically significant since its p-value of 0.014 is less than 0.05 level of significance. This means that a unit improvement in moral hazard control would lead to a 0.421 unit improvement in group loan performance of the MFIs. The study results are in agreement with past results presented by Milgo (2013), Sharma and Zeller (1997), Paxton, Graham, and Thraen (2000) and Ndirangu and Terer (2016) who indicated that adverse selection control positively affects group loan performance.

The coefficient for loan monitoring (0.097) is statistically significant because its p-value of 0.032 is below the 5% or 0.05 level of significance. This demonstrates that a unit increase in loan monitoring activities would result in a 0.097 unit increase in MFI group loan performance. The study findings are in agreement with past results as indicated by Bichanga and Aseyo (2013), Addae-Korankye (2014), Milgo (2013) and Ndirangu and Terer (2016) who all indicated that loan monitoring was an instrumental determinant of group loan performance.
The coefficient for enforcement of social sanctions (0.163) is statistically significant since its P value of 0.023 is less than 5% or 0.05 level of significance. This implies that a unit increase in loan monitoring would lead to a 0.163 unit increase in the group loan performance of MFIs. The findings agree with Ndirangu and Terer (2016), Che (2002), Karlan (2004) who demonstrated that enforcement of social sanctions would enhance group loan performance.

A conclusion was made to that effect that all the independent variables under joint liability lending were useful predictors of group loan performance of MFIs and that they all affected group loan performance positively. The regression model for joint liability lending and group loan performance of the MFIs was therefore developed as follows:

\[
\text{Group Loan Performance} = 1.790 + 0.163 (\text{Enforcement of Social Sanctions}) + 0.097 (\text{Loan Monitoring}) + 0.421 (\text{Moral Hazard Control}) + 0.250 (\text{Adverse Selection Control}) .
\]

**4.5.3 Pearson Correlation analysis**

The study also analysed the data using the Pearson Correlation analysis method in a bid to determine the strength and direction of relationship between each joint liability lending variable and group loan performance for MFIs in Nyandarua County, Kenya. Correlation aims at investigating the association between two quantitative, continuous variables. Pearson's correlation coefficient (r) is a measure of the strength of the association between the two variables and is interpreted on a scale of 0 to 1. Values closer to 0 would indicate diminishing correlation or association between the variables under assessment. Conversely, values close to 1 indicate high degree of relationship between the variables being assessed. Table 4.15 presents the Pearson Correlation Output derived from SPSS.
Table 4.15: Pearson Correlation Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Performance</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enforcement of social sanctions</td>
<td>Performance</td>
<td>.590**</td>
<td>.002</td>
<td>48</td>
</tr>
<tr>
<td>Loan monitoring</td>
<td>Performance</td>
<td>.813**</td>
<td>.003</td>
<td>48</td>
</tr>
<tr>
<td>Moral hazard control</td>
<td>Performance</td>
<td>.437**</td>
<td>.001</td>
<td>48</td>
</tr>
<tr>
<td>Adverse selection control</td>
<td>Performance</td>
<td>.645**</td>
<td>.001</td>
<td>48</td>
</tr>
</tbody>
</table>

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

Source: Survey data (2018)

Results of the Pearson Correlation Analysis demonstrated significant positive associations between all the independent variables and group loan performance. The Pearson Correlation Coefficient for enforcement of social sanctions stood at 0.590 implying that the variable has a strong positive relationship with group loan performance. The strength of association is considered strong since the Pearson Correlation Co-efficient is above 0.50 but below 0.70. Additionally, the relationship was considered statistically significant since the Sig. (2-tailed) value of 0.002 is below the 0.05 or 5% level of significance. The findings agree with Ndirangu and Terer (2016), Che (2002), Karlan (2004) who demonstrated positive association between enforcement of social sanctions and group loan performance.

The Pearson Correlation Coefficient for loan monitoring stands at 0.813 which demonstrates a very strong positive relationship between loan monitoring and group loan
performance. The relationship was considered very strong since the Pearson Correlation coefficient was greater than 0.70. The relationship is also statistically significant since the sig (2-tailed) value of 0.003 was less than the 5% or 0.05 significance level. The study findings are in agreement with past results as indicated by Bichanga and Aseyo (2013), Addae-Korankye (2014), Milgo (2013) and Ndirangu and Terer (2016) who indicated that loan monitoring was positively related with group loan performance.

The Pearson Correlation coefficient for moral hazard control was 0.437 which shows a moderate positive association between moral hazard control and group loan performance. The association is considered moderate since the coefficient is greater than 3 but less than 5. The relationship is statistically significant because the Sig. (2-tailed) value of 0.001 is less than 5% or 0.05 level of significance. The study results match the propositions and past results by Armendáriz and Morduch (2005), Jiang et al. (2014) and Percival (2006) who demonstrated that moral hazard control has a positive relationship with group loan performance.

Lastly, the Pearson Correlation coefficient for adverse selection control stood at 0.645 which indicates a strong positive association between adverse selection control and group loan performance. The relationship was considered strong since the coefficient was greater than 0.5 but less than 0.70. The association was considered statistically significant since the Sig. (2-tailed) value of 0.001 was less than 0.05 or 5% level of significance. The study results are in agreement with past results presented by Milgo (2013), Sharma and Zeller (1997), Paxton, Graham, and Thraen (2000) and Ndirangu and Terer (2016) who demonstrated that adverse selection control is positively related to group loan performance.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter gives a summary of the study, conclusions as well as recommendations on policy aimed at enhancing the group loan performance of MFIs as key drivers of the Kenyan economy. Also included in this section are the recommendations for further research aimed at advancement of knowledge on this critical subject for players in the financial sector.

5.2 Summary
The study sought to determine the effect of joint liability lending on performance of MFIs in Nyandarua County, Kenya. Specifically, the study dwelt on determination of the effect of enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control on performance of MFIs in Nyandarua County, Kenya. Group Loan Performance was measured through a review of average group repayment rate, loan book growth and net profit margin of the MFIs in Nyandarua County, Kenya.

The group loan performance of the Micro Finance institutions in Nyandarua County was considered fairly good with the average group repayment of loans standing above two thirds but highlighting need to drive the organisations towards full group loan repayment. The average growth in group loan portfolio was also found to be fairly good although some players in the sector were not registering attractive figures in loan portfolio growth. On the same note, the average net profit margin stood just slightly above the quarter mark which calls for action towards the improvement in profitability. As demonstrated by the Coefficient of Determination or R square, more than three quarters of the variation in the Group Loan Performance of MFIs was explained by variability in the joint liability
lending factors including enforcement of social sanctions, loan monitoring, moral hazard control and adverse selection control.

On enforcement of social sanctions, results affirmed high level of application of the enforcement of social sanctions as a joint liability control tool in the MFIs sub sector. It was established that the institutions to a large extent used progressive or graduated lending models, offered incentives to group members in enforcing social sanctions. The institutions also used co-guarantee models of the group members and sought isolation of the defaulting members from the group and ensured well-structured loan size limits for any one category of borrowers. The regression analysis and correlations analysis results indicated that enforcement of social sanctions plays a key role in enhancing the group loan performance of MFIs.

On loan monitoring, the study results established generally high level of application of the practice in keeping loan advanced to members under check. Specifically, the results indicated that MFIs in Nyandarua County promoted to a great extent peer monitoring models for loans advanced to groups. The institutions also regularly reviewed clients’ portfolio status besides offering incentives for timely repayment of group loans. Similarly, the MFIs were found to have a clear delinquency management framework for group borrowers and had a clear and effective follow up and collection systems. Regression analysis as well as Pearson Correlation Analysis affirmed that loan monitoring had group loan performance enhancing effects for MFIs in Nyandarua County, Kenya.

On moral hazard control, the study similarly found wide application of the component activities in group loan management for MFIs in Nyandarua County, Kenya. Results
demonstrated that MFIs conducted to a great extent post disbursement visits to check diversion of funds to riskier projects and also applied direct supplier disbursement initiatives to control moral hazards. The institutions also to a great extent offered incentives and penalties to control diversion of funds to risky projects and ensured regular project risk monitoring. Finally, the firms involved group members to a large extent to curb or control diversion of funds to risky projects. Moral hazard control was found to positively influence group loan performance for MFIs in Nyandarua County, Kenya as demonstrated by regression and correlation analysis results.

On adverse selection control, results also indicated wide application by MFIs in group loan management. Specifically, MFIs used assorted matching in group formation as an adverse selection control tool and also applied group risk profiling approaches in screening group borrowers. The institutions further assessed the cohesion of the group prior to lending as an adverse selection control tool. Additionally, group and individual collateral was also attached in some cases to ensure capacity of members to repay. The MFIs also applied graduated lending models to ensure defaulters don’t receive funding in future. Regression and correlation analysis results indicated that MFIs group loan performance was greatly influenced by adverse selection control activities.

5.3 Conclusion
From the inferential statistics that allow inferences or generalisations to be made to the entire population, it was concluded that joint liability lending was key to influencing the group loan performance of MFIs. It was therefore concluded, going by the regression results that enforcement of social sanctions influences greatly the group loan performance for MFIs. A further conclusion was made, going by the results of the Correlation Analysis that the relationship between enforcement of social sanctions and
group loan performance is strong and positive meaning that an improvement in enforcement of social sanctions would lead to significant improvement in group loan performance of MFIs.

On loan monitoring, it was concluded that loan monitoring greatly and significantly influenced the group loan performance of MFIs. Correlation analysis results led to a conclusion that the relationship between loan monitoring and Group Loan Performance of MFIs is very strong and positive. The implication is that improvement in loan monitoring activities would lead to a significant improvement in MFIs’ performance.

It was further concluded, going by the regression analysis results, that moral hazard control was a major determinant of the group loan performance of the MFIs. It was further concluded from the correlation analysis results that moral hazard control and group loan performance of MFIs exhibit a moderate but positive relationship. It was further concluded that adverse selection control yields a statistically significant effect on group loan performance for MFIs. A further conclusion was made, as informed by correlation analysis results, that adverse selection control yields a strong positive relationship with performance.

5.4 Recommendations

Informed by the disparities in performance of the individual MFIs, benchmarking activities are recommended for loan officers in the MFIs sector so that they can learn from other firms. The study recommends the need to drive the organisations towards full group loan repayment. Firms needed to learn from other in building their group loan portfolio since some players were not registering attractive figures in loan portfolio growth. There is also need for companies to rethink and redefine their lending strategies
in order to ensure an improvement on profitability which was found not to be very attractive.

Guided by the conclusion made underlining the value of joint liability lending control, activities, and the study recommends that firms generally embrace joint liability lending control tools including enforcement of social sanction, loan monitoring, moral hazard control and adverse selection control in order to continuously enhance group loan performance. On enforcement of social sanction, the study Okays activities to this regard as they would positively enhance group loan performance. The use of progressive or graduated lending models, incentives to group members, co-guarantee models, isolation of the defaulting members and well-structured loan size limits for any one category of borrowers is highly recommended.

On loan monitoring, the study recommends activities gearing towards improvement of this practice as it would add value on improvement of group loan performance. To this end, the study recommends use of peer monitoring models for loans advanced to groups, regular review of clients’ portfolio status and incentives for timely repayment of group loans. MFIs should also formulate and implement a clear delinquency management policy and build clear and effective follow up and collection systems.

On moral hazard control, the study recommends investment in activities that are built on this joint liability lending concept as the study demonstrates value in enhancing group loan performance. MFIs should conduct post disbursement visits to control diversion of funds to riskier projects. Disbursement options such as direct supplier disbursement should also be embraced where possible. MFIs should also offer incentives and penalties to control diversion of funds to risky projects and ensure regular project risk monitoring.
The study further recommends involvement of group members to curb or control diversion of funds to risky projects.

Finally, on adverse selection control, the study recommends more investment on this area to ensure group loans are closely checked build strong pillars for MFIs overall performance. The study recommends the use of assorted matching in group formation as an adverse selection control tool. The MFIS should also apply group risk profiling approaches in screening group borrowers and assess the cohesion of the group prior to lending. The MFIS should attach group and individual collateral in order to ensure capacity of members to repay but this should be done carefully so as not to interfere with the goal of MFIs as drivers of financial inclusion.

5.5 Suggestions for further research

In the midst of growing risk in lending, Micro finance institutions find themselves in a dilemma as they seek to balance the need to absorb the financially excluded class with that of ensuring shareholders assets are safe and growing. The current study served to provide empirical evidence on how shareholder’s assets can be safeguarded by providing answers on how group liability lending could be used to enhance group loan performance which would then contribute to overall firm performance. So the question goes, what about the interest of borrowers? And what about the goal of MFIs in promoting financial inclusion? As such, the study recommends a study on joint liability lending and financial inclusion of MFIs in Kenya.

It is further recommended that future studies be replicated to other important players in the financial sector such as the commercial banks which are faced with performance challenges in the wake of new interest rate regime that caps interest rates to not more than 4% of CBK rate. As such, the study recommends a study on joint liability lending and group loan performance for Commercial Banks in Kenya.
REFERENCES


Appendices

Appendix 1: Letter of Transmittal

NEWTON RIUNGE
P.O BOX 88-20302,
OL-JORO-OROK
TEL: 0728 761 051

17TH MARCH 2017

Dear respondent,

RE: DATA COLLECTION FOR A STUDY ON JOINT LIABILITY LENDING AND GROUP LOAN PERFORMANCE AMONG MICRO FINANCE INSTITUTIONS: A CASE OF NYANDARUA COUNTY, KENYA

I am student of Kenyatta University pursuing Master of Business Administration, with a specialization in Finance. I am undertaking a study on Joint Liability Lending and Group Loan Performance among Micro Finance Institutions in Nyandarua County, Kenya. This is part of the university requirement in partial fulfilment of the above stated postgraduate degree. For that matter, I have developed a questionnaire aimed at obtaining relevant data. I wish to request you to accord me some of your valuable time to respond to the questionnaire as guided. The data collected is purely for academic use. A commitment is therefore made that the information given will be treated with utmost confidentiality.

Thanks in advance.

Yours faithfully,

NEWTON RIUNGE,
Researcher,
REG NO: D53/OL/NKU/24645/2014
Appendix 2: Questionnaire

SECTION A: GENERAL INFORMATION

1. Name of the Micro Finance Institution ..............................................................................

2. Gender of participant
   Male ( )  Female ( )

3. Respondents’ leadership position in the company.
   Branch Manager ( )  Credit Manager ( )
   Finance and Investment Officer ( )  Loan Officer ( )
   Operations Manager ( )  Customer Care Officer ( )

4. Highest level of education of the respondent:
   ( ) Primary  ( ) Secondary  ( ) Certificate
   ( ) Diploma  ( ) undergraduate Degree
   ( ) Post graduate  ( ) others.

5. Respondent’s working experience in the Micro Finance Institution.
   Below 2 years ( )  3-5 years ( )
   6-10 years ( )  over 10 years ( )

SECTION B: JOINT LIABILITY LENDING

I: ENFORCEMENT OF SOCIAL SANCTIONS

To what extent do you agree with the following statements regarding the use of social sanctions to improve group loan performance in the Micro Finance Institution?

SCALE: 1) Not At All  2) Little Extent  3) Moderate Extent
   4) Great Extent  5) Very Great Extent

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>The Micro Finance Institution uses progressive or graduated lending models as a social sanction on borrowers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The Micro Finance Institution offers Incentives to group members to improve repayment of loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The Micro Finance Institution uses co-guarantee models of the group members in seeking to improve loan repayment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The Micro Finance Institution seeks member isolation in cases where they become naughty defaulters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The Micro Finance Institution has well-structured loan size limits for any one category of borrowers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
II: LOAN MONITORING

Kindly indicate, in your opinion the extent to which the following statements regarding the MFI loan monitoring models hold?

SCALE:  1) Not At All    2) Little Extent    3) Moderate Extent
        4)  Great Extent    5) Very Great Extent

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>The Micro Finance Institution promotes Peer Monitoring Models for loans advanced to groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>The Micro Finance Institution regularly reviews clients’ portfolio Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>The Micro Finance Institution offers Incentives for timely repayment of group loans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>The Micro Finance Institution has a clear delinquency management for group borrowers.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>The Micro Finance Institution has a clear and effective follow up and collection systems</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III: MORAL HAZARD CONTROL

To what extent do you share with the following statements regarding moral hazard control activities of the Micro Finance Institution?

SCALE:  1) Not At All    2) Little Extent    3) Moderate Extent
        4)  Great Extent    5) Very Great Extent

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>The Micro Finance Institution conducts Post Disbursement visits to check diversion of funds to riskier projects</td>
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<td>16.</td>
<td>The Micro Finance Institution undertakes direct supplier disbursement initiatives to control funds diversion</td>
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<td>17.</td>
<td>The Micro Finance institution offers Incentives and penalties to control diversion of funds to risky projects</td>
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<td>18.</td>
<td>The Micro Finance institution undertakes regular project risk monitoring to ensure funds are not subjected to very risky projects.</td>
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<tr>
<td>19.</td>
<td>The Micro Finance Institutions involve group members to ensure funds are not diverted to risky projects.</td>
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</tbody>
</table>
IV: ADVERSE SELECTION CONTROL

Kindly indicate, in your opinion the extent of application of the following Adverse Selection Control activities?

**SCALE:** 1) Not At All 2) LittleExtent 3) ModerateExtent 4) GreatExtent 5) Very GreatExtent

<table>
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<tr>
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<tbody>
<tr>
<td>19. The Micro Finance Institution recommends the use assorted matching in group formation</td>
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<td>20. The Micro Finance Institution applies group risk profiling approaches to screen group borrowers</td>
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<td>21. The Micro Finance Institution assesses group cohesion prior to lending</td>
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<td>22. The Micro Finance attaches group and individual collateral to ensure capacity of members to repay</td>
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<td>23. The Micro Finance Institution uses graduated lending models to ensure defaulters don’t receive funding in future</td>
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</table>

SECTION C: GROUP LOAN PERFORMANCE

24. Kindly provide the following statistics concerning the Group Loan Performance status of the Micro Finance Institutions in Nyandarua County, Kenya.

<table>
<thead>
<tr>
<th>FINANCIAL YEAR</th>
<th>Group Loan Repayment Rate (%)</th>
<th>Loan Book Growth (%)</th>
<th>Profitability indicated by Net Profit Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/2014</td>
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<tr>
<td>2014/2015</td>
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<tr>
<td>2015/2016</td>
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</tbody>
</table>

25. Kindly indicate the extent to which the following statements regarding the group loan repayment status of the MFI hold.

**SCALE:** 1) Not At All 2) LittleExtent 3) ModerateExtent 4) GreatExtent 5) Very GreatExtent

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>The Micro Finance Institution has maintained a modest growth in the number of customer and Loan book Growth</td>
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<tr>
<td>The MFI has sustained a good quality book over time</td>
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</table>
26. What recommendations would you give towards improving the performance status of the Group Loans in the MFI?

........................................................................................................................................
........................................................................................................................................

27. Please provide in the space provided, any more information you deem relevant to the study but which may not have been captured

........................................................................................................................................
........................................................................................................................................

Thank you for filling this Questionnaire
### Appendix 3: List of MFIs in Nyandarua County

<table>
<thead>
<tr>
<th>S/ No.</th>
<th>Name of the Micro Finance Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Faulu Micro Finance Bank</td>
</tr>
<tr>
<td>2.</td>
<td>Kenya Women Finance Trust (KWFT)</td>
</tr>
<tr>
<td>3.</td>
<td>Sidian Bank (Formerly K-Rep Bank) –Micro Finance Section</td>
</tr>
<tr>
<td>4.</td>
<td>Small and Micro Enterprise Programme</td>
</tr>
<tr>
<td>5.</td>
<td>Real People Micro Finance</td>
</tr>
<tr>
<td>6.</td>
<td>BIMAS Micro Finance</td>
</tr>
<tr>
<td>7.</td>
<td>JuhudiKilimo Micro Finance</td>
</tr>
<tr>
<td>8.</td>
<td>Pamoja Women Development Programme (PAWDEP)</td>
</tr>
<tr>
<td>9.</td>
<td>Kenya Ecumenical Loan Funds (ECLOF)</td>
</tr>
<tr>
<td>10.</td>
<td>Musoni Micro Finance Bank Ltd</td>
</tr>
<tr>
<td>11.</td>
<td>Letshego Micro Finance</td>
</tr>
</tbody>
</table>

Source: *Association of Micro Finance Institutions of Kenya (2017)*
Appendix 4: Authorisation Letter by Kenyatta University

FROM: Dean, Graduate School
DATE: 13th September, 2017

TO: Newton Riange Njeru
C/o Accounting & Finance Dept.

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 6th September, 2017 approved your Research Project Proposal for the MBA degree entitled, “Joint liability on group loan performance among micro finance institutions: A case of Nyandarua county, Kenya.”

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

HARRIET ISIBORI
FOR: DEAN, GRADUATE SCHOOL

cc. Chairman, Accounting & Finance Dept.

Supervisor: Dr. Abel Aniimiri
C/o Accounting & Finance Dept.
Kenyatta University
Appendix 5: Research Authorisation by NACOSTI

Ref No. NACOSTI/P/17/6604/19437

Newton Riunge Njoroge
Kenyatta University
P.O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Joint liability on group loan performance among micro finance institutions: A case of Nyandarua County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Nyandarua County for the period ending 9th October, 2018.

You are advised to report to the County Commissioner and the County Director of Education, Nyandarua County before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERIWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nyandarua County.

The County Director of Education
Nyandarua County.
Appendix 6: Research Permit by NACOSTI

THIS IS TO CERTIFY THAT:
MR. NEWTON RIUNGE NJOROGE
of KENYATTA UNIVERSITY, BB-20302 OL
JORO GROK, has been permitted to
conduct research in Nyandarua County

on the topic: JOINT LIABILITY ON
GROUP LOAN PERFORMANCE AMONG
MICRO FINANCE INSTITUTIONS: A CASE
OF NYANDARUA COUNTY, KENYA

for the period ending:
9th October, 2018

........................
Applicant's
Signature

........................
Director General
National Commission for Science,
Technology & Innovation

Permit No: NACOSTI/P/17/66604/19437
Date Of Issue: 10th October, 2017
Fee Received: Ksh 1000