

## Effects of Moral Hazard and Adverse Selection Control on Group Loan Performance of Micro Finance Institutions in Nyandarua County, Kenya.

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**Abstract:** This study sought to investigate the effects of joint liability on group loan performance for Micro Finance Institutions in Nyandarua County, Kenya. The study was carried out using descriptive survey design. The study relied on a population of 11 Micro Finance Institutions with operations in Nyandarua County as gathered from the Association of Micro Finance Institutions of Kenya (2017). The study used the census study approach to identify the micro finance institutions to study alongside the purposive or judgemental sampling approach to sample the target respondents. The purposive sampling procedure targeted a total of 66 respondents comprising of branch managers, credit managers, finance and investment officers, customer care officers, operations managers and loan officers of Micro Finance Institutions offering group lending in Nyandarua County, Kenya. The research relied on primary data from questionnaires which highlighted various aspects of group liability lending and performance of the group loans. Validity and reliability of the instrument was assessed using Chronbach's Alpha Reliability Test, pre-testing and expert opinion. The study adopted the drop and pick method for data collection. Data analysis involved Both descriptive and inferential statistics were useful for the study at hand. Correlation Analysis was used to determine relationships. The study was important in bringing out the specific group lending practises and how such practises are impacting on the group borrowing. The group loan performance of the Micro Finance institutions in Nyandarua County was considered fairly good with the average group repayment of loans standing above two thirds but highlighting need to drive the organisations towards full group loan repayment. The average growth in group loan portfolio was also found to be fairly good although some players in the sector were not registering attractive figures in loan portfolio growth hence need to device ways to improve growth in loan book. On the same note, the average net profit margin stood just slightly above the quarter mark which calls for action towards the improvement in profitability. Group Loan Performance of MFIs was explained by variability in themoral hazard control and adverse selection control.

**Key Words:** Adverse Selection, Moral Hazard, Group Loan Performance, Microfinance Institutions

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### I. Introduction

In Kenya microfinance services were started by NGOs in the 1980s and 1990s. NGOs like food for the hungry changed to Faulu deposit taking microfinance and now to Faulu microfinance bank and K-rep which was started in 1984 as a project to support small and micro enterprises, later in 1987 being incorporated as a local NGO and in 1999 we saw the establishment of K-rep bank now trading as Sidian bank. Kenya has the second largest borrower base in the continent, a reason which makes microfinance presence in Kenya very huge (Lafourcade, Isern, Mwangi, & Brown, 2005). Nyandarua County is in Central Province of Kenya and is County number 18 on the list of counties in Kenya as per the new constitution of Kenya.

### **1.1 Statement of the Problem**

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

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

Introduction of technology has seen a big change in how microfinance business is conducted. Kenya is one of the leading nations in mobile banking with products like M-pesa which is revolutionary mobile money transfer platform which is being used to transfer money internationally and M-shwari which allows customers to save and borrow soft loans. Kenya's position in mobile banking has played a great role in ensuring financial inclusion of the citizens (Kpodar & Andrianaivo, 2011). Old microfinance products have been revamped to include mobile banking services where clients can save using their mobile phones, withdraw their loans and also borrow money either being in the group model or individually.

In Kenya researchers such as Milgo (2013) have studied the effects of joint liability among microfinance institutions in Kenya done several years ago when most MFIs had not adopted technology and society dynamics had not changed to where they are now. A knowledge gap exists as the environment under which previous researches were conducted has changed. This reason has fuelled the desire to undertake this research on the effects of joint liability on group loan performance among microfinance institutions in Nyandarua County.

### **1.2 Research Objectives**

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

## **II. Research Methodology**

### **2.1 Research Design**

The current study used a descriptive survey research design in effectively seeking to explain the effect of joint liability on group loan performance of Micro Finance Institutions in Nyandarua County, Kenya. The choice of the descriptive survey research design for the study on joint liability and group performance was also justified by the fact that the phenomena under study could not be manipulated as it involves an already existing state of affairs.

### **2.2 Target Population**

The target population consisted of all the 11 Micro Finance Institutions offering micro finance services in Nyandarua County who are registered with the Association of Micro Finance Institutions of Kenya (AMFI-K). The targeted respondents were 66 in total and comprised of all branch managers, credit managers, finance

and investment officers, customer care officers, operation managers and loan officers of all the 11 MFIs in Nyandarua County.

### 2.3 Sampling Technique

The study at hand utilised a census approach to identify the firms to subject to study alongside purposive sampling technique to select the choice respondents. Using the census approach, the study subjected all the 11 Micro Finance Institutions with operations in Nyandarua County and registered with the Association of Micro Finance Institutions of Kenya (AMFI-K) to study. The study then purposively selected branch managers, credit managers, finance and investment officers, customer care officers, operations managers and loan officers of the Micro Finance Institutions as the choice participants of the study. The purposive or judgemental selection of this class of respondents was justified by the fact that they are well equipped with the information sought. The target population was as shown below.

**Table 1: Target Respondents**

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

Source: AMFI-Kenya (2017)

### 2.4 Data Collection Instruments

The study used both primary and secondary data sources. Primary data was collected using questionnaires which were structured into two main sections. The first section covered background information regarding the respondents. The second section covered questions regarding the specific variables making up the study objectives. Secondary data was gathered from the annual financial statements of the Micro Finance Institutions in Nyandarua County.

### 2.5 Data Collection Procedure

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

### 2.6 Data Analysis and Presentation

Data was then categorised in line with the study objectives. The study used both bivariate and multivariate analysis tools and sought to provide both descriptive and inferential statistics in order to effectively test the research hypotheses. Regression and correlation analysis werethe key inferential statistics tools utilised in determining and explaining the nature, magnitude, direction and strength of relationships unveiled between joint liability and group loan repayment.

### III. Finding

#### 3.1 Response rate

Table 2 provides statistics on the response rate achieved by the study. A justification why the responses received were considered adequate is also given.

**Table 2:Response Rate**

Targeted respondents	Responses received	Response rate
66	48	72.72%

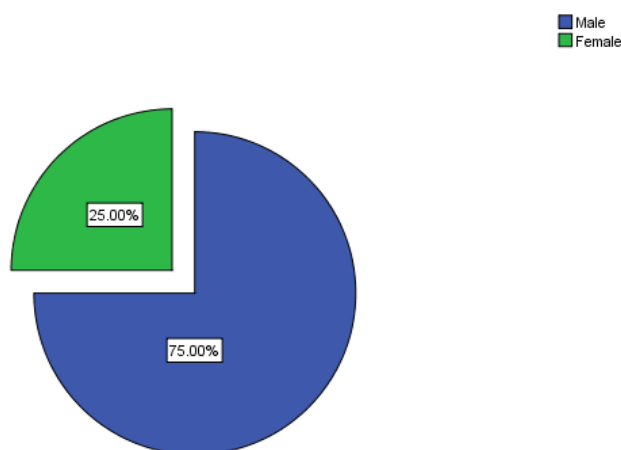
Source: Survey data (2018)

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

#### 3.2 Bio Data.

This section of the report presents a summary of respondents' profiles including gender, leadership position, highest level of education, and working experience in the Micro Finance entities. Figure 1 provides a summary of the respondents' gender. 75.00% of respondents were male while the remaining 25.00% of respondents were female. The implication is that the management of the MFIs in Nyandarua County, Kenya was male dominated.

**Gender of participants**



**Figure 1: Respondents' Gender**

Table 2 presents a profile of respondents' leadership position for the MFI sector in Nyandarua County of Kenya.

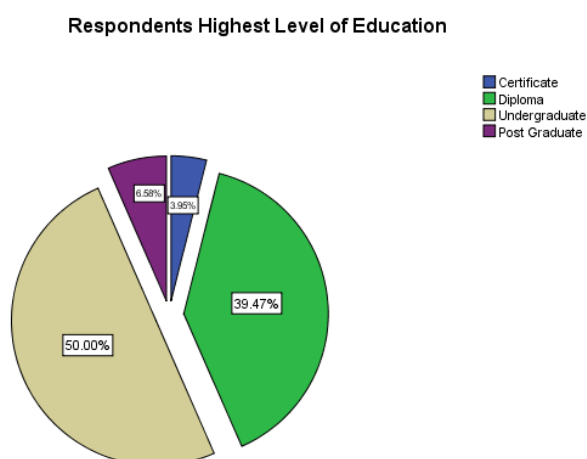
**Table 2: Respondents' Leadership Position in the MFI.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Branch Manager	5	10.4	10.4	10.4
	Credit Manager	8	16.7	16.7	27.1
	Finance and Investment Officer	10	20.8	20.8	47.9
	Loan Officer	9	18.8	18.8	66.7
	Operations Manager	7	14.6	14.6	81.3
	Customer Care Officer	9	18.8	18.8	100.0

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	Finance and Investment Officer	10	20.8	20.8	47.9
	Loan Officer	9	18.8	18.8	66.7
	Operations Manager	7	14.6	14.6	81.3
	Customer Care Officer	9	18.8	18.8	100.0
	Total	48	100.0	100.0	

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

Figure 2 presents responses on respondents' highest level of education. Almost 90.00% of the respondents had either undergraduate degree qualifications or diploma level qualifications. The lower cut class made up of about 10.00% of the respondents had either college certificate qualifications or post graduate qualifications. Hence, the management team of the MFIs in Nyandarua County was highly educated.



**Figure 2: Respondents Highest Level of Education**

This section covers the results of the descriptive analysis of the data collected. The presentation was done in line with the research objectives.

### 3.3 Group Loan Performance of the MFIs.

This section presents descriptive statistics on the group loan performance condition of the MFIs in Nyandarua County of Kenya. In particular, it covers aspects of the group loan repayment, loan book growth and profitability as indicated by net profit margin. Table 3 presents statistics on the average group repayment rate, loan book growth and net profit margin of the MFIs in Nyandarua County, Kenya.

**Table 3: Performance of the MFI**

	N	Minimum	Maximum	Mean	Std. Deviation
Group Loan Repayment Rate (%)	48	.60	.90	.6869	.04590
Loan Book Growth (%)	48	.20	.85	.4467	.26319
Profitability indicated by Net Profit Margin (%)	48	.06	.24	.1604	.02790

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The repayment of loans stands at 68.69% hence the need to drive this towards the 100% which is the goal of lending institutions. The loan book grows at an average of 44.67% which is considered okay but need for some players to work on this growth as the least has a loan book growth of 20.00%. The average net profit margin stood just slightly above the quarter mark which calls for action towards the improvement in profitability. The group loan performance of the Micro Finance institutions in Nyandarua County can therefore be considered to be poor which calls for strategies to improve on repayment, loan uptake or growth and profit margins. These findings support earlier observations by Moti, Masinde, Mugenda, and Sindani (2012), Bichanga and Aseyo (2013) and Amwayi, Omete, and Asakania (2014) who all raise alarm over poor performance of the MFIs in Kenya.

### 3.4 Moral Hazard Control

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

**Table 4: Moral Hazard Control**

	N	Mini- mum	Maxi- mum	Mean	Std. Deviation
The Micro Finance Institution conducts Post Disbursement visits to check diversion of funds to riskier projects	48	1.00	5.00	3.7292	.84399
The Micro Finance Institution undertakes direct supplier disbursement initiatives to control funds diversion	48	1.00	5.00	3.7292	.91651
The Micro Finance institution offers Incentives and penalties to control diversion of funds to risky projects	48	2.00	5.00	4.0625	.78296
The Micro Finance institution undertakes regular project risk monitoring to ensure funds are not subjected to very risky projects	48	1.00	5.00	4.5000	.82514
The Micro Finance Institutions involve group members to ensure funds are not diverted to risky projects	48	1.00	5.00	3.9375	.63267

As demonstrated by a mean of (3.73) and a low standard deviation of (0.84), it was clear that MFIs in Nyandarua County conducted to a great extent post disbursement visits to check diversion of funds to riskier projects. This was further enhanced by application of direct supplier disbursement initiatives as affirmed by a mean of (3.73) and a standard deviation of (0.92). The institutions also to a great extent offered incentives and penalties to control diversion of funds to risky projects as demonstrated by a mean of (4.06) and standard deviation of (0.78). On the same note, the MFIs ensured regular project risk monitoring as demonstrated by a mean of (4.50) and standard deviation of (0.83). Additionally, the firms involved group members to a large extent to curb or control diversion of funds to risky projects as indicated by a mean of (3.94) and standard deviation of (0.63). The mean of the means with regard to the moral hazard control factors stood at (3.99)

indicative of high application of moral hazard control in the MFIs. The average standard deviation for the moral hazard control factors was (0.80) which demonstrated that the responses were closely held about the mean affirming the condition of wide application of moral hazard control as recommended by Armendáriz and Morduch (2005), Jiang et al., (2014) and Percival (2006) who argued a case for moral hazard control as an effective joint liability control strategy.

### 3.5 Adverse Selection Control

This part of the report covers descriptive statistics on adverse selection control by the MFIs in Nyandarua County, Kenya. Specific components of adverse selection control assessed included the use of assorted matching approach, risk profiling, assessment of group cohesion, use of collateral and graduated lending models. Table 5 signposts statistics on the extent to which various aspects of adverse selection control were applied.

**Table 5: Adverse Selection Control**

	N	Mini- mum	Maxi- mum	Mean	Std. Deviation
The Micro Finance Institution recommends the use assorted matching in group formation	48	1.00	5.00	3.6667	1.49230
The Micro Finance Institution applies group risk profiling approaches to screen group borrowers	48	1.00	5.00	4.1458	.96733
The Micro Finance Institution assesses group cohesion prior to lending	48	1.00	5.00	3.9792	1.06170
The Micro Finance attaches group and individual collateral to ensure capacity of members to repay	48	1.00	4.00	3.5000	1.01058
The Micro Finance Institution uses graduated lending models to ensure defaulters don't receive funding in future	48	1.00	5.00	4.0417	1.09074

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

### 3.6 Pearson Correlation analysis

Pearson's correlation coefficient ( $r$ ) is a measure of the strength of the association between the two variables and is interpreted on a scale of 0 to 1. Values closer to 0 would indicate diminishing correlation or association between the variables under assessment. Conversely, values close to 1 indicate high degree of relationship between the variables being assessed. Table 6 presents the Pearson Correlation Output derived from SPSS.

**Table 6:** Pearson Correlation Analysis

		Performance
Moral hazard control	Pearson Correlation	.437**
	Sig. (2-tailed)	.001
	N	48
Adverse selection control	Pearson Correlation	.645**
	Sig. (2-tailed)	.001
	N	48

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

Source: Survey data (2018)

Results of the Pearson Correlation Analysis demonstrated significant positive associations between all the independent variables and group loan performance.

The Pearson Correlation coefficient for moral hazard control was 0.437 which shows a moderate positive association between moral hazard control and group loan performance. The association is considered moderate since the coefficient is greater than 3 but less than 5. The relationship is statistically significant because the Sig. (2-tailed) value of 0.001 is less than 5% or 0.05 level of significance. The study results match the propositions and past results by Armendáriz and Morduch (2005), Jiang et al. (2014) and Percival (2006) who demonstrated that moral hazard control has a positive relationship with group loan performance. Lastly, the Pearson Correlation coefficient for adverse selection control stood at 0.645 which indicates a strong positive association between adverse selection control and group loan performance. The relationship was considered strong since the coefficient was greater than 0.5 but less than 0.70. The association was considered statistically significant since the Sig. (2-tailed) value of 0.001 was less than 0.05 or 5% level of significance. The study results are in agreement with past results presented by Milgo (2013), Sharma and Zeller (1997), Paxton, Graham, and Thraen (2000) and Ndirangu and Terer (2016) who demonstrated that adverse selection control is positively related to group loan performance.

#### IV. Conclusions

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

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