

**EFFECT OF MICRO FACTORS ON FINANCIAL SUSTAINABILITY OF  
INFORMAL FINANCE GROUPS IN MWEA CONSTITUENCY**

**BY**

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**MASTER OF SCIENCE IN COMMERCE FINANCE AND ACCOUNTING**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
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## DECLARATION

I declare that this is my original work and has not been submitted for examination in any other institution for the award of a degree or a diploma. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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I do hereby confirm that I have examined the master's dissertation of

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## **ABSTRACT**

Informal finance has become critical in poverty eradication around the world. Despite acknowledgment of this fact, informal finance groups have faced financial constraints issues resulting from micro factors that affect them. This study sought to establish the effect of micro factors on the financial sustainability of informal finance groups. The study focused on loan pricing, repayment period, recovery mechanisms, loan advance criteria as micro factors and leadership as a moderating factor. This study adopted a descriptive survey design with the target population of 600 IFGs in Mwea Constituency. Stratified random sampling based on geographical distribution was employed to pick a sample of 83 IFGs with the respondents being the leaders of the sampled IFGs. Data was collected through questionnaires and analyzed by use of descriptive and inferential statistics. Moderated multiple regression was used to test for the moderating effect of the leadership of IFGs. Results of the study indicated that loan pricing, repayment period, recovery mechanisms and loan advance criteria affect financial sustainability of informal finance groups. The presence of recovery mechanisms was confirmed. Most groups preferred to set off loans against savings due to ease of execution and for cost reduction. Recovery mechanism policies were influential in the sustainability of the informal finance groups since the operations of the village microfinance were mainly savings and loans. However, the members required sustainable income generating activities from which they could boost their savings ability for viable and long-term informal finance groups operations. Loan advances were majorly for investment purposes to enable members generate income and be able to service loans. However, monitoring systems were not in place an attestation of the presence of cases of loan diversion. Leadership was found to moderate the relationship between micro factors and financial sustainability of IFGs hence a clear manifestation of the role of leadership in group continuity and sustainability. The research recommended that IFGS develop loan pricing criteria for optimal interest rates that strike a balance between providing affordable financial services to the rural residents and achieving financial sustainability. The department of social services should devise enforceable recovery mechanisms for the registered groups to reduce loan losses and increase interest income for financial self-sufficiency. Policy makers in liaison with County social services department should develop capacity building programs for IFG members to undertake training on leadership and conflict resolution. Training in the area of viable group income generating activities and resource mobilization should be provided to ensure that IFGs remain financially sustainable.

**Keywords:** Financial sustainability, Loan pricing, Repayment period, Recovery mechanisms, Loan advance, Informal Finance Groups

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## TABLE OF CONTENTS

<b>DECLARATION</b> .....	<b>ii</b>
<b>ABSTRACT</b> .....	<b>iii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iv</b>
<b>TABLE OF CONTENTS</b> .....	<b>v</b>
<b>DEDICATION</b> .....	<b>vii</b>
<b>LIST OF TABLES</b> .....	<b>viii</b>
<b>LIST OF FIGURES</b> .....	<b>ix</b>
<b>LIST OF ABBREVIATIONS AND ACRONYMS</b> .....	<b>x</b>
<b>DEFINITION OF TERMS</b> .....	<b>xi</b>
<b>CHAPTER ONE</b> .....	<b>1</b>
<b>INTRODUCTION</b> .....	<b>1</b>
1.1 Background of the Study .....	1
1.2 Statement of the Problem.....	5
1.3 Objectives of the Study .....	6
1.4 Research Questions .....	7
1.5 Significance of the Study .....	7
1.6 Scope of the Study .....	8
1.7 Assumptions of the Study .....	8
1.8 Justification of the Study .....	9
<b>CHAPTER TWO</b> .....	<b>10</b>
<b>LITERATURE REVIEW</b> .....	<b>10</b>
2.1 Introduction.....	10
2.2 Theoretical framework.....	10
2.3: Microfinance Models .....	12
2.4 Loan Pricing in Informal Finance Groups .....	15
2.5: Loan Repayment period in Informal Finance Groups .....	16
2.6: Loan Recovery Mechanisms in Informal Finance Groups .....	18
2.7: Loan Advances in Informal Finance Groups.....	20
2.8 Leadership Aspects in the Village Microfinance.....	22
2.9 Empirical Review.....	23
2.10 Summary of the reviewed literature and knowledge Gaps .....	25
2.11: Conceptual Framework.....	26
2.12 Operationalization of Variables .....	27
<b>CHAPTER THREE</b> .....	<b>28</b>
<b>RESEARCH METHODOLOGY</b> .....	<b>28</b>
3.1 Introduction.....	28

3.2 Research Design.....	28
3.3 Target population .....	28
3.4 Sample size & Sampling procedure .....	29
3.5 Data Collection Instruments .....	30
3.6 Validity of the Research Instruments.....	31
3.7 Reliability.....	31
3.8 Data Analysis Procedures .....	32
3.9 Model Specification .....	34
3.10 Ethical Issues .....	36
<b>CHAPTER FOUR.....</b>	<b>37</b>
<b>DATA ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS .....</b>	<b>37</b>
4.1: Introduction.....	37
4.2: Demographic data .....	37
4.3: Research Variables .....	42
4.4 Descriptive Statistics.....	58
4.5 Regression Analysis.....	60
4.6 Testing for normality .....	61
4.7 Test for heteroskedasticity .....	62
4.8 Test for multicollinearity .....	63
4.9 The Multiple Regression Model .....	64
4.10 The Moderating effect of Leadership .....	67
4.11 Principal Component Analysis .....	71
<b>CHAPTER FIVE .....</b>	<b>76</b>
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>76</b>
5.1: Introduction.....	76
5.2: Summary of Findings.....	76
5.3 Conclusions of the study.....	81
5.4 Recommendations of the study.....	86
5.5 Limitations of the study .....	87
5.6: Suggestions for Further Research .....	87
<b>REFERENCES.....</b>	<b>89</b>
<b>APPENDICES .....</b>	<b>96</b>
<b>Appendix 1: Research Questionnaire .....</b>	<b>96</b>
<b>Appendix II: Time Frame .....</b>	<b>104</b>

## **DEDICATION**

This research dissertation is dedicated to my family for their moral and financial support throughout the entire course. God bless them abundantly.



## LIST OF TABLES

TABLE 1: Operationalization of Variables.....	27
TABLE 2: Questionnaire response rate.....	37
TABLE 3: Gender of the Respondent.....	38
TABLE 4: Age of respondents.....	39
TABLE 5: Level of Education.....	40
TABLE 6: IFG period of existence.....	41
TABLE 7: Frequency of loan repayment.....	45
TABLE 8: Maximum duration of loan applicable in the IFG.....	46
TABLE 9: Grace period applicable in the IFG.....	47
TABLE10: Loan losses suffered.....	49
TABLE 11: Default recovered.....	49
TABLE 12: Percentage of defaulted loans recovered.....	50
TABLE 13: Recovery Mechanisms applicable to defaulters.....	51
TABLE14: Consideration of the purpose for which loans are advanced.....	52
TABLE 15: Purpose for loan advances.....	53
TABLE 16: Presence of loan processing charges.....	53
TABLE 17: Bearer of the cost of loan processing.....	54
TABLE 18: Period in leadership.....	55
TABLE 19: New membership.....	57
TABLE 20: Descriptive Statistics.....	59
TABLE 21: Shapiro – Wilk test.....	62
TABLE 22: Breusch-Pagan Test.....	63
TABLE23: Test for multicollinearity.....	63
TABLE24: Coefficients of multiple regression.....	64
TABLE25: Multiple Regression Model Summary.....	65
TABLE26: Coefficients of Moderated Multiple Regression.....	68
TABLE27: The Moderated Multiple Regression Model summary.....	68
TABLE28: Factor analysis.....	72
TABLE 29: LR Test.....	72
TABLE 30: Factor loadings.....	73
TABLE 31: Analysis of variance with indices as predictor variables.....	74
TABLE 32: The model coefficients.....	75

## LIST OF FIGURES

FIGURE1: Conceptual framework.....	26
FIGURE2: Criteria used in setting interest rates.....	43
FIGURE3: Interest on savings.....	44
FIGURE 4: Proportion of loans currently overdue.....	48
FIGURE5: Rating of % growth in shares.....	56
FIGURE6: Rate of increase of the group income.....	58
FIGURE7: Histogram of financial sustainability scale.....	60
FIGURE8: Histogram of the residuals of the regression model.....	61
FIGURE9: RVF plot.....	62

## **LIST OF ABBREVIATIONS AND ACRONYMS**

**ASCA:** Accumulating Savings and Credit Association

**CARE:** Cooperative for Assistance and Relief Everywhere

**CBK:** Central Bank of Kenya

**CBT:** Community Based Trainer

**IFGs:** Informal Finance Groups

**NGO:** Non-Governmental Organizations

**ROSCAS:** – Rotating Savings and Credit Associations

**SHGs:** Self Help Groups

**T.O.T:** Trainer of Trainers

**VSLA:** Village Savings and Loans Associations

## **DEFINITION OF TERMS**

**Sustainability** – refers to the long- term continuation of a microfinance programme that enables financial services to be available on a continuous basis and clients to continue benefiting from these services in a routine manner (Zeller & Sharma, 2008).

**Micro factors** - elements in an organization's immediate area of operations that affect its performance and decision-making freedom (Zeller, 2015).

**Village microfinance** - refers to the village microfinance savings and loans mechanism, where members pool their savings, from which they take loans and repay with a lower interest (Ahlin & Lin, 2006).

**Financial literacy**- refers to the ability to understand how money works, how to manage it, earn or make it, how to invest it, and how to make basic mathematical accountability (Ahlin & Lin, 2006).

**Member Selection**- refers to the process by which the persons willing to be part of the village microfinance project decide on who gets to be a member of the micro-finance, based on the criteria of trustworthiness (Zeller, 2015).

**Leadership Aspects**- refers to the traits and characteristics essential for the village microfinance leaders to effectively and efficiently manage the operations of the village microfinance. Such aspects include management of the group dynamics, conflict management and proper group management (Zeller & Sharma, 2008).

**Apex Organization** – The VSLA implementing NGO that trains the Community Based Trainers in order to train members that would like to form or join the village microfinance (Ahlin & Lin, 2006).

**Share** – The amount of money contributed by each VSLA member so as to qualify for membership, and as part of his/her savings (Zeller, 2015).

**Loan delinquency** - is defined as a situation where a member borrows money from the pool of savings and gets late in repayment or even defaulting repayment (Zeller & Sharma, 2008).

## **CHAPTER ONE INTRODUCTION**

### **1.1 Background of the Study**

Informal finance groups describe community-based credit and savings associations that are run by a village itself (Zohir & Matin, 2014). On the other hand, formal finance groups are described as credit and savings associations that are manned and controlled by Acts of parliament, CBK statutes and they adhere to policies that cover them over board (Zeller, 2015). Village banking dates back to ancient times. However, microfinance institutions adopted this practice recently. The innovation of early banking methods stems from Grameen bank. Its development was later initiated by John Hatch, founder of FINCA an American NGO.

Zeller & Meyer (2012) describe village banks as self-managed and highly democratic grassroots organizations. Under this arrangement, members make their own decisions that include: election of leaders, funds management, making of bylaws, solving loan related issues and bookkeeping. They also determine penalties and fines on lateness and default. The normal payback period for loans ranges from 4 to 12 months. It is only after completion of an existing loan that a member qualifies for a new one. IFGs take various forms as Rotating savings and credit associations (Roscas), Accumulating savings and credit associations (Ascas) and Self-help Groups (SHGs).

Zeller & Sharma (2008) relate informal financing to small, unsecured and short term loans that are restricted to rural areas, individuals and small entrepreneurial ventures. According to Yaron (2012), informal financing contracts are conducted without reference or recourse to the legal system. Funds are exchanged now for promise of funds in the future. The future is always uncertain which exposes such kind of financing arrangement to the risk of default. IFGs are self-regulated and hence their performance is influenced to a large extent by factors within the

groups. These constitute micro factors which are elements in the IFGs' environment of operations that affect their performance and decision making and consequently their sustainability. Coppock et.al (2005) in their study of women groups in Arid Northern Kenya observe that these groups are affected by external factors as well as internal factors such as group dynamics and illiteracy. They view these factors as a major threat to the sustainability of the groups.

Sustainability refers to long term continuation of access to financial services and the availability of such services on a continuous basis. It entails that IFG members continue to routinely benefit from these services. Hence, necessary processes and systems must be embraced. Ahlin & Lin (2006) view financial sustainability as the long- term continuation of micro finance services after group inception and operationalization. Once formed, IFGs are expected to function indefinitely to ensure that members continuously access financial services. According to Gonzalez (1994), sustainability is key to provision of financial services to the poor. Different scholars are therefore in agreement that financially sustainable IFGs guarantee members of continued access to credit services.

One of the concepts indicative of the degree of lender sustainability is cash flows to the financing institution (Mommartz and Holtmann, 1995). It is therefore necessary that IFGs maintain constant cash inflows from repayments and savings. The viability of a micro finance programme is highly dependent on its level of sustainability. Various tests of viability are applied including the value of a loan portfolio. Mommartz and Holtmann (1995) argue that for an institution to be sustainable, it should have a sound portfolio. An unsound loan portfolio weakens the lender which compromises on the liquidity of IFGs. Mommartz and Holtmann (1995) further

note that any lender is weakened by un-remunerative financial flows in and out of a loan portfolio. As a consequence, financial development is undermined.

The single measure of a micro finance success or failure is the ability to recover money that is loaned out. Conner (2010) in a study of VSLA program in Zanzibar notes that occasionally groups fail to recover loans completely which could have a negative impact on the long-term sustainability of the group. Hence loan repayment rate is one of the indicators of financial sustainability in IFGs. It improves their liquidity and enable them to meet demand for credit. Dichter (1999) reviewed applied literature on microfinance across the world. He notes that micro finance programs are judged by their financial service outreach to the poor and their financial sustainability.

Group dynamics are a critical factor to the performance of IFGs and consequently their sustainability. Collins et al. (2009) note that the Asca model has certain weaknesses. They argue that Ascas are not reliable as members may fail to contribute to their savings or repay loans. Group leaders also influence the operations of the groups, a sentiment echoed by Johnson and Sharma (2007). They emphasize on the need to observe group leaders, failure to which IFGs' sustainability is affected. According to Johnson & Sharma (2007), failure to supervise leaders make them abuse their positions. They dominate IFGs and use group funds to enrich themselves. The formation of groups based on friendship and family relations is also seen to be a threat to IFGs. This is attributed to the fact that friends and families may find it difficult to sanction members for default or decline to advance a loan.

Though sustainability does get understood immediately in the financial terms or the resource terms, it actually has broader dimensions, of which financial sustainability is only one major dimension (Ahlin & Lin, 2006). Schreiner & Nagarajan (2008) argue that despite the



VSLAs providing members with a variety of social and financial benefits, their sustainability is unclear.

### ***1.1.1 Mwea Constituency: An overview of Financial System***

Mwea constituency is located within Kirinyaga County. Most of the residents are peasant farmers with no regular income. The county has 17 bank branches for all the major commercial banks in Kenya. There are 8 microfinance institutions, 18 building societies and 5 insurance companies. Agency banking has grown to include 58 registered agents (County Integrated Development Plan 2013-2017). Despite the development of formal institutions and the high demand for agricultural credit, majority of the residents have not been able to access them. High poverty levels have contributed to their financial exclusion. In fact, Mwea constituency is rated one of the poorest constituencies in Central Kenya region with a poverty prevalence of 43% (County Integrated Development Plan 2013-2017).

To counter financial exclusion, residents form groups that enable them have access to financial services and more so credit. These groups constitute both registered and unregistered informal groups with the most prevalent form of IFG being the Roscas. There are a total of 600 registered IFGs (County Social Services Records, 2016). These groups face various challenges resulting from factors within their environment of operations that affect performance. Many of these groups do not last long to ensure continuous provision of financial services to the residents in the long run. Existing groups disintegrate for one reason or the other prompting residents to form new groups time and again. Their sustainability can be enhanced by inclusion of training programs which are currently lacking. Availability of such programs would ensure structured group savings, effective lending criteria and proper repayment schedules that put into consideration the effects of seasonality on member needs and capabilities. Very few studies have focused on the on-going performance and sustainability of IFGs.

## **1.2 Statement of the Problem**

In every economy, informal finance groups are expected to play a crucial role of poverty alleviation by making available funds to the rural poor. In order to achieve the objective of poverty alleviation and have an impact in the society, IFGs must strive to reach as many poor people as possible (Sa-Dhan, 2008). This can only actualize if these groups remain financially sustainable. However, the sustainability of informal finance groups has come under scrutiny due to high rates of failure and stagnation. Despite their popularity, most IFGs in Mwea Constituency among them Mbeti, Mwihoko and Kionereria SHGs (County social services records, 2016) disintegrated within a short period of operation. Many face cash flow and liquidity problems arising from either failure to pay contributions in time or repay loans when due, prompting members to withdraw their membership. Such is a worrying trend as the IFGs fail to guarantee long-term provision of financial services to the poor and hence becoming an obstacle towards the objective of poverty alleviation in the long run (Sa- Dhan, 2013).

The village micro finance has been of great impact in Africa as a whole, and particularly in Mwea Constituency in Kirinyaga County. Participation in IFGs has seen livelihoods and levels of education improve. Membership into the VSLA groups has increased and new ones formed (Marguerite, 2011) but despite this fact, their sustainability is unclear (CARE, 2010). Most of the VSLAs do very well under support on capacity building only to disintegrate on exit of support organizations.

Several studies on IFGs have been conducted in Europe, Asia and Africa but not much has been written about financial sustainability of these IFGs. Most studies on the sustainability of IFGs have focused on Roscas (Anderson, Baland & Karl, 2003; Fadiga & Fadiga, 2004). These scholars have opted to avoid the Asca model of financing and concentrate on the Rosca

model, hence a limitation in scope. Their results cannot be generalized to comprehensively represent other forms of IFGs such as Ascas and SHGs. Other studies conducted on sustainability of Roscas give conflicting conclusions. Anderson, Baland & Karl (2003) concludes that Roscas are never sustainable in the absence of external sanctioning mechanisms. On the other hand, Karnu (2011) concludes that Roscas are sustainable in the absence of formal contracting social punishment.

Various documented studies have focused on repayment performance (Ahlin & Lin, 2006; Arene, 1992; Deininger & Liu, 2009) and identified loan pricing, repayment period, recovery mechanisms and loan advances as some of the factors influencing default. However, these studies did not expound on the effects of these micro factors on the financial sustainability of IFGs. No attempt is made to link repayment performance to either sustainability or unsustainability of the IFGs. Linking repayment performance factor to financial sustainability will ultimately enable IFGs to come up with strategies to enhance their sustainability and ensure continued provision of financial services to the rural poor. Previous studies have not investigated the effect of micro factors on financial sustainability of IFGs in Mwea Constituency. This study contributes to existing literature by comprehensively focusing on sustainability of all forms of IFGs from a different geographical region. Hence the need to find out the effect of micro factors on financial sustainability of Informal finance groups in Mwea Constituency.

### **1.3 Objectives of the Study**

The main objective of this study is to determine the effect of micro factors on financial sustainability of informal finance groups in Mwea Constituency.

The specific objectives are to:

1. Determine the effect of loan pricing on financial sustainability of Informal finance groups.

2. Determine the effect of repayment period on financial sustainability of Informal finance groups.
3. Determine the effect of loan recovery mechanisms on financial sustainability of informal finance groups.
4. Establish the effect of loan advance criteria on financial sustainability of informal finance groups.
5. Determine the moderating effect of leadership on the relationship between micro factors and financial sustainability of Informal Finance Groups.

#### **1.4 Research Questions**

1. How does loan pricing affect financial sustainability of Informal finance groups in Mwea Constituency?
2. How does loan repayment period affect financial sustainability of Informal finance groups in Mwea Constituency?
3. To what extent do loan recovery mechanisms affect financial sustainability of informal finance groups in Mwea Constituency?
4. How do loan advance criteria affect financial sustainability of informal finance groups in Mwea Constituency?
5. Does leadership moderate the relationship between micro factors and financial sustainability of Informal Finance Groups?

#### **1.5 Significance of the Study**

The outcome of the study will be useful to researchers, policy makers and stakeholders at large. It will inform stakeholders' efforts in coordinating the activities of the groups. This study will contribute to the understanding of the growth of informal finance groups more so in the process

of lending to the poor while maintaining viability of these groups (Maertens, 2013). It also gives a basis for further research on other micro factors and their effect on sustainability of informal finance groups. The study will be of importance to the NGOs implementing the Informal Finance Groups projects in the rural areas to help make better their interventions, establish sustainable strategies or scale up the village micro-finance projects (Luft, 2010). It will also provide valuable information to microfinance institutions to determine ways in which they could devolve their micro-finance and make it more affordable, workable and sustainable in the rural areas, where their presence is yet to be realized.

### **1.6 Scope of the Study**

The study focused on the effect of micro factors on financial sustainability of IFGs in Mwea Constituency with an aim of establishing the extent to which loan pricing, repayment period, recovery mechanisms and loan advance criteria affect financial sustainability of IFGs. The study sought to find if leadership aspect moderates the relationship between micro factors and financial sustainability of IFGs.

### **1.7 Assumptions of the Study**

The study was guided by the following assumptions:

1. The study runs smoothly under a manageable budget within the stipulated time frame.
2. That the respondents in the target population give authentic information to avoid data that is vague.
3. That the respondents positively participate in the research process without any hostility.
4. The sample population to be interviewed represents IFGs in Mwea Constituency.

## **1.8 Justification of the Study**

This study is necessary because of the increasing number of Informal Finance Groups in Kenya, and the rate at which they are disintegrating after the first cycle (CARE, 2010). Moreover, the study is necessary because of the Kenyan government move to eradicate poverty among her citizens in line with vision 2030. The study seeks to provide a basis for ensuring the IFGs which greatly assist in poverty eradication are always financially sustainable. Additionally, the study will form a framework under which the upcoming IFGs can base their loan pricing, loan repayment period, loan recovery and intervention mechanisms and loan advance policies. Lastly, the study will seek to build on the scholarly work already done in the field of interest.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter will review the literature on the effects of micro factors on financial sustainability of informal finance groups. The review covers loan pricing, loan repayment period, loan recovery mechanisms and loan advances. A review of theories and models is also covered.

#### **2.2 Theoretical framework**

The development of village banking, a micro financing method has been a major breakthrough for the livelihoods in rural communities. It has enabled communities that were previously financially excluded to afford and access credit services from microfinance institutions. Members are now more empowered to save and access loans at subsidized interest rates, whilst developing capacity for income generating activities for enhanced self-reliance (Khandker, Khalily & Khan, 2015).

##### ***2.2.1 Adverse Selection Theory of Financial Markets***

This theory originates from the works of Stieglitz and Weiss (1981). Stieglitz and Weiss argue that interest charged by a credit institution have a dual role of sorting potential borrowers thus leading to adverse selection. Interest rates therefore affect the nature of transactions in financial markets. In the absence of collateral, formal lenders lock out the poor out of the credit market. It is for this reason that most of the rural poor resort to informal financing that only requires social collateral. According to Stieglitz and Weiss (1981), lenders insist on identifying borrowers most likely to repay their loans since expected returns are highly dependent on the probability of repayment. Ability to repay signifies high levels of liquidity of the IFGs. This theory is important

in this study as it informs the reasons for exclusion of the poor from the formal financing sector. It explains why formal institutions fail to cater for the credit needs of small firms who are perceived to be too risky and often have greater access to informal credit facilities than to formal sources. It is for this reason that IFGs must strive to remain sustainable to ensure continued provision of financial services to the poor (Gonzalez, 1994).

### ***2.2.2: The Social Capital Theory***

Putnam (1993) defines social capital as features of social life-networks, norms and trust that enable participants to act together more effectively and to pursue shared objectives. The collective action that enables IFGs to function can be present in the initial stages if members are chosen based on pre-existing levels of trust among themselves. Since IFGs are self-regulated social factors are critical element of their performance and consequently sustainability. Outright default is seen as a direct threat to survival of IFGs. Costs of default include social mechanisms as sanctions, peer pressure and social ostracism.

Van de Brick and Chavas (1997) observe that while social pressure is certainly great, people do keep a sharp eye on the transaction costs involved in enforcing payment. Roscas function provided members value the benefit of membership more than the benefits of defaulting. Roscas are fairly flexible form of IFG whose survival rely entirely on social pressures and trust for continued operations. In group lending, loans are advanced to the group without tangible collateral but with reliance on guaranteed repayment through group approval and joint liability among group members. The enforceable trust is the source of social capital.

Olomola (2000) posits that social capital facilitates access to credit by borrowers. On the other hand, it yields approval, expedites transactions while insuring against risk of default for the



lenders. Social capital potentially provides a range of enforcement mechanisms for default in environments where recourse to the legal system is costly or impossible.

This theory is important in this study as it explains the importance of social capital as an intervention for loan recovery and also mechanism to minimize cases of loan default that affect the sustainability of IFGs.

### **2.3: Microfinance Models**

There are various microfinance models that have been adopted in the rural communities. Such models have been discussed as below.

#### ***2.3.1: Rotating Savings and Credit Association (ROSCAs)***

These are formed when a group of people come together to make regular cyclical contributions to a common fund. The lump sum is then given to one member of the group in each cycle (Grameen Bank, 2000). The fund may be given, in whole or in part, to each contributor in turn (Adener, 2010). This is done until each member of the group receives their share. A member who receives his share is automatically disqualified from receiving the pot in future, although they are obliged to contribute until the cycle ends (Anderson, 2002). Participants receive the pool only once over the life of the Rosca (Anderson & Baland, 2002; Besley et al, 1993).

Klonner (2003) notes that Roscas serve as financial intermediaries that transform the pooled savings of a small group into what can be considered a loan to one of the participants in each period. Upon completion of a cycle, the members can decide to continue, disband or quit the rosca (Eroglu, 2010). On reconstitution, members may admit new members or dismiss those who have been non-compliant. According to Harper (2002), this model is a very common form of savings and credit.

Roscas are a simple and flexible form of IFG that involves little or no documentation. An appealing feature is that Roscas can be formed with variations based on funding needs and how capability of members to save. They can be used for different purposes such as start-up capital, smoothing cash flows urgent needs and so forth. Their sustainability depends on members contributing to the pot till the end of the cycle. Thus the major challenge facing this type of IFG is possibility of default. Selection of members therefore play a key role since mistakes in the same could render the group unsustainable. In most IFGs, members are known to each other hence acting as a recovery mechanism since information regarding a member's ability to pay or financial behavior is easily available. Personal relationships are an ingredient in assessing the risk involved in advancing credit to a member.

### ***2.3.2: Village Banking Model***

Village banks are community-managed credit and savings associations established by NGOs. Their role is to provide access to affordable financial services to the poor while helping members accumulate savings (Chua & Llanto, 2006). Membership ranges from 25 to 50 members considered low-income individuals. These members run the bank, elect their own officers, establish their own by-laws, distribute loans to individuals and collect payments and services (Christen, 2008).

The loans advanced by village banks are backed by moral collateral where group members promise to be held accountable in case of default (Chen &Dunn, 2016). Members are also expected to save a stipulated percent amount of the loan amount per cycle (Chen, 2007). Such savings are tied to loan amounts. They can be used to finance new loans or be invested in collective income generating activities. Many village banks target women predominantly. According to Central Bank of Kenya, Kenya National Bureau of Statistics & FSD Kenya (2016),

the model anticipates that participation by female in village banks enhance social status and intra-household bargaining power.

### ***2.3.3: The VSLA Methodology***

A VSLA is an Accumulating Savings and Credit Association (ASCA) which does not depend on external borrowing or donations to the loan portfolio. It is in entirety a self-sufficient form of Informal Finance Group. Its work therefore falls within the informal sector (CARE, 2010). VSLAs depend entirely on member savings and interest from loans. They do not receive any direct capital investment from supporting organizations. The role of support organisations is to supply extensive training on group dynamics, governance and money management.

However, CARE in a study of the VSLAs realized that even mature groups could benefit from additional monitoring and technical support (Barnes, 2016) and in response developed a system known as an Apex Organization to support and monitor existing groups while fostering the growth of new groups (CARE, 2010). This would allow CARE to move onto new areas while maintaining a degree of self-sustainability in the existing groups. In spite of such a strategy, the sustainability of the VSLAs is not certain.

In Nepal, an evaluation done by CARE on Savings and Loans Associations found out that the aspect of sustainability was lacking. In Kenya, various CBTs have been trained under the VSLA arrangement by NGOs (Balkenhol & Schutte, 2011). In most cases the CBTs are remunerated by these supporting organizations to form and support the village banks until they are fully functional (Ayyagari, Demirgüç-Kunt & Maksimovic, 2010). However, once the support NGOs exit some of the VSLA members end up losing trust in their membership (CARE, 2010).

## **2.4 Loan Pricing in Informal Finance Groups**

Provision of financial services to the poor can be viewed from two different perspectives; the financial systems approach and the poverty lending approach. The financial systems approach as supported by institutionists stress the need for financial sustainability, efficiency and outreach (Christen, 2001; Rhyne, 1998). Their approach calls for microfinance providers to aggressively pursue sustainability through raising interest rates and lowering costs. Steinwand (2001) supports the institutionists approach. He argues that the key to financial sustainability is to charge an interest rate that is high enough to cover operating costs, loan losses and interest and adjustment expenses. The observation is consistent with Tucker & Miles (2004) who note that another way of maintaining sustainability is to increase profits by increasing interest rates.

Higher loan pricing rates deter prospective borrowers and increase credit risk of a loan portfolio already held. Coherent with this is the Stieglitz & Weiss (1981) assumption that raising interest rates undermines portfolio quality due to adverse selection and moral hazard. As such, the poor are locked out of financial markets and credit becomes accessible only to those who can afford to pay high interest rates. Armandriz & Morduch (2015) in their study suggested that high loan pricing affects the loan repayment which leads to default loans by IFGs members.

At variance are the welfarists who support poverty lending approach (Robinson, 2001) in offering credit to overcome poverty by subsidizing interest rates. The argument behind this approach is that subsidized interest rates lower credit risk. Credit risk is the default in repayment by borrower. Crab & Keller (2004) associate credit risk with uncertainty of loan repayment for the interest and principal and a possibility that a borrower will fail to honor obligations as agreed with microfinance institution (Bruett, 2004). This poses a threat to IFGs sustainability. The largest risk for any financial institution resides in the loan portfolio (CGAP, 2001). IFGs should

therefore have optimal interest rates. Beyond a given threshold interest rate, profitability tends to be lower (Stieglitz & Weiss, 1981) which might affect their financial sustainability. Steinwand (2001) stated that loan pricing represents the cost of borrowing capital for a given period of time.

According to Besley, Coate & Louny (2013), prevailing loan pricing rates are of much concern to many informal finance groups, because of indexing of loan pricing rates to inflation. Besley, Coate & Louny (2013) hypothesized that in time-bound village savings and loan programmes, members are willing to pay high interest rates because they know that as a group they collectively own the group's profits and will receive a fair and agreed proportion at the end of the year. According to CARE (2002), which has seen a significant number obtain loans that they do not invest but return the money with interest to accelerate the rate at which portfolio value accumulates. In determining interest rates to charge therefore, IFGs should strike balance between offering affordable services and maintaining financial sustainability.

### **2.5: Loan Repayment period in Informal Finance Groups**

Different Informal Finance groups have different repayment periods. Some base their period on the amount loaned while others base their period on the purpose of loan advanced. Whatever criterion is employed in determining the repayment is expected to influence repayment rates. A study by Armandriz & Morduch (2015), postulate that the flexibility of the repayment period is theatrically expected to influence financial sustainability to the extent that it affects the effective rate of interest. This consequently has an effect on the break-even interest rate. A more frequent repayment period generates a higher effective interest rate. In view of the foregoing, a weekly repayment period should therefore negatively or positively influence financial sustainability or unsustainability.

Allen & Staehle (2007), in their study affirms that regular repayment schedules are an element to generate high repayment rates from low income borrowers without the need for collateral. In the same study Allen & Staehle (2007), posit that repayment schedules should be such that IFGs have constant inflow of funds. Constant inflows will improve liquidity of the IFGs and enhance its ability to re-lend such funds to other willing members. Factors as seasonality should put into consideration when designing repayment schedules. Rhaman (1999) relates the first best level of repayment performance which minimises credit risk and promotes self - sustainability to one that is totally on time. There is always a trade-off between providing more flexible credit products while at the same time reducing cost of frequent collection (Allen & Staehle, 2007). As such, informal finance groups' credit products must be designed such that there is a balance between flexibility of products and cost of collection.

AIMS (2011), stresses the need for stronger loan delinquency control systems that would ensure lowered cost of frequent collection while ensuring customer satisfaction through flexible repayment period. This would prevent moral hazard that may lead to the collapse of the microfinance institution. Therefore repayment periods are expected to be optimally set to avoid locking out would be borrowers and the same guaranteeing the group of lower costs of loan collection. Adongo & Stork (2015), in their study, advocated for more flexible repayment period. They argue that a more flexible period is of benefit to members since it improves their ability to repay. Microfinance practitioners have argued that frequent repayment is critical to preventing loan default. Repayments should be scheduled on small regular basis, often weekly.

Maertens (2013) also agrees that regular payments break the loan into small manageable installments that can be paid from the regular household budget. Informal Finance Groups initially contribute for some time without lending the savings out to members. The savings make

the contributors to become credit worthy as such savings are assumed as collateral. The group in case of default can decide to set off the loan advanced against the defaulting member's savings. This has been adopted as a way to finance loan portfolio hence minimizing on loan losses. A study by Marr (2012) concurs with the same argument when he posits that it is through IFGs member's savings that members become committed to the institution, and thus their loan repayment period can be based on their savings discipline.

## **2.6: Loan Recovery Mechanisms in Informal Finance Groups**

In any lending relationship where credit is advanced now and repayment expected over time, chances of default are always present. Unlike in formal finance institutions where collateral is used to remedy for default, informal finance groups rely on mutual trust. Trust is enhanced by the virtue of being a member of a group that the lender can control. According to Aryeetey (1995), informal units that offer credit services hence create groups based on membership that are within their control. Informal finance groups are self-regulated and therefore to ensure sustainability, group members must devise ways of enforcing payment.

One of the mechanisms employed by IFGs is the Group Guarantee system. A study by Ghatak (1999) theorized that Group Guarantee System ensures that groups select members of their own choice and by themselves which provides an opportunity to distinguish good borrowers from risky ones. Moreover, a study by Abdullah et al (2012) notes that group based microcredit arrangements allow borrowers who cannot provide collateral to form their own groups where members are mutually liable for each other's repayments although loans are provided to individuals. No legal action is taken against defaulters, and the only remedy is denying other group member's access to loans unless they assist in repaying the defaulters debt. Khan (2012) observes that there is no legal and written contract that may force participants to

make their payments. It is noted that the group acts as a self-policing mechanism to ensure on time repayment. Hence self-selection of group members appears to be critical to the success of groups for borrowing and saving purposes.

Informal finance groups are formed based on shared needs and characteristics. According to Chua & Llanto (2006), the concept of joint liability depends on members' sense of trust and collective responsibility. Factors as common residential, shared ethnicity and common production regions are basis for the formation of Informal finance groups. Members therefore are familiar and well known to each other hence making group lending a fruitful intervention as group members are in a position to pressure the defaulting member. A study by Zang (2008) relates group lending to improved repayment performance which allows for financial sufficiency. Inadequate loan supervision results into low income from loan portfolio hence retardation in sustainability (Slangen, 2005). Llanto (2001) argues that liquidity is the lifeblood of microfinance operations. He relates the inability to track loan performance on a daily basis to a constraint in their efficiency.

Group membership should also be ideal to facilitate operative enforcement. Khandker, Khalily & Khan (2015) in their study associate small membership to effective enforcement and collective responsibility. They are of the opinion that with a greater number of members, it is harder for the group to maintain peer pressure and collective responsibility. On the other hand, Khandker, Khalily & Khan (2015), view a large membership as necessary to collectively handle repayment of missed instalments in case a member defaults. They recommend a group of five to fifteen members. While group based lending does not always result into enhanced loan recovery, it forms a powerful incentive for repayment. It creates social collateral within the IFGs minimizes cases of loan default.



In many programmes, high recovery rates are often achieved only by repeat or roll over loans (Marguerite, 2011). Roll over loans per se do not lead to high recovery but rather the importance that the borrowers attach to the loans. In order to continue in operation therefore IFGs must adopt recovery mechanisms that would result into high recovery rates and consequently sustainability.

In IFGs, loan advances are based on trust. Benda (2012) argues that trust is a key factor for the success of Roscas thereby agreeing with Biggart (2001) who states that membership in Roscas is based on mutual trust. In order to guarantee financing to all members, Roscas must ensure that its members continue to make their promised contribution- even after they have received a loan, failure to which the rosca will not be sustainable. Hence they will not be able to function throughout their projected lifetime (Besley et al. 1993). Khan (2013) in agreement posits that Roscas are considered successful only if members continue to pay after receiving their lots. If a rosca is viewed as unsustainable, members cannot expect to receive their promised benefit from participation (Chiteji, 2002). The aspect of loan repayment in IFGs therefore cannot be undermined.

## **2.7: Loan Advances in Informal Finance Groups**

The demand for credit services by the rural poor is driven by various needs. Some borrow for consumption and others for investment. Majority of the members are low income earners. According to one World Bank report, the poor tend to use loans to meet basic needs such as food and shelter rather than investing in income generating activities (World Bank, 2003). This increases chances of default that affects sustainability of the financing groups. To ensure high repayment and sustainability, IFGs should provide loan advances to borrowers who have

experience in a particular type of enterprise and who it is believed can and will repay the loan and interest on time (Kombo & Tromp, 2016).

Similar sentiments are echoed by Luft (2010) when he notes that the basis for advancing loans is the assessment of borrower's repayment abilities arising from their current income in flows and not from estimates of possible returns from utilization of such loans. However, such stance is questionable since tying loans to particular use in disregard of other needs and opportunities is an indication naivety. Owing to the nature of needs as matched with the income of the poor households, the possibility of loan fund diversion is inevitable. Loaned funds can be utilized for other purposes other than what the funds were initially intended for. Terms of loans determine the loan amount to be extended, the loan period and the cost. Brealey and Myres (1999) observe that decision to extend a loan to a borrower is followed by a discussion regarding terms of the loan. According to Rosengard (2001), it is necessary to make appraisal of a borrower before extending a loan in order to identify possible risks in lending.

Repayment capacity should be a benchmark in determining the members to loan to and the terms of loaning rather than on basis of poverty level (Rosenberg, 2006b). Rosenberg further notes that community based financial organisations manage for sustainability only if they provide loans to creditworthy members. Members who are not in a position to repay loans are not burdened by the situation of over indebtedness. This influences group membership by observing member selection. According to Rosenberg (2006b), many World Bank projects with community finance components have not assessed the sustainability of the organizations providing financial services or the sustainability of the financial services themselves. Many of the projects engage themselves in providing revolving loan funds to communities. Their objective is to enable the community improve their livelihoods through income generating

activities. However, success is measured on social metrics as opposed to financial aspects. Rosenberg (2006b) observes that success is often measured based on the livelihoods improved rather than the ability of such fund to continue to revolving within a sustainable organization.

## **2.8 Leadership Aspects in the Village Microfinance**

Leadership in Informal finance groups oversees the running of such groups. Therefore leaders must be elected based on levels of management skills. A study by Hulme (2010), posit that identification and nourishing good community leaders is critical to bringing the community together. It gives a representative voice to the community in articulating its needs and wishes. Leaders in informal finance groups are entrusted in overseeing the activities of the groups including funds management. They are also tasked with conflict resolution among members. They enforce group rules such as loan recovery, imposition and collection of fines and penalties.

In the study by Navajas & Schreiner (2010), many microfinance programmes have leadership training components built into them. Good leaders should ensure discipline among the borrowers which consequently results into quality financial management. Other than ensuring that funds are properly invested whether in terms loans issued out or investment in projects, good management contributes to long-term financial independence.

Competent leadership should also be in a position to deal with challenging situations within the informal finance groups. In his study, Mostaq (2012) argues that the level of education influences the ability of the T.o.Ts to handle challenges that may occur within the various VSLA groups. Hence group leaders should have the capacity to ensure that Informal finance groups run smoothly without any major challenges. Sa- Dhan (2013) concurs with the idea of effective leadership. He notes that essential leadership aspects ensure proper responsibility and control of members thereby reducing cases of loan default, non-attendance to group meetings or

mismanagement of the savings. It ensures compliance to group's constitution, enhanced trust amongst group members and sustained interest in the group.

This study will determine how group leadership influences the financial sustainability of IFGs in Mwea Constituency. The research study will investigate on any aspects of leadership amongst the informal finance groups that may affect their sustainability. Focus will be on conflict resolution and financial management amongst the informal finance groups, which are known to bring down group membership.

## **2.9 Empirical Review**

Barnes (2016) argues that repayment period has the effect on stability of financing groups. His study found out that the coefficient of the variable capturing the weekly repayment period has a negative sign, while that of the monthly and term repayment schedules have positive sign, thus affecting the financial stability of informal finance groups. Therefore he concludes that shorter repayment period increases chances of default while longer repayment periods reduce chances of default. Hence impacting on cash inflows from loan portfolio.

At variance are Balkenhol & Schutte (2011), whose study data from a field experiment randomized client assignment to a weekly or monthly repayment period. The study found no significant effect of type of repayment period on client delinquency or default. The findings suggest that, among microfinance clients who are willing to borrow at either weekly or monthly repayment period, a more flexible repayment period can significantly lower transaction costs without increasing client default.

Mallick (2012) and Berg et al. (2013) studied informal finance using village level moneylenders. They attribute increase in moneylender interest rates to higher formal finance coverage. Their argument is that the lesser informal finance groups there are the higher interest

rates are charged by moneylenders. Charging high interest rates to the poor makes them poorer. As such IFGs members should ensure that their groups remain sustainable to be able to serve a majority of the poor.

Fadiga & Fadiga-Stewart (2004) conducted a study on collective action and informal financial institutions. Using data collected in 2001 from field research in Dakar, Senegal, they model cooperation among members, financial performance and sustainability of informal finance groups. Their study accredits financial performance and sustainability of Roscas to the period the group has existed, ways of covering defaults, group individuals' homogeneity, individual contributions, residency requirements and rotation order.

Other studies have found out that peer selection and peer pressure have a positive and significant influence repayment performance (Zeller, 1998; Wydick, 1999). However, a study by Diagne et al, (2000) shows that peer monitoring and joint liability had little or negative effect on repayment performance. Deininger and Liu (2009) relate loan monitoring to increased repayment. Wydick (1999) in a study carried out in Guatemala finds that strong social ties have rather negative than positive impact on repayment rates. Ghatak (2002) reviewed repayment rates and the kind of liability assumed, using empirical studies comparing the performance of microfinance programs. The author concluded that microfinance programs using joint liability had better repayment rates than those using individual liability.

Ostrom (1999) argued that through monitoring and sanctioning mechanisms, Roscas can minimize the costs of screening new borrowers by depending on local information about individuals past behavior. As such they have been able reduce high transaction costs associated with formal financial institutions. In addition, reputations and the self-selection of members help these institutions reduce adverse selection and moral hazard problems. Factors as operative

mechanisms like first, second or third party enforcement, high interaction rates and proximity enhance mutual monitoring among members that has been associated with minimized default. Social capital such as shared norms, networks of relationships, and trust are important factors that explain how informal finance groups can remain sustainable.

Ferguson & Co.'s (2005) analysis of the sustainability of SHGs in Tamil Nadu concluded that the basic self-sufficiency had been achieved in the sample group of SHGs that had been in existence for at least three years. The study further notes more needed to be done on parameters that affect their long-term sustainability.

## **2.10 Summary of the reviewed literature and knowledge Gaps**

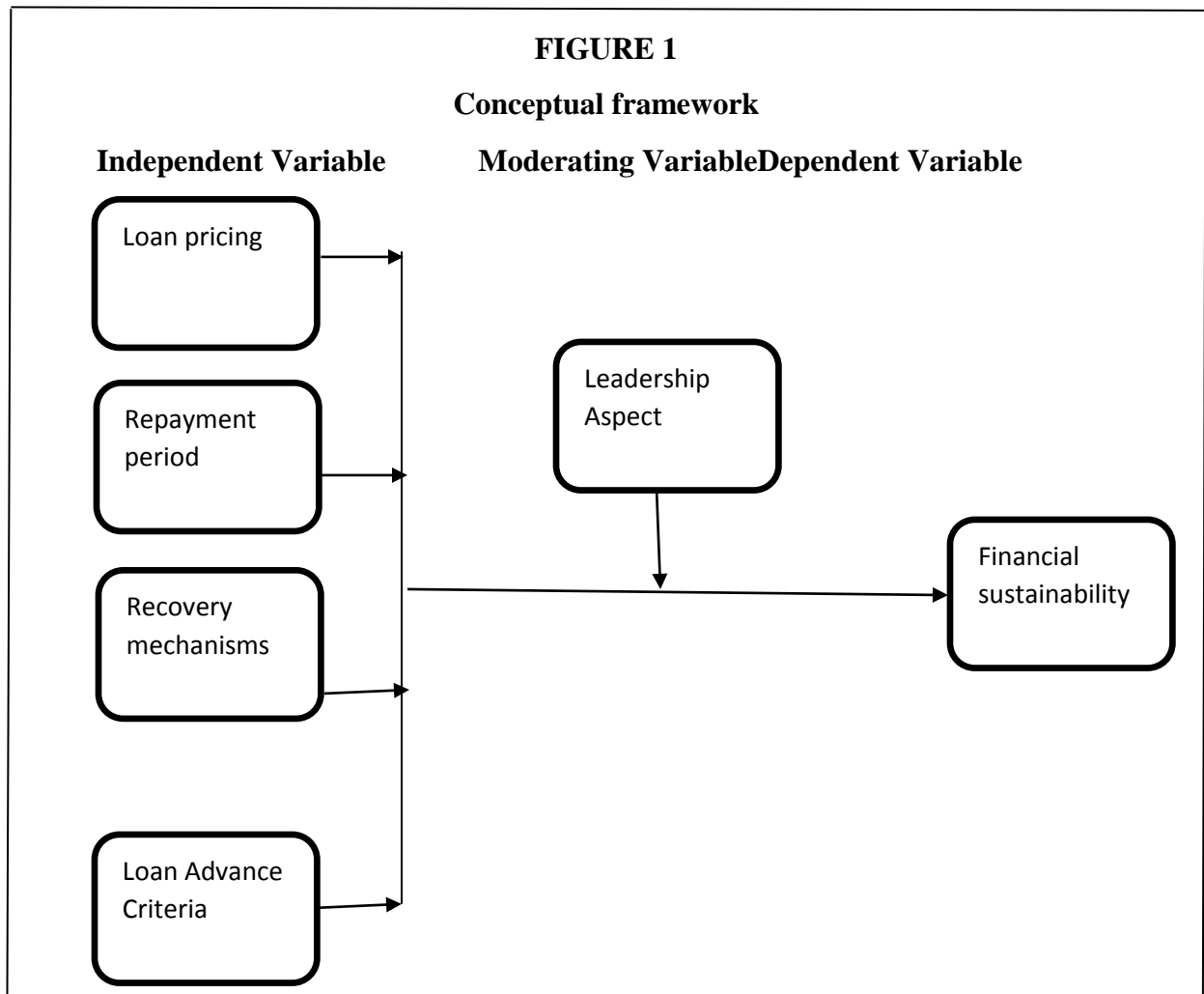
Previous studies have shown that the Informal Finance Groups have an impact on poverty alleviation in the rural communities. They are very fruitful when there is a well-structured financial management system, including the savings and loans repayment (Sebstad & Cohen, 2010). Other aspects such as group membership dynamics are yet to be explored as potential factors that may influence the sustainability of the Informal Finance Groups projects.

Most studies have highly focused on only one form of microfinance model, the roscas (Anderson, Baland & Karl, 2003; Gugerty, 2007; Handa & Kirton, 1999) and hence may not reach decisive conclusions on sustainability of IFGs. Other scholars have ignored the area of loan pricing in informal finance groups and instead concentrated on enforcement, repayment period and Advance criteria in Roscas (Kimuyu, 1999; Anderson, Baland & Karl, 2003; Amandariz & Morduch, 2015). Comprehensive understanding of how micro factors affect financial sustainability of IFGs has not been realized, hence the need for a more comprehensive current study.

The knowledge gaps to be addressed by this study include: The loan pricing, loan repayment period, loan recovery and intervention mechanisms and loan advances as factors affecting the sustainability of Informal Finance Groups in Mwea Constituency.

**2.11: Conceptual Framework**

This research study will entail two variables; the independent and dependent variables and a moderating variable. The independent variables will be the factors affecting the sustainability of Informal Finance Groups, which is the dependent variable. The independent variables are Loan pricing, loan repayment periods, loan recovery and intervention mechanisms and the loan advances aspects. Both the independent and dependent variables will be moderated by leadership (Aryeetey, 2015).



## 2.12 Operationalization of Variables

Table 1 presents the research variables, variable measures, scale and section in the questionnaire that covers them. There are two sets of variables; the dependent and the independent variables.

<b>TABLE 1</b>				
<b>Operationalization of Variables</b>				
Variable	Indicator	Measure	Scale	Questions in questionnaire
<b>Independent variables</b>				
Loan pricing	Sufficiency of Interest income	Ability to generate enough interest to cover costs and loan losses and to diversify group sources of income	Nominal	Section A
Repayment period	Frequency of repayments.	Cash flows that enable group to advance credit on demand and meet operational costs.	Nominal	Section B
Recovery mechanisms	Clearly formulated policies guiding recovery of defaulted loans	Presence of recovery mechanisms ensuring reduced loan losses, reduced cost of collection, increased revenue, increased cash flows and increased liquidity	Nominal	Section C
Loan Advance Criteria	Clearly stipulated criteria for advancing loans	Capacity of stipulated criteria to increase revenue, increase cash flow and reduce cost of collection	Nominal	Section D
Leadership	Presence of conflict resolution skills and ability to mobilize resources.	Level of education, membership retention diversified sources of income.	Nominal	Section E
<b>Dependent variable</b>				
Financial sustainability	Ability to cover financial expenses, capacity for capitalization for growth, ability to meet demand for credit	Growth in revenue, cash flows, liquidity, profitability	Nominal	Section F
<b>Source: Research Data (2016)</b>				



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter looks into the methods that were used in the survey of the effects of micro factors on financial sustainability of Informal Finance Groups in Mwea Constituency. The chapter covers the research design, target population, sampling procedure, and methods of data collection, validity of the research instruments, reliability of the research instruments, methods of data analysis, and the ethical issues.

#### **3.2 Research Design**

A research design is the conceptual structure in which research is conducted (Kothari, 2013). This research study adopted a descriptive research design. A descriptive research design is one in which information is collected without changing the environment, that is nothing is manipulated (Cooper & Schindler, 2003). The study was both qualitative and quantitative in nature. Mugenda and Mugenda (2003), notes that a descriptive research design determines and reports the way things are. It is a design that tries to discover answers to the question who, what, when, which and sometimes how (Cooper & Schindler, 2003). Owing to the limited geographical scope in this study, a descriptive design was ideal as it is logistically easier and simpler to conduct. In agreement with Kothari (2008), the design also provides enough protection against biasness and helps maximize reliability.

#### **3.3 Target population**

The study's target population was drawn from Mwea Constituency and focused on the leaders of the Informal Finance Groups in Mwea Constituency, which comprises of 600 IFGs (County Social Services Officer, 2016). A leader in the IFGs is identified as the personnel responsible for

the overall financial, management and running of the IFG, in this case the leader was the chairperson of the group. The Informal Finance Group leaders were selected as the target population because of their overall knowledge in the operation and management of the IFGs. There were 600 such leaders in Mwea Constituency, each leader per group.

### 3.4 Sample size & Sampling procedure

Sampling is the procedure by which a researcher gathers people or things to study (Kombo & Tromp, 2016). A sample is a finite part of a statistical population selected for observation and analysis (Best & Kahn, 2007). The Fisher formula was used to obtain a sample size for the study. Stratified sampling method was used in the research study to classify the respondents into various categories based on their geographical distribution as shown in the table below. The Fisher et al (2003) formula was employed as follows:

$$n = \frac{z^2 p(1 - p)}{d^2}$$

Where;  $n$ = sample size

$z$ = the standard normal deviate value for the level of confidence, for instance 95% level of confidence =1.96.  $d$ = margin of error or level of precision at 0.1 for total population at 90%  $p$ = proportion to be estimated, Mugenda & Mugenda (2003) recommends that if you don't know the value of  $p$  then you should assume  $p=0.5$  Therefore, sample size was arrived at as follows:

$$n = \frac{(1.96^2)(0.5)(1 - 0.5)}{(0.1)^2}$$

$n = 96$

Since the population is less than 10,000 the sample size was further adjusted as follows:

$$\begin{aligned}n &= \frac{n_0}{1 + \frac{n_0 - 1}{N}} \\ &= \frac{96}{1 + \frac{96 - 1}{600}} \\ &= 83\end{aligned}$$

### **3.5 Data Collection Instruments**

The study was based on primary data. The primary data was collected through the administration of questionnaires to the respondents. The questionnaires were closed ended and were based on the Likert scale. The questionnaires were divided into five sections each section covering the study variables which include: loan pricing, loan repayment period, loan recovery and intervention mechanisms, loan advances and leadership. The research instruments were first tested in the field before being used in the actual data collection (Kothari, 2013). These research instruments were structured according to the research objectives. Questionnaires were then administered to the sampled 83 leaders in the sampled 83 Informal Finance Groups in Mwea Constituency.

#### **3.5.1 Pilot Study**

A pilot study was conducted in Murang'a County so as to improve the quality of the research instruments and data collection procedures. It was necessary to carry out a pilot study on a sample of the target population to avoid contamination and to test the reliability and validity of the research instruments. The pilot study gave pointers on how to improve the validity and reliability of the strengths and difficulties in the questionnaires by identifying questions or elements that are ambiguous or unclear to the respondents (Kombo & Tromp, 2016). When

testing for reliability and validity of research instruments in a pilot study, respondents do not have to be statistically selected (Cooper and Schindler, 2007). This study employed 10% of the sample population. Hence 8 questionnaires were subjected to a pilot study with a view to improving content validity.

### **3.6 Validity of the Research Instruments**

Validity refers to the degree to which evidence and theory support the interpretation of test scores entailed by use of tests. The validity of instrument is the extent to which it does measure what it is supposed to measure. According to Mugenda and Mugenda (2003), Validity is the accuracy and meaningfulness of inferences, which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represent the variables of the study.

The research instrument was validated in terms of face validity or expert validity. The face validity refers to the technique of study seeking input from the expert in the area of specialty who assisted in framing questions that can source relevant answers to the topic under investigation. Face validity was confirmed to avoid misunderstanding or language misinterpretation through pre-test method.

Prior to data collection the researcher pre-tested the questionnaires using eight IFG leaders in Murang'a County. The purpose was to improve the validity of the instruments. Based on pre-test results, the researcher effected amendments on the questionnaires. Content validity was confirmed through the expert opinion of the supervisor during questionnaire development.

### **3.7 Reliability**

Reliability is another important measurement in research. Reliability refers to the consistency of the scores to be obtained in the research. It is a measure of how consistent the scores are for each

individual from one administration of an instrument to another, and from one item to another (Gakuu & Kidombo, 2008). The reliability of the research instruments was assured through test retest method. The pre-test respondents were issued with questionnaires and the same were subjected to a re-test to establish how the response was.

In order to reduce the levels of biases and increase the levels of reliability, Cronbach's alpha technique was used to calculate reliability coefficient. It is the most common measure of internal consistency used when one has multiple Likert questions in a questionnaire that form a scale and one wish to determine if the scale is a reliable research instruments. Inter-correlations among test items are maximized when all items measure the same construct Gakuu & Kidombo (2008). Hence, Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single unidimensional latent construct. However, it can easily be shown that tests with the same test length and variance but different underlying factorial structures can result in the same values of Cronbach's alpha. Indeed, several investigators have shown that alpha can take on quite high values even when the set of items measures several unrelated latent constructs.

The method was settled on owing to its ability to take care of the continuous variables in the Likert scale. A coefficient of 0.6 or more is considered acceptable (Bartholomew, Henderson & Marcia, 2000).

### **3.8 Data Analysis Procedures**

This study used Factor Analysis and in particular Principal Component Analysis to determine if data is well modeled for analysis. Factor analysis is a statistical method used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called factors (Kombo & Tromp, 2016). Factor analysis searches for such

joint variations in response to unobserved latent variables. The observed variables are modelled as linear combinations of the potential factors, plus "error" terms. The information gained about the interdependencies between observed variables can be used later to reduce the set of variables in a dataset. Factor is employed when the researcher is dealing with data sets where there are large numbers of observed variables that are thought to reflect a smaller number of underlying or latent variables.

Kombo & Tromp, (2016), defined Principal component analysis (PCA) as a statistical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components. The number of principal components is less than or equal to the number of original variables. This transformation is defined in such a way that the first principal component has the largest possible variance. Each succeeding component in turn has the highest variance possible under the constraint that it is orthogonal to the preceding components. The resulting vectors are an uncorrelated orthogonal basis set. PCA is mostly used as a tool in exploratory data analysis and for making predictive models. The results of a PCA are usually discussed in terms of component scores, sometimes called factor scores, and loadings.

Results of pre-test were analyzed using Shapiro-Wilk method to determine whether data is normally distributed with the threshold for normality being  $p^* > 0.05$ . The study investigated for multicollinearity by computing variance inflation factor, VIF. A recommended cut off of 4 by Pan & Jackson (2008) was used. To detect heteroskedasticity, Breusch-Pagan test was employed. The data analysis and statistical software STATA was used in establishing the data associations, analysing the data and help in coming up with the findings of the research, the conclusions and

the recommendations for further research, in line with the objectives of the research study (Kothari, 2013).

In order to test for the effect of moderating variable, this study adopted the moderated multiple regression analysis. According to Aiken and West (1991), this approach involves the addition of interaction effects to a multiple regression model by comparing two different least squares regression equations. Moderated multiple regression has been used by previous studies such as Yau (2002) whose study was the effect of Relationship Marketing Orientation on Business Performance in a Service Oriented Economy.

### 3.9 Model Specification

The data collected will be analyzed by use of regression analysis model using STATA. The model developed from the study findings take the form of:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} + \mu_i \dots \dots \dots \text{Eqn (1)}$$

Where Y represents the financial sustainability of Informal Finance Group

X<sub>1</sub> represents loan pricing in a cycle in the Informal Finance Groups.

X<sub>2</sub> represents loan repayment period in the Informal Finance Groups.

X<sub>3</sub> represents loan recovery mechanisms in the Informal Finance Groups

X<sub>4</sub> represents loan advance in Informal Finance Groups

β<sub>0</sub> represents the constant

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub> and β<sub>4</sub>, β<sub>5</sub> represent the co-efficient of regression for loan pricing, repayment period, recovery mechanisms, loan advance and leadership respectively.

While μ is the random error term accounting for all other variables on financial stability of the IFGs but not captured in the model.

### 3.9.1 The Moderated Multiple regression model

The moderated multiple regression model will take the form of:

$$Y = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} + \beta_6 (X_{i1} \times X_{i5}) + \beta_7 (X_{i2} \times X_{i5}) + \beta_8 (X_{i3} \times X_{i5}) + \beta_9 (X_{i4} \times X_{i5}) + \mu \dots \dots \dots \text{Eqn (2)}$$

Where  $Y_i$  represents the financial sustainability of Informal Finance Group

$X_{i1}$  Represents loan pricing in a cycle in the Informal Finance Groups.

$X_{i2}$  Represents loan repayment period in the Informal Finance Groups.

$X_{i3}$  Represents loan recovery mechanisms in the Informal Finance Groups

$X_{i4}$  Represents loan advance in Informal Finance Groups

$X_{i5}$  Represents the leadership skills aspect in Informal Finance Groups

$(X_{i1} \times X_{i5})$  Represents the interaction between loan pricing and leadership in Informal Finance Groups.

$(X_{i2} \times X_{i5})$  Represents the interaction between loan repayment period and leadership in Informal Finance Groups.

$(X_{i3} \times X_{i5})$  Represents the interaction between loan recovery mechanisms and leadership in Informal Finance Groups.

$(X_{i4} \times X_{i5})$  Represents the interaction between loan advances and leadership in Informal Finance Groups.

While  $\mu$  is the random error term accounting for all other variables on financial stability of the IFGs but not captured in the model.



### **3.10 Ethical Issues**

Prior to the commencement of data collection, the researcher obtained all the necessary documents, including an introduction letter from KCA University. Audience with the sampled local authorities in the region was sought to clarify the purpose of the study. Upon getting clearance, the researcher in person distributed the questionnaires to the sampled individuals. Assistance from the local authorities was sought (Mugenda & Mugenda, 2003).

The researcher explained to the respondents about the research and that the study will be for academic purposes only. It was made clear that the participation is voluntary and that the respondents were free to decline or withdraw any time during the research period. Respondents were not coerced into participating in the study (Mugenda & Mugenda, 2003). The participants had informed consent to make the choice to participate or not. They were guaranteed that their privacy will be protected by strict standard of anonymity. The study explored effects of the micro factors on financial sustainability of Informal Finance Groups in Mwea Constituency. All data used was acknowledged appropriately.

## CHAPTER FOUR

### DATA ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS

#### 4.1: Introduction

This chapter contains the findings on the effect of micro factors on financial sustainability of informal finance groups in Mwea constituency, Kirinyaga County. It includes the findings and discussion on the demographic information of the respondents, financial information of the Informal finance groups, loan pricing, loan repayment period, loan recovery mechanisms, loan advances, as well as the leadership and financial sustainability aspects in the Informal Finance Groups.

#### 4.2: Demographic data

The study sought to find out the socio-demographic data in regards to gender, age and level of education of the IFG leaders and the period the IFG has been in existence with a view to relating the information to their understanding of the operations of VSLA methodology. The sample size of the study was 83 IFGs leaders. A total of 70 IFGs leaders participated in the study hence a response rate of 84% as indicated in Table 2. Mugenda & Mugenda (2003) considers a response rate of 50% as adequate for descriptive study.

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Number of questionnaires returned by respondents	70	84
Number of questionnaires not returned	13	16
Total	83	100

**Source: Research Data (2016)**

The response rate (84%) is an indication of willing participation and the relevance attached to this area of study by the respondents. Most rural people consider informal finance groups important as they form the only source of credit easily accessible to them.

An analysis of the respondents' gender was as captured in the Table 3.

<b>TABLE 3</b>		
<b>Gender of the Respondent</b>		
<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Female</b>	42	60
<b>Male</b>	28	40
	70	100

**Source: Research Data (2016)**

Most of the groups in Mwea Constituency had majority female gender (60%) as group leaders compared to the male gender (40%). This is evidence that women are more actively involved in the village microfinance as compared to men. Majority of men who were members of the IFGs linked their membership to either influence by their spouses, or entirely to access the savings and loans for small scale businesses. This finding is demonstrative of the traditional view that these grass root financing organisations are formed by women and for women. Considering that the male gender also require finance to feed for their family and for start-up capital, more men should be encouraged to actively participate in these informal finance groups so as to contribute towards growth of the economy. Such a move could see poverty levels decrease since men could utilize the loaned funds in investment projects as opposed to the current trend where majority women borrow to cater for household basic needs hence worsening their poverty situation.

The respondents' age is indicated in Table 4

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
18-25 years	4	5.71
26-40 years	47	67.14
41-60 years	19	27.14
<b>Total</b>	<b>70</b>	<b>100</b>

**Source: Research Data (2016)**

Majority of the respondents were 26-40 years (67.14%) with only a very small percentage being 18-25 years (5.71%). Those between 41-60 years were 27.14%. This was accredited to members in the age bracket (26-40 years) being more active in economic activities such as farming and small scale businesses that require financing. The older age of 41-60 years had joined the microfinance as a way to make savings or on influence by their children who were already members of the scheme. The middle aged generation were more likely to consistently remain members of the IFGs as compared to the younger generation who are assumed to have fewer financial responsibilities and stand a greater chance of securing employment in other areas hence exiting the IFG. The age group 18-25 years was also considered as not having relevant conflict resolution skills which are an ingredient for membership retention. Therefore, the sustainability of the IFGs was influenced by the age group of the members.

An analysis of the respondents' level of education is presented in Table 5.

<b>Level</b>	<b>Frequency</b>	<b>Percent</b>
Primary	1	1.43
Secondary	65	92.86
Diploma	4	5.71
Total	70	100

**Source: Research Data (2016)**

Only 5.71% of the targeted population claimed to have gone up to college level. Majority said that they had gone up to secondary level (92.86%) with few reaching primary level of education (1.43%). Respondents were expected to understand the questionnaire and provide valid responses guided by their level of education. This demonstrated that despite the limitation in levels of education, most of the IFGs leaders understood basic operations of the VSLA methodology and appreciated the importance and impacts of the IFGs. This can be accredited to experience gained in the course of their operations coupled with skills acquired in school. The level of schooling did affect the sustainability of the informal finance groups since leaders are expected to have financial knowledge and numeracy skills.

The period an IFG has existed is indicated in Table 6.

<b>Period in existence</b>	<b>Frequency</b>	<b>Percent</b>
Below 1 year	7	10
1-3 years	25	35.71
4-5 years	17	24.29
6-10 years	13	18.57
Over 10 years	8	11.43
Total	70	100

**Source: Research Data (2016)**

From Table 6, during the study period, majority of the informal finance groups, 25 (35.71%) of the total, had been in existence for a period of between 1-3 years. 17 (24.29%) of the total had been in existence for a period of 4-5 years, 13 (18.57%) groups had been in existence for a period of 6-10 years, 8 (11.43%) groups had been in existence for a period of over 10 years while 7(10%) groups out of 70 had been in existence for a period of less than a year. Hence an attestation that majority of the IFGs were in their infancy to growth stage. Majority of the groups accredited their continued operations to financial self sufficiency that ensured that the groups were able to advance credit to members on demand, a factor critical to their participation in these groups. Most of the groups(58%) had 10-30 members at inception. 18% of the groups declined to take up new membership. They imputed this to ease of management of smaller groups as

opposed to large groups. The finding is an indicator of reduced conflicts and chances of fall out amongst members that threaten group long term operations. Majority of the groups(62%) had attracted less than 10 new members since inception which signals that prospective members had trust in the operation of existing IFGs. New members joined and continued to be members based on shared objectives and trust in line with social capital theory.

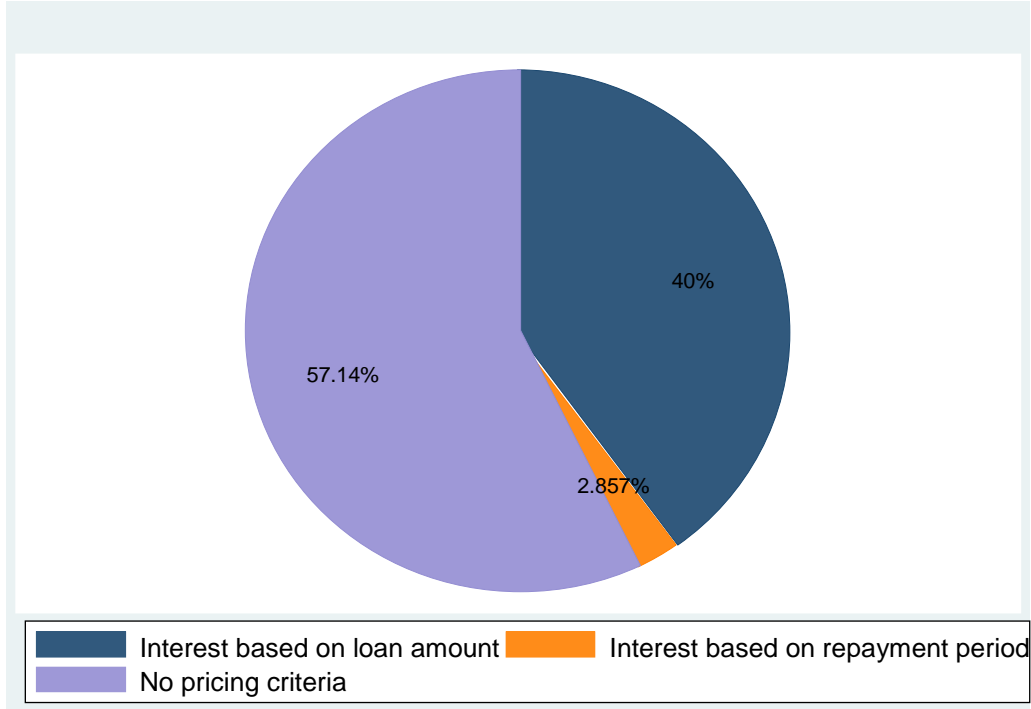
### **4.3: Research Variables**

#### ***4.3.1 Loan Pricing***

The informal finance groups were asked about the criteria that they use in setting interest rates. Out of the total number of groups, 40 (57.14%) groups reported that they use no pricing criteria, 28 (40%) groups reported that they base interest rates on loan amount while only 2 (2.86%) groups reported that they base interest rates on repayment period. This information is shown in Figure 2. The finding demonstrates that most of the IFGs arbitrarily set interest rates on loans to avoid complex bookkeeping. Most groups ascribed this to cost cutting on expert services which saves the groups on additional staff costs. Majority of the IFGs reported that interest rates attracted more membership. Prospective members anticipated high dividends in form interest income which is normally shared out at the end of a savings cycle. High rates resulted into increased interest income hence improving liquidity of the groups. Despite the IFGs charging higher interest rates than formal financial institutions, members agreed that they would continue seeking credit from the informal finance groups.

**FIGURE 2**

**Criteria for setting interest rates**



**Source: Research Data (2016)**

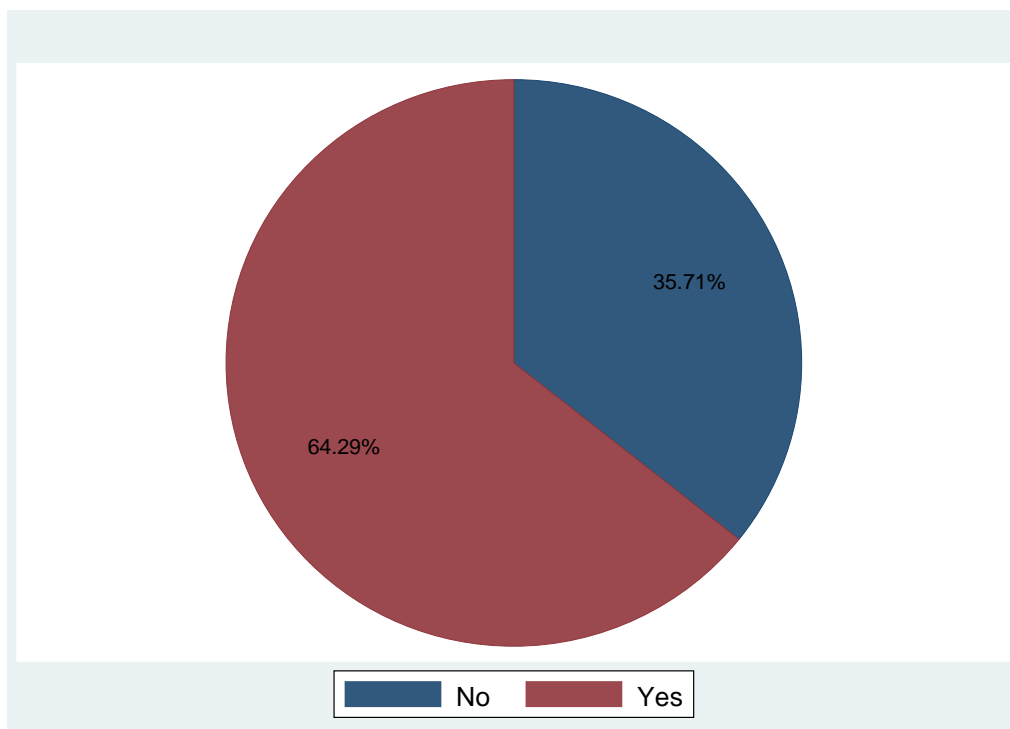
Further, the study sought to know whether members earn interest on savings. From Figure 3, out of the total number of informal finance groups, 45 (64.29%) reported that their members do earn interest on savings while 25 (35.71%) reported that their members do not earn interest on savings. Majority of the groups distributed a part of their profit to members as savings on interest to motivate members to adopt the culture of savings and reduce instances of exit from the IFG. Those groups that did not share out profit as interest on savings connected this to the need for diversifying their sources of income to enable the groups remain financially sustainable. Most of the groups set their interest rates higher than formal financial institutions, some as high



as 10% per month. Most groups reported that there was a large spread between interest on loans and interest on savings. The finding was ascribed to the need to maintain group liquidity and also re-invest the net interest earned in income generating projects that would ensure that the groups remain financially self-sufficient. This was also attributed to the need to re-lend the interest in cases where groups were at infancy stage and were unable to meet demand for credit solely from their savings.

**FIGURE 3**

**Interest on savings**



**Source: Research Data (2016)**

**4.3.2 Loan repayment period**

The frequency of loan repayment in the IFG is indicated in Table 7.

<b>TABLE 7</b>		
<b>Frequency of loan repayment</b>		
<b>Frequency of repayment</b>	<b>Frequency</b>	<b>Percentage</b>
Weekly	18	25.71
Monthly	52	74.29
	70	100

**Source: Research Data (2016)**

From Table 7, it is clear that in a majority of the groups, that is, 52 (74.29%) the frequency of loan repayment was monthly while in 18 (25.71%) groups the frequency of loan repayment was weekly. None of the groups had a frequency of loan repayment of one day. Majority of the groups preferred monthly to weekly payments since members’ major source of income is farming, which is irregular and uncertain. The finding is demonstrative of efforts to reduce risk of default.

Most groups agreed that frequency of repayment greatly affected cash flows. Weekly repayments were related to constant cash flows and increased interest income. The 25% of the groups that supported weekly repayment claimed that the sub division of loan into smaller amounts payable enabled them to comfortably repay their loans from their meagre earnings. On the contrary most of the IFGs preferred monthly repayments as this would give members enough time to seek jobs hence afford to pay their loans. Regular repayment was also linked to improved liquidity and ability to advance credit on demand which is one of the main objectives of the IFGs. Grace period was also found to influence repayment as it gave members time to invest loaned funds hence earn revenue before the loan fell due.

This study sought to determine the maximum duration applicable to loans. Information on the maximum duration of loan applicable to an IFG is exhibited in Table 8.

<b>Maximum duration</b>	<b>Frequency</b>	<b>Percent</b>
Less than 1 year	38	54.29
Exactly 1 year	28	40.00
More than 1 year	4	5.71
Total	70	100

From Table 8, the maximum duration of loan applicable to an IFG was less than 1 year in 38 (54.29%) groups, exactly one year in 28 (40%) groups and more than a year in 4 (5.71%) groups. This is an indication that most groups advance short term loans. The short duration of loans was imputed to the fact that small amounts are advanced to members. Groups also discouraged long term borrowing due risk involved. They preferred that loaned funds are repaid within shortest duration possible and earn interest income on the loaned funds. The 5% groups that had loan tenure of more than 1 year are those that had existed for over 10 years. Members in these groups had accumulated enough shares to act as collateral for long term borrowing.

Information on the grace period applicable in an IFG is presented in Table 9. From Table 9, the grace period applicable in an IFG was between 1 and 30 days in 64 (91.43%) groups, over 30 days in 3 (4.29%) groups and equally zero days in 3 (4.29%) groups. Groups did not give grace period required that interest is paid immediately upon receipt of loaned funds. It shows that

interest was paid up front to enhance liquidity of these groups. Members agreed that this impacted on group cash flows and consequently enabled the group to meet demand for credit.

<b>Grace Period</b>	<b>Frequency</b>	<b>Percent</b>
1-30 days	64	91.43
Over 30 days	3	4.29
None	3	4.29
Total	70	100
<b>Source: Research Data (2016)</b>		

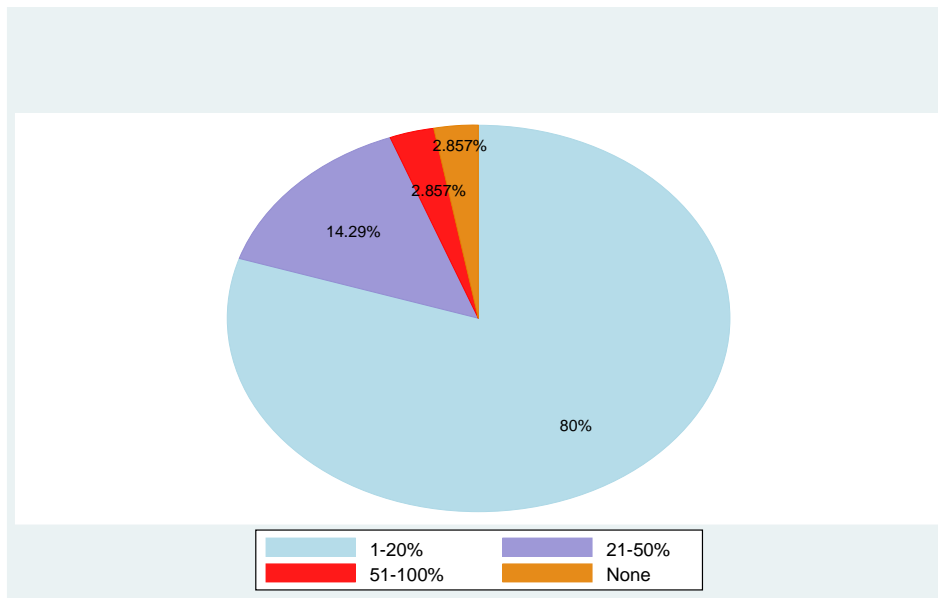
The finding signaled that most groups receive their interest within the first month of the loans. Those groups that do not allow for grace period ascribed this to the need for constant cash flows.

Information on the proportion of loans currently overdue is shown in Figure 4. From Figure 4, the proportion of loans is currently overdue was between 1% and 20% in 80% (56) groups, between 21% and 50% in 14.29% (10) groups, between 51% and 100% in 2.86% (2) groups, and none in 2.86% (2) groups linked to stronger loan recovery mechanisms in place. Most of the groups agreed that overdue loans affected their interest income and cash flows. This is reflective of credit operations of informal finance groups that function in the absence of legally enforceable recovery mechanisms. Chances of default are always present where funds are advanced now and repayment expected later. The situation was made worse by the economic

status of the residents. Most are peasant farmers with irregular and uncertain income hence the high rates of default.

**FIGURE 4**

**Proportion of loans overdue**



**Source: Resource Data (2016)**

#### **4.3.3 Aspects of loan recovery mechanisms**

The study sought to establish whether the IFG’s have suffered losses before. This information is presented in Table 10. From Table 10, 60 (85.71%) groups reported to have suffered loan losses before while only 10 (14.29%) groups reported not to have suffered loan losses before. The finding proves the situation that whenever money is advanced now and repayment expected in the future, chances of default are always present. The large number of losses was accredited to the uncertain income of the rural households. Loan losses were found to impact on group cash flows. The finding was a manifestation of unearned interest income which

affected revenue and subsequently ability to meet operational costs. Defaults also affected cash flows by virtue of delayed income interest.

<b>Losses suffered</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	60	85.71
<b>No</b>	10	14.29
<b>Total</b>	70	100

**Source: Research Data (2016)**

Information on whether the group recovered any part of previously defaulted loans is provided in Table 11.

<b>Defaults recovered</b>	<b>Frequency</b>	<b>Percent</b>
Yes	59	84.29
No	6	8.57
Not aware	5	7.14
<b>Total</b>	70	100

**Source: Research Data (2016)**

From Table 11, out of the total number of IFG's, 59 (84.29%) groups reported to have recovered previously defaulted loans, 6 (8.57%) groups reported not to have recovered previously defaulted

loans while 5 (7.14%) groups reported not to be aware whether previously defaulted loans were recovered. Those who were not aware were those leaders that had just taken over office and were yet to familiarize themselves with the books of the groups. The large number of recoveries was evidence of strong policies on loan recovery. This demonstrates that recovery mechanisms within an IFG were critical.

<b>% of defaulted loan recovered</b>	<b>Frequency</b>	<b>Percent</b>
1-10	1	1.69
11-30	6	10.17
31-60	9	15.25
61-99	37	62.71
100	6	10.17
<b>Total</b>	<b>70</b>	<b>100</b>
<b>Source: Research Data (2016)</b>		

According to Table 12, out of the 59 groups which reported to have recovered previously defaulted loans, 37 (62.71%) of them recovered 61-99% of the defaulted loans, 9 (15.25%) of them recovered 31-60% of the defaulted loans, 6 (10.17%) of them recovered 11-30% of the defaulted loans and another 6 (10.17%) of them recovered 100% of the defaulted loans. Only 1 (1.69%) recovered 1-10% of the defaulted loans. The 100% recovery was linked to set off against members savings.

Information on the mechanisms that are applicable in case of loan defaults within the IFGs is portrayed in Table 13. From Table 13, 31 (44.29%) groups reported that they would set off against savings the amount owed by a member(s) in case the member(s) defaults, 12 (17.14%) groups reported that they would impose fines and penalties to a member(s) in case they defaulted to pay a loan, 10 (14.29%) groups reported that they would confiscate assets of member(s) in case they default, 9(12.86%) groups reported that they extend the repayment period on member(s) in case they defaulted, 7(10%) groups reported that they would use the guarantors to the member(s) in case they defaulted and only 1(1.43%) group reported that it would dismiss a member(s) in case they defaulted to pay a loan. Most groups preferred set off against savings. The finding was accredited to lowered cost of collection that impacts on financial sustainability.

<b>Recovery mechanism applicable</b>	<b>Frequency</b>	<b>Percent</b>
Dismissal	1	1.43
Set off against savings	31	44.29
Asset confiscation	10	14.29
Use guarantors	7	10.00
Extension of repayment period	9	12.86
Fines and penalties	12	17.14
<b>Total</b>	<b>70</b>	<b>100</b>
<b>Source: Research Data (2016)</b>		



#### 4.3.4 Aspects of loan advance

Information on whether or not an IFG considers the purpose for which loans are advanced to members is exhibited in Table 14. From Table 14, 50 (71.43%) of the total number of IFGs reported that they do consider the purpose for which a member applies for a loan while 20 (28.57%) of the total number of IFGs reported that they do not consider the purpose for which a member applies for a loan. However, majority of the groups did not have loan monitoring mechanisms hence cases of loan diversion. This situation was made worse by the poverty situation of the residents whereby funds requested for investment ended up being used for household basic needs. Leaders agreed that there was a challenge following up on loans due to the cost involved in monitoring loan funds.

<b>Consideration of loan purpose</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	50	71.43
<b>No</b>	20	28.57
<b>Total</b>	70	100

**Source: Research Data (2016)**

Out of the 50 groups that reported that they do consider the purpose for which a member applies for a loan, the following purposes for which loan advance applications are considered qualified were given. The information is portrayed in Table 15.

From Table 15, 34 (68%) groups reported that they consider loan advance application for investment purposes as qualified, 14 (28%) groups reported that they consider loan advance

application for consumption purposes as qualified while only 2 (4%) groups reported that they consider loan advance application emergency basic needs purposes as qualified. This is an indication that most groups have been conceived to provide capital for investment to members to boost their economic status.

**TABLE 15**  
**Purpose for loan advances**

<b>Loan purpose consideration</b>	<b>Frequency</b>	<b>Percent</b>
Consumption	14	28
Investment	34	68
Emergency basic needs	2	4
<b>Total</b>	<b>50</b>	<b>100</b>

**Source: Research Data (2016)**

Information on whether or not there are loan processing charges in the IFGs is given in

Table 16.

**TABLE 16**  
**Presence of loan processing charges**

<b>Loan processing charges</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	43	61.43
<b>No</b>	27	38.57
<b>Total</b>	<b>70</b>	<b>100</b>

**Source: Research Data (2016)**

charges on their loan products. Those groups that did not charge loan processing costs connected this to the need to reduce burden of debt to the rural residents which make their poverty situation worse.

As shown in Table 17, out of the 43 groups that reported having loan processing charges on their loan products, 34 (79.07%) groups reported that it is the member applying for the loan that bears the cost hence reduced group operation costs, while 9 (20.93%) groups reported that it is the entire group that bears the cost processing a loan. The finding is proof that most groups prefer that members incur loan processing costs which was associated to cost cutting by the IFGs.

<b>Bearer of cost</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Member</b>	34	79.07
<b>Group</b>	9	20.93
<b>Total</b>	43	100
<b>Source: Research Data (2016)</b>		

#### ***4.3.5 Leadership Aspect***

Information on how long the respondent (group chairperson) had been a leader is provided in Table 18.

From Table 18, in 54 (77.14%) groups, the chairpersons had been in leadership for over 1 year, in 11 (15.71%) groups, the chairpersons had been in leadership for a period of 7 -12 months, in 3 (4.29%) groups, the chairpersons had been in leadership for a period of 4-6 months while in 2 (2.86%) groups, the chairpersons had been in leadership for a period of 1-3 months. This finding

demonstrates a situation where pioneers of these grass root organisations assume leadership and remain leaders as long as the groups are operational in total disregard of level of education or leadership skills. The research established that most of the informal finance group’s members preferred to elect leaders that were trustworthy and had essential leadership and conflict management skills to enhance their microfinance operations, lack of which most of the informal finance groups disintegrated after their savings were misappropriated by their leaders.

<b>Period in leadership</b>		
<b>Period in leadership</b>	<b>Frequency</b>	<b>Percent</b>
1-3 months	2	2.86
4-6 months	3	4.29
7-12 months	11	15.71
Over 1 year	54	77.14
Total	70	100
<b>Source: Research Data (2016)</b>		

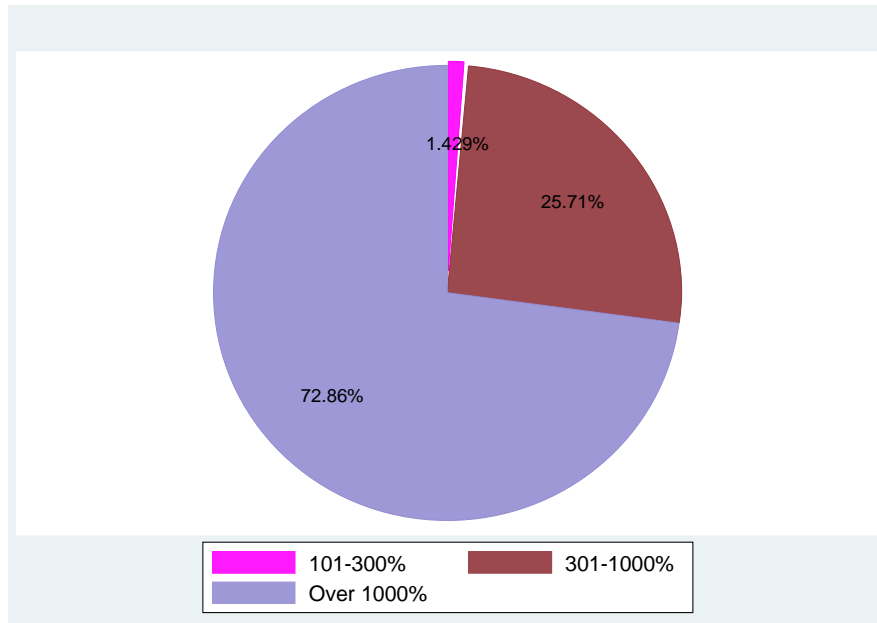
#### ***4.3.6 Financial Sustainability Aspect***

During the study period, the informal finance groups were asked how they rate their current percentage growth in shares as compared to when the group was started.

Regardless of the duration an IFG had been in operation, 72.86% of the targeted population had accumulated shares to over 1000%. Only a few IFGs shares had grown up to 300% (1.429%). A total of 25.71% had their shares grow up to 1000%. Members of the IFGs saved different

amounts of shares per group, depending on their financial ability. The rapid growth in shares was as a result of some members contributing more than mandatory minimum savings in one cycle. Such excess contributions were to their added advantage as they could access more loans. Members were allowed to access as much amount of loan as they had saved. The VSLA methodology allows the members to save a minimum amount of money, but still be able to save more if they have a bigger income base. (Mutesasira, 1999). This affects the income of the IFGs, so long as members are able to save, take loans based on their savings and repay with interest.

**FIGURE 5**  
**Rating of % growth in shares**



**Source: Research Data (2016)**

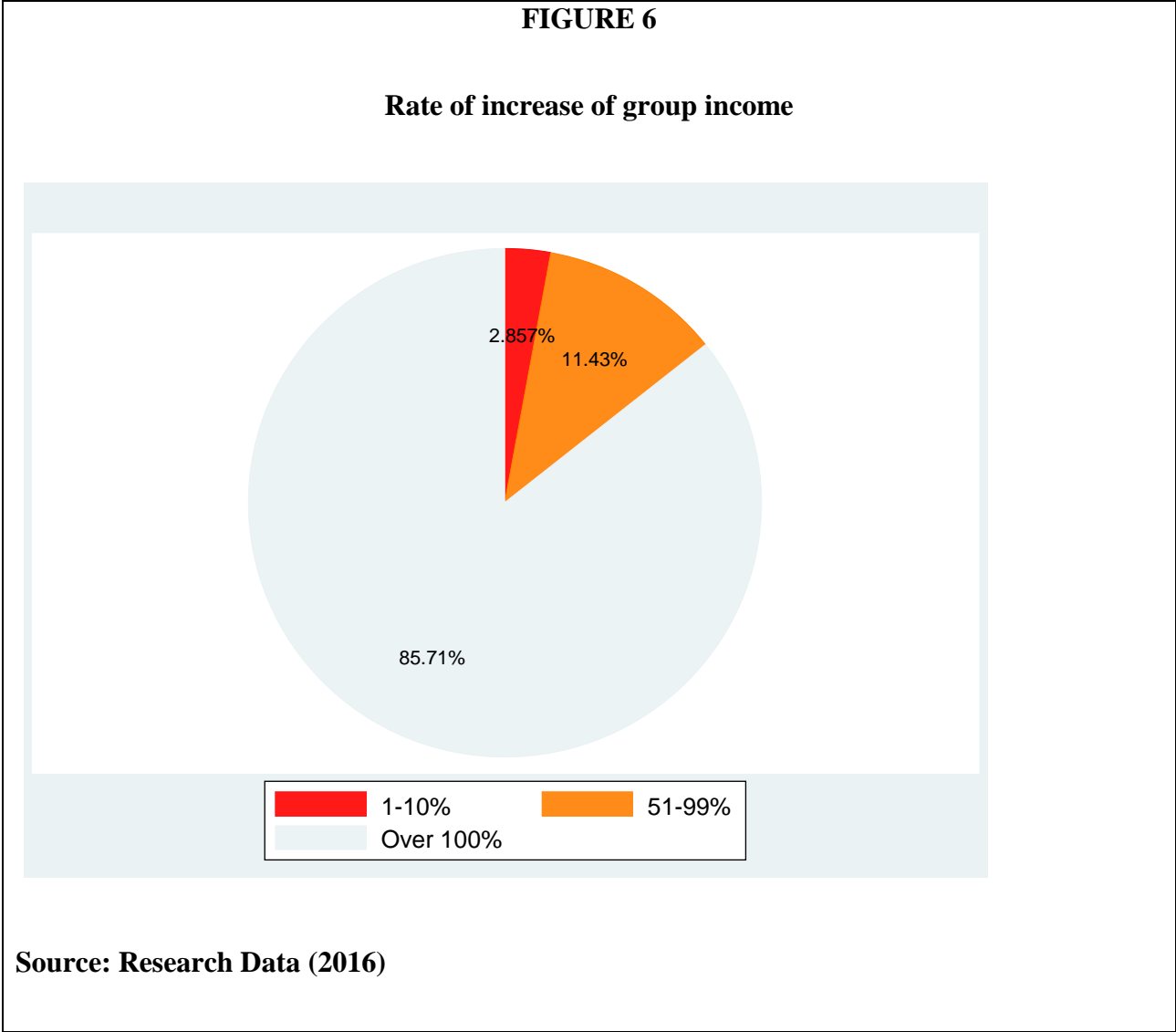
In terms of new membership, the number of new members that had joined the informal finance group at the time of the study since the informal finance group was formed is tabulated in Table 19.

From Table 19, in 44 (62.86%) groups, less than 10 new members had joined the informal finance group, 11 (15.71%) groups had between 11 to 20 new members joining the group, 2 (2.86%) groups had over 20 new members joining the group while 13 (18.57%) groups had no new members joining the group during the specified period. Majority of the IFGs leaders ascribed the entrant of new members to favourable repayment schedules and easy accessibility to credit from the groups.

<b>New membership</b>		
<b>New members since formation</b>	<b>Frequency</b>	<b>Percent</b>
Less than 10	44	62.86
11-20 members	11	15.71
Over 20 members	2	2.86
None	13	18.57
Total	70	100
<b>Source: Research Data (2016)</b>		

In an attempt to assess the rate at which the group income had increased over the years, it was found that in 60 (85.71%) groups, the group income had increased by over 100%, in 8 (11.43%) groups, the group income had increased by between 51% and 99% while in only 2 (2.86%) groups, the group income had increased by between 1% and 10%. None of the groups had an increase in group income of between 11% and 50%. The finding is a manifestation that income of most of the groups had doubled since inception which is evidence of constant savings

by members. Members were able to constantly save, take up loans and pay with interest. Those groups that had grown from infancy had also diversified their sources of income. These results are shown in Figure 6.



**4.4 Descriptive Statistics**

Table 20 below gives the mean, maximum value, minimum value, standard deviation, skewness and kurtosis related to the data.

As shown from Table 20 below, the financial sustainability had a mean of 3.88 which corresponds to the response category “Agree” implying that the respondents on average agreed with the statements on different aspects of financial sustainability. Leadership was at a significantly higher rate averaging 4.14 with a standard deviation of 0.31, an indication that majority of the respondents agreed with the statements on different aspects of leadership. Recovery mechanisms had a mean of 3.68 corresponding to the category “Agree” with the least standard deviation of 0.22, an indication that recovery mechanisms within IFGs were less volatile as compared to other variables affecting sustainability. The most volatile of the variables was financial sustainability with a standard deviation of 0.435722.

**TABLE 20**  
**Descriptive Statistics**

	<b>FINANCIAL SUSTAINABILITY</b>	<b>LOAN PRICING</b>	<b>REPAYMENT PERIOD</b>	<b>RECOVERY MECHANISMS</b>	<b>LOAN ADVANCE CRITERIA</b>	<b>LEADERSHIP</b>
<b>Mean</b>	3.880519	3.160714	3.777143	3.680519	3.698214	4.14
<b>Maximum</b>	4.636364	3.833333	4.3	4.363636	4.25	4.8
<b>Minimum</b>	2	2.25	2.8	3.272727	2.5	3
<b>Std. Dev</b>	0.435722	0.381043	0.390158	0.225218	0.330714	0.316411
<b>Skewness</b>	-1.432807	-.68991	-.6761324	.4463235	-1.191584	-.9351822
<b>Kurtosis</b>	6.801294	2.191525	2.648773	3.02163	5.260428	5.484376

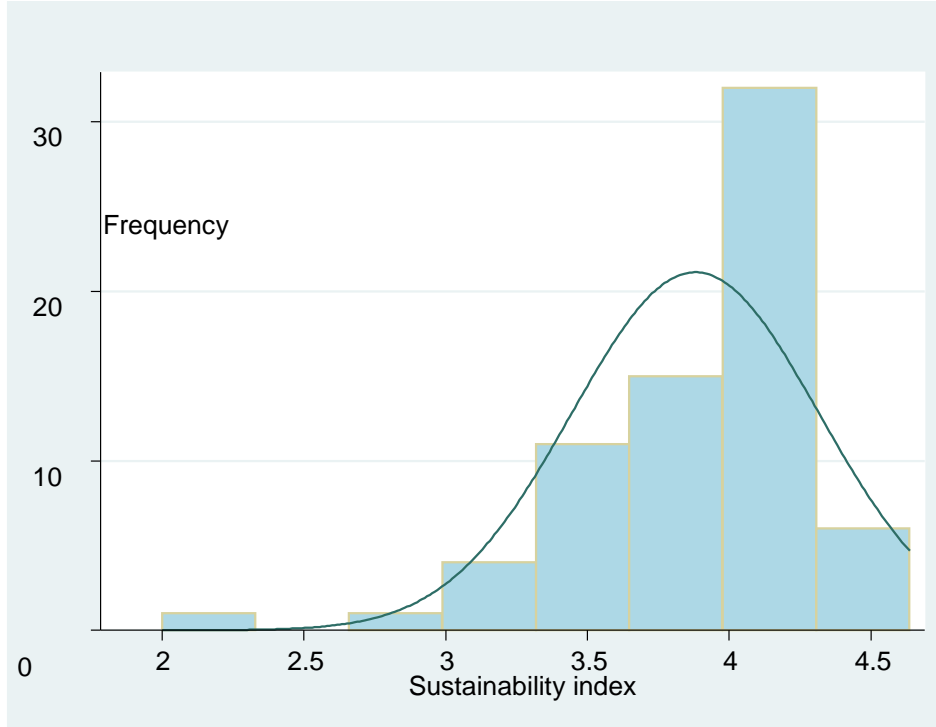
**Source: Research data (2016)**

A plot of the financial stability score of the 70 informal finance groups sampled is portrayed in Figure 7 below.



**FIGURE 7**

**Histogram of financial sustainability scale**



**Source: Research Data (2016)**

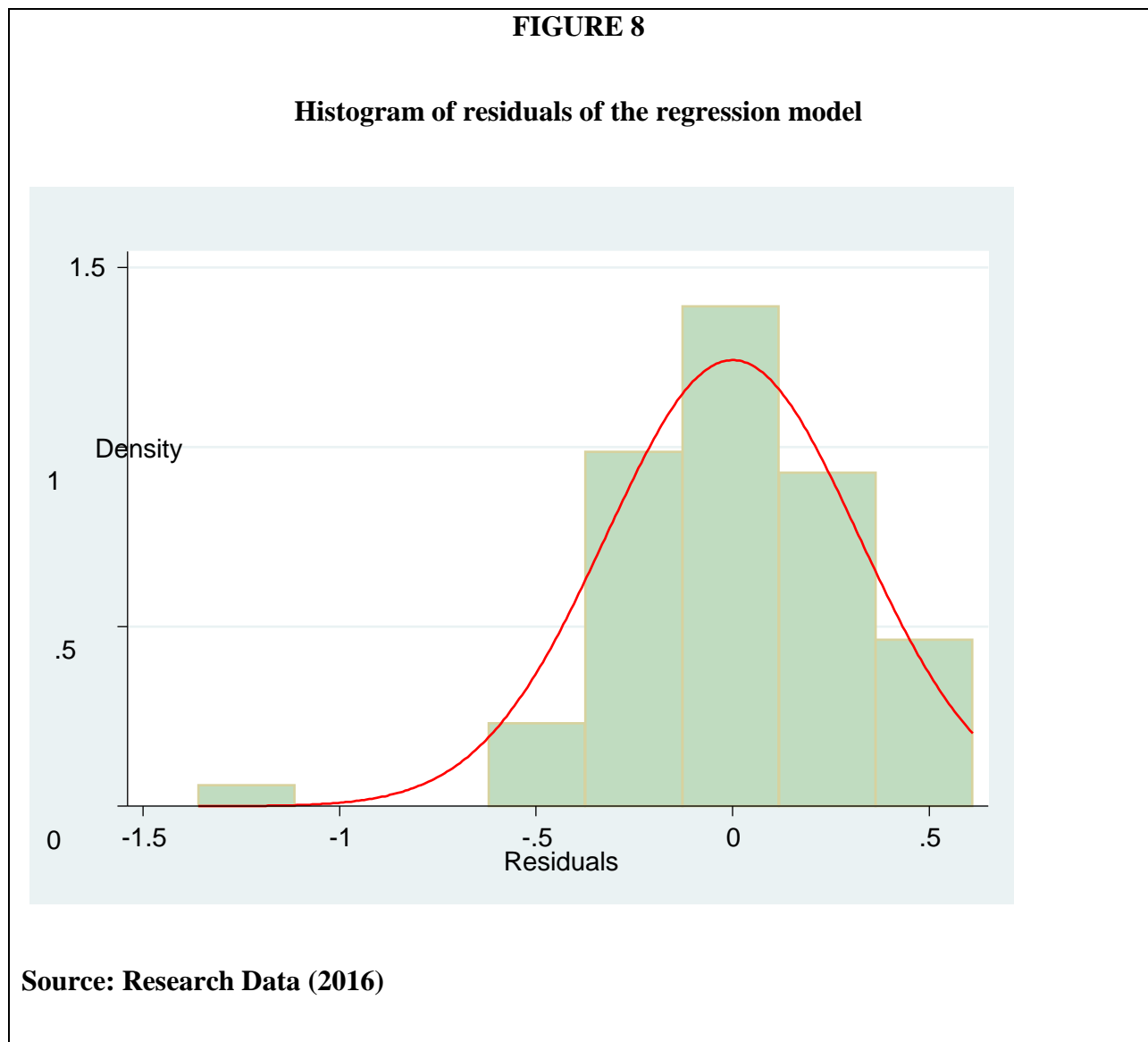
After the descriptive statistics, regression analysis was conducted as shown in the section that follows.

#### **4.5 Regression Analysis**

The study used multiple regression model for data analysis. Pre-analysis tests of normality, homoscedasticity and multicollinearity were conducted to determine if data was well modelled.

#### 4.6 Testing for normality

An analysis was carried out to determine whether data is normally distributed. A plot of the residual values from the moderated regression model was first obtained to give a graphical outlook of the assumption of normality. As shown in figure 8, the residuals are not normally distributed as we have a thicker tail to the left of the mean zero.

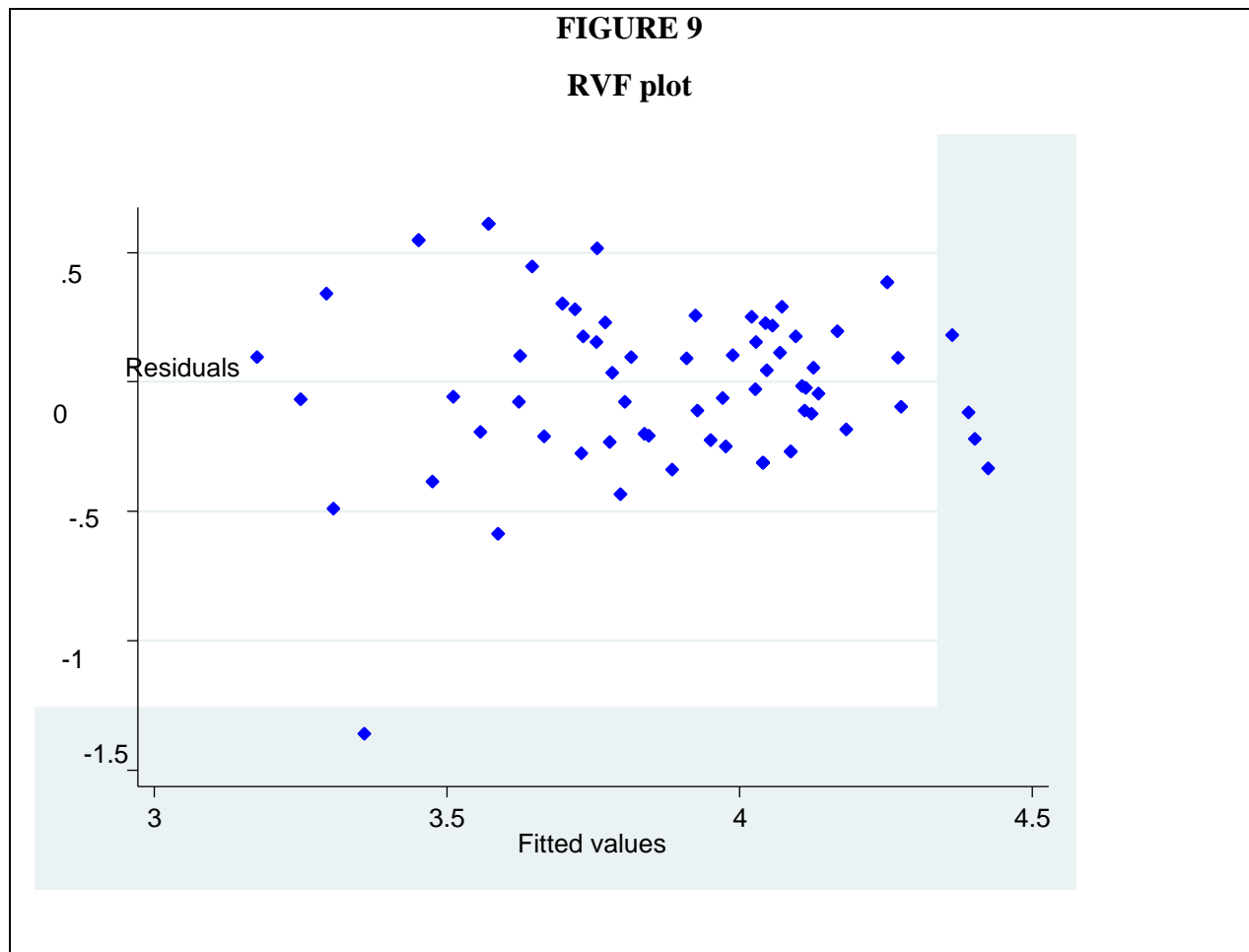


The analysis shows that a few observations lie outside the fitted normal curve on the histogram.

These results are confirmed by the Shapiro – Wilk test for normality in Table 21 in which case a

p-value = 0.00104 indicates that we should reject the null hypothesis that data is normally distributed.

<b>Variable</b>	<b>Obs</b>	<b>w</b>	<b>v</b>	<b>z</b>	<b>Prob&gt;z</b>
Resid	70	0.93305	4.121	3.079	0.00104



The fitted values plot was first obtained to give a graphical representation of the assumption of homoscedasticity. These results are exhibited in figure 9. As shown in figure 9, the scatteredness depicts the presence of heteroskedasticity in the observed data.

This is confirmed by the Breusch – Pagan test for heteroskedasticity in Table 22. The p-value = 0.0000 indicates that we have to reject the null hypothesis of homoscedasticity.

Breusch-Pagan Test	Variables	$H_0$ :	Chi2(1)	Prob>chi2
	Fitted values	Constant Variance	21.43	.0000

**Source: Research Data (2016)**

#### 4.8 Test for multicollinearity

A test was carried out to test for multicollinearity in the variables. This was achieved by computing variance inflation factor (VIF) values. The results are displayed in Table 23.

Variable	VIF	1/VIF
Loan pricing(X1)	1.51	0.660473
Repayment period(X2)	1.56	0.697707
Recovery mechanisms(X3)	1.43	0.712722
Loan advance Criteria(X4)	1.40	0.557218
Leadership(X5)	1.79	0.622626
X1_ x_ X5	1.61	0.622626
X2_ x_ X5	3.51	0.284963
X3_ x_ X5	1.99	0.502002
X4_ x_ X5	2.05	0.487061

Using a recommended cut off of 4 by Pan& Jackson (2008), there is no evidence of multicollinearity as all VIF values of the variables are less than 4.

#### 4.9 The Multiple Regression Model

Table 24 presents the regression model of the dependent variable financial sustainability and the set of independent variables; loan pricing, loan repayment period, loan recovery mechanisms, loan advance in informal finance groups and leadership skills where the latter is the moderating variable.

**TABLE 24**  
**Coefficients of multiple regression**

Model 1				t	P-value (Sig at 5%).
	Coef.	Std. Err.	Beta		
(Constant)	-1.099666	1.152199		-.95	0.343
1.Loan Pricing	.31595	.1272618	.31595	2.84	0.006
2.Repayment Period	-.0257906	.1305084	-.0257906	-.22	0.826
3.Recovery mechanisms	.0979571	.2003484	.3979571	3.84	0.000
4. Loan advance	-.0590452	.1414741	-.0590452	-.55	0.584
5. Leadership aspect	.2457518	.1445997	.2457518	2.34	0.022

**Source: Research Data (2016)**

A summary of the model is presented in Table 25.

**TABLE 25****Multiple Regression Model Summary**

Model	R Square	Adjusted R Square	Std. Error of the Estimate	Prob>F
1	.4195	.3741	.34471	.0000

**Source: Research Data (2016)**

The fitted model is given by (1),

$$Y_i = -1.099666 + 0.31595 X_{i1} - 0.0257906 X_{i2} + 0.3979571 X_{i3} - 0.0590452 X_{i4} + 0.2457518 X_{i5}$$

.... Eqn (1)

From Table 24, the regression coefficient of the loan pricing variable is 0.31595 implying that for every unit increase in the loan pricing variable, the dependent variable, financial stability increases by 0.31595 units. Furthermore, the statistics ( $t=2.84$ ,  $p\text{-value} = 0.006 < 0.05$ ) indicate that there exists a statistically significant relationship between financial stability of the informal finance group and the loan pricing in a cycle in the informal finance group at 5% level of significance. The finding depicts that adjustments in loan pricing are related to variations in financial stability of the informal finance group.

The regression coefficient of the loan repayment period variable is -0.0257906 implying that for every unit increase in the loan repayment period variable, the dependent variable, financial stability decreases by 0.0257906 units. Furthermore, the statistics ( $t=-0.22$ ,  $p\text{-value} = 0.826 > 0.05$ ) indicate that there exists no evidence of a statistically significant relationship between financial stability of the informal finance group and loan repayment period in the

informal finance group at 5% level of significance. The finding suggests that variations in loan repayment period are not linked to changes in financial stability of the informal finance group.

As per results of analysis, loan recovery mechanisms variable is 0.397957 implying that for every unit increase in loan recovery mechanisms variable, the dependent variable, financial stability increases 0.397957 units. Furthermore, the statistics ( $t=3.84$ ,  $p\text{-value} = 0.000 < 0.05$ ) indicate that there exists a statistically significant relationship between financial stability of the informal finance group and loan recovery mechanisms in the informal finance group at 5% level of significance. This is evidence that variations in loan recovery mechanisms variable are linked to changes in financial stability of the informal finance group.

The regression coefficient of the loan advances variable is -0.0590452 implying that for every unit increase in the loan advances variable, the dependent variable, financial stability decreases by 0.0590452 units. Furthermore, the statistics ( $t=-0.55$ ,  $p\text{-value} = 0.584 > 0.05$ ) indicate that there exists no evidence of a statistically significant relationship between financial stability of the informal finance group and loan advances at 5% level of significance. This is proof that changes in loan advances are not associated to adjustments in financial stability of the informal finance group.

Leadership aspect variable regression coefficient is 0.2457518 implying that for every unit increase in the leadership aspect variable, the dependent variable, financial stability increases by 0.2457518 units. Furthermore, the statistics ( $t=2.34$ ,  $p\text{-value} = 0.022 < 0.05$ ) indicate that there is a statistically significant relationship between financial stability of the informal finance group and leadership aspect variable at 5% level of significance. Hence suggesting that variations in leadership aspect variable are related to changes in financial stability of the informal finance group.

Analysis of Variance and goodness of fit statistics for the regression model between the dependent variable; financial sustainability of informal finance group and the independent variables; loan pricing, loan repayment period, loan recovery mechanisms, loan advance in IFGs and leadership skills where the latter is the moderating variable was carried out. The probability  $\text{Prob}>F = 0.0000$  (p-value) indicates that there is a joint significance of all the independent variables in explaining the dependent variable, that is, all the independent variables are simultaneously significant in the model at 5% level of significance. Further, the statistic  $R^2 = 0.4195$ , can be interpreted to mean that all the independent variables jointly explain 41.95% of the total variations in the dependent variable, financial sustainability.

#### **4.10 The Moderating effect of Leadership**

This research question is addressed by utilizing the moderated regression model which seeks to establish whether or not the effect of loan pricing, loan repayment period, loan recovery mechanisms, loan advances on financial stability in each case depends on the leadership aspects. This can be accredited to the contribution of leaders towards enforcement, conflict resolution and resource mobilization. Most leaders reported that they had solved previous conflicts amongst members implying that they were able to retain members within the group.

Coefficients of moderated multiple regression are shown in Table 26



**TABLE 26****Coefficients of Moderated Multiple Regression**

Model 2				t	P-value (Sig at 5%).
	Coef.	Std. Err.	Beta		
(Constant)	-1.155992	1.210238		-0.96	0.343
1.Loan Pricing(X1)	.3228013	.1339278	.2822927	2.41	0.019
2. Repayment Period(X2)	.0187449	.1326987	.0167848	0.14	0.888
3. Recovery mechanisms(X3)	.8012798	.2204616	.4141687	3.63	0.001
4. Loan advance(X4)	-.1479226	.1485454	-.1122737	-1.00	0.323
5. Leadership aspect(X5)	.369396	.1755931	.2682469	2.10	0.040
6.X1_ x_ X5	-.5906153	.5510322	-.1292935	-1.07	0.288
7.X2_ x_ X5	.5680226	.4385822	.2309315	1.30	0.200
8.X3_ x_ X5	.9467154	.5862334	.2169496	1.61	0.112
9.X4_ x_ X5	.0617286	.5257537	.0160131	.012	0.907

**Source: Research Data (2016)**

A summary of the moderated multiple regression model is indicated in Table 27.

**TABLE 27****The Moderated Multiple Regression Model summary**

Model	R Square	Adjusted R Square	Std. Error of the Estimate	Prob>F
2	.4564	.3749	.34451	.0000

**Source: Research Data (2016)**

The fitted moderated regression model that addresses this research question is specified in (2).

$$Y_i = -1.155992 + 0.2822927 X_{i1} + 0.0167848 X_{i2} + 0.4141687 X_{i3} - 0.1122737 X_{i4} + 0.2682469 X_{i5} \\ - 0.1292935 (X_{i1} \times X_{i5}) + 0.2309315 (X_{i2} \times X_{i5}) + 0.2169496 (X_{i3} \times X_{i5}) + \\ 0.0160131 (X_{i4} \times X_{i5}) \text{ Eqn (2)}$$

The value -1.155992 represents the constant of the moderated regression model while the values 0.2822927, 0.0167848, 0.4141687, -0.1122737, 0.2682469, -0.1292935, 0.2309315, 0.2169496 and 0.0160131 represent the estimated beta coefficients of moderated regression for loan pricing, loan repayment period, loan recovery mechanisms, loan advances, leadership skills aspect, interaction between loan pricing and leadership, interaction between loan repayment period and leadership, interaction between loan recovery mechanisms and leadership and interaction between loan advances and leadership aspects respectively.

The estimated coefficient of loan pricing of 0.2822927 indicates that for every unit in loan pricing, the dependent variable financial sustainability increases by 0.2822927. Likewise a repayment coefficient of 0.0167848 proves that for every unit increase in recovery mechanism, financial sustainability increases by 0.0167848. For a unit increase in recovery mechanisms, financial sustainability increases by 0.4141687. Notably, the coefficient of loan advances in the moderated multiple regression is negative implying that for every unit increase in loan advance, financial sustainability decreases by 0.1122737 units. This can be interpreted to mean that most leaders are opposed to groups advancing credit in the absence of stipulated purpose for which the loan funds are to be utilised.

Like in the case of the normal regression model given in Table 24, the variables loan pricing, loan recovery mechanism and leadership aspect in the moderated model displayed in

Table 26, are each statistically significant as indicated the small (less than 0.05) p-values 0.019, 0.001 and 0.040 respectively at 5% level of significance. This implies that each of these variables independently influences the dependent variable, financial stability. However, the variables loan repayment period and loan advances, are each statistically insignificant as indicated by the large (more than 0.05) p-values 0.888 and 0.323 respectively at 5% level of significance. Thus, each of these two variables does not independently influence the dependent variable, financial stability. Notably, in the moderated regression model, the regression coefficient of the loan repayment period variable is a positive value, 0.0167848. Thus for every unit increase in the loan repayment period variable, the response variable, financial sustainability increases by 0.0167848 units.

Considering the interaction factors, all interaction effects are statistically insignificant at 5% level of significance as indicated by the p-values exceeding the theoretical significance level of 0.05, that is, 0.288, 0.200, 0.112 and 0.907 for the interaction between loan pricing and leadership, interaction between loan repayment period and leadership, interaction between loan recovery mechanisms and leadership and interaction between loan advances and leadership aspects respectively. This implies that there is no evidence to conclude that each of the four interaction factors independently moderates the effect either loan pricing, loan repayment period, loan recovery mechanisms or loan advances on the financial stability of the informal finance group.

Analysis of Variance and goodness of fit statistics for the moderated regression model between the dependent variable; financial sustainability of informal finance group and the set of independent variables; loan pricing, loan repayment period, loan recovery mechanisms, loan advances, interaction between loan pricing and leadership, interaction between loan repayment period and leadership, interaction between loan recovery mechanisms and leadership and

interaction between loan advances and leadership in informal finance groups was conducted. The probability  $\text{Prob}>F = 0.0000$  (p-value) indicates that there is a joint significance of all the independent variables in explaining the dependent variable, that is, all the independent variables are simultaneously significant in the model at 5% level of significance. Further, the statistic  $R^2 = 0.4564$ , suggests that all the independent variables jointly explain 45.64% of the total variations in the dependent variable, financial sustainability. The increase in  $R^2$  implies that leadership moderates the relationship between the independent and the dependent variable.

#### **4.11 Principal Component Analysis**

The factor analysis and in particular principal component analysis was carried out on the observed variables to identify latent variables through reduction of the information in the moderated regression model by reducing the dimensions of the observations. The results are indicated in Tables 28-30

From Table 28, Factor1 explains 27.6% of the total variance in the data, Factor2 explains 20.58% of the total variance in the data while Factor3 explains 12.83% of the total variations in the observed data. These are the Factors that were retained as they account for the maximum variance in the data, that is, the three factors account for 61.02% of the total variance in the data that all other factors combined.

The same is indicated in the factor loadings which are the weights and correlations between each variable and the factor in Table 30. Under the uniqueness column in Table 30, we have the variances that are 'unique' to each and every variable and not shared with other variables. The variance is equal to 1 minus communality (variance that is shared with other variables). Therefore 26.04% the variance in financial sustainability index is not accounted for by other variables.

The variances that unique to the variables loan pricing, loan repayment period, loan recovery mechanisms, loan advances, leadership aspect skills, interaction between loan pricing and leadership, interaction between loan repayment period and leadership, interaction between loan recovery mechanisms and leadership and interaction between loan advances and leadership aspect are 38.88%, 57.32%, 35.62%, 54.5%, 38.89%, 33.92%, 22.09%, 37.77% and 44.79% respectively.

**TABLE 28**  
**Factor Analysis**

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	2.7605	0.70253	0.2760	0.2760
Factor 2	2.05797	0.77470	0.2058	0.4818
Factor 3	1.28327	0.30183	0.1283	0.6102
Factor 4	0.98145	0.10949	0.0981	0.7083
Factor 5	0.87195	0.23861	0.0872	0.7955
Factor 6	0.63334	0.07027	0.0633	0.8588
Factor 7	0.56308	0.19740	0.0563	0.9152
Factor 8	0.36568	0.03339	0.0366	0.9517
Factor 9	0.33228	0.18180	0.0332	0.9850
Factor 10	0.15048	.	0.0150	1.000

**Source: Research data (2016)**

**TABLE 29**  
**LR Test**

LR Test	Number of params	Retained Factors	Chi2(45)	Prob>chi2
	27	3	210.80	0.0000

The variances that unique to the variables loan pricing, loan repayment period, loan recovery mechanisms, loan advances, leadership aspect skills, interaction between loan pricing and leadership, interaction between loan repayment period and leadership, interaction between loan recovery mechanisms and leadership and interaction between loan advances and leadership aspect are respectively 38.88%, 57.32%, 35.62%, 54.5%, 38.89%, 33.92%, 22.09%, 37.77% and 44.79% as shown in Table 30

**TABLE 30**  
**Factor Loadings**

<b>Variable</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Uniqueness</b>
Sustainabi~x	0.2007	0.7958	-0.2570	0.2604
Loanprc~x(X1)	0.0361	0.7483	0.2233	0.3888
Loanrepay~x(X2)	-0.5476	0.2810	0.2189	0.5732
Loanrecove~x(X3)	0.5616	0.4495	-0.3555	0.3562
Loanadvanc~x(X4)	-0.3885	-0.4691	-0.2898	0.5450
Leadership~x(X5)	-0.5223	0.5690	-0.1209	0.3889
X1_x_X5	0.0616	0.1353	0.7992	0.3392
X2_x_X5	0.8161	-0.1080	0.3184	0.2209
X3_x_X5	-0.7688	0.0968	-0.1480	0.3777
X4_x_X5	0.6473	-0.0249	-0.3639	0.4479

**Source: Research Data (2016)**

Thus, the interaction between loan repayment period and leadership is the most relevant variable in the factor model while loan repayment period alone is the least relevant variable in the overall factor model.

The retained three factors that have eigenvalues of more than one have a mixture of both positive and negative factor loadings. A negative value indicates an inverse impact on the factor and the higher the load the more relevant the variable is in defining the factor's dimensionality. Thus based on these factor loadings, the factors could be defined as Factor1; loan recovery mechanisms, interaction between loan repayment period and leadership, interaction between loan recovery mechanisms and leadership and interaction between loan advances and leadership aspects. Factor2; financial sustainability, loan pricing, loan advances and leadership aspect skills. Factor 3; loan repayment period and interaction between loan pricing and leadership aspect skills.

These factors were used to create the following three indices;

$$I_1 = (\text{Loan recovery mechanisms} + \text{interaction between loan repayment period and leadership} + \text{interaction between loan recovery mechanisms and leadership} + \text{interaction between loan advances and leadership aspects})/4$$

$$I_2 = (\text{Financial sustainability} + \text{loan pricing} + \text{loan advances} + \text{leadership aspect skills})/4$$

$$I_3 = (\text{Loan repayment period} + \text{interaction between loan pricing and leadership aspect skills})/2$$

A linear multiple regression analysis was carried out with financial sustainability against the three indices as the predictor variables. The results are shown in Tables 31 and 32.

Model	R Square	Std. Error of the Estimate	F-statistics	Prob>F
3	.6925	.24706	49.54	.0000

Results on the significance of the model are presented in Table 31. The statistics  $F=49.54$  and  $\text{Prob}>F = 0.000$  indicate that the three indices are jointly significant in the model. Furthermore, the three indices account for 69.25% ( $R\text{-squared}=0.6925$ ) of the total variations in the response variable, financial sustainability hence a superior model.

**TABLE 32**  
**The Model Coefficients**

Model 3			Beta	t	P-value (Sig at 5%).
	Coef.	Std. Err.			
(Constant)	-2.978854	.3565837		4.02	0.000
$I_1$	1.434435	.1602376	.2816969	10.50	0.000
$I_2$	1.6818	.1705333	.7828932	-2.28	0.026
$I_3$	-.3886666	.6228025	-.1699374	-4.78	0.000

**Source: Research Data (2016)**

Results from Table 32, give the regression model in (3)

$$Y_i = -2.978854 + 0.2816969I_{i1} + 0.7828932I_{i2} - 0.1699374I_{i3} \quad (3)$$

All the three indices are highly statistically significant as indicated by the small (less than 0.05) p-values 0.000, 0.000 and 0.026 for  $I_1$ ,  $I_2$  and  $I_3$  respectively which implies that each index, as computed, is independently statistically significant in the model and thus adjustments in the index influence the adjustment in the financial sustainability index.



## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### **5.1: Introduction**

The purpose of this study was to investigate the effect of micro factors on financial sustainability of Informal Finance Groups in Mwea Constituency, Kirinyaga County. This chapter presents summary of findings, discussions, conclusions and recommendations based on the objectives of the research study. The objectives that guided the study were: loan pricing, repayment period, recovery mechanisms, loan advance criteria and leadership as the moderating variable.

#### **5.2: Summary of Findings**

The summary of findings was as guided by the objectives of the study:

##### ***5.2.1: Loan Pricing in Informal Finance Groups***

57% of the groups reported that they use no pricing criteria. The response was reflective of a situation where IFGs arbitrarily determine interest rates. This confirmed that most IFGs have no basis upon which interest rates are set. Majority use flat rates on loans while others charge interest rates depending on either loaned amounts or the loan term. However most of the groups disagreed with the statement that their rates were cheaper as compared to formal financial institutions. They ascribe their high interest to the fact that interest income earned is a benefit to the group as it increases cash flows and enhances lending on demand.

Members reported that they had no problem with the high interest charged by the groups an indication that they were willing to pay interest rates that would generate enough revenue to cater for their operational costs and achieve financial self-sufficiency. Interest revenue was associated with the ability to cover financial expenses and to cover for capitalization for growth. High interest rates were also an ingredient for increased group profitability hence financial

sustainability. The study established that the IFGs members regarded loan pricing as a good aspect for the financial sustainability.

The study also established that IFGs that had existed for over 3 years had accumulated enough interest income to cater for operational costs. However they could not cater for loan losses fully an indication of high rates of default. Groups that charged interest on loan tenure attributed this to speedy repayments that increased interest income. In this case interest rates were set high for longer loan tenure which was also linked to the risk involved with long term lending. Interestingly, IFG members felt that longer loan tenure reduced risk of default as members had time to invest loaned funds hence earning revenue to enable them repay loans. Groups that had lasted over 5 years were able to utilize their interest income in diversifying their sources of income. However, there were no training programs in place to enable members make informed decisions on viable income generating projects.

A total of 40% that based their rates on amount borrowed ascribed the same to the high demand for credit. They felt that it was a fair way to ration the limited funds available for lending. The higher the amount of loan applied for, the higher the interest rate changed. Most IFGs used this as a mechanism to ensure that the group maintains liquidity.

A common feature in the IFGs was the rigidity of the interest rates. Interest rates were less volatile and did not change to reflect prevailing economic status. Most groups preferred constant interest rates to avoid complex book keeping associated with fraudulent activities and manipulation by leaders who were out to enrich themselves. Majority of the groups agreed that they would continue seeking credit facilities from the IFGs irrespective of the high interest rates charged. Members associated their loyalty to sharing of proceeds among members in form of interest income. Others were of the opinion that the high interest rates are necessary to generate

revenue which would enable the group diversify their sources of income. However some members agreed that there was no other way of accessing credit available to them and therefore had no option but to borrow at the high interest rates. Interest rates were found to have an impact on group cash flows.

### ***5.2.2: Loan Repayment Period***

74% of the IFG members preferred monthly to weekly repayment. The finding is a signal that members required a longer duration resulting into reduced frequency of repayments which was ascribed to reduced risk of default considering their uncertain income as majority are peasant farmers. However most agreed with the statement that frequency of repayment affected group cash flows as inflows were not regular.

54% reported that they preferred short term loans to long term loans. The finding was ascribed to the small amounts of loan advanced to members and the consideration that the loans are unsecured. Hence an attestation of the operations of IFGs that deal with short term lending as opposed to long term lending.

64% reported that they grant a grace period of up to thirty days meant to give members time to look for money to repay the loan and pay interest which was associated with the need for reduced cost of collection in case of defaults that impacts on profitability of the groups. Members understood that loan repayment period is important for a more sustainable informal finance groups.

The findings of the research established that most of the IFGs members were aware of the loan repayment policies put in place for the group operations. Such loan repayment financial knowledge included simple monetary calculations and reconciliation of the savings and loans, including the calculation of the payable loan interests. Loan repayment period is an important

aspect in the financial sustainability for the informal finance group's project; however, lack of adherence in the loan repayment policies greatly affects the financial sustainability of the groups and creates possible conflicts that end up splitting the group members.

### ***5.2.3: Loan Recovery Mechanisms***

84% of the IFGs reported to have incurred loan losses bringing out the nature of financial operation where credit is advanced in the absence of enforceable recovery mechanisms. Only 6% had managed to recover fully previous loan losses. Loan losses seemed to be the biggest challenge that the IFGs members were struggling with, as compared to the wrong reconciliation and poor interest calculation. The trend was linked to the entire lack of accountability amongst the IFGs members, poor leadership and management of the groups' savings and loans. Most groups (44%) preferred to set off overdue loans against savings due to lowered cost of collection.

17% charged penalties for default in attempt to increase the group revenue. 12.86% resorted to extension of repayment period. However, they reported that extension of repayment period impacted on group cash flow as inflows were delayed. Only 14% did confiscate assets in case of default. Confiscation of assets affected group liquidity since some of the assets confiscated were not readily marketable. Most groups (99%) were opposed to dismissal of defaulters accrediting the same to the fact that the group may incur loan losses where loaned amounts were more than savings. Majority of groups were aware of policies guiding loan recovery. Most groups agreed that penalties and fines increased group revenue. Penalties were charged on lateness, default and disclosure of group information to non-members. Most groups disagreed with the statement that they would re-admit a dismissed member upon repayment of defaulted loan. The finding is demonstrative of the extent to which these groups rely on trust in their continued operations.

Only 10% used guarantors as a recovery mechanism. Such were instances where a member required a loan more than his/her shares. Members who acted as guarantors could only take up loans to the extent of uncommitted balances of their own shares.

#### ***5.2.4: Loan Advances***

71% of the IFGs did consider the purpose for which loans were advanced to members since their main objective was to provide credit to enable members generate income hence be able to repay the loan and interest which explains the highest percentage (68%) in investment category. However challenges arose in loan monitoring as IFGs do not have strong monitoring mechanisms in place.

Another 28% advanced loans for consumption which can be explained by the fact that majority of the rural households are extremely poor with no sources of income and hence their little savings enabled them access credit for meeting their basic needs. The challenge associated with loans for consumption was the ability to repay considering that loaned amount did not bring in any revenue to the member. This impacted on the group cash flows resulting from defaults.

61% of the groups charged processing fees on loan advances which was considered a means for generating more revenue to the group. The same can be evidenced by the high percentage (79%) where members were the bearers of the processing charges. Groups associated the practice with reduced cost of operation.

#### ***5.2.5: Leadership Aspects***

77% of the IFGs leaders had served as leaders for more than one year a situation reflective of the grass root operations where members who conceive the idea of forming the groups remain as holders of office. Most of the groups agreed with the statement that leadership had influenced member retention owing to the ability to solve conflicts as well as mobilize resources. They felt

that the choice of the group leader greatly determined the dynamics and operations of the IFGs. Adequate monitoring procedures and accounting systems are not available, one of the challenges reported by leaders within the group. Other groups reported corrupt governance and leadership who utilize collective funds for personal gains which bankrupts the group. These vices fuel distrust among group members which leave behind tarnished reputation and exit of members. Most groups reported that most informal finance groups collapse as a result of leadership wrangles which influences group operations resulting into exit of members.

### **5.3 Conclusions of the study**

The study drew the following conclusions:

#### ***5.3.1 Loan Pricing in Informal Finance Groups***

From the findings of the study, loan pricing is positively related to financial sustainability which implies that the higher the interest rates the more sustainable the IFGs are. The finding concurs with Steinwand (2001) who argues that the key to financial sustainability is to charge an interest rate that is high enough to cover operating costs, loan losses and interest and adjustment expenses. The finding is also in line with the financial systems approach as supported by institutionists that stress the need for financial sustainability, efficiency and outreach (Christen, 2001; Rhyne, 1998). The financial systems approach calls for microfinance providers to aggressively pursue sustainability through raising interest rates and lowering costs. The finding agrees with the observation by Tucker & Miles (2004) who note that another way of maintaining sustainability is to increase profits by increasing interest rates.

This finding however disputes the Adverse Selection Theory of Financial Markets argument as advanced by Stieglitz and Weiss (1981) that interest charged by a credit institution have a dual role of sorting potential borrowers thus leading to adverse selection. In an attempt to

achieve financial sustainability, this study finds that, IFGs charge interest rates that are higher than those charged by formal financial institutions hence an insight into the fact that the poor are not locked out formal financial institutions by virtue of high interest rates but due to lack of pledge-able collateral.

IFGs are self-regulated and hence are faced with the challenge on the basis for pricing their loans. Their rates are less volatile and therefore do not change to reflect the prevailing economic performance of the region.

Loan pricing is key to financial sustainability of the informal finance groups. Members need to be empowered on basic accounting and reconciliation of their loans and savings. In order to realize maximum profits from the village microfinance, the members need to be aware of the saving trend, how to invest and market their income activities and products and how to follow up and ensure that the members do not default loan repayments.

### ***5.3.2 Loan Repayment Period***

Loan repayment period is negatively related to financial sustainability. Longer repayment period reduces sustainability which can be attributed to cash inflows that are not so frequent which is inconsistent with Barnes (2016) who found out that coefficient of monthly and term repayment have positive sign. His argument is based on consideration that longer repayment period lowers risk of default. However this study found out that IFGs cash flows are affected by not so frequent in flows.

IFGs function in the absence of enforceable recovery mechanisms which explains the reason the groups would prefer frequent repayments such as weekly as opposed to monthly repayments in reducing risks of default which impacts on sustainability. In support of this observation, Allen & Staehle (2007) affirm that regular repayment schedules are an element to

generate high repayment rates from low income borrowers without the need for collateral. Maertens (2013) also agrees that frequent repayments break the loan into small manageable installments that can be paid from the regular household budget.

Loan repayment period is an important aspect in the financial sustainability for the informal finance group's project; however, lack of adherence in the loan repayment policies greatly affects the financial sustainability of the groups and creates possible conflicts that end up splitting the group members.

### ***5.3.3 Loan Recovery mechanisms***

The variable loan recovery mechanism is positively related to sustainability. The more mechanisms a group has in place, the easier it is to recover principal loans and interest on the same. Several groups had suffered loan losses but a few had managed to fully recover the defaulted loans. A large number opted for set off against savings as a recovery mechanism as opposed to dismissal of defaulters. Interestingly, more members paid for fines for not able to pay their loan dues on time rather than risking dismissal from the IFGs and their savings dissolved. This finding was an indication that the membership is long-term oriented and that the members were willing to go to lengths to retain their membership in the group for as long as they were able to. However, the same led to inconsistency in loan repayment which affected group cash flows. Despite being aware of the penalties for loan repayment default, the cases of loan delinquency still remained very high.

As Khan (2012) observes, there is no legal and written contract that may force participants to make their payments. Therefore the operations of the groups were informed by the social capital theory where trust is important in ensuring reduced defaults and increased sustainability.



To reduce instances of default and challenges in recovery, capacity building and empowerment of the IFGs members on other income generating activities should be prioritized to enhance their income base and ensure sustainability of the IFGs. IFGs should also adopt a variety of recovery mechanisms within their constitution. Loan recovery mechanism policies were influential in the sustainability of the informal finance groups, since the operations of the village microfinance were mainly savings and loans. However, the members required sustainable income generating activities from which they could boost their savings ability for viable and long-term informal finance groups operations.

#### ***5.3.4 Loan Advances***

Loan advance criteria negatively affect sustainability. Diverse advance criteria reduces sustainability which can be attributed to cases of loan diversion and default hence unearned interest income. Most of the groups advanced credit for investment. However, there were cases of loan diversion to consumption attributed to the level of poverty of residents hence agreeing with one World Bank report that the poor tend to use loans to meet basic needs such as food and shelter rather than investing in income generating activities (World Bank, 2003) which increases chances of default hence affecting sustainability of the financing groups. Groups were faced with challenges in monitoring the loaned funds.

Loan advances for consumption purposes was found to increase cost of collection therefore implying that funds advanced for consumption were subject to constant defaults. Increased defaults can be attributed to the fact that consumption does not bring in additional revenue that could be used to repay the loans. Interestingly most groups agreed that loans advanced for investment led to increased group revenue a trend attributed to the capability of

members to repay loans when due resulting into improved cash flows from interest income. Most groups agreed that matching of loan advances and repayments affected their cash flows.

This study concluded that IFGs should stipulate investment projects to be undertaken using loan funds and at the same time establish fruitful monitoring mechanisms to avoid cases of loan diversion.

### ***5.3.5 Leadership Aspect***

This study found out that leadership moderates the relationship between micro factors and financial sustainability of IFGs. The coefficient of leadership had a positive sign. This implies that good leadership contributed to sustainability. Leaders who were able to solve conflicts and mobilize resources were found to influence member retention within the IFGs hence contributing to growth in income. Leadership skills associated with level of education were also found to influence continuity of groups therefore concurring with Mostaq (2012) who argue that the level of education influences the ability of the leaders to handle challenges that may occur within the various VSLA groups.

From the findings, majority of the village microfinance members understood that the choice of their group leader influenced various group dynamics such as the management of group income, follow-up on the loan repayments and penalties on the loan delinquencies, fines for non-attendance to group meetings and general over seeing and support to IFGs activities. Having a guiding constitution also gave the village microfinance members an upper hand in accessing group registration with the department of social services and even possible support by funding agencies; this ensured that the village microfinance was more sustainable and self-dependent. Group constitution also instilled discipline amongst the members to adhere to the group meetings and other group activities.

Quality leadership is important as the group leaders play the crucial role of managing the IFGs group dynamics such as attendance, savings and loans amongst other group activities. The less number of times the village microfinance group re-elects their leader, the more trustworthy the informal finance group becomes. The research study recommended further research on the sustainable recruitment of the informal finance group's leaders and viable income activities for the informal finance group's members, as well as fruitful measures of mitigating against and dealing with loan delinquencies.

#### **5.4 Recommendations of the study**

Based on the study findings, the study recommended that;

1. IFGs should devise standard criteria for optimal pricing of loans to avoid charging exorbitant rates in their quest to achieve financial sustainability as this overburdens the poor with debts and aggravate poverty levels against micro finance objective of poverty alleviation.
2. The study gave an insight into the fact that most citizens are locked out of formal institutions due to lack of pledge-able collateral as opposed to high interest rates. Therefore, there is need for policy makers to formulate policies that could allow citizens to access credit from formal institutions such as commercial banks based on their savings as opposed to pledge-able collateral.
3. The IFGs also need to be trained on viable income activities so as to boost their income base, as well as marketing skills for their income generating products. Policy makers and County social services department should be charged with responsibility of training the registered groups on entrepreneurship to enable them invest loaned funds and generate revenue to repay loans. IFGs should also set up loan monitoring systems in place to avoid diversion and defaults

4. In future, the IFGs may consider registering as legal entities in form of village banks, with a proper central management system where all member groups can pool their savings, access loans and repay as well as providing pass books for personal records and tracking of their savings and loans.

5. In addition to having a guiding constitution policy makers may consider empowering IFG members with leadership and conflict management skills for effective group leadership. Such programs are currently unavailable.

6. IFGs should liaise with County social services office and devise operative and enforceable recovery mechanisms to reduce instances of loan losses that affect sustainability.

### **5.5 Limitations of the study**

Most of the respondents (the group chairperson) were reluctant to give information in the absence of other group leaders such as the treasurer and secretary since members are fined for divulging group information to non-members, hence a limitation to information access. However the introductory letter assured them confidence thus facilitating data collection. The target respondents had different levels of education and some did not have the required literacy for the data collection. The respondents had their questions translated to a language they could understand to overcome language barrier.

Owing to time period, the study was limited to Mwea Constituency.

### **5.6: Suggestions for Further Research**

Based on the research study findings, the researcher recommended further studies in the following areas:

1. This study used Ordinary Least Squares method of estimation which works best with normal distributions. Further studies may consider using other methods of estimation that work well with peaked distribution.
2. The effect of micro factors on operational sustainability of Informal finance groups. Scholars may also take a broader scope and consider the common challenges in recovery of defaulted loans and its impact on financial sustainability.
3. Relationship between group income generating activities and financial sustainability of IFGs.
4. Viable informal banking system for IFGs and management of loans and savings.
5. Factors influencing the exit of group members after a savings cycle.

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## APPENDICES

### Appendix 1: Research Questionnaire

This questionnaire is intended at collecting data on micro factors and financial sustainability of Informal finance groups. It aims at finding out the effect of group specific factors on the financial sustainability. The information given will be used only for the purpose of this research. Please fill in the spaces provided with information as accurate as practicable. Indicate your response to each of the statements, with an X in the appropriate parenthesis, or answer box according to the following code definitions:

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

### Section 1: Background Information

Group Name: ..... Location: .....

a) Number of members at group inception:

Less than 10 ( ) 10-30 members ( ) 31-50 members ( ) Over 50 members ( )

b) Period the IFG has been in existence:

Below 1 year ( ) 1-3 years ( ) 4-5 years ( ) 6-10 years ( ) Over 10 years ( )

c) Initial number of shares on group formation:

Less than 10 ( ) 10-30 shares ( ) 31-50 shares ( ) Over 50shares ( )

**Section 2: Demographic Information**

a) Gender of IFG member:

Male ( )                      Female ( )

b) Age:

18-25 years ( )              26-40 years ( )      41-60 years ( )      Over 60 years ( )

c) Level of Education:

Primary ( )      Secondary ( )      Diploma ( )      Degree ( )      Post graduate ( )

**Section 3: Research Question per Study Variable**

**A. Loan Pricing**

1. What criteria does the group use in setting interest rates?

Interest based on loan amount ( )      Interest based on repayment period ( )      No pricing criteria ( )

2. Do members earn interest on savings?

Yes ( )              No ( )

3. To what extent do you agree with the following statements on loan pricing?

<b>Loan Pricing</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Interest rates generate enough revenue to cover costs					
b	Interest income is sufficient to cover loan losses.					
c	Not all interest income earned is distributed to members					
d	There is a large spread between interest on loans and interest on savings					
e	The group utilises net interest earned in diversifying sources of income					

f	Group interest rates regularly change					
g	Volatility of interest rates contribute to cases of default					
h	Group profitability is affected by changes in interest rates					
i	Group Interest rates are below formal institutions interest rates					
j	Group interest rates scare would be borrowers					
k	Group interest rates have attracted new membership					
l	Based on the IFGs current interest rates, would you continue seeking credit facility from the IFG?					

**B. Loan Repayment Period**

1. What is the frequency of loan repayment in your IFG?

Daily ( )      Weekly ( )      Monthly ( )

2. What is the maximum duration of loan applicable to your IFG?

Less than one year ( )      Exactly one year ( )      More than one year ( )

3. What grace period is applicable in your group?

1-30 days ( )      Over 30days ( )      None ( )

4. In your opinion, what proportion of loans is currently overdue?

1-20% ( )      21-50% ( )      51-100% ( )      None ( )

5. To what extent do you agree with the following statements on loan repayment period?

<b>Loan Repayment Period</b>		1	2	3	4	5
a	Frequency of repayment affect group cash flow					

b	Group frequency of repayment ensures funds are readily available to qualified borrowers					
c	Grace period for loan repayment in the IFG influence loan repayment					
d	Loan term has an effect on interest income					
e	Loan term affects group liquidity.					
f	Based on the IFGs current repayment Schedule, would you continue seeking credit facilities from the IFG?					
g	Has the consideration of seasonality influenced repayment schedules?					
h	Flexibility of repayment has led to increased membership					
i	Flexibility of repayment has affected the ability to meet demand for credit					
j	Have overdue loans affected your ability to advance credit to prospective borrowers?					

### C. Loan Recovery mechanisms

1. Has the group suffered loan losses before?

Yes ( )      No ( )      Not aware ( )

2. Has the group recovered any part of bad debts previously written off?

Yes ( )      No ( )      Not aware ( )

3. What percentage has the group managed to recover?

1-10% ( )      11-30% ( )      31-60% ( )      61-99% ( )      100% ( )

2. What mechanism is applicable in case of default within your group?

Dismissal ( )    Set off against savings ( )    Asset confiscation ( )    Use Guarantors ( )



Extension of repayment period ( ) Fines and penalties ( ) Social sanctions ( )

3. To what extent do you agree with the following statements on loan recovery mechanisms?

Loan Recovery mechanisms		1	2	3	4	5
a	The group has set out policies for loan recovery mechanisms.					
b	Group members are aware of recovery mechanisms applicable to their groups					
c	Asset confiscation affects group liquidity					
d	The use of savings as collateral has led to reduced cost of collection					
e	Dismissal of defaulters greatly influence repayment rates					
f	Extension of repayment period affect group cash flow					
g	Fines and penalties have increased group revenue					
h	Use of shares as collateral has led to increased saving					
i	Social sanctions influence rate of repayment					
j	Use of guarantors has reduced loan losses					
k	Would your group re-admit dismissed members in future upon repayment of defaulted loan?					

**D. Loan Advances**

1. For what purpose are loan advance application considered qualified by your group?

For consumption ( ) For Investment ( ) For emergency basic needs ( )

2. Are there loan processing charges?

Yes ( ) No ( ) Not aware ( )

3. Who bears the cost of loan processing?

Member ( ) The Group ( ) Not aware ( )

4. To what extent do you agree with the following statements on loan advances?

<b>Loan Advances</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Loan advances affect group cash flows					
b	The group restricts the use of loaned funds to specific uses					
c	Loan advances for consumption purposes have led to increased cost of collection					
d	Loan advances for investment purposes have led to increased revenue					
e	Matching of loans, deposits and withdrawals affect group cash flows					
f	Matching of loans advances with deposits and withdrawals affect liquidity?					
g	Advances for emergency needs affect group cash flows					

h	Demand for loan advances has increased over the years					
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**E. Leadership Aspects**

1. How long have you been a leader in the IFG?

Less than a month ( ) 1-3months ( ) 4-6 months ( ) 7-12 months ( ) Over an year ( )

2. To what extent do you agree with the following statements on group leadership?

<b>Leadership Aspects</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Leadership issues affect the membership retention in the IFGs					
b	The choice of a group leader determines the lifetime of the group and its membership					
c	Group leaders have been effective in resource mobilization.					
d	As a group you tackled conflicts successfully, without affecting the membership and existence of the IFG					
e	In the next 2 years, would you still agree to remain a group leader?					

**F: SUSTAINABILITY ASPECT**

1. How do you rate your current percentage growth in shares as compared to when you started?

Less than 100% ( ) 101-300% ( ) 301-1000% ( ) Over 1000% ( )

2. How many new members have joined the group since its formation?

Less than 10 ( )      11-20 members ( )      Over 20 members ( )

3. At what rate has group income over the years increased?

1-10% ( )      11-50% ( )      51-99% ( )      Over 100% ( )

4. To what extent do you agree with the following statements on sustainability?

<b>Sustainability Aspect</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	The group generates enough revenue to cover financial expenses					
b	The group generates enough revenue to cover for capitalization for growth					
c	The asset base of the group has increased over the years					
d	The group profitability has grown over the years					
e	The group has diversified its sources of income over the years					
f	The group cash flow has made funds readily available for willing borrowers					
g	Group savings have grown over the years					
h	Group membership has increased over the years					
i	The liquidity of the group has improved over the years					
j	The Sales turnover of the group has increased					
k	The group is able to meet demand for credit by members					

**Thank you for your cooperation**

**Appendix II: Time Frame**

ACTIVITY NO	ACTIVITY	J	J	A	S	O	N	D
1	RESEARCH TOPIC							
2	RESEARCH TOPIC PRESENTATION AND ACCEPTANCE							
3	BACKGROUND STUDY							
4	PROBLEM STATEMENT							
5	MAIN OBJECTIVE AND SPECIFIC OBJECTIVES							
6	SIGNIFICANCE							
7	SCOPE AND LIMITATION							
8	CONCEPTUAL AND THEORITICAL FRAMEWORK							
9	LITERATURE REVIEW							
10	RESEARCH METHODOLOGY							
11	DATA COLLECTION, ANALYSIS AND PRESENTATION							
12	CONCLUSION RECOMMANTATION AND PRESENTATION OF FINAL PROJECT							