

**REPAYMENT PERFORMANCE OF AGRICULTURAL CREDIT AMONG CLIENTS
OF MICROFINANCE INSTITUTIONS IN THE NADOWLI/KALEO
DISTRICT OF GHANA**

BY

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The crest of the University of Ghana is a shield-shaped emblem. The top section is blue with three golden stalks of grain. The bottom section is also blue with a golden scrollwork design. A golden banner at the base of the shield contains the university's motto in Latin.

**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA,
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DECLARATION

I STEPHEN KWEKU YELSUNG hereby declare that the work presented in this dissertation is the result of my own investigation, and that, except the work of other people, which have been duly acknowledged, this dissertation has never been presented to this university or elsewhere for any degree.

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ABSTRACT

The purpose of agricultural credit is to provide funds to people who are engaged in agricultural activities in order to improve their living conditions. These credits are normally to be repaid within the stipulated period to enable others benefit. However, credit recovery is an impediment to agricultural credit delivery in the Nadowli/Kaleo district of the Upper West Region. Microfinance has been advocated as the solution to both the failure in the public sector agricultural lending and usurious interest rates charged by informal lenders. Microfinance institutions are, however, unable to fulfil this role in the district and this could be attributed to a number of client socio-economic and microfinance products and service characteristics. It is against this background that this study examined the factors influencing repayment performance of agricultural credit among clients of microfinance institutions in the district. The data used in the study was gathered through a survey of 80 respondents affiliated to three rural microfinance institutions, and one public institution with a credit programme. Descriptive and inferential statistics were used to examine the factors affecting repayment performances of the clients within the institutions. The study found that four socio-economic variables namely, gender, age occupation and use of informal sources of credit have significantly affected repayment performance of the clients. The results further showed that interest rate, lending methods, number of collateral requirements and saving demands were the product characteristics affecting repayment performance. The results also showed that 53% of respondents continue to patronize informal credit sources while they remain clients of MFIs due to the appropriateness of their products and services. The study recommends MFIs identify and integrate informal financial strategies into mainstream microfinance and charge realistic interest rates to make credit programmes sustainable. It also recommends that public institutions offering credit services should do so with partnerships with other institutions who has expertise in credit management.

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DEDICATION

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TABLE OF CONTENTS

Content	Page
DECLARATION	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ACRONYMS	xii
 CHAPTER ONE	 1
INTRODUCTION	1
1.1 General introduction.....	1
1.2 Background	1
1.3 Problem Statement	4
1.4 Research questions	6
1.5 Research Objectives	6
1.6 Conceptual framework	6
1.7 Scope and organization of chapters.....	7
 CHAPTER TWO	 9
LITERATURE REVIEW.....	9
2.1 Introduction.....	9
2.2 Approaches to microfinance delivery	9

2.2.1 Welfare approach	10
2.1.2 Financial system approach	10
2.3 Socio-economic characteristics of clients and repayment performance	11
2.3.1 Gender and repayment performance	12
2.3.2 Age and repayment performance	12
2.3.3 Household size and repayment performance	13
2.3.4 Educational level and repayment performance	13
2.3.5 Occupation and repayment performance	14
2.3.6 Use of informal sources of credit and repayment performance	14
2.4 Microfinance financial products: characteristics and repayment performance.....	15
2.4.1 Credit characteristics of MFIs and repayment performance	15
2.4.2 Savings of clients and repayment performance.	22
2.5 Non-Financial Services of Microfinance Institutions and repayment.....	23
2.6 Performance Indicators of MFIs	24
2.7 Repayment rate and repayment performance.....	25
2.8 Summary	26
 CHAPTER THREE.....	 27
RESEARCH METHODOLOGY	27
3.1 Introduction	27
3.2 Study Area.....	27
3.3 Population	28
3.4 Sources of finance	29
3.5 The Research Process.....	29
3.5.1 Study Design	30

3.5.2 Sample size and sampling procedures.....	30
3.5.3 Tools for Data Collection.....	33
3.5.4 Sources of Data and Collection.....	34
3.5.5 Data Quality Assurance.....	34
3.5.6 Data collection procedure	35
3.5.7 Data Analysis and Presentation.....	35
3.6 Challenges of the study	37
3.7 Summary	37
 CHAPTER FOUR.....	 38
RESULTS AND DISCUSSIONS	38
4.1 Introduction.....	38
4.2 Socio-Economic Background of Respondents and repayment performance	38
4.2.1 Gender and repayment performance	38
4.2.3 Educational level of respondents and repayment performance.....	40
4.2.4 Occupational distribution of respondents and repayment performance.....	41
4.2.5 Distribution of respondents by household size to repayment performance	42
4.2.6 Informal loan use and client repayment performance.....	43
4.3 MFI product characteristics and repayment performance.....	45
4.3.1 Interest rates and repayment performance	45
4.3.2 Frequency of instalments and repayment performance	46
4.3.3 Loan size and repayment performance	47
4.3.4 Method of securing loans and repayment performance	48
4.3.5 Saving and repayment performance.....	49
4.3.6 Lending Methods and repayment performance	50

4.4 Non-financial MFI services and repayment performance.....	51
4.4.1 Production training and repayment performance	51
4.4.2 Marketing services and repayment performance	52
4.4.4 Literacy training and repayment performance	54
4.5 Summary	55
 CHAPTER FIVE.....	56
SUMMARY, CONCLUSION AND RECOMMENDATIONS	56
5.1 Introduction.....	56
5.2 Summary of major findings	56
5.2.1 Socio-economic characteristics affecting repayment performance.....	56
5.2.2 Microfinance institutions products influencing repayment performance	57
5.2.3 Microfinance services affecting repayment performance	58
5.3 Conclusions.....	59
5.4 Recommendations.....	60
 REFERENCES.....	62
APPENDICES	67
Appendix 1: Client Questionnaire.....	67
Appendix 2: MFI Questionnaire	73

LIST OF TABLES

Table 3. 1: List of institutions selected by category.....	32
Table 3. 2: Number of respondents from selected institution	33
Table 4. 1: The effect of gender on repayment performance	39
Table 4. 2: Contribution age to repayment performance of agricultural credit.	40
Table 4. 3: The effect of educational level on repayment performance.....	41
Table 4. 4: Contribution of occupation to repayment performance	42
Table 4. 5: Effect of household size on repayment performance.....	43
Table 4. 6: Effect of informal loans on repayment performance	44
Table 4. 7: Effect of interest rate on repayment performance.....	46
Table 4. 8: Effect of frequency of payment installments on repayment performance	47
Table 4. 9: Effect of loan size on repayment performance	48
Table 4. 10: Effect of number of collateral methods on repayment performance	49
Table 4. 11: Contribution of savings to repayment performance.....	50
Table 4. 12: Effect lending methods on repayment performance	51
Table 4. 13 : Contribution of production training to repayment performance.....	52
Table 4. 14: Effect of marketing services on repayment performance.	53
Table 4. 15: Effect of health service on repayment performance	54
Table 4. 16: Effect of literacy training on repayment performance	55

LIST OF FIGURES

Figure 1. 1: Conceptual framework	7
Figure 3. 1: Map of Upper West Region Showing Study Area	28
Figure 3. 2: The research process.....	30

LIST OF ACRONYMS

BRI	Bank Rukayat Indonesia
CGAP	Consultative Group to Assist the Poorest
CU	Credit Union
DADU	District Agricultural Development Unit
FAO	Food and Agriculture Organization
FNGO	Financial Non-Governmental Organization
GH¢	Ghana cedi
GLSS	Ghana Living Standard Survey
GSDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
IFI	Informal Financial Institution
IFPRI	International Food Policy Research Institute
MFI	Microfinance Institution
MOFA	Ministry of Food and Agriculture
MOFEP	Ministry of Finance and Economic Planning
NGOs	Non- Governmental Organizations
NKDA	Nadowlie –Kaleo District Assembly
RCB	Rural Community Bank
RMFI	Rural Microfinance Institution
SPSS	Statistical Package for Social Scientist

CHAPTER ONE

INTRODUCTION

1.1 General introduction

This chapter is an introduction and background to the study of the factors influencing repayment performance of agricultural credit among clients of Microfinance Institutions (MFIs) in the Nadowli/Kaleo district. It gives the study context, raises questions about the problem and states the objectives of the study. It also gives insights into the significance of the study.

1.2 Background

Agriculture is an important sector of the economies of many countries, especially in developing countries where the sector is large in terms of both aggregate income and labour force (World Bank, 2007). Dethier and Effenberger (2012) report that the major challenge in the World today is the need to increase food productivity and production especially in Sub-Saharan Africa with small holder farmers. To achieve this, a number of problems have to be addressed. One of such problems is agricultural credit.

Credit has been observed to facilitate agricultural development through increased productivity by intensifying use of inputs such as seed and fertilizer (Ali, Deininger & Marguerite, 2014). Abedullah, Mahmood and Kouser (2009) expressed similar observations when they describe agricultural credit as an integral part of the process of modernising agriculture and commercialisation of the rural economy. Dohcheva (2009) also describe credit as a lubricant that provides a push to the development process of agriculture. In Ghana, it is seen as the back bone of many businesses and more so agriculture which has traditionally been a non-monetary activity for the rural population.

The efficient introduction and provision of cheap credit is seen as the major means of promoting agricultural development in Ghana (Haselip, Desgain & Makenzie, 2014).

Despite the importance of credit to agricultural development in Ghana, the issue of agricultural lending is faced with many challenges. Sakyi-Dawson, Tambi and Odularu (2011) observed that lending for agriculture has been a major constraint because of high default rates due in part to high risks (climatic risks, price fluctuations, pest and disease) and the absence of risk mitigation/management tools. Other challenges to agriculture and rural finance in Africa include among others, poor infrastructure, dispersed populations and high information and transaction costs; limited numbers of and inadequate capacity of rural finance institutions; crowding out of collateral due partly to lack of property rights; and restrictive legal framework for enforcing contractual agreements (Dethier & Effenberger, 2012).

Microfinance, defined as providing financial services tailored to the needs of the poor (Despellier, Guerin & Mersland, 2011) is seen as an alternative solution to agricultural lending and rural finance (Armendariz & Murdoch, 2005). Microfinance is specifically important for farmers because they often lack the necessary collaterals and preconditions to obtain credit from formal lending institutions (Nader, 2007). In this context, credit from microfinance institutions (MFIs) serve as a tool to combat poverty on one hand and to correct failures in agricultural lending on another hand.

The concept and practice of microfinance have changed dramatically over the last decade and the microfinance sector is increasingly adopting financial systems approach, either by operating on commercial lines or by systematically reducing reliance on interest rates, subsidies and/or aid agency financial support (Rhyne &

Otero 2006). The financial systems approach supports the argument that microfinance institutions should aim for sustainable financial services to low income people.

Recent literature has revealed low repayment and high delinquencies as the main challenges facing MFIs and other public sectors in financing agriculture (Hundie, Belay & Demeke, 2004; Ernst & Young, 2012; Warui, 2012). Quartey, Uldry, Al-hassan and Seshie (2011) show that supplying of loanable funds does not necessarily expand the production frontier and result in higher earnings, and that unless the risk is managed, loanable funds will disappear into bad debts. The increasing default in the repayment of loans and the unsustainability of many credit programmes may have various implications. Primarily, defaults discourage both public and private financial institutions from giving further loans to defaulters, blacklisting of affected farmers and even threats of court action (Robinson 2001). Consequently the overall agricultural productivity may diminish.

Given the above challenges, most policy and programme efforts to enhance sustainable credit to smallholder farmers have focused on group-based credit schemes. The mechanisms of group lending, such as peer pressure and group solidarity are touted as instruments to attaining favourable repayment rates. However, repayment rates vary drastically from one source to another and from one programme to another which suggests the inherent instability of the financial technology (Odongo & Kendi, 2013). Such credit programmes appear to merely copy well known programmes that are successful under different socio-economic and agro-ecological conditions.

To ensure sustainable credit delivery to smallholder farmers through enhanced repayment performance, MFIs and public sector lending institutions need to employ

other dynamic strategies in designing flexible and tailor-made financial products and ingenious use of varying incentive mechanisms.

1.3 Problem Statement

Access to credit is a major constraint to agricultural development in the Nadowli district. Such a constraint has been observed to have negative effects on livelihood outcomes of the people such as low productivity, malnutrition and food insecurity (Ali, Deininger & Marguerite, 2014). The possible causes of the above situation could be related to the unwillingness of formal financial institutions to offer credit for farming activities due to high default rate of bank loans or farmers inability to offer collateral security.

It is against this background that microfinance institutions in the district adopted agricultural lending as a means of bridging the gaps created by lack of access to credit. Studies have shown that credit can improve the livelihood of farmers. For instance Woller (2002) stated that in rural communities providing microfinance services to the small scale farmers is perceived as a means of increasing food production and raising incomes.

There are as many as six rural microfinance institutions that operate in the district. They include Vision fund, Nadowli Credit Union (NCU), Sombo Credit Union (SCU), Sonzelle community rural bank, Snapi Aba Trust and Sombo Village Savings and Loans Scheme (SVSLS). In addition to the above mentioned institutions, other public sector institutions such as the Ministry of Food and Agriculture (MoFA) and District Assembly also offer credit services to farmers.

These credit institutions have different products and services. The major products and services offered by these MFIs are agricultural credit, savings and in some cases non-

financial services such as production training, health services, marketing services and health services. Observations have shown that the credit unions (CU) and rural banks (RCB) prefer to offer credit in the form of cash while the financial non-governmental organizations (FNGOs) prefer to give credit in the form of inputs. These institutions also have varied products and services characteristics in terms of credit terms, frequency of collecting installments, interest rates and provision of non-financial services.

These products and services are offered to clients with varied socio-economic characteristics such as gender, age, educational level, marital status and sources of finance. Socio-economic factors have always been a contributing factor to repayment of agricultural credit. Hundie, Belay and Demeke (2004) observed that a complex set of socio-economic and demographic factors affected repayment of agricultural inputs loans in Ethiopia and recommended that MFIs should seriously check and improve these situations through appropriate financial and non-financial products and services. Godquin (2004) also observed that successful agricultural lending highly depends on eliminating socio-economic barriers to repayment of loans by farmers.

Similarly, it has been observed that variation in products and service characteristics such as loan size, repayment schedules and lending methodology by different MFIs could serve as contributing factors to farmers' failure to repay agricultural loans. Adequate knowledge on the part of MFIs on what clients perceived as quality products and services has been observed to eliminate barriers to repayment by avoiding products and services characteristics that do not meet client expectations (Dunford, 2000; Bhat & Tang, 2001; Armendariz & Morduch, 2005). The study therefore attempts to answer the following questions:

1.4 Research questions

- What is the relationship between socio-economic factors and repayment performance of agricultural credit?
- What relationship exists between MFI products and service characteristics and repayment performance of agricultural credit?

1.5 Research Objectives

The study aims at examining how socio-economic factors and MFI products and service characteristics influence the repayment performance of agricultural credit delivered to smallholder farmers.

Specific Objectives:

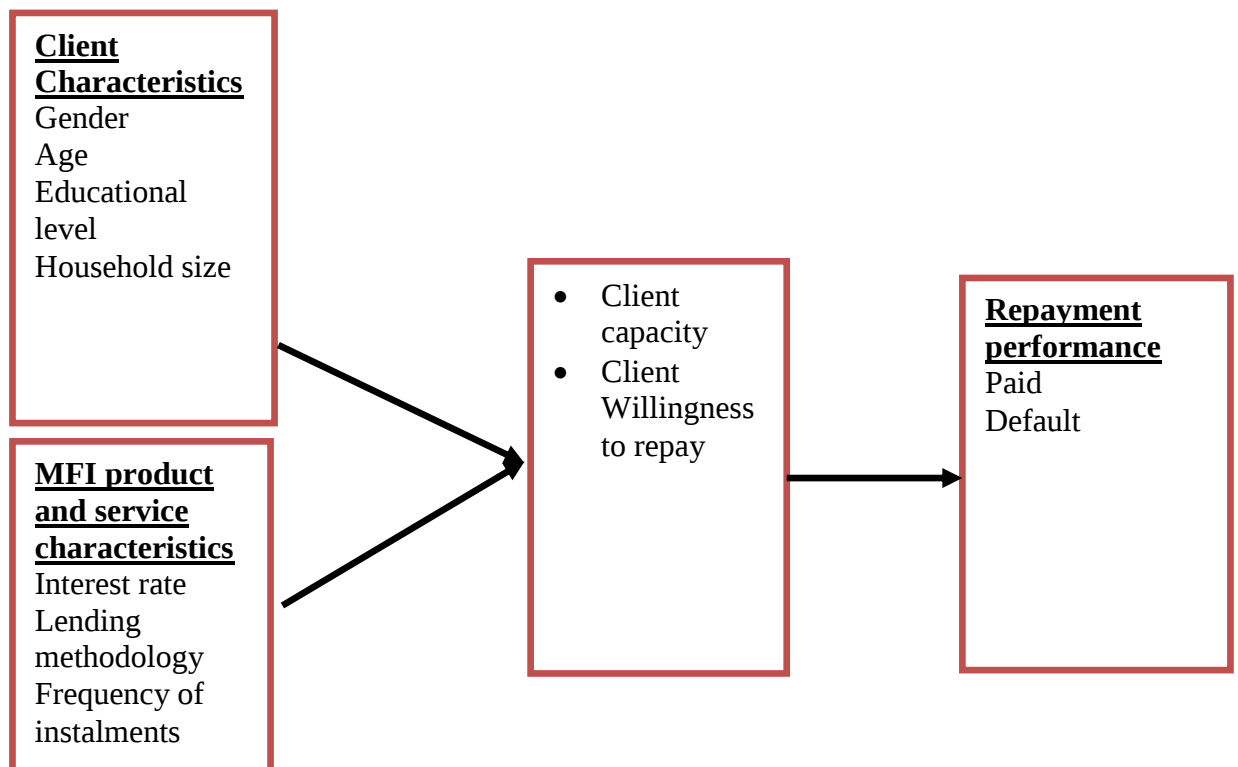
- i. To determine the contribution of selected socio-economic characteristics of farmers to the repayment performance of agricultural credit in the Nadowli/Kaleo district.
- ii. To determine the relationship between MFI product characteristics and repayment performance of agricultural credit in the Nadowli/Kaleo district.
- iii. To determine how non-financial services influence the repayment performance of agricultural credit to small holder farmers in the study area.

1.6 Conceptual framework

The model in figure 1.1 suggests links between both MFI and clients' characteristics and repayment performance that is moderated by the ability and willingness of clients to repay. It has been observed (Cohen, 2002; Dunn, 2002; Woller, 2002) that MFIs can enhance repayment performance of clients by designing a mix of products and services tailored to

meet their varied needs. It is also argued (Hundie , 2004) that loan repayment performance by farmers is influenced by a complex set of socio-economic, demographic and institutional factors. Farmer willingness and ability has been observed to be directly linked with repayment performance as both attributes are essential for repayment of credit (Jain & Mansuuri, 2004).

Figure 1. 1: Conceptual framework



Source: Author's own design (2014)

1.7 Scope and organization of chapters

The study was limited to clients of four institutions in the Nadowli district and the focus was on assessing the socio-economic and MFI products and service characteristics that influence repayment performance of agricultural credit. The rest of this dissertation is divided into four chapters. Chapter two presents the linkages between the various variables and repayment performance. It also consists of review of relevant literature in relation to

the topic under study. Chapter three discusses the methodology employed in the study which include the design, data collection, sampling techniques and data analysis. In chapter four, the results and findings are discussed. Conclusions and recommendations are presented in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is divided into five sections. The first section is focused on philosophical approaches to microfinance delivery. The second section discusses the socio-economic characteristics of clients affecting repayment performance. Section three is dedicated to MFI product characteristics that are likely to affect repayment performance of clients while the fourth section takes a look at literature on the effect of non-financial services on repayment performance. Finally, the fifth section is on performance indicators of micro financial institutions. A funnel approach was adopted, by looking at related issues from the global to the regional levels and gradually narrowed down to the local situation.

2.2 Approaches to microfinance delivery

Two main approaches to microfinance delivery are discussed in order to place the study in its right context: welfare approach and institutional approach (Robinson, 2001). The provision of microfinance has been explained from two philosophical perspectives (Armendarize & Morduch, 2005). First is the institutional approach which argues that MFIs' sustainability is paramount and should be able to cover both operational and financial costs with programme revenue. Next is the welfare approach which take odds with the institutionists over the issue of sustainability. They argue that MFIs can attain self-sufficiency without achieving financial self-sufficiency (Murdoch, 2000). The following section discusses the two approaches briefly.

2.2.1 Welfare approach

Under the poverty lending or welfare approach, focus is on using credit to overcome poverty, primarily by providing credit with subsidized interest rates. The main argument of the advocates for this approach is that the poor cannot afford high interest rates. Therefore, aiming at sustainability will ultimately go against large groups of poor borrowers. This implies that there is a trade-off between sustainability and outreach. Thus *welfarists* gauge success in terms of social metrics rather than financial viability.

2.1.2 Financial system approach

This approach emphasizes the need for financial sustainability of microfinance programmes. It stresses the importance of being able to cover costs of lending money out of the income generated from the outstanding loan portfolio and to minimize operational costs as much as possible (Hermes & Lensink, 2011). The proponents of this approach argue that large scale microfinance, sustainable over time, can only be attained in financially self-sufficient regulated institutions (Robinson, 2001). They claim that there is no empirical evidence to show that the poor cannot pay high interest rates, nor that there is a negative correlation between the sustainability of an MFI and poverty level of the borrowers. Another argument advanced by Christen & Drake (2002) is that MFIs with motives of profitability will better serve the poorest of the community since their profit motives lead them to be more efficient and be willing to seek new markets for their products. Empirical evidence supports this position. Mersland & Strom (2009) observed 379 rated MFIs in 74 countries and concludes that there was no evidence of mission drift.

In recent years the debate appears to settle in favour of the proponents of the financial system approach (Hermes, Lensink & Meesters, 2009). The importance for striving for

sustainability by MFIs has been embraced by most parties involved in the microfinance debate.

Against this background, most policy makers, donors and financiers have shifted focus from subsidizing MFIs toward financial sustainability and efficiency of these institutions. This shift in focus according to Ryne and Otero (2006) is due to a number of developments the microfinance business has been recently confronted with, such as the increased competition among MFIs, technological changes and financial liberalization and regulation policies of the governments. These developments have induced MFIs to change their behavior, and to broaden their products and services. The question that immediately pop up is to what extent does changes in these products and services has implication on the repayment performance of smallholder farmers? It is viewed that repayment performance of an MFI clients should play a key role in ensuring sustainable delivery of credit services to its clients. Empirical investigations has shown a number of socio-economic and product design factors that may affect the likelihood of delinquency on microcredit obligations. In Ghana, Ernst & Young (2012) found that training given to an MFI borrowers, the amount of the loan, time of delivery and age are significant factors affecting loan default. Similarly, Laure and Baptiste (2007) found that loan amount is a significant variable affecting default in microcredit programs in Bangladesh. Interest rate has also been found to be an important factor affecting microcredit loan delinquency (Warui, 2012; Pereira & Mourao, 2012).

2.3 Socio-economic characteristics of clients and repayment performance

Socio-economic characteristics is critical to understanding determinants of repayment performance of microfinance clients. Hundie et al. (2004) reports that the nature of

financial services demanded by farmers are strongly influenced by their socio-economic circumstances such as age, sex, education level and household size. These are important in assessing clients in order to design tailor-made products and services.

2.3.1 Gender and repayment performance

Many MFIs target primarily, or exclusively women. This practice is based on the common belief that women invest loans in productive activities or improving family welfare more often than men, who are assumed to rather consume than invest loan funds. Pitt and Khanker (1998) use empirical data to test the hypothesis that women used borrowed funds more efficiently than men. Using household expenditures held by women, male and female labor supply, and boys and girls schooling as measurement outcomes, they conclude that women used borrowed funds better than men in Bangladesh microfinance programmes. Examining a related issue Kevane and Wydick (2001) use a sample of 341 MFI participants to analyze the assertion that male borrowers produce more economic growth than women and that women facilitate more poverty alleviation. They find no significant difference in repayment performance with respect to gender.

2.3.2 Age and repayment performance

Age as a determinant of repayment performance is replete in literature. Hundie (2004) assessed factors influencing repayment of agricultural inputs loans in Ethiopia. They conclude that on the average younger farmers are more likely to default in repayment than older farmers. Working on a similar issue, Shariff and Naiwar (2012) found no significant relationship between age and repayment performance in Madagascar microfinance programmes. Also in support of the insignificance of age as a determinant of repayment,

Zeller (1996) worked on determinants of repayment performance in groups and found no significant relationship between average age of group members and probability to default in Madagascar.

2.3.3 Household size and repayment performance

Household size has been defined as the number of people who live together in a residential unit (Moser, 1993). The effect of household size on loan repayment has been observed by Bichanga and Aseyo (2013) who studied causes of loan default in Kenya. Their results revealed that majority of MFIs clients have larger household but was not clear whether the propensity to default was high. Similarly, Navajas, Schreiner, Meyer, Gonzalez-Vega, and Rodriguez-Meza (2000) observed that large households allow for diversity of income sources among family members and result in complex demand for financial services. The diversification of income sources could either lead to default or enhanced repayment performance.

2.3.4 Educational level and repayment performance

Views about the impact of client education on repayment of agricultural credit is varied in literature. For instance Sharif and Nawair (2012) argue that education increases the ability of farmers to seek, process and use information more than illiterate farmers. As a result literate farmers may seek information on better prices and consequently sell their produce at better prices. Ability to sell at higher prices is expected to have a positive impact on repayment of credit. In contrast, Zeller (1996) uses education level as an indicator of human capital in assessing repayment performance of credit groups and found it to be insignificant.

2.3.5 Occupation and repayment performance

Occupation as a determinant of repayment performance has been discussed by several authors. Navajas et al. (1996) observed that multiple occupations enhance repayment performances by diversifying income sources in risky environments. Similarly, Armendariz and Murdoch (2006) argued that borrowers should have other sources of income to repay loans even if the project for which the loan was intended failed. Also in support of multiple occupations, Shariff and Nawair (2012) observed that households with diverse occupations had improved repayment in Malaysia.

2.3.6 Use of informal sources of credit and repayment performance

A number of studies have observed that MFI member households participate extensively in informal credit markets. In support of this, Jain and Mansuuri (2003) used household survey data from the International Food Policy Research Institute (IFPRI) in a study on repayment schedules of microfinance programmes. They conclude that households who are members of MFIs programmes continue to borrow extensively from informal sources and use a significant proportion of the informal loans to repay other debts, including debts to MFIs. Specifically, they argue that the tight repayment schedules of many MFIs force many borrowers to borrow from money lenders to repay MFI loans. Sinha and Martin (1998) points out that cross-financing takes place because of the large increase in MFI lending in which the proceeds from one loan are being used to repay another. Clients borrow from informal sources so they can maintain high repayment rates with MFIs to be eligible for larger future loans. Zeller (1996) reports that 9% of funds borrowed from informal sources were used to pay existing debts.

2.4 Microfinance financial products: characteristics and repayment performance

This section discusses product characteristic of microfinance on repayment performance. It is very significant to recognize that the focus of microfinance has shifted from credit mono- product to include a wide array of financial services, and that the target market has broadened from microenterprises to include low income households, including both business and family needs (Rhyne & Otero, 2006). MFIs provide similar products and services to their customers as formal financial institutions. The scale and methods of delivery differ but the fundamental products and services are the same (Woller, 2002). According to Ledgerwood (1999), MFIs provide a range of products to clients including credit, savings, insurance, credit cards and payment services. The characteristics of these products and services are thus critically to the enhancement of repayment performance of agricultural credit from MFIs clients.

2.4.1 Credit characteristics of MFIs and repayment performance

Credit is defined as borrowed funds with specified terms of repayment (Ledgerwood, 1999). It is argued that when return on loans exceed the interest rate charged, it makes sense to borrow rather than to postpone the investment. Most MFIs strongly focus on credit and in some countries, flexible loans remain the predominant product offered (Rhyne & Otero, 2006). Credit is usually made for business purposes in order to generate revenue within a business. MFIs may also make loans available for consumption, housing or special occasions. In a baseline study of eighty (80) MFIs conducted by Ernst & Young (2012) for the Ministry of Finance and Economic Planning (MOFEP), ten main categories of credit products were identified in Ghana. They include agricultural credit, housing loans, consumer loans, education loan, microenterprise loan, susu credit, corporate loan, trade and other household loans. The necessity for MFIs to design credit products with

characteristics that meet the target market has been discussed (Ledgerwood, 1999; Robinson, 2001; Armendariz & Morduch, 2005; Rhyne & Otero, 2006). This involves establishing appropriate loan amounts, loan terms, collateral requirements, interest rates and fees, lending methodologies, appropriate delivery time, and potentially, compulsory savings.

Cash patterns, Loan terms, interest rates and repayment performance

The literature links repayment performance of MFI clients to understanding credit fundamentals, including cash patterns of borrowers, loan amounts, loan terms and interest rate (Ledgerwood, 1999; Armendariz & Morduch, 2005; Ahlin, Lin & Maio, 2011). It is argued (Ledgerwood, 1999) that to design a loan product that meets the needs of borrowers, the cash inflow and outflow patterns of borrowers must be understood. Cash inflows are the cash received by the business or household in the form of wages, sales revenues, gifts and loans. The cash paid by the business or household to cover purchases and payments is termed the cash outflow. Armendariz and Morduch (2005) observed that it is important to determine cash patterns of borrowers before advancing credit since borrowers must have other streams of income to draw on to repay the loan even if the investment for which the loan was taken failed. This is particularly important for agricultural credit in which a bad drought, flood, pest and disease infestation can devastate an entire region.

Interest rate on the other hand, may be defined as the amount of money paid by borrowers for using borrowed funds, stated as a percentage of the amount borrowed (Ledgerwood, 1999). Borrowers are demanders of loanable funds and lenders are suppliers of loanable funds. The levels of interest rates play a major role in determining the sustainability of any credit scheme (Godquin, 2004). While clients will prefer low interest rates, it has a lot of adverse effects on the future sustainability of future schemes. There continues to be a debate

as to what effect interest rate has on repayment and what constitute an appropriate interest rate to be charged on smallholder loans. According to Robinson (2001), the provision of interest rate below those in the informal sector has resulted in the failure of many public credit schemes to reach their target groups. She argued that the poor does not mind paying high interest rate to obtain quality service.

CGAP (2002) indicated that interest rates should be set with the aim of providing viable, long term financial services on large scale. To reach a good degree of sustainability, MFIs must set interest rates that cover all administrative costs plus the costs of capital, loan loss and provision for increasing equity.

With regards to the loan amount, the following is proposed by Ledgerwood (1999:135): “The loan amount should be based on the cash pattern of the borrower and designed as much as possible to enable the client to repay without undue hardship. The appropriate loan amount should depend on the debt capacity of the client”. A number of authors have identified loan amount as a determinant of repayment performance (Hundie et al., 2014; Bichanga and Aseyo, 2013; Sharif & Nawair, 2012).

Loan repayment schedules and repayment performance

A number of studies have examined loan term and repayment frequencies on stability of loan use. Jain & Mansuri (2003) report that microlenders often expect loans to be paid in small installments starting immediately after disbursement. According to them, in the Garmin Bank model, installments are made on weekly basis while in Bolivia microlenders Caja dos Andes demanded daily payment from about half of its clients. One argument that explain why MFIs demand frequent installments is that it creates a warning system. By meeting weekly, credit officers get to know their clients well by seeing them on frequent

basis. This information can offer credit officers' early warnings about emerging problems and help to clamp them when there is the need (Armendariz & Morduch, 2005). They stressed the value of the early warning feature, asserting that the most important tool for the monitoring of borrowers in lending technologies is requiring frequent repayments followed by immediate reaction in the case of arrears.

However, Jain & Mansuri (2003) argued that while frequent repayment is critical in keeping the probability of default low, they increase the transaction cost incurred by the borrower and thereby reducing the quality of service to the borrower. Armendariz and Morduch (2005:131) rebutted by suggesting that "for borrowers that have difficulty saving, frequent repayment schedules can increase the quality of service to the client. They reinforced their suggestion through the statement: "If borrowers must wait months before they repay loan installments, part of their earnings may be dissipated as neighbors and relatives come by for handouts, spouses dip into the household kitty, and discretionary purchases command attention. Months later funds may not be there to repay the bank" (Armendariz & Morduch, 2005: 132).

One notable problem faced by frequent repayments is the difficulty it poses to areas focused on seasonal activities such as agricultural cultivation (Ledgerwood, 1999). In particular, tight repayment schedules may preclude borrowers from long-term investments, as is often in the case of agriculture where the production cycle is longer than in several other activities (Pellegrina, 2011). In addition, farmers may encounter difficulties to commit to regular repayment installments due to risks related to climatic conditions. For such seasonal activities it may be necessary to design the loan in such a way that lump sum repayment is made when the activity is completed (Ledgerwood, 1999).

Lending Methodology and repayment performance

Lending methods in microfinance usually follow two main approaches: individual and group lending. The group lending model, first used in Bangladesh is globally touted as a financial technology that improves the repayment rates by mitigating the problem of adverse selection (Armendariz & Morduch, 2005; Baland, Somanathan & Wahhaj, 2013). Godquin (2004) observed that group lending mitigates the risks associated with information asymmetry. For instance, because borrowers are linked by joint liability, if a group member switches from a safe business to a risky one (moral hazard), the probability that the other group members may have to pay the debt rises. The fear of paying the other's debt gives group members the incentive to monitor each other. The reduction in group members' default through peer pressure and social ties has also been discussed (Bichanga & Aseyo, 2013; Odongo & Kendi, 2013; Gutman, 2008).

Group lending with all its advantages is not without setbacks. Savita (2007) argues that group lending is associated with additional costs of group formation, training of borrowers on group procedures and higher frequency of installments payments. These costs increase interest rates of microloans leading to high repayment risks. Similarly, Maria (2009) also claim that group monitoring may be rendered ineffective where social ties are loose and the cost of monitoring each other high. Other researchers argue that joint liability in lending serve as a disincentive by penalizing good credit customers (Gine & Karlan, 2010), could hinder optimal use of credit (Madajewicz, 2011) and might even endanger repayment since the incentive of future credit is no longer present in case one member fails to repay (Besley & Coate, 1995).

Although group lending make the bulk of microloans worldwide, individual lending is significant in some areas and is growing in popularity (Brau & Woller, 2004). Armendariz

and Morduch (2005) considers microfinance beyond group lending in Eastern Europe, Russia and China. They describe the mechanisms that enable MFIs to successfully penetrate new segments of rural credit markets. These features include direct monitoring, regular repayment schedules and non-refinancing treats.

Individual lending also present several advantages. For instance Savita (2007) observed that the guarantor exerts sufficient pressure on the client to repay individual MFI loans in Kenya and Ghana. However Jane and Mansuri (2003) argue that the guarantee mechanism, especially personal guarantees, would only enhance repayment if the borrower have sufficient assets that can be pledged as a surety and if the institutional framework permits the actual transfer of ownership of the pledge from the borrower to the creditor easily. They contend that these two conditions are not met in many developing countries. Another argument advanced in favour of individual lending is that it spares borrowers the negative effects of group activities such as loss of time spent in group meetings and loss of privacy when they discuss their financial situation and investments with peers (Maria, 2009).

Progressive lending and non-refinancing threats

When a borrower has continual credit needs, access to future loans can provide a strong incentive to avoid default on a current loan. Furthermore, continual increases in loan size, or 'progressive lending,' improve a borrower's incentive to repay on time. In that case a borrower might even choose to borrow from other informal sources like moneylenders to repay the current loan (Jain & Mansuri, 2003).

Ensuring repayment incentives through refinancing is modeled in the context of microfinance by Armendariz and Morduch (2005). Using a two-period model, they

demonstrated how repayment of the first loan is induced with the promise of a second bigger loan.

In practice, MFIs stipulate that once a borrower defaults on a loan, she/he becomes forever ineligible for future loans. This tactic is almost universally employed by MFIs and is a fairly means to ensure repayment. Although commonly employed and considered successful, the non-refinancing threats may unnecessarily diminish borrower welfare (Tedeschi, 2005). Accordingly, rather than discarding borrowers forever, he suggest the design of the contract be changed, whereby defaulting borrowers can be made to enter a “finite punishment phase.

Methods of securing loans and repayment performance

One premise of microfinance is that borrowers are too poor to offer collateral. Loans are thus secured through non-traditional methods such as group solidarity. But in practice, some microfinance lenders do require some collateral. Armendariz and Morduch (2005) reports that in rural Albania, microlenders require tangible assets such as land, livestock, future harvest and housing to be put up as collateral, and that programmes have been vigilant in enforcing agreements if clients fail to repay. In Ghana, Ernst & Young (2012) conducted a survey on rural microfinance institutions (RMFI) and observed that the only loan product without collateral security was microenterprise loans. It was noted that several methods were used to secure agricultural loans ranging from personal guarantee, group guarantee, landed property to percentage of loan amount required as compulsory savings

The influence of traditional means of collateral on loan repayment carries different views in literature. In order to reach the poorer customers, some micro finance institutions introduce products that require no collateral at all. According to Armendariz and Morduch

(2005), Bank Rakyat Indonesia (BRI) is flexible in the assets that it accepts and that in practice collateral is not a major constraint when seeking out poor clients. Instead the bank provide ways for borrowers to build up financial assets (financial collateral) and then base the lending on those assets. Typically, it requires that borrowers hold a saving account of up to three months before borrowing was allowed. The maximum loan size was determined as the current savings plus ten (10) times the monthly net inflow of savings over the previous three months. The bottom line is that financial collateral can be an innovative way of facilitating lending and ensuring repayment without traditional means of collateral.

2.4.2 Savings of clients and repayment performance.

Savings mobilization has long being a controversial issue in microfinance parlance (Ledgerwood, 1999). The transition of microcredit to microfinance has brought a realization that low-income households can profit through a wide range of financial services than just credit (Armendariz & Morduch, 2005). According to them, this has been demonstrated in Dhaka, Senegal where *SafeSave*, a cooperative bank working in the slums of the country sends it sixty staff on daily rounds, during which customers are visited in their houses or business to collect deposits and repayment of loans. Nourse (2001) reviews the context and rise of microfinance products and argue that there is the need for savings and insurance services and not just credit products. He argues that MFIs need to provide tailored saving products for the poor instead of rigid loan products. Similarly, Cohen (2002), Dunn (2002) and Woller (2002) argue that MFIs needs to be more-client focused, including offering a mix of financial products tailored to varied needs and wants of poor consumers if they are to reduce indebtedness. Similar views were expressed by Schreiner (2000) when he indicated that there was a positive correlation between deposit worth of an MFI and interest rates, minimum balance, convenience and repayment performance.

Within the savings function of microfinance, it is useful to divide saving services into compulsory and voluntary savings. In a forced program, clients are required to save a minimum amount each week (or other set period of time). Forced savings ostensibly teaches financial discipline and provides the MFI with the additional information about clients (Brau & Woller, 2004). In practice, forced savings serves primarily as a form of cash collateral and source of funds for the MFI. Rules regulating when and how clients may withdraw forced savings are highly restrictive

The second form of savings is voluntary saving. According to Nourse, (2001) all strata of poor people do not operate enterprises, but they do save, albeit in very small amounts and at inconsistent intervals. Savings are integral to poor households' risks management strategies; they constitute the first line of defense to help poor households cope with external shocks, emergencies, and life-cycle events to which they are so vulnerable; and they play an important role in allowing the poor to take advantage of investment opportunities (Grosh & Somolekae, 1996). It has been observed that at MFIs that offer both enterprise loans and voluntary savings, repayment is enhanced by large multiples. Christen (2001), for example, reports that in a space of two to three years, retail banks in Latin America opened millions of small deposit accounts and experienced an improved credit recovery in countries in which MFIs added less than 200, 000 loan customers over the same period.

2.5 Non-Financial Services of Microfinance Institutions and repayment

Financial intermediation is usually not enough to help low-income men and women overcome barriers to gaining access to financial services, and MFIs have to create mechanisms to bridge the gaps created by poverty, illiteracy, gender and remoteness (Ledgerwood, 1999). Brau and Woller (2004) observed that in most cases clients need

production and business management skills as well as better access to markets if they are to make better use of the financial services they receive (integrative approaches) and to enhance repayment.

Providing effective financial services to low-income women and men therefore requires social intermediation, enterprise development services and social services. Smith (2002) compares minimalist programmes in Ecuador and Honduras to those offering financial services integrated with health education. Using surveys of 963 Ecuadorian clients and 981 Honduran clients, he finds that clients in integrated programmes experienced improved family health, while those in minimalist programmes did not. Also in support of an integrative approach, Edgcomb (2002) and Dumas (2001) each use case methodology to analyze MFIs offering integrated business development training. They conclude that business development training significantly improves microfinance clients' repayment performance and micro entrepreneur empowerment. In contrast, Schicks (2014) working with 531 micro -borrowers in Accra, Ghana find that financial literacy and numeracy do not have consistent significant effects on over-indebtedness. Thus, there are varied views regarding the benefits of integrating financial services and non-financial services in literature.

2.6 Performance Indicators of MFIs

Following Yaron (1992), the performance of an MFI have been judged base on the concept of outreach and financial sustainability. Financial sustainability has been defined as the extent to which the full cost of providing services is directly paid for by the service users. This is usually measured by three set of ratios: the amount of payment received with respect to the amount due (repayment rate); how well an MFI can cover its full costs

without subsidy (financial self-sustainability); and how well it can cover its operational costs without subsidy (operational self-sufficiency).

Outreached is defined as the social value of the output of a microfinance organization (Navajas, Meyer, Schreiner, Gonzalez-Vega & Rodriguez-Meza, 2000). Three set of indicators are widely used: the number of people using services in a given period (breadth of outreach); social/poverty status at the beginning of the period (depth of outreach); and net benefit to each, including indirect benefits to other household and even non-household members during the period (quality of outreach.)

According to Copestake (2007), innovations that reduce costs of providing services can result in simultaneous improvement in both financial and social performance of an MFI, but that many decisions entail a tradeoff between them. For example, raising interest rates on loans is likely to improve financial performance but at the expense of social performance. Many MFIs have emphasized the prime importance of serving more clients through growth. Improved financial performance is also necessary in order to mobilize resources for future social performance (Copestake, 2007). To be sustainable, MFIs should provide innovative services that improves social performance that can help to realize economies of scale to improve financial performance.

2.7 Repayment rate and repayment performance

Repayment rate and repayment performance are used interchangeable and is usually a measure of the amount of payments received with respect to the amount due (Ledgerwood, 1999). It is a good proxy measure for monitoring MFI financial performance over time. It also useful for projecting future cash flows, because it indicates what amount of the loan due can be received since it measures the historical rate of loan recovery. In this study it is uses as the main dependent variable because it is one of the widely used indicators for

assessing MFI sustainability (Brau & Woller, 2004). The choice of this indicator is also consistent with previous studies (Shariff&Nawair 2012; Hundie et al. (2004; Godquin, 2004). The exact technique in assessing repayment performance is a subject of controversy among researchers. For instance Al-zam, Hill and Sarangi (2012) used the number of days late after each due date (delinquency) to study repayment performance of group lending in Jordan. Hundie et al. (2004) adopted a dichotomous variable of default and non-default in studying factors influencing repayment performance of agricultural input loans in Ethiopia. Shariff and Naiwar (2012) categorized repayment performance into three categories of “paid in time”, “delinquent” and “default” in assessing factors affecting repayment performance in Malaysia. This study adopted the technique of used by Hundie et al. (2004).

2.8 Summary

In the literature it came out clearly that MFIs must operate efficiently to cover operational costs so as to survive in a competitive market. It has also been noticed that client socio-economic characteristics should be considered seriously if repayment performance is to be enhanced.

One of the issues that also came out strongly in the literature is that product and service characteristics of MFIs are paramount to enhancing the ability of its clients to repay their loans. Also, it became clear that providing alone is not the sole panacea to the problems of poor people but incorporating other non-financial services to the credit will equip borrowers with the necessary skills to manage their own businesses.

CHAPTER THREE

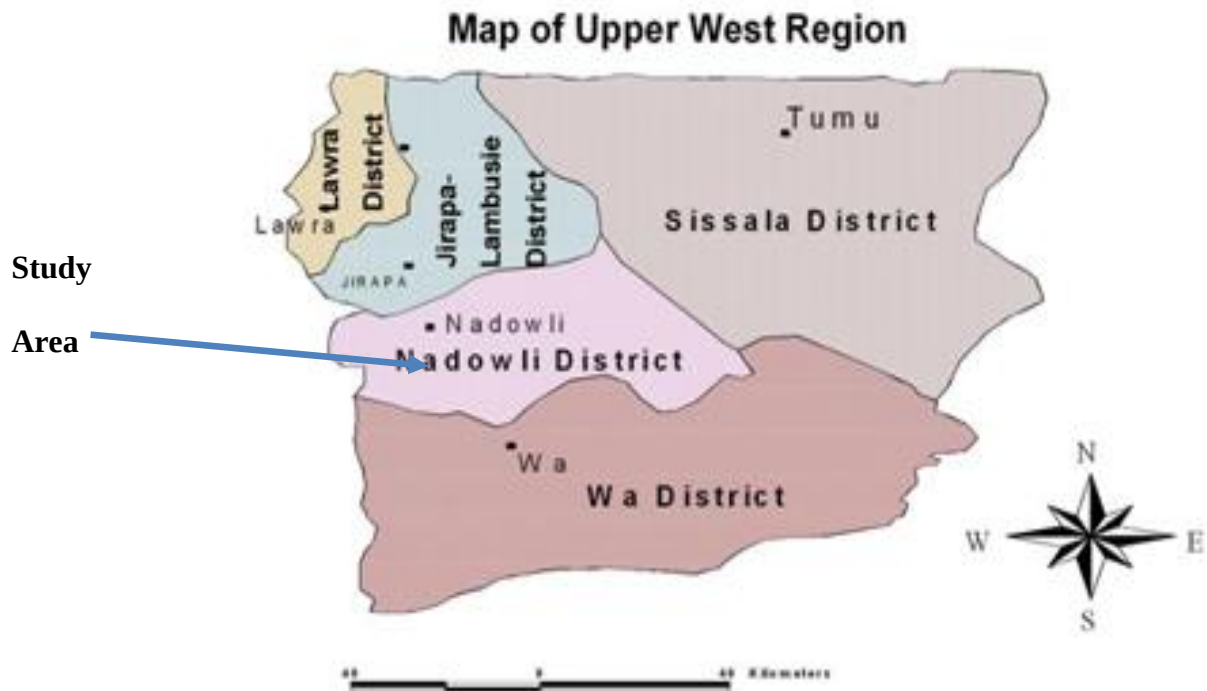
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology refers to the concepts and methods used by scientists in collecting research information that is relevant and meaningful enough to help the researcher understand the phenomenon under study (Twumasi, 2001). This chapter therefore presents the methodological procedures used in carrying out this study in order to obtain accurate and reliable data that provided answers to the research questions. The justification for the use of the various concepts and methods have been provided. Where there are flexibilities in the use of the concepts and methods in order to overcome special challenges, and to introduce innovations into the existing traditional methodologies, it has been stated.

3.2 Study Area.

This study was carried out in the Nadowli/Kaleo district of the Upper West Region of Ghana. The district is bounded to the north by the Jirapa district, to the south by the Wa municipal, to the west by Burkina Faso and the east by the Daffiama-Bussie-Issadistrict. Nadowli, the district capital is 42.0 km from Wa, the Regional capital. It lies between latitude 10.8' 28' and 9.8' 18' North and longitude 2.7' 10' and 1.9' 10' West. The location of the District promotes international trade between the district and neighbouring Burkina Faso (Source: NKDA District profile). Below is the map of the Upper West Region showing Nadowli/Kaleo district.

Figure 3. 1: Map of Upper West Region Showing Study Area**Source: NDKA**

3.3 Population

According to the 2010 Population and Housing census of Ghana, the district has a population of 94,388 made up of 44,724 males and 49,664. This means that females dominate in the district with a percentage of 52.67% while males form 47.33%. Though agriculture is a preserve for men, credit use is not. Hence, equal chances were given to both sexes in the sampling of respondents as discussed later. The study examined users of agricultural credit and repayment performance. From that perspective, the total population per se was of little significance. Attention was focused on clients of MFIs who obtained

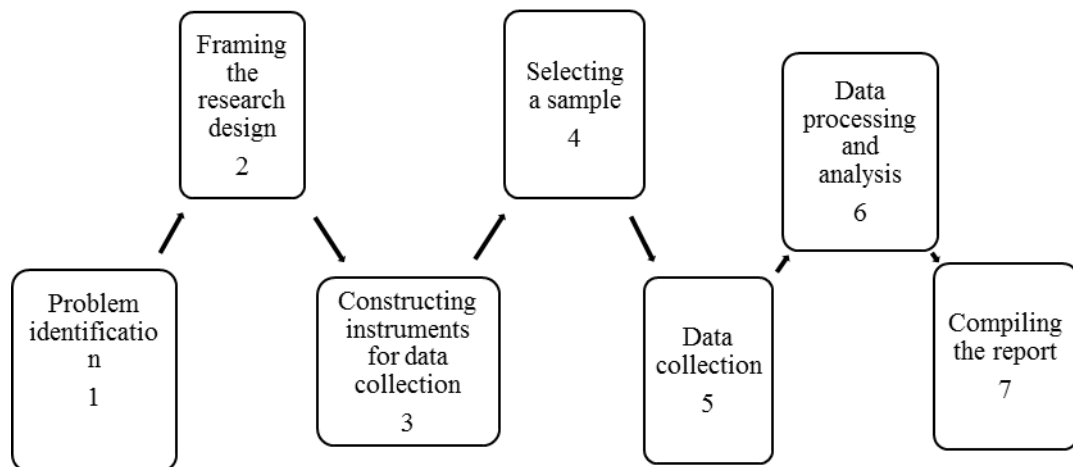
credit for agricultural purposes through cluster sampling of MFIs followed by simple random sampling of respondents.

3.4 Sources of finance

The smallholder farmers in the district mobilize their initial working capital from their own savings. Other sources include relatives, friends, and moneylenders. These sources give them only small capital to start with, which limits their ability to expand their businesses. The inability of the inhabitants to secure loans from such financial institutions stems from various reasons including lack of collateral security to guarantee for loans, unwillingness of financial intuition to finance agriculture due to loan defaults among others. It is therefore imperative to enhance the ability of MFIs to provide financial assistance to farmers which has been a major constraint to small scale businesses

3.5 The Research Process

This indicates the step by step approach to the study. It indicates how the research was conducted from the beginning to the end. Figure 3.2 is the summary of the research process. It follows the seven –step model conceptualized by Bryman (2008) with some modifications.

Figure 3. 2: The research process

Source: Adapted from Bryman (2008)

3.5.1 Study Design

The explanation of figure 3.1 starts with the study design. This dissertation made use of both descriptive and inferential analysis. The descriptive design aims at identifying the peculiar socio-economic, products and service characteristics of MFIs and clients, while the inferential statistics was applied to the examination of the relationships that exist between them and repayment performance. The subsequent sections below are a breakdown of the study design.

3.5.2 Sample size and sampling procedures

Sampling denotes the process of selecting representative items from a universe (population), examining those selected items and drawing a conclusion about the population based on the examination of the selected items (Branner, 2007). Among other considerations, a researcher must be able to define the parameters of the population he/she wants to study and this is achieved through sampling design.

To ensure that data collected during the study is relevant reliable and accurate, the study was designed taking into consideration selection criteria of MFIs, selection of clients and data quality assurance. The sampling methodology employed in this study was chosen to ensure that the study objectives would be achieved and also the procedure can be repeated. Accordingly, multistage sampling method was used in the study. This is a sampling method in which probability sampling procedures occur independently and at different levels of the same sample selection (Ernst & Young, 2012). The determination of the sample size was by a non-statistical sampling method, in which the researcher adopted a rule of thumbs or based on professional-judgement (Branner, 2007). This method presupposes that a sample size of 50 or more can avoid serious biases, and a sample size of 100 or more ensures certainty of the normality of assumptions. Using simple random sampling techniques, all elements were given equal chances and there was a reasonable proportionate coverage of the study population to ensure accuracy. The selection of the sample size reduced the problems involved in studying the whole population given the time and resource constraints. The first in the sequence was the selection of the MFIs.

Selection of MFIs

For the purpose of this study, MFIs in the district were categorized into four strata: rural community banks (RCB), credit unions (CU) and financial non-governmental organizations (FNGOs); and a public institution, Ministry of Food and Agriculture (MOFA) was treated as the fourth stratum of financial service providers to account for the numerous credit schemes offered to farmers and for purpose of comparisons of methods. A money lender/susu collector was not included in the sample because all efforts to locate one proved futile. Simple random sampling techniques were then used to select the MFIs which were more than one in the category.

A category with only one institution existing in the district was automatically chosen.

Table 3.1 is a list of the selected institutions by category.

Table 3. 1: List of institutions selected by category

	Category of institution				
	FNGO	CU	RCB	Public Scheme	Total
Number of Institutions	1	1	1	1	4
Institution selected	Vision fund	Nadowli credit union	Sonzelle rural bank	MoFA credit Scheme	
Total	1	1	1	1	4

Source; Field survey (2014)

Selection of Clients

The basis for selection of respondents as sample elements was for one to have taken a loan from the selected institution for at least one month. A simple random sampling procedure was adopted to select the respondents in this study because it is considered the simplest, most convenient and bias free method of selection. It allows each member of the population to have an equal chance of being selected as a respondent. The study adopted 20% sample size of the target population chosen from each stratum. A list containing the names of beneficiaries were obtained from group secretaries at each stratum. All these names were written on pieces of paper and put into a container, then picking one-by-one after each shaking until the desired number of names were selected. This ensured that all the strata within the study area were included in the population. Table 3.2 shows the number of respondents that was selected from each stratum.

Table 3. 2: Number of respondents from selected institution

Name of Institution	Sampling frame	20 % sample	Percentage of Sample selected for Study
Vision fund	95	19	23.8
Naddowli credit union	100	20	25.0
Sonzelle rural bank	105	21	26.2
MoFA credit scheme	100	20	25.0
Total	400	80	

Source: Field survey (2014)

3.5.3 Tools for Data Collection

The main instruments used in this study for data collection were questionnaires. Two sets of semi-structured questionnaires were used for the collection of information from MFIs and clients to facilitate quantitative analysis. Four (4) and eighty (80) questionnaires were administered to MFIs staff and clients respectively, selected through a multi stage sampling procedure as described earlier. Each client questionnaire had a combination of 40 opened and closed-ended questions with blank spaces to fill in or options to circle respectively (Appendix 1). It was divided into five (5) subsections (1-5) that incorporated the socio-economic backgrounds of the respondents and the study objectives. Similarly, the questionnaire designed for the MFI official was made up of 26 opened and closed-ended questions subdivided into five sections to incorporate the MFI background and study objectives (Appendix 2).

3.5.4 Sources of Data and Collection

This section looks at the main sources from which data was obtained to answer the research questions. There were basically two sources, namely primary and secondary as discussed below. To facilitate the process of identifying the sources for data, a matrix outlining the variables, likely sources of data, method of collection and data analysis was constructed.

Primary sources

First-hand information on the socio-economic characteristics, products and services of MFIs were obtained from staff and clients of the MFIs through the administering of questionnaires. These provided quantitative data for presentation and analysis, and aided by the secondary sources considered below.

Secondary sources

Available documentations or literature was obtained from the various MFIs. Books, journals and the internet were also used to collect information. This was to facilitate comparative assessment of how MFI products and services relate between the primary data and what was ever done elsewhere on similar studies.

3.5.5 Data Quality Assurance

Prior to the actual data collection, 10 questionnaires were pre-tested on selected clients affiliated to the four institutions in the Daffiama-Bussie - Issa district. These were not on the list of the selected clients for the actual study. Based on the outcome of the pre-test, modifications were made to the questionnaires and the estimated number of clients to be interviewed each day also revised. The selection criteria were also modified based on the outcome of the pre-test.

3.5.6 Data collection procedure

Eighty (80) questionnaires were administered to clients from the four MFIs selected for the study and four to the MFIs. However the number of clients from each MFI was proportionally related to its total number of clients, using the sampling procedure discussed earlier. Following the identification of the 80 respondents, the researcher administered the questionnaires to the clients. In order to reach all respondents in good time, each day was assigned to interviewing 20 respondents. Questionnaires meant for MFI staff were answered by the staff responsible with guidance from the researcher. Data collection from clients usually took place in the evening when farmers were expected to return from their farms as the study was conducted at the peak of the farming season.

3.5.7 Data Analysis and Presentation

Kumar (1999), considers data analysis as the computation of certain measures along with searching for patterns of relationship that exist among data-groups. This includes summarizing the data collected and organizing them in such a manner that they answer the research questions. The processing of the data was done with a combination of manual and computer methods and presented in the form of tables to facilitate easy comparison (Alan and Franklin, 2007)

The data from the 80 administered questionnaires were coded and fed into the variable and data view components of the SPSS version 20 respectively for storage and use during the analysis. The 4 questionnaires administered to the staff of MFIs was to elicit information that respondents could not give. They were therefore not included in the sample size. Accordingly, the 40 and 26 questions on the client and MFI questionnaires respectively,

were arranged under sub-sections in correspondence to the research objectives. Options were given for each question and numerical codes assigned to them.

Most tables were constructed manually before using the computer, especially secondary quantitative data. The use of the computer called for a clear identification of the categories of the quantitative data to be fed into the computer. This was analysed and presented using the Statistical Package for Social Sciences (SPSS) and Microsoft excel to draw statistical relationships between variables in the administered questionnaires, using cross-tabulation under descriptive statistics. The data entered was crossed checked for completeness, consistency and accuracy of the information collated.

Statistical applications became necessary for the measurement of the strength of the relationships between dependent and independent variables. The strength of a relationship between variables depends on the absolute value and the approximate statistical significance (Kane, 1995).

Apart from the use of the SPSS for the statistical computations, tabulation and graphical illustrations, some appropriate statistical diagrams were also selected from the Microsoft office excel (2013 edition) for data presentation.

During cross-tabulation by SPSS version 20, the independent variables were presented in the columns while the dependent variables were in the rows. For tabular presentations, their values were on the columns and rows respectively. This made it possible to measure the relationships that existed between the variables by their frequency distributions and other measures of central tendencies such as mean, modal and median scores using percentages or absolute numbers (Bryman, 2008).

3.6 Challenges of the study

A number of challenges were encountered during data collection which led to considerable delay in data entry and validation. Key challenges encountered include:

1. Prior to the study it was intended that a list of active clients (savers and borrowers) be obtained from the MFIs. However, during the pre-test it was evident that this approach was not feasible due to confidentiality reasons. The approach adopted during the actual study was therefore modified. For clients that were in groups, selection was done by identifying the group secretary and then obtaining the rest of the group members through him/her. Individual clients were identified with the aid of field personnel of MFIs
2. Although the MFIs were briefed on the purpose of the study, obtaining data was extremely difficult. One of the reasons cited for this observation was confidentiality in disclosing financial statements to outsiders. The researcher therefore resorted to obtaining the required information from respondents.

3.7 Summary

This chapter has stated clearly the research methodology, defined the study population, unit of analysis, sampling techniques and procedures. The variables to be explored using statistical techniques and how they are to be operationalized have also been defined. Central to this is questionnaire administration and statistical analysis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

The following sections present the results of the study. Section 4.2 looks at the first objective which was to identify the socio-economic characteristics of smallholder farmers that has a contribution to repayment performance in three MFIs and a public institution with a credit programme. Section 4.3 takes a look at the second objective of determining the relationship between products characteristics of the sampled institutions that has an effect on repayment performance of agricultural credit and finally section 4.4 discusses the objective of determining the relationship between non-financial services of MFIs and repayment of agricultural credit.

4.2 Socio-Economic Background of Respondents and repayment performance

This section addresses the first objective of identifying the relationship between socio-economic characteristics of clients and repayment performance of agricultural credit in the study area. The characteristics considered for the purpose of this study were gender, age, household size, educational level, occupation and credit use from informal sources. These factors were chosen based on literature review and discussions held with subject matter specialists in the area of agricultural credit.

4.2.1 Gender and repayment performance

This section examines the effect of gender on repayment performance agricultural credit. The findings show that only 22.22% of the 45 male respondents interviewed had repaid in full while that for females was 48.57%. The statistical analysis showed significant difference ($\chi^2 = 6.113$ df = 3 p = 0.013) between repayment performance of the clients

with respect to gender the 0.05 significance level. The finding is in line with Derpallier, Guerin & Mersland (2011) who found that a higher percentage of female clients in MFIs is associated with lower portfolio risks, and Armendariz and Morduch (2005), who evaluated different techniques to reduce default and considered targeting of women as a technique in its own right. This may arise from the fact that women have limited credit sources and hence may fear the punishment of default, which may be denial of further credit. Alternatively, it could also be explained from the point that women succumb easily to pressures from credit officers than men as reported by Godquin (2004).

Table 4. 1: The effect of gender on repayment performance

Gender	Repayment Performance				Total	
	Paid		Default			
	N	%	n	%	N	%
Male	10	22.22	35	77.78	45	56.25
Female	17	48.57	18	51.43	35	43.75
Total	27		53		80	

Source: Field Survey (2014) $\chi^2 = 6.113$ df = 3 p= 0.013 S

4.2.2 Age distribution of respondents and repayment performance

This section examines the contribution of age on repayment performance of agricultural credit in the study area. Table 4.2 presents the age distribution of the respondents served by the various institutions in the area. Since the respondents were made up of clients of MFIs, the minimum age of being economically active (18) was adopted. The ranges 18-40, 41-60 and 61+ used was to facilitate the classification of the sample into the youth, middle aged and aged (Getis, Getis & Fellmann, 2006). Table 4.2 shows that generally, a greater proportion of the population served by MFIs in the area are in the lower age cohort, which is characteristic of a rapidly growing population. With a total of 80 respondents, the age

group 18-40 constituted 50.0%, the group 41-60 was 45% and the aged above 61 formed 5%.

Table 4. 2: Contribution age to repayment performance of agricultural credit.

Age Group	Repayment performance				Total	
	Paid		Default			
	N	%	n	%	N	%
18-40	13	33.5	27	67.5	40	50
41-60	12	33.33	24	66.67	36	45
61+	2	50.00	2	50.00	4	5
Total	27		53		80	100

Source: Field study 2014

$$\chi^2 = 28.241 \quad df = 6 \quad p = 0.001 \text{ S}$$

The statistical analysis showed that there was a significant difference ($\chi^2 = 28.241 \quad df = 6 \quad p = 0.001$) between the repayment performances of the different age categories. This implies that different age categories of clients have different repayment performance. The finding is consistent with Hundie (2004) and Bhat and Tang (2002) both of whom found that on the average, defaulters of agricultural input loans were younger than non-defaulters. This could be indicative that with time, older farmers gather experience on better management of credit than younger ones. Alternatively, it could also imply that older farmers might have accumulated wealth more than younger ones.

4.2.3 Educational level of respondents and repayment performance

Table 4.3 MFIs shows the distribution of clients by educational status and repayment performance. About 61% of the 80 respondents had no formal education with the rest having at least some form of formal education. Todaro and Smith (2009) observed that there is generally low expenditure on education in rural areas as a result of low incomes. The results also revealed that 40.82% of those who had no formal education repaid their loans in full while only 22.58% of those with formal education repaid.

The statistical analysis showed that there was no significant difference between repayment performances clients levels of education ($\chi^2 = 2.824$ df = 1 $p = 0.193$). This implies that client different levels of education do not contribute to their repayment performance. A similar situation was found by Hundie (2004) and Zeller, (1996) each of whom found that different educational levels of farmers on repayment performance proved to be insignificant in Ethiopia and Madagascar respectively. The possible explanation of this situation could be that educated people have other alternatives to accessing credit than the uneducated and do not usually patronise MFI services. Another explanation could be that MFIs target poorer people who are more likely to be uneducated.

Table 4. 3: The effect of educational level on repayment performance

Education level	Repayment performance				Total	
	Paid		Default			
	n	%	n	%	N	%
No education	20	40.82	29	59.18	49	61.25
Formal education	7	22.58	24	77.42	31	38.75
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 2.824$ df = 1 $p = 0.093$ NS

4.2.4 Occupational distribution of respondents and repayment performance

This section investigates the relationship between occupation and repayment performance. Like many other rural areas of Ghana, the occupational distributions of the clients of the three institutions exhibited a similar pattern and have been collectively presented in Table 4.4. It shows that of the eighty (80) respondents, 91% were farmers, whilst the rest were into other occupations such as trading, carpentry, masonry, and driving. Analysis on repayment basis showed that all the 7 (100%) respondents who were into other occupations repaid their loans in full whereas only 36.97% of those whose main

occupation is farming repaid in full. The statistical analysis showed a significant relationship ($\chi^2 = 3.908$ df = 1 p = 0.048) between repayment performance and occupation at the 0.05 significance level. This is a confirmation of findings by Armendariz & Murdoch (2005) that borrowers with different occupations have different repayment levels. Farmers may encounter difficulties to commit repayment schedules due to risks related to farming conditions as observed by Pellegrina (2011).

Table 4. 4: Contribution of occupation to repayment performance

Main Occupation	Repayment performance				Total	
	Paid		Default			
	N	%	n	%	N	%
Farming	20	36.97	53	63.03	73	91.25
Others	7	100	0	0	7	8.75
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 3.908$ df = 1 p = 0.048 S

4.2.5 Distribution of respondents by household size to repayment performance

The section investigate the relationship between household sizes on repayment performance. Respondents were asked to indicate the number of people in the household in order to determine the household size. To facilitate easy analysis, the household sizes obtain were grouped into two categories: 1-3 (small) and above 4 (large). Table 4.5 is a presentation of the results obtained. It shows that 81.25% of non-defaulters had small household sizes but only 21.75% of the non-defaulters were in the category of those who had large household sizes.

The statistical analysis results showed that there was no significant difference between repayment performance with respect to clients household sizes and as shown by the chi-

square value ($\chi^2 = 1.554$ df = 2 $p = 0.460$). The implication of the finding is that different levels of repayment are independent of the household sizes of respondents. Similarly, Bichanga and Aseyo (2013) observed that most MFI clients in Kenya have large households but did not find significant effects on the propensity to increase repayment.

This could be explained by the socio-cultural nature of the farmers in the study area.

Among the cultural setting of the respondents, large families are seen as a source of security. When one member is in default, the rest of the household members take measures to settle the indebtedness to avoid any family embarrassment. The opposite may also hold that small households may be efficient in managing credit for productive purposes.

Table 4. 5: Effect of household size on repayment performance.

Household size	Repayment performance				Total	
	Paid		Default			
	N	%	n	%	N	%
1-3		18.75	13	81.25	16	20.0
4 and above	24	37.5	40	62.5	64	80.0
Total	27		53		80	

Source: Field survey (2014)

$\chi^2 = 1.554$ df = 2 $p = 0.460$ NS

4.2.6 Informal loan use and client repayment performance

Farmers take loans from various informal sources such as friends, relatives and moneylenders and use it for various purposes. This section investigates the relationship between repayment performance of MFI clients who use informal loans and those who do not. The results (table 4.6) showed that 43 (53. 75%) of the respondents continued to patronise the services of informal sources while they remain clients of MFIs. 53.49% of

those who reported to have borrowed from informal lenders repaid their loans in full. With regards to whether there is a relationship between the use of informal loans and repayment performance, the statistical test showed significant difference between the two variables ($\chi^2 = 6.772$, $df = 1$ $p = 0.009$), with clients who used informal loans and those who did not, having different repayment performances. The implication of the result is that there are differences between repayment performance of MFI clients who use informal loans and those who do not.

The finding is consistent with previous findings that MFI clients who borrow informal and MFI loans simultaneously have enhanced repayments (Hundie et al., 2004, Jain & Mansuuri, 2003). The implication of the findings can be explained from two viewpoint as follows: (1) because of the tight repayment schedules of most MFIs and considering that farming activities take several months to complete, farmers may be forced to take loans from other sources to repay MFIs loans in order to be eligible for future loans and; (2) use of informal loans may lead to avoidance of diversion since informal lenders are known to possess efficient monitoring mechanisms than MFIs.

Table 4. 6: Effect of informal loans on repayment performance

Use of informal loans	Repayment performance				Total	
	Paid		Default			
	n	%	n	%	N	%
Yes	23	53.49	20	46.51	43	53.75
No	4	10.81	33	81.19	37	46.25
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 6.772$, $df = 1$ $p = 0.009$ S

4.3 MFI product characteristics and repayment performance

This section discusses microfinance products characteristics and how they contribute to repayment performance. The second objective of this study was to examine MFI product characteristics on repayment performance of clients in the study area. Six factors were considered after reviewing literature. The factors are interest rates, loan size, lending methodology, frequency of collecting instalments, savings demands and methods of securing loans.

4.3.1 Interest rates and repayment performance

This section discusses the relationship between interest rates of MFIs and repayment performance of agricultural credit disbursed to farmers. Analysis by MFI category revealed that on the average the following interest rates are charged per annum: rural community banks 44%, credit unions (CU), 36%, Vision fund 20% and MoFA credit scheme 2%.

Further analysis revealed that 71.43 % of the clients who paid the highest interest rate of 44% repaid in full whereas only 28.57% defaulted as shown in Table 4.7.

Statistical analysis conducted to establish a relationship between interest rates paid by clients and repayment performance showed a significant relationship as shown by the chi square value ($\chi^2 = 18.451$, $df = 3$ $p = 0.001$). This implies that interest rate is a contributory factor to the difference in repayment performances of the clients studied. Even though Ledgerwood (1999) observed that microfinance clients are not very sensitive to interest rate, other studies found it to be an important factor affecting microcredit delinquency (Warui, 2012; Pereira & Mourao, 2012). Perry (2000) and Robinson (2001)

also observed that interest rate is a contributory factor to farmers' ability to repay MFI loans and to ensure continuous credit delivery.

Table 4. 7: Effect of interest rate on repayment performance

Interest rate (%)	Repayment performance				Total	
	Paid		Default			
	n	%	n	%	N	%
2	4	20.0	16	80.0	20	25
36	5	25	15	75%	20	25
20	3	15,79	16	84.21	19	23.8
44	15	71.43	6	28.57	21	26.2
Total	27	100	53	100	80	100

Source: Field survey (2014)

$\chi^2 = 18.451$, $df = 3$ $p = 0.001$ S

4.3.2 Frequency of instalments and repayment performance

Loan repayments can be made on instalment basis (weekly, bi-weekly, monthly) or in a lump sum at the end of the loan term, depending on the philosophical orientation of the lending institution (Ledgerwood, 1999). This section determines whether the frequency of collecting instalments has a contribution to the repayment performance of agricultural credit. The results in Table 4.8 show that 10% of the non-defaulters repaid their loans on annual basis whereas 45% and 75% repaid on weekly and daily basis respectively. Statistical analysis revealed a significant relationship between the two variables ($\chi^2 = 18.451$, $df = 3$ $p = 0.009$), with repayment performance varying among clients repayment schedules. The finding is consistent with Armendariz and Murdoch (2005) and Odongo and Kendi (2013) who observed that instalments done on frequent basis offer credit officers' early warnings about emerging problems of default. This enables them to take the necessary measures to retrieve the loans.

Table 4. 8: Effect of frequency of payment installments on repayment performance

Frequency of instalments	Repayment performance				Total	
	Paid		Default			
	n	%	n	%	N	%
Daily	15	75.0	5	25.0	20	25
Weekly	10	45.0	30	55.0	40	50
Annually	2	10	18	90.0	20	25
Total	27		53		80	100

Source: Field survey (2014)

 $\chi^2 = 18.451$, $df = 3$ $p = 0.009$ S

4.3.3 Loan size and repayment performance

Often MFIs have a maximum loan size for first time borrowers which increase with each loan (progressive lending). The results shows that the average loan amount per respondent was GH¢ 380.00 with a minimum of GH¢ 100.00 and a maximum amount of GH¢ 1500.00.

To facilitate analysis, the loan amounts were categorised into small (GH¢ 100.00-500.00), medium (GH¢ 501.00 -1000.00) and large (above GH¢ 1000.00). Table 4.9 shows that 36.11% of those who took small loans repaid but only 33.33% of large loan borrowers repaid. The implication is that borrowers of small loans are more likely to repay than those who took larger loans. Borrowers who receive bigger loans beyond their managerial ability misappropriate the funds and thereby predisposing them to default.

The statistical analysis did not find a significant difference between clients repayment performance and the amount of loan taken ($\chi^2 = 2.727$, $df = 2$ $p = 0.256$). This suggest that there is no statistical difference in repayment performance among the clients who took different amounts of loans.

Table 4. 9: Effect of loan size on repayment performance

Loan category	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Small	26	36.11	46	63.99	72	90.0
Medium	0	0	5	100	5	6.25
Large	1	33.33	2	66.77	3	3.75
Total	27		53		80	100

Source: Field survey (2014)

 $\chi^2 = 2.727$, df = 2 p = 0.256 NS

This finding contradicts that by Nowair and Shariff (2012) who showed that the larger the total loan received by borrowers, the higher the probability to repay the loan in Malaysia. Similarly, Laure and Baptiste (2007) found that loan amount is a significant variable affecting default in microcredit programs in Bangladesh. There could be other factors that might have accounted for this development. The difference in findings could be due the fact that most of the clients interviewed received the same amounts of loans as group members.

4.3.4 Method of securing loans and repayment performance

Data obtained during the study indicated that all MFIs have at least one method of securing loans. It was noted that Sonzelle rural bank had more methods of securing loans than any MFI category with five (5) different methods ranging from personal guarantee, landed property, group guarantee, percentage of the loan amount required and compulsory savings. Vision Fund had two (2) methods while Nadowli Credit union and MoFA credit scheme use only one method each. It was however observed that three (3) methods were enough to obtain a loan from the rural banks. Statistical analysis to investigate the effect of number of collateral requirements and repayment performance showed a significant

difference between repayment performance of clients and the number of methods of collateral offered before obtaining loans ($\chi^2 = 18.339$, $df = 2$ $p = 0.001$). This means that clients repayment performances vary according to the number of collaterals demanded to obtain a loan. This finding is similar to what was reported by Ernst & Young (2012) that rural microfinance institutions (RMFIs) clients with several collaterals offered before receiving loans is have better repayment. The fear of losing the collateral serve as a motivation factor to repay.

Table 4. 10: Effect of number of collateral methods on repayment performance

Number of collaterals methods	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
1	9	22.5	31	77.5	40	50
2	3	15.79	16	84.21	19	23.8
3	15	71.43	6	28.57	21	26.2
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 18.339$, $df = 2$ $p = 0.001$ S

4.3.5 Saving and repayment performance

This section discusses the operating of savings accounts by clients and repayment performance. Respondents were asked whether they operate saving accounts with their MFIs of affiliation. Table 4.11 shows that 78.75% of the 80 respondents have saving accounts with their MFIs whereas 21.25% did not. This means that most MFI clients in the study area are inclined to save. On repayment basis, 39.68% of those with savings repaid in full while those without savings were only 11.76%. The statistical analysis conducted showed a significant relationship between the two variables ($\chi^2 = 4.667$, $df = 1$ $p =$

0.031). This implies that repayment levels differ among borrowers who operate savings and those who do not.

This result is consistent with Nourse (2001) who reported that savings play a crucial role in allowing the poor to take advantage of productive opportunities and to generate enough revenue to repay their loans. Armendariz and Murdoch (2005) also observed that forced savings which is characteristic of most MFIs teaches financial discipline and provide the MFI additional information about the clients' creditworthiness.

Table 4. 11: Contribution of savings to repayment performance

Operating of savings accounts	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Yes	25	39.68	38	60.32	63	78.75
No	2	11.76	15	88.24	17	21.25
Total	27		53		80	100

Source Field survey (2014)

$\chi^2 = 4.667$, $df = 1$ $p = 0.031$ S

4.3.6 Lending Methods and repayment performance

Lending methods in microfinance usually follow two main approaches: individual and group lending. From Table 4.12, it is clear that 37.29% of the farmers who repaid their loans in full took loans as group members whereas 23.81% of them were individual borrowers. The results agree with findings by Odongo and Kendi (2013) that group lending is more effective in mitigating the risk of default among MFI clients. The statistical test however did not show any significant difference between ($\chi^2 = 0.728$, $df = 1$ $p = 0.394$) different lending methodologies and loan repayment performance. This could be arising from the relative small sample size used in the analysis.

Table 4. 12: Effect lending methods on repayment performance

Lending Methods	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Group	22	37.29	37	62.71	59	73.75
Individual	5	23.81	16	76.19	21	26.25
Total	27		53		80	100

Source: Field survey (2014)

 $\chi^2 = 0.728$, $df = 1$ $p = 0.394$ NS

4.4 Non-financial MFI services and repayment performance

This section discusses the third objective of determining how the provision of other services (non-financial) contributes to repayment performance of credit meant for agricultural purposes. It has been argued (Edgcomb, 1998) that the provision of non-financial services as a compliment to credit and savings do not only develop the economic ability of the client to repay but also establishes a valuable lender –borrower relationship. The purpose of this objective is an attempt to identify those MFI services that has a relationship with repayment performance. Factors considered include production training, marketing services, health services and literacy training.

4.4.1 Production training and repayment performance

Production training services is not only demanded by users of agricultural credit but is also believed to have an identifiable positive impact on the live of the customers (Ledgerwood, 1999). This section investigates whether production training has an effect on the repayment performance of farmers using MFI credit. The results in Table 4.13 show that 36% of those who received production training repaid their loans in full while only 30% of who did not receive the training repaid. This indicates that production training given to clients decreases the probability of default in repayment. The statistical analysis showed

no significant difference between repayments performances of the clients with respect to production training received ($\chi^2 = 0.302$, $df = 1$ $p = 0.583$). This finding illustrates what has been reported by Ledgerwood (1999) that integrative approaches to MFI delivery might not yield the desired objectives because financial services and non-services are two different things all together. Farmers might not see production training as any attempt to enhance repayment but as a necessity of the MFI.

Table 4. 13 : Contribution of production training to repayment performance

Receive production training	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Yes	18	36.0	32	64.0	50	62.50
No	9	30.0	21	70.0	30	37.50
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 0.302$, $df = 1$ $p = 0.583$ NS

4.4.2 Marketing services and repayment performance

This section investigates the relationship between marketing services offered by MFIs and repayment performance of agricultural credit. The results presented in Table 4.14 shows that 22 (71%) of the 31 respondents who defaulted received marketing services. This means majority of the respondents who defaulted received marketing services from their MFIs of affiliation. The statistical analysis found no significant difference between repayment performance with respect to reception of marketing services ($\chi^2 = 0.218$, $df = 1$ $p = 0.640$).

The finding is contradicts Edgcomb (2002) and Dumas (2002) both of whom use case methodologies to analyse MFIs offering business development training (including marketing services) and conclude that business development training improves micro-

entrepreneur repayment performance and empowerment. The possible explanation of the inconsistency of the results with earlier findings could be due to the unorganised marketing system in the study area, together with the unstable prices of farm produce. In such instances farmers may not be able to take advantage of marketing services offered by MFIs to enhance their repayment performances

Table 4. 14: Effect of marketing services on repayment performance.

Received marketing services	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Yes	9	29.0	22	71.0	31	38.75
No	18	36.73	31	63.2	49	61.25
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 0.218$, $df = 1$ $p = 0.640$ NS

4.4.3 Health services and repayment performance

This section examines the integration of agricultural credit with health services by MFIs on repayment performance. The results presented in Table 4.15 shows that only 17 (21.25%) of the 80 respondents received health services from their MFI of affiliation. This indicates that MFIs in the area do not usually offer health services as part of their activities. However, 41.17% of those who paid their loans in full received health services whereas those who did not were 31.75%. The results shows that health services have an effect on repayment performance though not statistically significant ($\chi^2 = 0.194$, $df = 1$ $p = 0.659$). Similar results were found by Smith (2002) when he compared the repayment performance of 20 minimalist MFIs and 84 banks that offer health services in Ecuador and found no significant difference in the repayment performance of their clients. This could

be due to the fact that the health services provided might not be sufficient to trigger any difference in repayment.

Table 4. 15: Effect of health service on repayment performance

Received health services	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Yes	7	41.18	10	58.82	17	21.25
No	20	31.75	43	68.25	63	78.76
Total	27		53		80	100

Source: Field survey (2014)

$\chi^2 = 0.194$, $df = 1$ $p = 0.659$ NS

4.4.4 Literacy training and repayment performance

Table 4.16 presents the distribution of respondents according to literacy training received from their MFIs of affiliation. It shows that there is a greater representations of clients without health services from MFIs. However on repayment basis, it was observed that 69.23% of those who defaulted did not receive literacy training whereas those who received training were 53.33%. This shows that literacy training has an effect on repayment performance. A statistical investigation to find out the significance of the difference between repayment performance and reception of health services showed no significant difference ($\chi^2 = 1.378$, $df = 1$ $p = 0.241$). The finding is in line with Schicks (2014) who worked with 531 micro borrowers in Accra, Ghana found that financial literacy and numeracy do not have consistent significant effects on over-indebtedness. She attributed the situation to the time it takes to translate literacy training into productive opportunities.

Table 4. 16: Effect of literacy training on repayment performance

`Received literacy training	Repayment performance				Total	
	Paid		Default			
	N	%	N	%	N	%
Yes	7	46.67	8	53.33	15	18.75
No	20	30.77	45	69.23	65	81.25
Total	27		53		80	100

Source; Field survey (2014)

 $\chi^2 = 1.378$, df = 1 p = 0.241 NS

4.5 Summary

In this chapter, factors affecting the repayment performance of clients of microfinance institutions in the Nadowli/Kaleo have been examined. It explored using quantitative methods, the relationships between socio-economic factors, MFIs products services and repayment of loans. It found that interest rates, lending methods, collateral regimes affect the capacity of clients to repay loans.

The results showed that negligible numbers of farmers were receiving non-financial services from their institutions of affiliation. All four variables investigated did not show any significant relationship with loan repayment performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter consists of three sections. The first section presents the summary of the research findings which looks at the socio-economic and MFI product and service characteristics affecting repayment performance of clients. Section two elaborates on the conclusions drawn from this research based on the findings in chapter four. The last section takes a look at the policy recommendations based on the research findings.

5.2 Summary of major findings

This section presents the major findings of the study by considering the socio-economic and microfinance products and services characteristics affecting repayment performance. It provides a brief discussion of the various factors and their implications to credit service delivery.

5.2.1 Socio-economic characteristics affecting repayment performance

The study identified four socio-economic characteristics namely, sex, age, occupation and use of informal loans that have significant relationships with repayment performance of agricultural credit in the study area. The four factors identified were significant at the 5% level. Two other factors household size and educational level did not show any significant relationship with repayment performance.

These findings suggest that there are socio-economic variables that can actively reinforce positive relation between clients' personal characteristics and repayment performance.

MFIs that practice a more tailor-made approach adapted to meet the personal needs of clients are more likely to increase repayment rates. The lesson learned here is that MFI best practices may become worst practices by leading to mechanical replication of strategies if they are not adapted to socio-economic and cultural conditions of clients at a given time.

A key finding of the study is that quite a substantial percentage of the clients (53%) continue to patronise informal credit sources while they remain MFIs clients. This suggests that informal credit institutions are wide spread and fulfil important functions but their modern adaptations and potential in MFIs programmes has been largely ignored. Ignoring informal financial institutions as a form of indigenous social capital leads to a continuous existence of dual financial sector which misses the opportunity of an inclusive financial sector.

5.2.2 Microfinance institutions products influencing repayment performance

Microfinance institutions products and their characteristic design is key to enhancing repayment performance of agricultural credit. The financial innovation of their lending methodologies, frequency of collecting instalments and progressive lending have raised the interest of researchers as a means of improving repayment rates. The second objective of this study was to examine other product characteristics and draw the attention of empirical researchers to the attention on the need to broaden the scope on factors influencing repayment of credit.

The study revealed that three variables namely, interest rate, number of collateral requirements and savings demands were positively associated with repayment performance of agricultural credit in the study area. This provides argument in favour of the notion that savings matter to the poor more than credit alone.

5.2.3 Microfinance services affecting repayment performance

It has been argued that financial intermediation is usually not enough to help low-income men and women overcome barriers to gaining access to financial services, and MFIs have to create mechanisms to bridge the gaps created by poverty, illiteracy, gender and remoteness (Ledgerwood, 1999). The third and final objective of this dissertation was to find out whether the provision of non-financial services such as production training, marketing, health and literacy services has a relationship with repayment performance.

The results showed that negligible number of farmers was receiving non-financial services from their institutions of affiliation. All four variables investigated did not show any significant relationship with repayment. This finding is contradictory to earlier research results confirming a positive impact of non-financial services on repayment performance. For instance, Godquin (2004) found a positive impact of non-financial services on the repayment of MFI loans in Bangladesh but was quick to recommend further research to assess the cost and benefits associated with the different services. She also recommended further research on the best institutional way of providing these services: should they be provided by MFIs or should the MFI operate in partnership with another organization providing these services? The findings also confirm the notion that most MFIs choose minimalist approach because providing two distinctive activities of financial and non-financial services is difficult and may lead to conflicting objectives.

5.3 Conclusions

The study concludes that socio-economic factors of clients as well as MFI product and service characteristics have an effect on repayment performance of clients of MFIs. The study therefore supports the view that for clients to be have enhanced repayments to make MFIs sustainable there is the need to design appropriate products and services with characteristics that meet farmers socio-economic needs.

The findings also suggest that informal credit sources are wide spread in the study area and play an important function in offering financial services to farmers. Farmers patronise MFI credit services and informal services simultaneously. The findings further suggest that interest rates and savings are important determinant factors of repayment performance of agricultural credit in the study area.

It was also observed that on percentage basis, clients who received non-financial services had better repayment than those did not though the difference were not statistically significant. This could be attributed to the fact that most of the MFIs in the study area use the minimalistic approach with very little or insufficient non-financial services that does not translate into enhanced repayment performance.

5.4 Recommendations

This section is an expression of the contribution of this study to how the identified challenges can be addressed through policy review and further research, not only for improved agricultural credit delivery but also for the reduction of poverty in rural communities. The following recommendations therefore go beyond MFIs in the study area to include all rural microfinance institutions offering agricultural credit to smallholder farmers.

1. In this study, a range of socio-economic, institutional and demographic factors were omitted from the analysis due to time and data limitations. Further research should look at other variables that are likely to have an influence on repayment performance of agricultural credit, especially the effect of marital status, loan duration, and timeliness of loan delivery, staff supervision and customer relations. Such an understanding will ensure that policy makers and microfinance institutions utilise the most effective methods in delivering credit, and that the intended target groups benefit from the credit programmes.
2. Considering the wide spread and importance of informal sources of credit in the study area, it is recommended that MFIs identify and integrate informal financial institutions strategies into mainstream microfinance.
3. The findings have also illustrated that low interest rate is a significant determinant of repayment performance of agricultural credit and sustainability of credit programmes. As a result it is recommended that public institutions' offering credit services should charge realistic interest to make their programmes sustainable.

4. Again, it has been demonstrated by the study that a whole range of factors account for default of agricultural credit. It is therefore recommended that institutions that are not adequately trained in the dynamics of rural credit markets should rather partner with other institutions to handle their credit delivery components

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APPENDICES

Appendix 1: Client Questionnaire

Questionnaire No.....Date of Interview.....

Interviewer.....

Time started.....Time ended.....

Community.....

District.....

PART ONE: PERSONAL DETAILS

Section One (1)

1.1 Name of Client/Farmer.....

1.2 Sex 1 = Male 2 = Female

1.3 Age.....

.....

1.4 Are you at present:

1. Single (Never married)
2. Married
3. Separated
4. Divorced
5. Widowed
6. Others (specify).....

1.5 What is your relationship with the household head?

1. Head
2. Spouse
3. Child
4. Other relative
5. Other (specify)

1.6 How many children do you have?

Male.....Female.....

1.7 How many are dependents?

Male.....Female.....

1.8 How many other dependents do you have?

.....

1.9 What is your main occupation?

1. Farming
2. Regular employee
3. Trader
4. Casual laborer
5. Unpaid family worker
6. Others (specify).....

1.10 Apart from your main occupation what other income generating activity do you do?(Multiple answers allowed)

.....

1.11 What type of labour do you use?

1. Unpaid family labour
 No.....
2. Paid family labour
 No.....
3. Hired labour
 No.....

1.12 What is your highest level of Education?

- | | |
|---------------|---------------------------|
| 0. None | 4. Vocational/Commercial |
| 1. Primary | 5. O-level/A-level/SSS |
| 2. Middle/JSS | 6. Technical/Professional |
| 3. Tertiary | 7. Others (specified) |

2.5 If no why have you never operated with any of the institutions? (Multiple answers allowed)

1. Interest rates too high
2. Inadequate collateral
3. Do not like to be indebted
4. Informal lender provide all my financial needs
5. Others (specify).....
.....

2.6 If yes, why have you stopped operating with it? (Multiple answers allowed)

- | | |
|---------------------------------------|-----------------------------------|
| 1. High interest rates on loans | 6. Low rates on savings |
| 2. High transaction costs | 7. Loan securing methods to cruel |
| 3. Loan size too small | 8. Lack of non-financial services |
| 4. Frequency of instalments too short | 9. Loan duration too short |
| 5. Very long application procedures | 10. Poor customer relation |
| 11= others (specify).....
..... | |

2.7 Do you have saving accounts with any MFI?

1= Yes

2= No

2.8 If yes what reasons do you have for keeping the savings?

- | | |
|----|---------------------------|
| 1. | Safe keeping |
| 2. | To access credit/loan |
| 3. | As an investment |
| 4. | To enable me do transfers |
| 5. | Others (specify) |

2.9 Have you ever applied for a loan/credit within the past 2 years?

1= Yes

2 = No

2.10 If no, why have you not applied (Multiple responses allowed?)

- 1 Do not know where to apply
- 2 No supply available locally
- 3 Interest rates too high
- 4 Inadequate collateral
- 5 Do not like to be indebted
- 6 Believed would be refused due to previous default
- 7 Others (specify)

2.11 If yes to question 2.9 what was your reason for applying for the loan?

1= Agricultural inputs

2= Purchase land

3= Produce processing

4= Produce buying

5= Consumer goods and services

6= others (specify).....

2.12 What percentage of the loan has been repaid?

Loan Amount	Amount paid	Balance	Duration	Interest rate

3.1 Apart from financial services what **social intermediation** do you receive from your institution?

0 = none 1= group formation 2 = leadership skills 3= accounting skills 4= participatory management 5= record keeping 6 = others (specify)

3.2 What **enterprise/business development services** do you receive?

0= none 2= marketing 3= business training 4= production training 5= others

3.3 What **social services** do you receive?

0= none 2 = literacy training 3= health services 4= nutrition services

5= Others

.....

Section Four(4): Informal Credit Use

4.1 Do you operate with a susu collector/money lender?

1= Yes

2 = No

4.2 If yes to 3.1, why do you use the susu collector/money lender? (Multiple responses allowed)

1. Proximity
2. Flexible repayment terms
3. Timely delivery of loan/inputs
4. Less cumbersome procedures in obtaining loans/inputs
5. Moderate interest rates
6. He/she understands the local situation design less risky contracts
7. Less cruel means of enforcing repayment
8. Accepts payment in kind
9. Others (specify)

4.3 How did you choose the susu collector/money lender? (Multiple responses allowed)

1. Recommended by a friend
2. Operates an office in the locality
3. Well known in the locality
4. Others (specify).....

4.4 For what purpose do you apply for loans from the informal source?

1. Production
2. Produce buying
3. Produce processing
4. Household consumption
5. Emergencies issues
6. Others.....

Section Five (5): Client satisfaction with products and services of MFIs

5.1 On a scale of 1-5 rate the customer relation of your institution.

1=very good 2=good 3= neutral 4= poor 5=very poor

5.2 On a scale of 1-5 rate the cost of service of your financial institution.

1=Very high 2=high 3= medium 4= low 5=very low

5.3 Rate how easy you get access to credit from your financial institution

1=very easy 2= easy 3= somehow easy 4= difficult 5= very difficult

5.4 Please rate your perception of the interest rates charged on loans by your main institution.

1=very high 2= high 3= moderate 4= low 5= very low

5.5 Rate your overall satisfaction with your main financial institution.

1= very satisfied 2= Satisfied 3= somewhat satisfied 4= Unsatisfied 5=very Unsatisfied

Unsatisfied

Appendix 2: MFI Questionnaire

**Questionnaire No.....Date of
Interview.....**

Interviewer.....
...

**Time started.....Time
ended.....**

Community.....
.

District.....
.

PART ONE: GENERAL INFORMATION**Section One (1)**

1.1 Name of Institution.....

1.2 Institution type

1= Financial NGO 2= Credit Union 3= Rural community Bank

4= Government Scheme 5= S & L

6= other (specify)

1.3 Name of respondent.....

1.4 Position of respondent in the institution.....

1.5 Respondent's phone number.....

1.6 Email address.....

PART TWO: PRODUCTS AND SERVICES**Section Two (2): Financial Products and services**

2.1 What financial products and service do your institution offer?

- | | |
|---------------------|---------------------|
| 1. Credit | 2. Savings |
| 3. Insurance | 4. Credit cards |
| 5. Payment services | 6. Transfer service |
| 7. Others specify | |

2.2 If you offer credit/loans, please can you provide the information below?

No	Category	Amount	Loan duration	Interest rate
1	Agricultural loan			
2	Consumer loan			
3	Education			
4	Trade loans			
5	Micro enterprise loan			
6	Susu credit			
7	Mortgage			
8	Others (specify)			

2.3 If you provide agricultural credit, can you disaggregate the information into the following?

No	Value chain actor	Amount	Loan duration	Interest rates
1	Input suppliers			
2	Producers			
3	Processors			
4	Buyers			
5	Consumers			
6	Others			

2.4 What lending methodologies do you use?

1. Individual Lending 2. Solidarity group lending 3= Village banking
 4= other (specify).....

2.5 Of all the agricultural loans disbursed what number and percentage were given out using the various lending methods as in Q 2.4 above

Lending methodology	Number of loans	Percentage
Individual		
Group		
Village banking		
Others		
Total		

2.5 How frequent are agricultural loan installments collected?

1= Weekly 2 = Fortnightly 3 = Monthly 4 Quarterly 5= Annually

6 = others (specify)

2.6 How do you secure your loans/credit?

0 = None 2= Group guarantee 3= landed property 4= personal guarantor
5= compulsory savings 6= other (specify).....

.....

2.7 If a client defaults what measures do you take to retrieve the loan?

1= Refusal of further loans 2= Take collateral 3= Resort to the law courts

4= others (specify)

2.8 What other incentives mechanisms are designed to elicit repayment?

1= progressive lending 2= Frequent visit by staff 3= Making public repayments 4= Public announcement of defaulters 5= others

2.7 How do you calculate your interest rates?

1= flat 2= declining balance method 3 = others (specify)

2.8 If you provide saving services, what type of accounts do you operate?

1= deposit 2=current 3= others specify

Section Three (3):Non-Financial Services

3.1 Apart from the financial services what **social intermediation** service do you provide?

0 = none 1= group formation 2 = leadership skills 3= accounting skills 4= participatory management 5= record keeping 6 = others (specify).....

3.2 What **enterprise/business development services** do you provide?

0= none 2= marketing 3= business training 4= production training 5= others

3.3 What **social services** do you provide?

0= none 2 = literacy training 3= health services 4= nutrition services

5= Others

PART THREE: PERFORMANCE OF MFIs**Section Four (4): Financial performance**

4.1 Please complete the information on your loan portfolio as at 31/12/13

Category	Total Amount	Amount received (current + past due)	Total amount due this period + amount due from previous periods
Agricultural loan portfolio			
Other loans			

4.2 Please breakdown your agricultural loan repayment rate into the following categories

Category	Total Amount	Amount received (current + past due)	Total amount due this period + amount due from previous periods
Producers			
Buyers			
Processors			
Others			

4.3 Can you provide information on your reported financial self-sufficiency (FSS) and operational self –sufficiency (OSS) in the following table?

Ratio	Percentage
FSS	
OSS	

Section Five (5): Non-Financial performance (scale and depth of outreach)

5.1 Please break down your agricultural clients served into the following categories

Category	Number of new active borrowers	Average loan size	Average interest rate	Average loan term
Women				
Men				
Rural				
Urban				
Educated				
Uneducated				

5.2 What do you need most to improve your agricultural lending?

1.
2.
3.

5.3 Kindly list the main constraints for your agricultural lending activities

1.
2.
3.

***THANK YOU FOR YOUR TIME AND EFFORT IN ANSWERING THE
QUESTIONS. YOUR EFFORTS WILL HELP TO FURTHER UNDERSTAND HOW
PRODUCTS AND SERVICES INFLUENCE THE SUSTAINABILITY OF
AGRICULTURAL CREDIT DELIVERY IN GHANA.***