UNIVERSITY OF CAPE COAST

AN EXAMINATION OF THE FACTORS THAT INFLUENCE LOAN REPAYMENT IN THE CREDIT WITH EDUCATION PROGRAMME IN THE TAMALE METROPOLIS

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BY

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THESIS SUBMITTED TO THE INSTITUTE FOR DEVELOPMENT STUDIES OF THE FACULTY OF SOCIAL SCIENCES, UNIVERSITY OF CAPE COAST IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR AWARD OF MASTER OF PHILOSOPHY DEGREE IN DEVELOPMENT STUDIES

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Name: Mugmin Musah

Signature…….....Date…….....

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Name: Dr. Francis Enu-Kwesi

Signature…….....Date…….....

Co-Supervisor's Name: Mr. Frederick Koomson

Signature…….....Date…….....

ABSTRACT

Microfinance has been used as a development strategy for reducing poverty and contributing to development. Survival of microfinance institutions (MFIs) is however, much dependent on ability of borrowers to make timely loan repayment. Records of MFIs in the Tamale metropolis of Ghana show unusually high repayment rates. This has consequence of being replicated widely even though no empirical study has been done to guarantee the sustainability of these claims. This study examined factors that influence loan repayment in the Credit With Education Programme (CWE) implemented in the Tamale Metropolis.

The study employed simple random sampling within cross sectional and correlational research designs to collect data from 375 borrowers and 23 loan officers. Data collection instruments used include questionnaire and interview schedules. Data analysis utilised both descriptive statistics such as means and standard deviations and inferential statistics such as binary logistic regression.

The findings show that older borrowers, borrowers with access to market, and borrowers with smaller households repaid loans on time. Similarly, older loan officers, loan officers with smaller households, and those who had more initial trainings recovered loans on time. In terms of loan conditions, borrowers with multiple loans and those who participated more in initial trainings repaid loans on time. The study recommends replication of the CWE by other MFIs but called for intensification of the training and education components of the programme, increase in loan officer incentives and intensification of screening of new loan officers and borrowers.

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DEDICATION

To Mariam, my lovely wife

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LIST OF ABBREVIATIONS

ARB	Association of Rural Banks
BRAC	Bangladesh Rural Advancement Committee
BRB	Bonzali Rural Bank
CRS	Catholic Relief Services
CSAs	Credit and Savings Associations
CWE	Credit With Education
FFH	Freedom From Hunger
FNGO	Financial Non Governmental Organisation
HR	Human Resource
IT	Information Technology
MDGs	Millennium Development Goals
MFIs	Micro-Finance Institutions
MIS	Management Information System
NGO	Non Governmental Organisation

CHAPTER ONE

INTRODUCTION

Background to the study

Development and poverty are perhaps the most prominent phenomena in the global struggle to improve the wellbeing of people in the 21st century. There is general consensus among theorists and practitioners that development and poverty are inversely linked. Poverty is broadly considered as the antithesis of development even though the two are not necessarily exact opposites (O'Connor, 2002).

The charge against poverty in the development discourse is that poverty is considered a major threat to education, health, peace, and investment which are necessary for development (Neville, 2003). Poverty is also charged for promoting power gaps that perpetuate inequalities in development between different localities (rural and urban), nations (developed and developing) and groups (men and women). For instance, World Bank (2005) report indicated that the global inequality in gender is largely attributed to the fact that women are over represented among the world's poor and suffer disproportionately. The report described this situation as a terrible human tragedy which represents the greatest challenge to development.

It is believed, however, that rapid economic growth can reduce poverty. For example, China's poverty halved between 1990 and 2001 due to rapid economic growth (World Bank, 2005). In contrast, Ravallion and Chen (2008) noted that the number of extremely poor people in Sub-Saharan Africa doubled within the same period.

Perhaps, the most significant global attempt to fight poverty was the dedication of the first Millennium Development Goals (MDGs) to reduce extreme poverty by half by 2015 (Sachs, 2005). In pursuance of the MDGs, Tesfatsion (2010) notes that governments and development agencies have developed several strategies to fight poverty of which various forms of microfinance programmes are implemented. Microfinance is defined as the provision of financial services to low-income clients, including consumers and the self-employed, who traditionally lack access to banking and related services (Gonzalez-Vega, 2008)

The justification for the use of microfinance in fighting poverty is in line with Sen's Capability Approach that microfinance provides an opportunity for increasing capabilities of the poor to realize their economic and social well-being (Crocker, 2006). This follows the view of Robinson (2001) that the core philosophy of microcredit lending is that poor people are best able to help themselves when they are given equal access to credit. In addition, the basic principle of microcredit is that it targets only the poor with emphasis on women who are socially and economically the most impoverished in society (Mahmud, 2008).

Microfinance advocates such as James Wolfenshohn (former World Bank president) has emphasised the crucial role of microfinance in reducing poverty and achieving the MDGs (Daley-Harris, 2004). On their part Armendariz de Aghion and Morduch (2010) are quoted to have said that "microfinance presents a series of exciting possibilities for extending markets, reducing poverty, and fostering social change" (p.3). They noted that charitable organisations like the Bangladesh Rural Advancement Committee (BRAC), the Catholic Relief Services (CRS), and Freedom from Hunger have become major microlenders, with missions that also include working to improve health conditions, empower women, and meet the aims articulated as the United Nations' MDGs.

The arguments for microfinance must however take cognisance of an earlier position of Akubuilo, Umebali and Ude (1998) that credit is important for fighting poverty but it must be repaid in order to make it sustainable. In line with this, Roslan and Mohd (2009) warns that non-payment of loans can deny clients access to future credit and also bring shameful social pressure from group members who often guarantee the credit. On the other hand, Francis (2009) notes that non-payment of loans reduces the interest income, profits and on-lending funds of financial institutions whose major asset is loans.

Notwithstanding the above consequences, lending to the poor is generally laden with repayment related challenges which have generated protracted arguments in the microfinance industry (Roodman & Qureshi, 2006). Derban, Binner, and Mullineux (2005) argue that non-payment of loans is attributed to

behavioural factors underpinned in agency theory and include institutional factors such as loan officer characteristics and loan conditions. In addition, Bwonya-Wakuloba (2008) has noted that abundant literature supports the view that borrower characteristics are highly influential determinants of repayment. Theoretically, these characteristics are influenced by the existence of imperfect information which significantly increases default risks caused by adverse selection and moral hazard, behaviours (Kono & Takahashi, 2010).

In spite of these challenges and criticisms, MFIs continue to provide loans to poor borrowers because there abound evidence that repayment rates of these people is very good (Roslan & Mohd, 2009; Tesfatsion, 2010). For instance, Zohra and Shyam (2011) indicate that well performing MFIs in the world are recording high loan repayment rates between 97 to 99 percent. These high repayment rates are said to be due to the innovative credit methodologies.

In Ghana, a leading MFI, Freedom from Hunger Ghana (FFHG), has supported its partners to implement one of these innovative programmes called Credit with Education (CWE). Credit with education hinges on Sen's capability theory in that poor unbankable women who lack credit are given the ability and capability to engage in meaningful income generating activities (Reid, 2002). MkNelly and McCord (2002) explain that when a woman joins a CWE programme in her village, she links arms with other women she probably knows well and together, the women receive loans and jointly guarantee repayment. The

women also engage in joyful learning sessions, save little money and make repayment each week when the group gathers (Freedom from Hunger, 2006).

Freedom from Hunger (2010) also reported that it has installed the CWE programme for five MFIs in the Northern Region, including four rural banks (Bonzali, Bori manga, East Mamprusi and West Mamprusi rural banks) and one Financial Non Governmental Organisation (FNGO) called Grameen Ghana. Two of these institutions namely, Bonzali rural bank and Grameen Ghana are operating in the Tamale Metropolis.

Bonzali Rural Bank (BRB) is a registered rural bank licensed to operate in Ghana and regulated by Bank of Ghana through the Association of Rural Banks (ARB). The Bonzali Rural Bank (2008) annual report indicates that the bank was established in 1990 to provide financial services to people in the Northern Region. According to the report, the bank has its headquarters in Kumbungu in the Tolon/Kumbungu District but operates in seven other districts, including the Tamale Metropolis. An earlier report by Freedom From Hunger Ghana (2005) shows that BRB was supported by Action Aid Ghana in 1997 to implement the CWE programme in the Tamale Metropolis.

The programme expanded in 2006 to 186 CSAs with a total of 6,391 borrowers and an outstanding loan portfolio of GH¢ 843,300. This made the BRB the largest of all the CWE partners in terms of growth (Freedom from Hunger Ghana, 2006). As at 2009, the Tamale Metropolis branch alone had 8,211 clients from 394 CSAs, all of whom are women. The average loan size of the clients was

GH¢ 100 with weekly repayment frequency, a CWE interest rate of 36 per cent per annum and an excellent repayment performance (Bonzali Rural Bank, 2009).

Grameen Ghana, on the other hand, is a registered Non Governmental Organisation (NGO) established in 2001 at Tamale but now operates in seven Districts in the Northern Region (Grameen Ghana, 2009). The aim of the organisation is to reduce poverty through working in partnership with other organisations and institutions working with poor and vulnerable groups in the area of Microfinance, Food Security and Education (Grameen Ghana, 2010). According to Alhassan, Abdul-Malik, and Andani (2011), the basic loan delivery methodology used by Grameen Ghana has been the group lending method based on the Grameen Bank credit model.

In 2009, however, the organization was supported by Freedom From Hunger Ghana to implement the CWE methodology in its operational areas including the Tamale Metropolis (Grameen Ghana, 2011). According to the 2011 annual report of Grameen Ghana, the reason for the rapid adoption of the CWE in all programme areas is primarily due to its 100 per cent repayment rate. Currently, the total number of clients of Grameen Ghana is 8,847, all of whom are women belonging to 326 groups. The average client loan size is GH¢ 100 with an interest rate of 36 percent per annum. Tamale Metropolis has 89 groups and 2,647 clients (Grameen Ghana, 2011). Repayment in Tamale is fortnightly even though it is weekly in other district. The organisation hopes to graduate all its groups in every district to the CWE methodology.

Problem statement

The microfinance industry has recently come under intense criticisms owing to concerns raised against reported repayment rates as well as limited and conflicting research findings regarding factors that determine loan repayments (Achoja et al, 2008; Kohansal & Mansoori, 2009). In the midst of these criticisms, MFIs using the CWE methodology in the Tamale Metropolis of Ghana report higher rates of repayments (100%) even above the global best record of 99 percent achieved by the Grameen Bank (Tesfatsion, 2010).

Studies that have been carried out around the world suggest that some socio-economic characteristics of the borrowers and loan officers can affect repayment of loans (Bhatt & Tang, 2002). According to Oke, Adeyemo and Agbonlahor (2007), factors such as the age, marital status, household size and the number of dependents of borrower could affect loan repayment or otherwise.

Others also believe that loan officer socio economic characteristics such as his/her income and number of income sources could also affect willingness of these officers to make timely loan retrieval (Oni, 1999). Yet still, Oladeebo and Oladeebo (2008) mention that, the loan conditions of the financial institution could also affect the convenience at which borrowers will access loans and how they can put them to good use and eventually be able to repay.

The results on microcredit repayment rate appear quite unusual considering the fact that most of the target groups are poor clients engaged in risky agro-based businesses. Besides, no empirical study has been done to

investigate how the CWE loans have been repaid and which factors influence the higher repayment rates that are claimed.

In spite of these uncertainties, many more MFIs are prepared to adopt and implement the CWE methodology. The two CWE implementing organisations alone have already disbursed over GH¢ 200,000 in loans to over 10,000 clients in the year 2010 (Bonzali Rural Bank, 2010; Grameen Ghana, 2010). These huge disbursements and astronomical growth may lead to collapse of these institutions should there be a sudden increase in default. Hence, the need to examine the factors that influence the loan repayment in the CWE programmes in the Tamale Metropolis.

Objectives of the study

The main objective of the study was to examine the factors that influence loan repayment within the Credit with Education Programme in the Tamale Metropolis. Specifically, the study sought to:

1. Examine the effects of socio-economic characteristics of CWE borrowers on loan repayment
2. Determine the effects of socio-economic characteristics of loan officers on loan repayment
3. Analyse the effects of loan conditions on loan repayment.
4. Make recommendations for policy

Hypothesis

In order to address the objectives the following hypotheses were tested:

1. H_o: Repayment of loans is independent of the socio-economic characteristics of CWE borrowers

   H_1: Repayment of loans is dependent on the socio-economic characteristics of CWE borrowers

2. H_o: The socio-economic characteristics of loan officers do not contribute significantly to loan recovery.

   H_1: The socio-economic characteristics of loan officers contribute significantly to loan recovery.

3. H_o: Loan repayment does not depend on loan conditions.

   H_1: Loan repayment depends on loan conditions.

Scope of the study

The study focused only on CWE borrowers in the Tamale Metropolis because of time and financial constraints. In addition, although there are other MFIs implementing similar programmes in the area, this study concentrates on Grameen Ghana and Bonzali Rural Bank because they are the forefront MFIs trained by FFH to implement the CWE programme in the Tamale Metropolis.

The study is also based on only factors relating to loan officers, clients, and loan terms and conditions. It did not include business related factors such as

type of business and profit since most micro-borrowers did not keep proper financial records of their businesses (Mohini, 2006).

Significance of the study

An examination of factors affecting loan repayment of CWE borrowers would enable policy makers to formulate successful credit policies and programmes that will facilitate the allocation of scarce financial resources to the development of the rural microfinance sector of the economy and contribute to poverty reduction efforts in Ghana.

The results will help microcredit practitioners to identify the major characteristics of credit worthy borrowers so as to improve upon their future screening and training programmes. The study will also contribute to knowledge and understanding of the reasons for the excellent CWE loan repayment there by providing appropriate guidelines to sustain the success and wider adoption of the CWE methodology. Furthermore, the study will help researchers to identify microfinance challenges in the area and establish basis for further research.

Operational definitions

1. Socio-economic characteristics refer to personal characteristics such as marital status and education and business activities of respondents.

2. Socio-economic characteristics of CWE borrowers is measured in terms of age, marital status, level of education, income, religion, experience, number of dependents and household size and residence status
3. The socio-economic characteristics of loan officer is measured in terms of sex, age, marital status, level of education, income, number of dependents, household size and years of work experience.
4. Loan conditions refer to the rules and regulations as well as sanctions governing the loan disbursement and repayment processes. This is measured in terms of loan amount, interest rate, repayment frequency, amount of savings and sanctions for non repayment.
5. Repayment (dependent variable) in this study is defined as whether the client had delayed payment of loan instalments to the lending institution or not. This follows similar empirical studies including that of Kohansal and Mansoori (2009). Hence, repayment is seen as a dichotomous variable such that if the client had no delayed repayment, value of the dependent variable will be one and otherwise zero.

Organisation of the study

The study is organised into five chapters. Chapter one looks at the introduction with specific areas as background to the study, research problem statement, objectives, research questions and hypotheses, significance of the study and scope of the study. The second chapter reviews the theoretical and empirical

literature on loan repayment and draws lessons learnt to feed into a conceptual framework for the study. Chapter three deals with the research design, population, data collection instruments, sample and sampling procedures and analytical techniques. The empirical results and discussions are presented in chapter four according to the objectives. The last chapter contains conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

Literature review is important in research because it provides relevant information about existing knowledge on the study topic and illuminates the significance of the new study. It also provides readers with clear direction of how the study should be conducted based on past works done on the area of study.

This chapter reviews literature on theoretical and empirical works related to the study. The theoretical literature comprises the agency theory and its two perspectives, the theory of joint liability and the moral hazard theory. The empirical literature focused on various works done on loan repayment and its determinants. The literature review also examined the lessons learnt from the theoretical and empirical literature and this led to the development of a conceptual framework for the study.

Sen's capability theory

Arguments about the impact of microfinance on poverty can be evaluated through the lens of Sen's capability theory. Amartya Sen gradually developed the theoretical foundations of the capability approach through his analysis of poverty

and famine on one hand and the limitations of evaluating human development and well-being in terms of economic growth and utility on the other. He argues that the conventional view that famines are caused by the decline of food availability is flawed. This is because the most devastating effect of famine may result mainly from the sudden collapse of direct and/or trade entitlement to food (Sen, 1981).

According to Sen (1984), entitlement here may be trade-based, production-based, own-labour, and inheritance and transfer. He proposes that since famines occur mainly because of entitlement failures, the best way to prevent them is to focus on antipoverty programmes that provide social safety nets for entitlement protection. Sen also made an analysis of poverty through his entitlement concept and proposes that any appropriate evaluation of poverty should be based on aggregation and segregation of the poor. This implies one should first identify a group of people as poor and then aggregate the characteristics of the set of poor people into an overall image of poverty (Devereux, 2001).

In his *Tanner Lecture,* Sen argues that the right focus for assessing people's well-being and standard of living in society is neither commodities, nor characteristics, nor utility, but their 'capacity to achieve valuable functionings' (Sen 1993: 31). By functioning, he means what a person is able to achieve or do within a given time subject to the availability of resources such as money, public goods and private goods. By capabilities he means the freedom that a person has to live one type of life or another. Sarumathi and Mohan (2011) explained that

this capability however, depends on a variety of factors including personal characteristics and social arrangements.

Cohen (1993) strongly criticised Sen's propositions on capability. He claims that the "capability approach espouses an inappropriate 'athletic' image of the person in that his emphasis on ability to achieve valuable functioning indicates that life is valuable only if people actively choose most facets of their existence" (Cohen, 1993:25). By implication whether one is capable or not depends on how much of the functioning indicators he has been able to achieve irrespective of the prevailing conditions of the time and place (Alkire, Qizilbash & Comim, 2008).

Sen (1999) responded to this criticism by saying that capability should be understood basically as a reflection of the freedom to achieve valuable functioning. It concentrates directly on freedom as such rather than on the means to achieve freedom. However, he notes that a person's freedom can also be understood in terms of his/her agency aspect, which refers to a person's broader freedom to bring about the achievements he/she values and which are associated with the well-being of others. He called the achievement realized in one's agency aspect as an 'agency achievement', and the achievement realized in one's well-being aspect as a 'well-being achievement'. Crocker (2006) explains that Sen's attempt to make a differentiation between a person's agency aspect and well-being aspect emphasizes that human behaviours are not always motivated by their own well-being but also the well-being of others.

Philosophers have also raised fundamental questions regarding the character and justification of Sen's capability approach. One set of objections is by Arneson (2006) who argues that the sufficient threshold feature embedded in Sen's capability approach will (i) lead to a situation in which too many social resources are devoted to vulnerable groups; (ii) arbitrarily set the proper threshold level; and (iii) pay no attention to inequality above the threshold. On her part, Nussbaum (2006) questioned the validation of people's decisions about basic capabilities and the threshold of each basic capability. She argues just because people directly participate in selecting a list of basic capabilities does not necessarily make the list morally justifiable. In other words, capabilities are considered basic because they are thought to be by citizens and may not belong to a morally justifiable list of capabilities promoted by development.

Sen's version of the capability approach has further been criticised on the basis of procedural lapses in the selection of capabilities. Crocker (2006) noted that even though Sen emphasises the need for democratic deliberations to produce the list of capabilities, such deliberations can produce a list which is vulnerable to selection bias if there are no restrictions or guidelines as to who should participate and how to conduct the deliberation. Another criticism of Sen's capability approach is that it lacks a procedure for discerning which capabilities/freedoms are fundamentally important and which are not (Nussubaum, 2009). For example, Nussubaum argued that a male dominated society may choose a list of basic

capabilities that is insensitive to gender-based equality but this may be highly questionable to women.

The first criticism on selection bias was sharply rebutted by Sen and his supporters. Charusheela (2008) stressed that what the society needs is not a predetermined list proposed by any individuals but a process of genuine listening and deliberation until a list, which will necessarily be collective, can be constructed. Sen's own response to his critics on selection bias is that the problem is not with listing important capabilities, but with insisting on one pre-determined canonical list of capabilities, chosen by theorists without any general social discussion or public reasoning (Sen, 2009). He emphasized that any choice made by few people is bound to deny majority of the exercise of their fundamental rights and this can be a recipe for social agitation. Besides, any such predetermined list is subject to change over time and will make individuals almost always have a partial perspective of issues.

The arguments on Sen's capability approach have significant development implications in that they offer better insight into the definition and measurement of poverty (Alexander, 2008). It is widely held that any social policies and arrangements relevant to development and poverty reduction should be assessed in terms of their impact on an individual's ability to convert resources into well-being (Hayes, 2008) or their substantial freedoms to do things they have reason to value. As such, many development programmes including microfinance have

tried to provide evidences on how poverty is addressed through enhancement of the individual's capabilities to do things they value.

With respect to the question of the evaluation of microfinance, microfinance has been touted by many, including Sen, as a poverty-reducing measure (Sen, 2009). A study done by Khandker (2005) suggests that microfinance is of great importance in helping women out of poverty.

However, many argue that these studies suffer from different forms of selection bias (Roodman & Morduch 2009; Banerjee, Duflo, Glennerster & Kinnan 2009; Karlan & Zinman 2010). These critics claim that since microfinance focuses on some categories of the poor who may have special skills than others, any evaluation based on comparison of beneficiaries and non beneficiaries is likely to produce exaggerated impact.

To confirm this proposition, Benerrjee et al. (2009) and Karlan and Zinman (2010) conducted separate experimental studies with beneficiaries whose participation in microfinance programmes was determined by random selection. The two researchers found that microfinance actually has insignificant effect on poor people's income. Yet again, critics point out to earlier studies by Karim (2008) that microfinance actually has a darker side on income because it increases over indebtedness of poor people. Karim (2008) gave evidence in Bangladesh where poor borrowers who defaulted (because of payment of hospital bills of their children) were harassed by their group members to sell their property to pay back the loan.

Microfinance supporters, however, claim that in line with Sen's capability theory, microfinance increases capabilities and real freedoms of the poor. A number of evidences are presented to show that microfinance increases women's empowerment. MkNelly and McCord (2001) present evidence from Bolivia that women who participate in Credit with Education (CWE) Programmes are more likely to run for local political office than non CWE participants. Further microfinance is said to increase women's empowerment in the area of decision making within the household (Mahmud, 2003). In addition, Kim (2007) found women's participation in microfinance leads to reduction in domestic violence as a result of increase in their decision making power.

In addition, microfinance is said to contribute significantly to improving capabilities of the poor through increases in health of beneficiaries and their families (Seiber & Robinson, 2007) as well as education of children (Becchetti & Conzo, 2010). Microfinance is also praised for increasing financial literacy of borrowers leading to better business and debt management (Rajendran & Raya, 2010).

The foregoing arguments suggest that in the light of Sen's capability theory, microfinance has a double edge possible effect of both increasing people's capabilities (social and economic empowerment) or decreasing capabilities (increasing indebtedness). The sustainability of this effect however depends on its ability to increase empowerment services and support poor borrowers to be able to convert loans into well-being without falling into indebtedness. This could be

done if the poor could be supported to manage the pursuit of both their well-being aspect and their agency aspect (Sen, 1999; Crocker, 2006).

Agency theory

According to Pietersz (2010), agency theory is the branch of financial economics that explains conflicts of interest between people with different interests in the same assets. The theory seeks to describe the agency relationship, in which a principal delegates work to an agent, who performs that work. Agency theory assumes that both parties to an exchange would be acting in their own interests but would also be aware of the basis on which the other is operating (Shapiro, 2005). The underlying assumption of this theoretical view is the existence of perfect competition. In such a situation, the resulting exchange is expected to benefit both parties to an equal degree. However, as noted by Amagoh (2009), this does not happen in reality as a result of the existence of imperfect information. According to Brudan (2010), agency theory has developed along two main dimensions, namely the positivists dimension and the principal-agent dimension.

The positivist dimension of the agency theory is an approach that attempts to identify and resolve conflicting goals of the principal and the agent. In this light, various researches (Fama & Jensen, 1983; Jensen, 1984) have often focused on limiting the self-serving interest of the agent. The positivist dimension is also

much concerned with describing the governance mechanisms that solve the agency problem.

Proponents of the positivist dimension have proposed two hypotheses to illustrate the governance mechanisms identified in this theory. One proposition is that outcome-based contracts are effective in curbing agent opportunism (Rocha & Ghoshal, 2006). Rocha and Ghoshal argue that such contracts are likely to reduce the self interest of the principal and the agent because the rewards for both depend on the same actions. In other words, the positivist perspective assumes that when the contract between the principal and agent is outcome based, the agent is more likely to behave in the interest of the principal (Brudan, 2010).

The hypothesis on outcome-based contracts can be extended to the loan officer in a microfinance institution (Inderst, 2008; Agarwal & Hauswald, 2011). For instance, Armendariz de Aghion and Morduch (2005) noted that if the payment of a loan officer is partly conditional on the loan recovery rate and portfolio growth of a financial institution, the loan officer is more likely to put in more effort to meet the organisational goals. In such a situation, the interests of the loans officer and the organisation or its manager are likely to be the same (Armendariz de Aghion & Morduch, 2005).

On the other hand, loan officers whose payment is independent of the portfolio growth of an institution might not be so committed to the organisational growth goal because it has no influence on their personal interest (Cull, Demirguc-Kunt, & Morduch, 2009). In the latter situation, the loans officer can

afford to pursue a personal interest, such as doing private job to get more money, which is different from the interest of the institution or its manager (Hertzberg, Liberti & Paravisini, 2009).

The second proposition is that information systems also curb agent opportunism. The rationale for this proposition is that information systems inform the principal about what the agent is actually doing. This makes the agent realise the impossibility of deceiving the principal and so the agent opportunism is curbed. According to Eisenhardt (1989), the positivist hypothesis here is that when the principal has information to verify agent behaviour, the agent is more likely to behave in the interest of the principal. In the context of microcredit, existence of an effective and robust management information system (MIS) in an MFI can keep loans officers, who act as agents, in check. This system backed by routine client/group monitoring mechanisms, can help to generate triangulated information on the actions of loan officers. Therefore, loans officers who are aware of this system are more likely to act in the interest of the principal (Bellucci, Borisov, & Zazzaro, 2010).

Principal-agent dimension of the agency theory focuses on determining the optimal contract between the principal and the agent. This optimal contract relates to behaviour versus outcome. Laffont and Mortimort (2001) noted that this dimension is more concerned with the relationship between the principal and the agent and can be applied to employer-employee, lawyer-client, buyer-supplier, and other agency relationships. According to Meijerink (2008), there are a

number of underlying assumptions of the principal-agent model including existence of goal conflict between principal and agent. Meijerink added that the principal-agent model assumes that contracts between the principal and the agent are easily measured and that the agent is more risk averse than the principal. The principal-agent stream therefore has a broader focus and greater interest in general and theoretical implications.

As noted by Demski and Feltham (1978), the approach of the principal-agent dimension can be described in terms of cases. The first case is when the principal knows what the agent has done. This assumes a simple situation where there is complete information about the agent. On the basis of this, a contract that is based on behaviour is most efficient since the principal is assumed to have bought the behaviour of the agent. In addition, since the agent is assumed to be more risk averse, an outcome-based contract would needlessly transfer risk to him/her. By implication, if it is possible for an MFI to obtain complete information about its staff, providing an outcome-based contract can lead to the achievement of the institutional goal of improving upon repayment performance without undermining the interest of the loans officers (Inderst, 2008).

The second case is when the principal does not know exactly what the agent does. This may lead to the agent pursuing his self-interest which may be contrary to the agreement with the principal. As observed by Mansouri, Pirayesh, and Salehi (2009), the agency problem arises because the principal and the agent have different goals, and the principal cannot determine if the agent has behaved

appropriately. Vargas-Hernández (2006) also argued that under conditions of incomplete information and uncertainty, which characterise most business settings, two major agency problems arise: adverse selection and moral hazard.

Moral hazard is the condition under which the agent fails to put in effort to perform the desired task since the principal cannot monitor all actions by the agent (Brown, Potoski, & Slyke, 2006). Adverse selection, on the other hand, refers to the condition under which the principal cannot ascertain if the agent accurately represents his ability to do the work for which he is being paid (Nyman, Nilsson & Birger, 2005).

Shapiro (2005) also points out that adverse selection arises where there are different types of agents and principals cannot tell the difference among the agents. In such situations, Shapiro notes that some agents may be risk averse while others may be free riders and it becomes difficult to tell which agent's interest is more congruent with that of the principal. Under this situation, the agents can take some costly action to improve outcomes for the principal but the principal cannot observe the action. It could also happen that the agent may simply not put forth the agreed-upon effort (Gauld, 2007).

Huang and Cappelli (2006) however, stated that the principal agent dimension has put in place measures to address problems arising from unobservable behaviour due to moral hazard or adverse selection. The principal agent dimension prescribes two options for the principal to use to address these problems. In line with this, Wankhade and Dabade (2006) recommend that one of

such options is to invest in systems such as information, budgeting, reporting procedures, boards of directors, and additional layers of management.

According to Zeng, Lou and Tam (2007), such investments would expose the behaviour of the agent to the principal, and the situation reverts to the same case of complete information. In the case of an MFI, management can invest in a robust MIS that incorporates budgeting and reporting templates to track the activities of loans officers (Amagoh, 2009). If this system is backed by a system of routine field monitoring of credit officers by a credit manager and periodic performance review by board of directors, then the agent's behaviour would be much revealed to the principal (Conlon & Parks, 1988).

The second option proposed by the principal agent proponents is to contract on the outcomes of the agent's behaviour. It is based on the assumption that such outcome-based contract can motivate behaviour by synchronising the preferences of the principal and the agent (Meijerink, 2008). However, Heath (2009) argued that this preference alignment can transfer risk to the agent because outcomes are only partly a function of behaviours.

In the case of microcredit delivery, borrower output levels, price changes, demand and supply variations, and competitor actions are some of the factors that may cause uncontrollable variations in outcomes (Atieno, 2001). The adoption of outcome-based contract therefore depends much on the degree of outcome uncertainty. When outcome uncertainty is low, the costs of shifting risk to the agent are low and outcome-based contracts are attractive. However, as uncertainty

increases, it becomes increasingly expensive to shift risk despite the motivational benefits of outcome-based contract (Mansouri et al., 2009).

Various extensions of the principal agent model have led to further hypothesis that the task of the agent, the measurability of the outcomes, and the length of relationship between the principal and the agent are related to behaviour based contracts and outcome-based contracts. Works by Eisenhardt (1985) stated that programmability of the task is likely to influence the ease of measuring behaviour. Programmability here refers to the degree to which the appropriate behaviour by the agent can be specifically determined in advance. The argument is that it is easier to observe and evaluate the behaviour of agents engaged in more programmed tasks than those engaged in less specified task (Finkle, 2005). Therefore, the more programmed the task, the more attractive are behaviour-based contracts because information about the agent's behaviour is more readily determined (Brown, Potoski & Slyke, 2006).

Regarding measurability of outcomes, Anderson (1985) argues that the assumption of the principal-agent dimension that outcomes are easily measured is not always applicable. This is because, some tasks require a long time to complete and some involve joint or team effort. In these circumstances, outcomes are either difficult to measure or difficult to measure within a practical amount of time (Clarke, 2004).

In the view of Meijerink (2008), when outcomes are measured with difficulty, outcome-based contracts are less attractive. In contrast, when outcomes

are readily measured, outcome-based contracts are more attractive. Application of this model to microfinance implies that outcome-based contracts will be appropriate for loan officers only when management can easily programme their tasks. By extension, loan officers whose tasks are programmed are expected to be putting in more effort in loan disbursement and repayment than those whose tasks are not (Khalil, Martimort & Parigi, 2007).

The third extension of the principal agent dimension hypothesises that the length of the agency relationship is positively related to behaviour-based contracts and negatively related to outcome-based contracts (Zhao 2005). Lambert (1983) claims that when principal and agents engage in a long-term relationship, it is likely that the principal will learn about the agent and will thus be able to assess behaviour more readily. Conversely, in short-term agency relationships, the information asymmetry between principal and agent is likely to be greater, thus making outcome-based contracts more attractive (Mansouri et al., 2009). Assuming an agency role of a loan officer, MFI management can improve upon loan repayment by adopting an outcome-base contract with newly employed credit staff (Amagoh, 2009).

The fundamental unifying ground of the positivist and principal-agent perspectives is that the two streams are complementary. Whereas the positivist theory identifies various contract alternatives, principal-agent theory indicates which contract is most efficient under varying levels of outcome uncertainty, risk aversion, information, and other variables.

Critique of the agency theory

The proponents of agency theory argue that the theory has examples that are universal as it applies to diverse disciplines (Ross, 1973). Others such as Jensen (1983) emphasise that the development of agency theory represents a revolution marking the establishment of a powerful theory of organisations.

On the other hand, the agency literature is accused of being split into two camps leading to differences in interpretation (Jensen, 1983). Some of the opponents of agency theory call it trivial, dehumanising, and even a dangerous proposition (Perrow, 1986). Perrow claims that agency theory addresses no clear problems and argues that the theory is unrealistically one-sided because it neglects potential exploitation of workers. In addition, Hirsch and Friedman (1986) say the theory is excessively narrow. Hirsch and Friedman believe that the technical style, mathematics, and tautological reasoning of the agency literature can obscure the theory.

The assaults on agency theory have generated controversies in the literature and have kept readers in a dilemma as to whether to describe it as "grand theory or great sham" (Eisenhardt, 1989, p. 57). The nature of the agency debate has also created a noticeable bias in the theoretical literature. Whereas economists hail it as revolutionary, it is considered a theory of little worth in the eyes of organisational scholars. One common criticism is that agency theory does not present consistent empirical results and so it is incapable of prescribing tools to control the presumed managerial opportunistic behaviour and improving

organizational performance (Daily, Dalton & Cannella Jr., 2003; Zajac & Westphal, 2004).

Kanter (2005) argues that agency theory presents an oversimplified way of characterizing and solving problems in the organizational setting that may be potentially dangerous. This is because the assumptions imbedded in agency theory are detached from reality and purely made in order for the model to be workable mathematically (Hartman, 2008; Surendra, 2010). According to Ghoshal (2005) the prescriptions of agency theory provides opportunity for higher propensity towards risk, along with unethical and immoral behaviour in organizations. For instance, it is argued that the theoretical underpinnings of agency theory promulgated the wealth maximization environment that fuelled the 2008 global financial crisis (Dobbin & Jung, 2010). In the context of microcredit research, the focus is therefore to understand the situations in which the agency perspectives can provide theoretical leverage.

Joint Liability Theory

The theoretical literature on joint liability is found in the works of Matin (1997), Ghatak and Guinane (1999), Conning (2000) and Ahlin and Townsend (2002). These works built on an earlier contract theory literature from the early 1990s (Arnott & Stiglitz, 1991; Holmstrom & Milgrom, 1990; Stiglitz, 1990; Varian, 1990), that tries to establish when a principal should contract with a group

of agents to encourage side-contracts between them as opposed to contracting individually with each agent.

Martin (1997) describes joint liability as a contract in which the provision of the private good, is made conditional on the provision of the public good. It refers to a situation in which two or more parties are liable for repayment of a debt or obligation and a creditor can be compensated from them either individually or jointly. The argument for group lending with joint liability is that if one borrower cannot repay a loan, then other members of the joint liability group will do so (Ahlin & Townsend, 2002).

The philosophical basis of joint liability lies in the economic logic that joint-liability lending can mitigate some problems that arise in lending to poor people (Giné, & Karlan, 2007). The rationale here is that lending to the poor is constrained by issues of information asymmetry and inability to effectively enforce contracts (Bassem, 2008). The first issue is that there exists asymmetric information in the credit market such that the lender does not know much about the borrower. The second issue is that lenders cannot effectively apply contractual arrangements to enforce financial sanctions on defaulting clients simply because, they are too poor.

Various works on joint liability provide divergent reasons why microfinance institutions must adopt group lending methodologies to achieve high repayment rates. Ahlin and Townsend (2007) tested theoretical predictions for joint liability and argued that higher degrees of joint liability coincide with lower

repayment, as do higher levels of cooperation within borrower groups. However, Karlan (2007) counteracted this argument by establishing that stronger social connections yield higher repayment rates in joint liability groups in Peru and that socially closer peers monitor fellow members more. He also shows that default is potentially detrimental to social ties.

Economists have applied notions taken from the economics of information and contracts to show how joint liability performs. According to Ghatak and Guinane (1999), these economic models of joint liability are efforts to formalise the idea that local information and social capital that exists among borrowers can be used by a well-structured joint liability institution to deal effectively with the four major problems facing lenders. These four major problems which form the basis of all financial intermediation theories include adverse selection, moral hazard, auditing costs, and enforcement of contract (Olivares & Santos, 2009). The auditing cost is explained as the costs of state verification where the relevant state is the return from the borrower's project.

Giné and Karlan (2009) indicated that the objective of joint liability is therefore to help lending institutions improve upon loan repayment by adopting the four main channels that were proposed by Ghatak and Guinane (1999). The first channel is preventing adverse selection by ascertaining what kind of a risk the potential borrower is (N'Guessan & Laffont, 2000). The second channel is reducing moral hazard by making sure she will utilize the loan properly, once made, so that she will be able to repay it (Laffont & Rey, 2000). The third channel

is avoiding auditing cost by learning how her project really did in case she declares her inability to repay while the fourth channel involves enforcement of rules by finding methods to force the borrower to repay the loan if she is reluctant to do so.

The proponents of joint liability believe that it can do better than conventional bankers in some social contexts for two distinct reasons. First, members of a community may know more about one another than an outside institution such as a bank (Bassem, 2008). Second, a major source of market failure in credit markets is that a bank cannot apply financial sanctions against poor people who default on a loan, since by definition they are poor (Karlan, 2007). In group lending however, members can better monitor each other's investment, and may be able to impose powerful non-pecuniary social sanctions at low cost.

A practical test of the model of Ghatak and Guinane (1999) shows that joint liability can achieve better screening to contend with adverse selection and encourage peer monitoring to reduce moral hazard. It can also give group members incentives to enforce loan repayments and reduce the lender's audit costs for cases where some group members claim not to be able to repay (Laffont & Ray, 2000). The joint liability theory is praised by its proponents because it is the most innovative means by which majority of the poor in both developing and developed world gain access to credit (Microcredit Summit Campaign, 2005).

This partly explains the belief that joint liability lending is a potential break through strategy in economic development.

Perhaps, the most impressive accolade for joint liability is that:

> "It is celebrated as a contractual innovation that has achieved the apparent miracle of enabling previously marginalized borrowers to lift themselves up by their own bootstraps by creating 'social collateral' to replace the missing physical collateral that excluded them from access to more traditional forms of finance" (Conning, 2000, p.1).

This tribute to joint liability implies that the poor could not access financial services from banks because the main qualification for credit was collateral which the poor did not have. However, Armendariz de Aghion & Morduch (2005) noted that the advent of joint liability lending provides opportunity for the poor to join forces with their likes and use their social standing to guarantee to pay for each other if any member is unable to pay. The fact that microfinance institutions accept this kind of guarantee as substitute for physical collateral makes joint liability lending an effective tool for increasing financial services to the poor (Madajewicz, 2005).

Contrary to this accolade, Simtowe, Zeller, and Phiri (2006) argue that since joint liability allows the poor to be given access to credit without collateral, in the event of default, they cannot be punished beyond a mere denial of future access to loans. This form of limited liability can induce borrowers to take risky

decisions leading to a more complicated moral hazard conditions (Dawd, 2009). In this case, the solutions prescribed by the joint liability model are mostly theoretical and may not work well in all places (Chowdhury, 2005).

In criticising joint liability lending, Aniket (2006) claims that peer monitoring alone is not sufficient to ensure better performance as professed by joint liability models. This is supported by Chowdhury (2005) whose model abstracts from adverse selection but shows that joint liability alone cannot mitigate an ex-ante moral hazard problem.

Other critics such as Rai and Sjostrom (2004) have maintained that even if joint liability does not jeopardise repayment, theory suggests that it may do no better than individual liability. They claim that even if its suspicious impact on repayment is right, evidence abound that joint liability limits the rate at which institutions can reach out to more poor clients. It also has the potential to create undue pressure and drive away non risky borrowers who fear that other group members may just rely on them for repayment (Giné & Karlan, 2009).

Armendariz de Aghion & Morduch (2010) noted that the use of joint liability to improve repayment is even becoming less famous as global best performing MFIs such as Grameen Bank and ASA are gradually moving away from relying on joint liability. These moves are based on growing empirical evidence that repayment rates in group lending with joint liability are not significantly better than lending without joint liability (Giné, Jakiela, Karlan, & Morduch, 2010).

The dynamics of joint liability lending

Simtowe, Zeller, and Phiri (2006) made a relational presentation of loan transactions and stages in the joint liability lending model based on an earlier work by Sadoulet (2004). Their presentation demonstrates four-stage logical steps as shown in Figure 1.

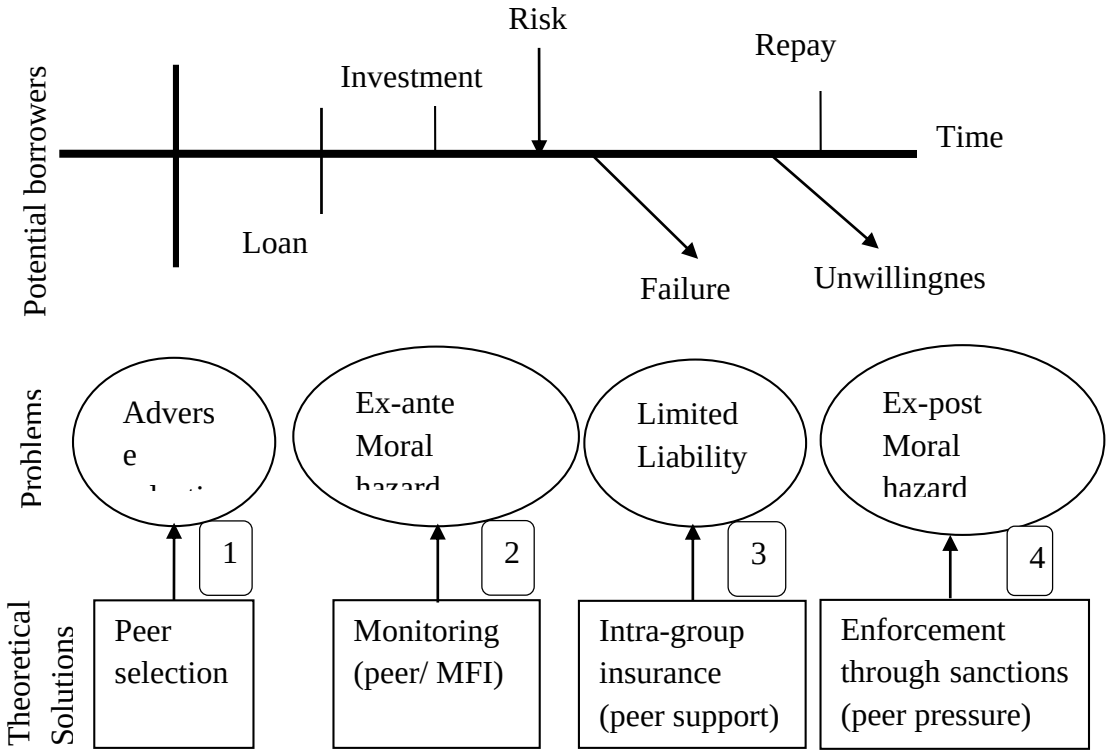

Figure 1: **A dynamic presentation of problems and solutions to joint liability loan**

Source: Adopted from Simtowe, Zeller and Phiri, 2006

According to Simtowe, Zeller, and Phiri (2006), each stage has an associated problem to be addressed by joint liability and a theoretical solution. In their conception, a pool of potential borrowers exists at the beginning of the process but the MFI communicates the need to be in a group before getting a loan.

The community is also made to understand that members of a group are jointly liable for any amount they take and the group will be signing a joint liability contract with the MFI. With this in mind and as it is typical of joint liability lending, Busetta & Zazzaro (2006) noted that individuals with similar risk type come together through peer selection process.

As proposed by Ghatak (1999), the self-selection process reduces the incidence of adverse selection since only members with known background are admitted into the group. The groups are then provided with loans after they receive training and sign the loan agreement with the MFI. The loan receipt is immediately followed by the stages of monitoring, return realisation, repayment or non-repayment. The process ends with penalties of non-refinancing in case of default as typically done in most microfinance institutions using the joint liability method (Tedeschi, 2006).

From Figure 1, the next stage after the selection and loan contract is the investment stage. Simtowe, Zeller, and Phiri (2006) note that the MFI at this stage is confronted with the problem of ex-ante moral hazard. This problem emanates from the kind of investment choice that the borrower may make. If the borrower decides to invest in a risky project or use the funds wrongly, then she/he is likely to create a repayment problem at the end. In addition, even if the borrower invest the funds in a non risky project but fails to put in effort to manage the investment, it may lead to low returns and default. According to Bassem (2008) the appropriate theoretical solution to this ex-ante moral hazard problem is peer

monitoring coupled with complementary monitoring by the MFI loan officers. However, joint liability lending emphasises the peer monitoring because monitoring by MFI officers is assumed to be costly and unsustainable.

In stage three (3), the diagram shows the outcome of the investment by the borrower. Depending on the kind of investment decision and management effort applied, Simtowe, Zeller, and Phiri (2006) argue that the investment may succeed or fail in the end. One cause of investment failure may be the risky nature of the project, misuse of the loan, or poor management (Hardy, Holden & Prokopenko, 2002). However, it is important to point out other possible causes of failure such as environmental shocks or idiosyncratic shocks which are beyond the control of the borrower. In such situations, the envisaged problem is when there is limited liability. This potential problem is however, reduced by intra-group insurance as a theoretical solution under joint liability lending (Sadoulet, 2004). This means that members that do not have repayment problems can assist in paying the defaulters' loan.

At the last stage, the investment is assumed to be successful but the borrower finds it optimal not to repay but divert the money to other purposes. This creates another dimension of the general moral hazard issue in lending contract and the writers call it ex-post moral hazard (Simtowe, Zeller, & Phiri, 2006). Under such situations, the prescribed theoretical solution in joint liability lending is enforcement of peer pressure and social sanctions. This is possible

because the other members have full information about the defaulter's actions (Giné, Krishnaswamy, & Ponce, 2011).

Savings and joint liability lending

Savings has been an integral part of most joint liability lending schemes since the revolution from microcredit to microfinance (Dowla, & Alamgir, 2003; Hulme, 2008). The argument for savings in joint liability lending was based on its necessity to fill up the gap of widening demand by the poor for secure places to save (Helms, 2006). This argument enabled people to see the shift from microcredit to microfinance as a less contentious one (Armendariz de Aghion & Morduch, 2010).

The debate only arose when some people took extreme positions against savings or against loans (Armendariz de Aghion & Morduch, 2005). The earlier extreme position was that the very poor are so close to subsistence that saving is impossible because all extra resources need to go into consumption (Bhaduri, 1977). Exactly contrary to the view of Bhaduri was the argument by Adams, Graham and Von Pischke (1992) that savings is the only thing good for the very poor because they cannot use loans productively. In their view, if microcredit is even necessary at all, then it should target only the "less poor". The debate on savings and credit became even more complicated when Robinson (2001) argued strongly that neither savings nor credit is appropriate for the extremely poor.

However, Armendariz de Aghion and Morduch (2005) rebutted that the arguments against savings or loans for the very poor is neither backed by systematic evidence nor theory. They maintained that the fact that the very poor are not seen to be saving is due to lack of opportunity for safe saving and mistaken beliefs along the lines of Bhaduri (1977) and Robinson (2001). Thus, contrary to the wrong inference, the poor are not saving because they lack the opportunity to save rather than inability to save.

Subsequent literature, however, took a middle position stating that households, rich and poor, often borrow and save simultaneously. This idea is underscored by new work in behavioural economics detailed by Collins, Morduch, Rutherford and Ruthven (2009). Thus, in practice, borrowing and saving are often complementary activities, not substitutes. This view is corroborated by Armendariz de Aghion and Morduch (2010) who point to the fact that the very poor can profit from having better ways to save and borrow. This later view established that people, rich and poor, continuously save less than they would like to. Armendariz de Aghion and Morduch maintained that this is mainly attributed to what is described as the limits to complex decision making and weak internal self-control mechanisms on the part of individuals.

In the joint liability lending practice, savings is considered insurance for the individual, the group, and the MFI (Karlan, 2007). The individual can use her/his savings to meet any repayment amount when she/he is unable to raise money from the normal business activities (Kono & Takahashi, 2010). The group

can also rely on the savings of any member when she/he defaults. All these means will ensure that the MFI recovers all its loans and meet its operational expenses. Therefore, savings is a major factor that can influence repayment of loans.

The findings of Kono and Takahashi (2010) support the debt deflation theory called the paradox of debt which suggests that people sometimes save not to increase savings, but rather to pay down debt (Fisher, 1993). This also confirms earlier empirical expectation that amount of savings have positive relationship with timely loan repayment (Manalo, 2003; Bassem, 2008). On the other hand, the results also contradicts Keynesian theory of the paradox of thrift which states that an ex-ante increase in saving may lead via multiplier to an ex-post decline in real output, investment and saving itself, thereby contradicting the very purpose for which the savings was intended (Abu, Mohammad & Abdullah, 2008).

Moral hazard theory

Mas-Collel, Whinston and Green (1995) explained that moral hazard is an age old phenomenon that characterises hidden actions of individuals in relation to an agreement with others. It may arise when individuals engage in risk sharing under conditions such that their privately taken actions affect the probability distribution of the outcome. That is, people are more comfortable when they know that the consequences of their personal actions are born by the group they belong to. Under moral hazard situation, two types of behaviour can change. One type is the risky behaviour itself, resulting in what is called ex ante moral hazard. The

second type is the reaction to the negative consequences of risk - ex post moral hazard (Holmstrom, 1979).

According to Salanie (2000), both the principal and the agent are guided by their utility maximising problems for abiding by the contract or taking an alternative course of action. This is based on the underlying assumption of the standard moral hazard model that the principal cannot directly observe the effort level of the agent. As observed by Muller and Turner (2005), once a contract has been signed, the agent must choose between a number of possible actions which in turn produce a number of outcomes. In this regard, it is assumed that when the agent chooses a particular action, the principal observes an associated outcome and provides the agent with an incentive.

Among the most notable theories of moral hazard are models by Stiglitz (1990) and Ghatak and Guinnane (1999). Building on the fundamental principles of the standard moral hazard model, Stiglitz (1990) proposed a moral hazard model for credit markets. This model shows that under joint liability scenario, it is assumed that when a borrower's project fails, the partner is liable for the amount. This is an incentive for each member to care about the safety of the project chosen by the peers and it is acknowledged as a justification for peer monitoring. Stiglitz's hypothesizes that by inducing group members to monitor each other's investment decisions and effort, the cost of monitoring by the lending institution is reduced, consequently mitigating moral hazard. Thus, borrowers are given the

tasks of both managing their loan, and monitoring peers to ensure that they take safe decisions that would protect them from falling into repayment problems.

Diagne (1998) extended the model by Stiglitz to include peer pressure and dynamic incentives as measures to induce repayment. The justification for this extension was that Stiglitz's models made a number of simplifying assumptions which are not always applicable in real microfinance practice. One of such assumptions was that members can enforce any agreements regarding their choice of action. The model also assumed that members can monitor each others actions perfectly at no cost. In reality however, Armenderiz de Aghion (1999) noted that joint liability lending only allows for the imposition of sanction on group members that break their repayment promises.

On their part, Ghatak and Guinnane (1999) provided another model to improve upon the earlier models. They added the effects of sanctions and monitoring cost to the model of Stiglitz and proved that peer monitoring is costly. Yet they demonstrated that optimal contracts can still be achieved taking into account the cost of monitoring. Their model further indicated that borrowers' willingness to repay the loan will depend on how they value the access to future loans from the same institution (Morduch, 1999).

However, Ahlin and Townsend (2003) criticized Ghatak and Guinnane for failing to demonstrate how the value of future loans can reduce moral hazard. In their modified model, Ahlin and Townsend included productivity differences across groups and used this to demonstrate how high productivity leads to a

reduction in moral hazard through an increase in payoffs for safe projects. Zhang (2008) also argued that both Stiglitz (1990) and Ghatak and Guinnane (1999) failed to realize that non refinancing threat can have significant effect on borrower's repayment behaviour in a joint liability lending. In his theoretical framework, Zhang included the non refinancing threat and demonstrated that group lending in which group members act cooperatively achieves higher repayment rate than individual lending.

Application of the moral hazard theory in microfinance industry

Dembe and Boden (2000) note that, the moral hazard concept was earlier used by economists to describe inefficiencies that can occur due to displaced risks. The concept is said to have its roots in the insurance industry but has been applied in most other sectors such as management, banking and finance (Hermes, Lensink & Mehrteab, 2005).

According to Paul (2009) moral hazard is described in management as any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly. He asserts that moral hazard can occur in a financial institution when a loan officer is protected by someone higher in the corporate structure such as credit manager or executive director in cases of nepotism. Another situation is when funding and/or managerial status for a project is independent of the project's success (Anghel & Glavan, 2008).

Empirical literature

Group lending with joint liability is commonly used by many microfinance institutions because it is noted to be a reliable means of preventing moral hazard and improving loan repayment. Godquin (2004) investigated how group lending, nonfinancial services and dynamic incentives affect repayment performance of three microfinance institutions in Bangladesh.

The quasi-experimental survey design was used to collect data from a study population of 1,798 households from 87 villages in 29 different sub-districts. For the purpose of the study, 2,349 loan observations representing transactions of 905 sampled households were collected from the three microfinance institutions operating in the area. The types of data collected were amount of loan, duration of loan, social ties in the group, age of group, homogeneity of group in terms of same age, same educational level, and access to non-financial services. The probit model was the analytical tool used to estimate the repayment behavior of the borrowers.

The results indicated that amount of loan has a negative and significant effect on repayment as in the case of Sharma and Zeller (1997). The negative sign of the size of the loan was linked to the borrower's difficulty in repaying a larger amount over a short period (usually one year). Another possible reason was that, for a given duration, large loans do not meet the borrower's needs and are not suited to the local economy. It was however found that all the unpaid loans were eventually paid one year after the due that. This implied that increasing the loan

amount higher than the borrower's need only allowed the borrower to invest in profitable projects whose maturity period were beyond that of the loan duration. This was related to the finding in the same study that an increase in the loan duration leads to a corresponding increase in on-time repayment.

Godquin's study also found that social ties inside a group and age of the group had a significant and unexpected negative impact on repayment rate. One reason for this result was related to what Paxton (1996) called the matching problem: as the duration of membership increases, the credit needs of the members of the group evolve differently. Godquin noted that this circumstance could result in tensions inside the group as the provision of intra-group insurance becomes more costly. For instance, with increasing variation in loan size, borrowers that are granted a small loan will no more feel comfortable to be jointly liable for borrowers that are granted larger loans. Another reason is that with increasing age of the group, members get to know each other better and are more reluctant to control and sanction each other (decreasing power of social penalties).

Godquin (2004) established that homogeneity of groups in terms of same age and same education has no significant impact on repayment performance. Access to basic literacy and health services were also found to have positive impact on repayment. One reason for this was that borrowers who have access to health services are more likely to be able to prevent or cope with health shocks and so continue to work harder to repay their loans. On the other hand, borrowers who had access to basic literacy might have access to more profitable projects or

might be able to generate more cash out of a project. In general, access to nonfinancial services can also increase the value of the relationship with the MFI and increase the opportunity cost of strategic default.

The study also shows that sex was not a significant determinant of repayment. That is, females did not experience a lower repayment performance compared to their male counterparts, which confirms Zeller's (1998) finding that traditional bias against female borrowing is not justified.

Godquin concluded that Microfinance programs have been successful in extending credit to the poor, thanks to appropriate lending methodologies such as the use of group lending, nonfinancial services and dynamic incentives. However, the negative impact on the repayment performance of the size of the loan and of the age of the borrowing group could reveal the incompleteness of these lending methodologies as the clientele of microfinance becomes more mature. Another conclusion of this study was that group homogeneity was not an important factor in improving loan repayment yet it is the primary concern of most group lending methodologies. Godquin also stressed that provision of nonfinancial services was very important in improving loan repayment and this provides credible argument for integrated development strategies in microfinance delivery.

In an empirical analysis of microcredit repayment in south western Nigeria, Oke, Adeyemo and Agbonlahor (2007) set out to examine the causal relationship between socio-economic variables of borrowers and repayment. This

was to provide evidence for microfinance institutions to use to improve repayment and ensure sustainability.

The study used the multi-stage stratified random sampling procedure to collect data from 200 members of microfinance institutions (MFIs) in the study area. Both qualitative and quantitative data was collected by means of questionnaires. Some of the information gathered was related to borrower characteristics such as age, sex, occupation and education, family size, income, consumption expenditure, social expenditure, and involvement in microfinance group. Other information were source of credit, amount of credit, uses of credit, microcredit disbursement lag, borrowing experience, microcredit repayment and interaction with lending institutions. Data analysis involved the use of descriptive statistics to summarise the socio-demographic characteristics of respondents and multiple regression model to analyse the factors affecting loan repayment.

Oke et al. (2007) found in this study that the variables that significantly and positively affect microcredit repayment are income, amount of business investment, socio-cultural expenses, amount of loan borrowed, access to business information and membership of cooperative society. This finding corroborates the work of Godquin (2004) that income of borrowers and access to nonfinancial services have positive and significant effect on loan repayment. The two studies also agreed that the sex of borrowers is not a significant determinant of loan repayment.

In contrast to the findings of Godquin (2004), Oke et al. (2007) argued that increasing amount of loan to borrowers will increase their repayment performance. Their results reject Godquin's assumption of decline in intra-group insurance as the group matures. This is because, group members who are properly selected and screened and are continually monitored would continue to remain committed to the group goals. In addition, the issue of decrease in enforcement of group sanctions is only an issue of lack of trust and not increasing familiarity as claimed by Godquin. Oke et al. provides that an increase in application of sanctions such as penalty for default will only result in decrease repayment since such members might be discouraged from attending group meetings there by making it difficult to track them.

The research also found that, distance between dwelling place and bank, penalty for lateness to group meetings, number of days between loan application and disbursement and poverty indicator had negative and significant influence on repayment. It was further established that neither age of group nor duration of the loan had any significant effect on loan repayment as claimed by Godquin (2004).

Oke et al. (2007) concluded that microcredit borrowers are credit worthy and have high repayment rates. It was observed that all the variables except membership to cooperative society and penalty for lateness to group meetings conformed to theoretical expectations. The repayment rates could be sustained or improved if microfinance institutions can increase the loan amount, increase

banking opportunities, increase access to adequate business information, insist on lending to cooperatives and reduce delays in processing and disbursing loans.

Oladeebo and Oladeebo (2008) studied socio-economic factors influencing loan repayment among small scale farmers in Ogbomoso agricultural zone of Oyo State in Nigeria. The multistage random sampling technique was adopted to select 100 farmers from 10 villages in 2 Local Government Areas from the agricultural zone. The data was collected with the help of structured questionnaire. The specific socio-economic variables examined were amount of loan repaid, amount of loan collected and spent on agricultural production, annual net farm income, age, farm size cultivated, farming experience with credit use, and level of education. The data was analyzed using descriptive Statistics and Ordinary Least Square multiple regression analysis.

The study found that amount of loan obtained by farmers, years of farming experience with credit use and level of education were the major factors that positively and significantly influenced loan repayment. This finding on positive impact of loan amount on repayment confirmed the work of Oke et al. (2007) but contradicts the findings of Godquin (2004). Also the positive and significant effect of experience and level of education on repayment reject the findings of Oke et al. (2007) that these variables have no effect on loan repayment.

The study also found that contrary to apriori expectation, age of farmers had negative and significant influence on loan repayment. Another factor which had negative effect on repayment was disbursement lag measured by the number

of days between loan application and repayment. This finding corroborates the work of Oke et al. (2007).

Oladeebo and Oladeebo (2008) concluded that for increase in agricultural production, further disbursement of loans should be targeted at young and better-educated farmers. According to the researchers, these categories of farmers are more likely to adopt new innovations in agricultural production than their older counterparts.

Theoretically, market imperfections are said to be the main factors contributing to credit market inefficiencies that affect repayment rates in developing countries. Kohansal and Mansoori (2009) investigated these market imperfections in their study on factors affecting loan repayment performance of farmers in Khorasan-Razavi Province of Iran.

The research was done using the cross-sectional survey design. Data was collected from 175 farmers who were selected through simple random sampling technique. The collection was by means of structured questionnaire. The variables investigated in this study were farmer's experience, income, received loan size and collateral value. Others were loan interest rate, total application costs and number of installment. Data was analysed using the logit model. According to the researchers, the logit model seeks to explain the probability of loan on time repayment as a result of any of the identified independent variables.

Results of the study showed that farmer's experience, income, received loan size and collateral value have positive effect on loan repayment. It was also

observed that whether a farmer owned farm machinery or not had positive effect on loan repayment but this was not significant. The result on the loan amount supports the findings of Oladeebo and Oladeebo (2008) and Oke et al. (2007) but contradicts the result obtained by Godquin (2004). Also, the finding on the positive effect of income corroborates the work of Oke et al. (2007) and Godquin (2004) while the finding on experience supports the work of Oladeebo and Oladeebo (2008).

Kohansal and Mansoori (2009) however, found that loan interest rate, total application costs and number of installment had negative and significant effect on repayment performance of recipients. The study did not find any significant effect of variables such as age of farmer, farm size, time laps between loan application and disbursement, and whether respondent used loan for investment activity. This is contrary to the finding of Oladeebo and Oladeebo that age of the farmer and disbursement lag negatively affect repayment performance.

The study concluded that loan interest rate is the most important factor that should be taken into consideration when lending to farmers. However, it is important to consider farming experience and total application costs since they proved to be the next most important factors in the study.

In relation to loan officer characteristics, Agier and Assuncao (2009) studied the role of credit officers in the performance of microcredit loans in Brazil. The study data was a sample of 32,000 loan contracts of the NGO (Vivacred) drawn from a total of 41,000 loan requests over an 11 year period

(from 1997 to 2007). The researchers indicated that this data was more appropriate because it was a larger sample containing both cross-section and time series variation to estimate the parameter of each credit officer. Second, all contracts in the sample were homogeneous (individual contracts with the same interest rate). In addition the sample comprised all the relevant dimensions of the credit contract - the client, the credit officer and the guarantor, the contract and the business characteristics. The data was analysed using the OLS regression analysis.

The study found that the estimated ability of credit officers is positively related to inner and previous experience. It was also found that the household size of loan officer, age at which they were engaged and the years of experience as a loan officer all had positive relationship with loan retrieval. However, these variables showed weak relationship. The researchers observed that, female, older and married loan officers had a lower retrieval rate probability but this relationship was not significant.

Agier and Assuncao (2009) concluded that the credit officer plays an important role in dealing with asymmetric information. The credit officer's performance significantly affects both the selection and the enforcement stages of the contract. However, the credit officer's ability varies a lot from one officer to another and this variation is related to the officer experience.

Lessons learnt

Theoretical literature on microfinance repayment performance is sparse and tends to provide testable propositions on how agency issues influence the behaviour of clients of microfinance institutions. The literature focuses much on how information asymmetry creates opportunity for moral hazard among borrowers and subsequent default. The empirical evidence on microfinance repayment performance mostly relates to investigations into the factors responsible for repayment or default in group or joint liability lending schemes.

Empirical studies on microfinance repayment performance are generally quantitative studies which mostly use the cross sectional survey design. Sampling is commonly done using multi-stage stratified sampling techniques. In many cases, structured questionnaires are used for data collection even though few studies utilize time-series data of loan transactions found in MFI databases.

One of the most important issues of interest in the empirical literature has to do with indicators and measurement. It is noted that different researchers use different indicators as proxy for measuring certain factors such as group homogeneity, social tie, and income of borrower. This lead to mitigated results for such variables. For instance, Godquin (2004) used same age and same education as proxy for group homogeneity and found no effect on repayment. On the otherhand Bassem (2008) used same sex as proxy for group homogeneity and found negative and significant effect on repayment.

Available empirical evidence show that the analytical techniques for loan repayment studies vary greatly among different researchers. The most common analytical tools employed in the studies include the OLS multiple regression, the probit model, probit and logit models, and linear multiple regression and log linear regression analysis.

The factors influencing repayment could be broadly classified into loan conditions, borrower characteristics, training and education, and organisation related factors. Loan amount, interest rate, loan duration, threat of denial of future loans, and disbursement lag were the most important variables under loan condition that had significant effect on loan repayment. It is also evident from the literature that, years of experience in group, size of the group, social cohesion, type of business, level of education, house hold size, sex, years of experience in business were the most important borrower related variables that significantly influence loan repayment. Other borrower related factors that influence repayment were lateness fee, number of businesses, and socio-cultural expenses.

Training and education related variables that significantly influence repayment were access to basic education/health information, access to business information, access to market information, and quality of information delivered to loan clients. Number of contacts with MFI, cost of loan recovery and distance between the MFI and clients were the organisation/credit officer related variables that significantly influence loan repayment.

The findings generally differed among researchers based on the analytical technique used. For instance, Godquin (2004) used the probit model to show that amount of loan was negatively related to loan repayment. On the contrary, Oke, Adeyemo, and Agbonlahor (2007) used linear multiple regression and found that amount of loan was positively related to loan repayment.

Microcredit repayment research demands a holistic approach to address the mix results regarding factors influencing loan repayment to produce reliable conclusions and recommendations. Such a holistic approach should measure variables relating to characteristics of loan officers and borrowers and loan conditions. These aspects do not only cover both the supply side and demand side factors but are also theoretically proven to have effects on repayment. These lessons provide the basis for the conceptual frame work for this study.

Conceptual framework of factors influencing loan repayment

The conceptual framework for this study is derived from the theories of agency, joint liability and moral hazard as well as various empirical studies into loan repayment. It demonstrates how agency related factors like loan officer characteristics can relate with joint liability related factors like client characteristics to influence moral hazard and loan repayment.

The conceptual framework is presented in Figure 2. The figure is divided into three main parts. The first part identifies how loan fund delivery is affected by sets of underlying factors. These underlying factors relate to loan officer

characteristics, client characteristics, and loan conditions. Each of these factors contains multiples of measurable variables. According to the agency theory, the loan officer is regarded as an agent and his/her characteristics such as age, sex, educational level, marital status and number of dependents can influence his/her behaviour towards the principal (MFI) or its manager).

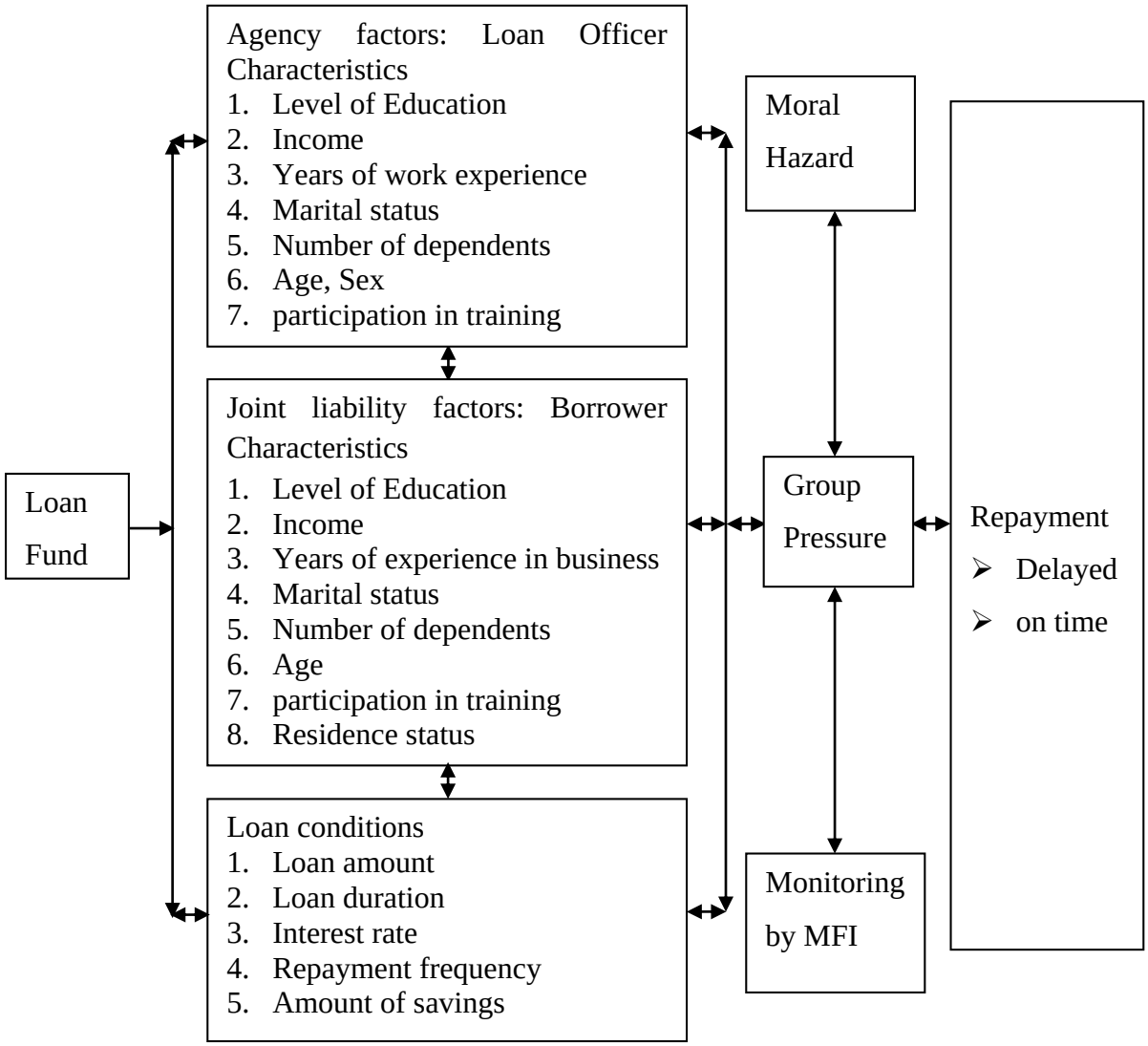

Figure 2: Conceptual framework of factors influencing loan repayment

Source: Authors construct, 2010

The argument in the framework is that if the loan officer, by virtue of his/her characteristics, decides to pursue a hidden motive contrary to the organisations objectives, this can reduce the effort put in to recover loans, and thus affect timely loan repayment. Similarly, individual client and group characteristics are considered very influential in the repayment of loans in the joint liability theory.

The empirical literature has identified those characteristics that can influence repayment to include age, sex, educational level, marital status, years of experience in business, number of dependents, household size, group size, age of group, group homogeneity, and level of group cohesion. According to the joint liability theory, each of these variables can exert a positive or negative effect on repayment depending on the individuals and the groups examined.

Moreover, like most group lending methodologies, the CWE provides various terms and conditions governing the delivery of loans to groups and clients. These conditions are measured in terms of amount of loan a borrower can take at a time, interest rate, duration of loan, frequency of repayment, frequency of group meetings, and amount of savings. Some of these variables have been studied empirically but they produced mixed results by different researchers. They have either been proven to have significantly negative or positive effect on repayment.

Another feature of the CWE is the incorporation of training and education for the client. The training is considered compulsory for all group members who

want to borrow and it varies in terms of duration, and quality of delivery based on client assessment. In addition, all groups in the CWE are supposed to benefit from periodic education on health, business, and social issues. This education also varies according to the frequency, duration, number of issues covered, and clients' perceived benefit. The training and education is hypothesized to have significant effect on business returns and repayment.

The second part of the conceptual framework examines the immediate effects of the underlying factors on loan repayment. The characteristics of the loan officer or the client can lead to moral hazard issues which may affect repayment. Theoretically, clients that are not properly monitored in their groups can exhibit moral hazard behaviours. These behaviours can vary and include diversion of loan funds from intended purpose and unwillingness to repay loans. However, this behaviour can trigger group pressure since, by the CWE methodology, it is the group that must pay the loan to the loans officer.

In addition, the joint liability clause compels group members to monitor each other so that they can obtain complete information about use of funds and put the necessary pressure when necessary. Group monitoring is also triggered by loan officer monitoring visits. But the presence and frequency of this monitoring varies by group.

The last aspect of the conceptual framework looks at the outcome of the underlying and immediate factors. It hypothesises that if the various factors interplay positively, it will lead to high productivity and good behaviour leading

to loan repayment. However, if the interplay of the factors is negative, then there will be default due to low business output and moral hazard.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

Methodology is very important in research because it presents a guide to the researcher and readers as to how the researcher arrives at the findings and conclusions. The methodology also enables readers to examine the appropriateness of the research findings and recommendations based on the procedures and tools used to obtain data for the study.

This chapter focuses on the procedures and methods used to obtain and analyze data for the study. It begins with a brief overview of the study organizations. It also discusses the study design and gives relevant background information on the study area. The chapter further discusses the study population, sources of data, sampling procedure, data collection instruments, data collection process as well as data processing and analysis techniques.

The study organizations

Grameen Ghana and Bonzali Rural Bank were the two organizations that the study dealt with. The two organizations are similar in their approach to credit

delivery in that they all employ the CWE methodology their credit delivery. The two organizations however differed slightly in their management structure with respect to the CWE methodology. This is basically due to the fact that Grameen Ghana is registered as an NGO whiles Bonzali Rural Bank is registered as a bank.

Organizational structure of Grameen Ghana

Grameen Ghana is governed by a Board of Directors and managed by a team of staff headed by the Executive Director who reports to the Board. The organization is introducing an internal audit unit to be headed by the Internal Auditor who shall report directly to the Board of Directors as shown in Figure 3.

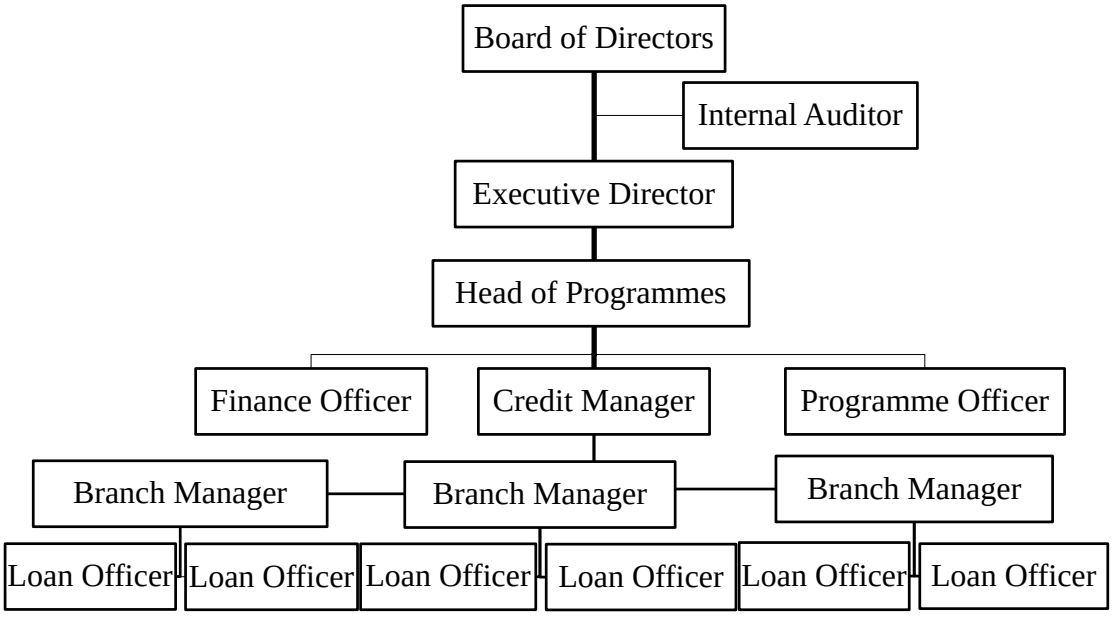

Figure 3: **Organogram of Grameen Ghana**

Source: Grameen Ghana, 2010

The Executive Director oversees the work of the Head of Programmes who coordinates the activities of the Finance and Administration Manager, the Credit Manager, and the Programme Officers. The Finance and Administration Manager works closely with the Credit Manager to ensure that the portfolio is prudently managed. The Finance and Administration Manager also oversees the work of the Management Information System (MIS) of Grameen Ghana. There is an MIS Officer who reports to the Finance and Administration Officer and the Credit Manager.

Under the CWE programme, the Credit Manager supervises branch managers who intern monitor and coordinate the activities of loans officers in the field. The Credit Manager ensures that all Branch Managers and Loans Officers apply the CWE guidelines to ensure effective credit delivery and excellent repayment performance. The Credit Manager reports monthly to the management team on the status of the loan portfolio and any challenges to repayment.

The Branch Managers monitor the Credit Officers and support them in conducting community entry and sensitizations on the products and methodologies of the organization.

Organizational structure of Bonzali Rural Bank

Bonzali Rural Bank is also governed by a Board of Directors as in the case of Grameen Ghana. However, Bonzali has a wider management structure lead by the General Manager who has a deputy in charge of supervising the managers of

Information Technology (IT), Human Resource (HR), Credit, Operations, Finance, and Internal Audit units as shown in Figure 4 below.

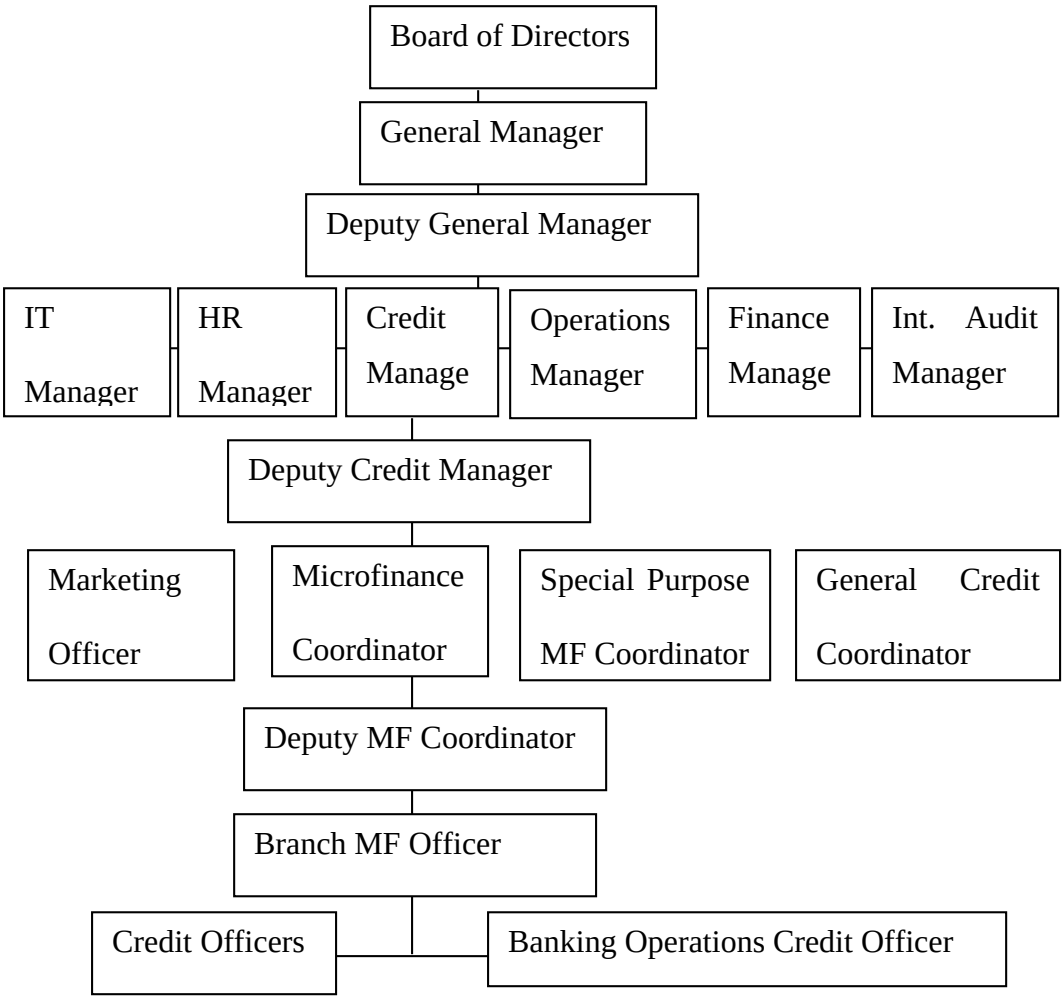

Figure 4: **Organogram of Bonzali Rural Bank**

Source: Bonzali Rural Bank, 2010

Under the CWE programme of Bonzali Rural Bank, the Credit Manager has a deputy who supervises the Microfinance Coordinator. Due to the large nature of the bank, the Microfinance Coordinator also has a deputy who

supervises and coordinates the activities of Branch Microfinance Officers. The Microfinance Coordinator ensures that all Branch Microfinance Officers apply the CWE guidelines to achieve high repayment performance.

The Branch Microfinance Officers also work closely with Credit Officers to ensure that the best clients are identified, trained and provided credit. The Credit Officers are also well monitored and supervised by the Branch Microfinance Officers to ensure that they put in their best efforts to achieve excellent repayments.

Study area

The study covers the Tamale Metropolis of the Northern Region of Ghana. The choice of the area was made out of interest in the CWE programmes of Grameen Ghana and BRB which consistently reported excellent repayment performance. Another reason is the rapid increase in the number of MFIs in the Metropolis. In addition, this area is selected because it was one of the first areas in the Northern Region to have piloted the CWE programme in Ghana. It is therefore an area where old and new borrowers can be studied. The Tamale Metropolis is also an area where women are the main targets of MFIs but the socio-cultural setting enveloping them as well as the types of businesses they engage in make them risky borrowers of microcredit. Yet, the CWE is said to be performing very well in the area.

Tamale Metropolis is home to the capital city (Tamale) of the Northern Region of Ghana. The Metropolis is situated at the hub of the Northern Region and occupies a total area of 750 square kilometres. It is bounded by Savelugu/Nanton District to the North, Central Gonja district to the South, Yendi municipality to the East and Tolon/Kumbungu District to the West. The Metropolis has a total population of 371,351 people and an annual growth rate of 2.5 percent per the 2010 population census (Ghana Statistical Service, 2012).

Economic activities in the area are mostly agriculture related with few petty trading and artisanship activities which reflect the poverty status of the Northern Region. Both rural and peri-urban inhabitants are farmers but women tend to operate low income businesses such as agro processing, petty trading, grain trading, and dressmaking with low potential for growth (Mahamadu, 2010).

There are many microfinance institutions in the Metropolis including notable ones like Grameen Ghana, Bonzali Rural Bank, Maatantudu, Sinapi Aba Trust, Community Action for Development (CAD), Ghana Development Communities Association (GDCA), Simli Pong and the Baobab Financial Services.

BRB started the CWE programme in the Metropolis since 2004 but Grameen Ghana only began the programme in 2009. The two institutions currently have over 10,000 clients located in urban, peri-urban and rural communities in the Tamale Metropolis.

Study design

The study used a combination of cross-sectional survey and relational research designs to collect data for the study. The relational design is the most widely used design in social research which is capable of establishing statistical and logical relationships between explanatory and outcome variables (Robson, 2002). This design also makes it possible to include more explanatory variables than is feasible in experimental and group comparison relational designs.

In addition, the relational design allows the researcher to do further statistical analysis such as multiple regression analysis to establish the effects of scores on selected predictor variables on the criterion variable (Anastas, 1999). The study therefore adopted this study design to establish a statistical relationship between the socio-economic characteristics of borrowers and loan officers and their repayment performance. It also explored the relationship between the CWE programme's loan terms and the repayment of loans. Specifically, the study explored these relationships using binary logistic regression and Pearson product moment correlation.

The cross-sectional survey design was also adopted because it enabled the researcher to collect data from a sample of beneficiaries for making generalisations on the population. Its advantages in terms of economy and rapid turnaround in data collection make it preferable for student research (Creswell, 2003). This design was considered important in obtaining further information

from sections of leadership of both the MFIs and the CWE groups on how agency and joint liability issues affect the behaviour of loan officers and borrowers.

Study population

The study population involved all CWE clients and credit staff of CWE MFIs in the Tamale Metropolis. There was an estimated 12,000 CWE borrowers and 33 CWE staff comprising 23 CWE loans officers and 10 Management personnel in the Tamale Metropolis (Bonzali Rural Bank, 2009; Grameen Ghana, 2009). These borrowers belonged to two organisations, Grameen Ghana and BRB.

The study targeted all CWE borrowers in the Tamale Metropolis. It also targeted loans officers from the two CWE institutions and some management staff. CWE borrower group was targeted because it is only people who have obtained loans and repaid that can be studied to find whether their repayment is influenced by certain factors or not. As such the active CWE borrowers and the loan staff provided the most authentic and dependable data necessary for addressing the research problem (Nworgu, 1991). In addition, details of these active borrowers and the loan staff were easily accessible from the two MFIs. All the borrowers and loans officers were easily met during their compulsory weekly meetings. Details of the distribution of the active CWE borrowers and loans officers of the two institutions are presented in Table 1.

Table 1: Distribution of CWE borrowers and loan officers in Tamale metro

Target group	Bonzali Rural Bank		Grameen Ghana		
	Male	Female	Male	Female	Total
Loans officers	13	4	4	2	23
Borrowers	0	8,211	0	2,647	10,858
Total	13	8,215	4	2,649	10,881

Source: Field survey 2010

Sample and sampling procedure

A multistage sampling technique was used to select respondents for the study. This technique was adopted because it allowed for selection of representative sample of respondents from the two target institutions which have different client capacities. By this technique, the researcher first obtained a list of members of beneficiary groups from the two organisations to build the sample frame for the borrowers.

Based on Krejcie and Morgan's (1970) table of determining sample size from a given population as cited in Creswell (2003), a total sample of 375 borrowers (out of 10,858 borrowers) were selected for the study. However, since the two institutions vary in terms of their number of borrowers, the total sample size was obtained through a proportionate sampling technique. The proportion of borrowers of Grameen Ghana to that of borrowers of BRB was 2,647: 8,211 or 1:3. This implies that out of the total of 375 borrowers selected, 94 of them came

from Grameen Ghana while the remaining 281 were selected from BRB. The researcher then employed the simple random sampling procedure (lottery method) to randomly select the number of borrowers required from each organisation.

It is noted that the sample size calculation methods of Krejcie and Morgan are based on assumptions and conditions (e.g. values of p, Z, E, chi-square, δ) which are difficult to estimate especially with limited knowledge of the population parameters. However, it was still adopted in this study as a sound and handy alternative due to time and resource constraints.

To arrive at the final sample, names of the borrowers from the two financial institutions (which are the two sampling frames) were written on pieces of paper and folded. The papers bearing the names of borrowers of the two institutions were put in turns into a container. The first 94 names being names of borrowers from Grameen Bank were picked in the first ballot, while the other 281 borrowers from Bonzali Rural Bank were then picked in the next ballot. This made up the 375 borrowers used for the study.

The study however, took a census of all the loans officers from the two institutions since their total number was only 23. Also, four out of the 10 management personnel (2 from each MFI) and six leaders of CWE groups were also randomly selected through the lottery method for interview as key informants.

Data types and sources

The research made use of primary data collected from the field survey conducted as part of the study. The survey information was obtained from CWE borrowers and the loans officers as well as management staff of Grameen Ghana and Bonzali Rural Bank in the Tamale Metropolis. The sources of evidence were chosen taking into consideration the different kinds of information required, the literacy levels of the respondents and the availability of the respondents. Yin (2003) opined that multiple sources of evidence can produce valuable research data especially when the different sources are made to complement each other.

The research made use of both qualitative and quantitative data obtained from respondents. The issues involved in the qualitative data included detailed information about background of respondents, group formation processes, as well as behaviours and sanctions that affect loan repayment. Quantitative data focused on issues relating to economic characteristics and loan terms of the CWE loans.

Data collection instruments

Four sets of instruments were used to obtain primary data for the study. They include a structured questionnaire for loan officers, interview schedule for borrowers, key informant interview guide for management of MFIs, and key informant interview guide for leadership of CWE groups. The questionnaire was administered to the loans officers because they could read and write. The interview schedule was administered to the borrowers because the majority of

them were not literate. The interview guides for key informant interview were used to guide discussions and to provide basis for probing for more information from leaders of MFIs and CWE groups. The four instruments were designed purposely for this study based on theoretical and empirical literature on the factors influencing loan repayment.

The instrument for the loans officers was divided into two sections while that for the borrowers was divided into three sections as shown in Appendices A and B respectively. In the loans officers' questionnaire, section A focused on loan recovery and reasons for timely or delayed recovery. Section B dealt with socio-economic characteristics of the loans officers including income, educational level, marital status, household size, etc. The instrument for the borrowers had three sections. Section A concentrated on loan repayment by clients and reasons for timely or delayed repayment. Section B looked at the socio-economic characteristics of borrowers such as income level, household size, and income generating activities. In section C, the focus was on loan terms such as amount borrowed, amount saved, repayment frequency, participation in initial training for the group.

Each of the sections was based on an objective of the study. Both instruments had close and open ended questions. Observation was employed to recognize and note facts on how loan officers relate with their clients.

Pre- testing

The instruments were pre-tested to establish validity and reliability. This was necessary to improve questions and format. To ensure the validity of the instruments, a pool of questions were generated with the help of colleague graduate students and supervisors. These questions were subjected to critique in relation to their relevance to the objectives of the study. Only questions that attracted 100% approval from the team consulted were the ones included in the research instruments. The researcher also ensured that the questions included in the instruments had basis in previous empirical studies related to the study.

The final versions of the instruments were field tested on randomly 50 borrowers and 5 loans officers of CWE programmes. Participants in the pre-test were taken from near-by Tolon/Kumbungu and Central Gonja Districts. The pre-testing was done in these areas because they have similar characteristics as Tamale Metropolis and are areas where the two target MFIs also have clients.

Some of the emerging issues that called for review of the instruments included respondents' understanding of household size and economic activities. It was realized that due to polygamous marriages and large homes, it was difficult for women to give accurate number of people in a household. Hence, most respondents confused household with number of dependants. This compelled the researcher to introduce questions on number of dependants alongside household size. Additionally, the seasonal nature of businesses women engaged in made it difficult for them to clearly mention the economic activity they were doing.

Therefore, there was the need to restrict the economic activity to the one the respondent was engaged in as at the time of the survey.

The reliability of the instrument was determined after an analysis of the data obtained from the pre-testing. The reliability coefficient obtained from the analysis showed that the instruments were generally reliable. This was based on the high Crombach alpha statistic for loan officer questionnaire (0.78) and that of the interview schedule for borrowers (0.80).

The pre-testing lasted for two days starting from 17th to 18th May 2011. Results of the pre-testing enabled the researcher to determine whether the methods of data analysis were workable and whether there was a better way of analysing the eventual data. Based on the results of the pre-test, the instruments were finalised under the guidance of the study supervisor.

Ethics

At every step of data collection, ethical issues relating to consent and confidentiality were critically observed. Ethics in the view of Walliman (2006) are rules and regulations in research, viewed in terms of values of honesty, frankness and personal integrity on one side and ethical responsibility to the subjects of the research. As such, all documents that were reviewed in the course of the study were duly acknowledged.

In order to gain access to the respondents, group leaders were first identified through loan officers. The researcher was then introduced to the group

leaders by the loan officer. Group leaders were briefed by the researcher about his mission and requested that group leaders consult their members to agree for a scheduled day and time for further discussion. When this consultation was done, the researcher was invited by the group to continue the process.

On the day of second meeting, the researcher introduced himself and the enumerators and informed the group members about the purpose of the study. The group members were informed that the study was purely an academic exercise. They were also assured of anonymity and confidentiality regarding the information they would provide. Participants were further informed that participation in the study was voluntary and that people would be made part of the study only when they give their free prior and informed consent. Respondents were however encouraged to be part of the study since it could help improve policies on microfinance.

Data collection procedure

The data collection process started with preliminary visits to the targeted MFIs to obtain basic information such as client locations as well as credit officers' schedules. This enabled the researcher to plan the visits to target respondents. The next step was the selection of enumerators who assisted in the data collection. The enumerators were selected based on their knowledge in basic research and microfinance as well as socio-cultural background of the people in

the area. This was necessary to ensure quality field data and adherence to ethical principles in research.

The enumerators were given one-day training by the researcher on the research aims and objectives, the content of the instruments, the instrument administration procedure, the background of the target population, and ethical principles in the research. The training enhanced the knowledge and competence of the numerators and made them collect accurate and reliable data.

The administration of the final instrument was done by the enumerators and the student researcher. It lasted for a period of 30 days starting from 1st to 30th June 2011. At each step of the data collection process, issues of ethics relating to consent and anonymity of respondents were critically observed.

Field challenges

The researcher encountered a number of field challenges including limited time of respondents and bad weather conditions. The data collection period coincided with the raining season and so there were times the researcher had to cancel some meetings with respondents because of rains. Additionally, this was also the period where some of the respondents were busy with farming activities and had little free time for interviews. These challenges resulted in the researcher making several visits to each credit group before completing the instrument administration process.

Other challenges encountered included difficulty in providing information on age and income levels since most of the respondents were illiterates. These challenges were addressed by detailed probing using proxies such as number of children and events to estimate age, as well as expenditure to estimate income. This was made possible because the researcher had better understanding of the language of the respondents.

Data processing and analysis

Data from the respondents were analysed using the Statistical Product and Service Solutions (SPSS version 13) software. This is because the SPSS is a powerful and perhaps the most popular software package for statistical analysis in the social sciences (Robson, 2002). The software has also been employed in similar published studies on the determinants of microcredit repayment. The data collected were entered into the software and cleaned to ensure that errors were identified and resolved before analysis is done.

The objectives were first analysed using descriptive statistics such as means, medians, and standard deviations, and binary logistic regression analysis. The binary logistic regression analysis was chosen because it allowed for analysis in a single study to indicate how several independent variables, either singly or in combination affect a dependent variable (Cohen, Manion & Morrison, 2000; Gall, Borg & Gall, 1996).

The logistic regression analysis was also used because it enabled the researcher to establish the probability of occurrence of on-time repayment or delayed repayment based on knowledge of the characteristics of the borrower, loan officer or loan conditions. In addition, this analytical tool was employed because the dependant variable is dichotomous ('timely' or 'not timely' with respect to repayment) and the independent variables were measured by both continuous and categorical data. According to Robson (2002), logistic regression may be used for both continuous and categorical data.

Furthermore, since the researcher was interested in making recommendation for actions to sustain repayment, logistic regression was necessary since it can be used to get an estimate of the relative importance of the different independent variables in producing changes in the dependent variable.

In the logistic regression, the dependent variable was Z, defined as whether CWE borrowers had delayed repayment of loan instalment or not. If borrowers had not delayed repayment, value of Z was one and otherwise zero. The relationship between Z and the probability of repaying on time was described by the following link function.

$$Zi = \log\left(\frac{\pi i}{1 - \pi i}\right) \qquad (1)$$

Where:

$\pi i =$ the probability the ith case experiences on time repayment

$Zi =$ the value of the unobserved variable for the ith case

The model also assumed Z to be linearly related to the predictors

$$Z_i = b_0 + b_1 x_{i1} + b_2 x_{i2} + \ldots + b_p x_{ip} \qquad (2)$$

Where:

x_{ij} = the j^{th} predictor for the i^{th} case

b_j = the j^{th} coefficient

p= the number of predictors

However, since Z is unobserved, the predictors were related to the probability of timely repayment by substituting for Z as follows.

$$\pi i = \frac{1}{1 + e^{-\left(b0 + b_1 x_{i\,1} + \cdots + b_p x_{i\,p}\right)}} \qquad (3)$$

The regression coefficients were estimated through an iterative maximum likelihood method using the SPSS. The independent variables used in the model were categorized into three according to each objective. This resulted in the development of three models as follows:

The model for socio-economic characteristics of borrowers is:

$$Z = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7 + b_8 x_8 + b_9 x_9 + b_{10} x_{10} + b_{11} x_{11} + b_{12} x_{12} + b_{13} x_{13} + b_{14} x_{14}$$

Where:

X_1 =	Educational level	=	1 if literate and 0 if illiterate
X_2 =	Marital status	=	1 if married and 0 otherwise
X_3=	Age (in years)	=	Number of years old
X_4=	Religion	=	1 if Muslim and 0 otherwise

X_5= Residence status = 1 if native and 0 if non native

X_6= Number of dependants = Number of people client takes care of

X_7= Household size = Number of people in household

X_8= Experience in business = Number of years in business

X_9= Income level = Amount of money earned per month

X_{10}= Age of group = Number of years

X_{11}= Number of loans received = Number of times loans are received

X_{12}= Current loan amount = Amount of money received

X_{13}= Investment amount = Amount of money invested

X_{14}= Access to market = 1 if ready market and 0 otherwise

The model for socio-economic characteristics of loan officers is:

$$Z = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + b_{10}x_{10}$$

Where:

X_1 = Educational level = Number of years in school

X_2 = Sex = 1 if female and 0 male

X_3= Age (in years) = Number of years old

X_4= Household size = Number of people in household

X_5= Number of dependants = No. of people client takes care of

X_6= Experience in business = No. of years in as loan officer

X_7= No. of groups handled = No. of groups handled by officer

X_8= Loan officer relationship with clients= No. of clients related to officer

X_9= Participation in initial training = No. trainings participated

X_{10}= No. of refresher trainings received = No. refresher trainings attended

The model for loan conditions is:

$$Z = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9$$

Where:

X_1 = Loan amount adequacy = 1 if adequate and 0 otherwise

X_2 = Access to multiple loans = 1 if multiple loans and 0 otherwise

X_3= Amount of savings = Amount of savings per meeting

X_4= Interest rate = Percentage of interest charged

X_5= Disbursement lag = No. of days from application to disbursement

X_6= Repayment frequency = Number of weeks between repayments

X_7= Frequency of visits = No. of times loan officer visit groups

X_8= Number of training days = No. of days training received by borrowers

X_9= Access to education = 1 if continuous education and 0 otherwise

The omnibus test of model coefficients was done to evaluate how fit and robust the model was. The chi square values and the p-values from the omnibus test were used to evaluate the fitness and robustness of the model. Another test of model fit used to assess the model was the Hosmer and Lemeshow test. This test was done to confirm the results from that of the Omnibus test of coefficients. The basis for evaluating the robustness of the model was that the significance value in the Hosmer and Lemeshow test should be greater than 0.05. Thus, any significant

value found to be more than 0.05 showed that the Hosmer and Lemeshow goodness of fit test supported the repayment model.

To explain the effect of the set of independent variables on loan repayment, the Cox and Snell R^2 and the Nagelkerke R^2 in the model summary table were used. The R^2 values were multiplied by 100 to explain how much of the variability in the loan repayment was explained by the set of independent variables.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter contains an analysis of the data gathered from the field. This was basically on borrowers and the staff of the respective MFIs involved in the implementation of the CWE programme. The main objective was to examine the factors that influence loan repayment in the CWE programme in the Tamale Metropolis.

To address the main objective, the study sought to examine the relationship between borrower and staff socio economic characteristics and timely loan repayment. The study also examined the relationship between MFI loan conditions and borrower ability to repay loans on time. To carry out and complete the study, a random sample of 375 borrowers and a census of 23 loan officers from the two CWE MFIs (Bonzali rural bank and Grameen Ghana) in Tamale were selected. Additionally, management from Grameen Ghana and BRB and leaders of CWE groups were interviewed as key informants.

The data analysis and discussion process is organised into sections as per the three objectives of the study. The first section deals with an examination of

the effects of borrowers' socio economic characteristics on the repayment of loans. The second section looks at the relationship between credit officer's socio economic characteristics and loan recovery. The last section addresses the effects of loan conditions on the repayment performance of borrowers in the CWE programme.

The study addressed objective one, two and three using binary logistic regression, bearing in mind issues of colinearity, sample size and outliers. The study also ensured that the number of variables in the various microcredit repayment models were between 5 and 25 as prescribed by (Tabachnick & Fidell, 1989).

Socio-economic characteristics

Borrower characteristics are part of the major factors that affect repayment of loans (Norhaziah & Mohd, 2010). The empirical literature on loan repayment provides diverse opinions as to the effects of the various characteristics of borrowers depending on the study location and methodology. Three hundred and seventy five clients (375) who received loans from the BRB and GG during the study period were analyzed.

Out of the total sample of 375 borrowers, 82.4 percent did not have any form of education. Only 66 of them (17.6%) had some formal education, which ranged from non-formal, primary, secondary, and tertiary education. Most of the borrowers who had formal education left school at primary level and they account

for 11.2 percent of the total sample. Only two borrowers went to school beyond secondary level. Thus, the literacy level was very low. Descriptive statistics of educational attainments of borrowers are presented in Table 2.

Table 2: Educational status of CWE borrowers

Educational level	Frequency	Percentage
No formal education	309	82.4
Primary	42	11.2
Non-formal education	16	4.3
Secondary	6	1.6
Tertiary	2	0.5
Total	375	100.0

Source: Field work, 2011

Many microfinance researchers link higher education to better loan repayment. Higher education is believed to offer borrowers higher managerial ability in their business (Oke, Adeyemo, & Agbonlahor, 2007). Eze and Ibekwe (2007) also found that educational attainment does not only raise borrowers' productivity but also increases their ability to understand and evaluate the information on new techniques and processes being disseminated. This has implications for increased income and loan repayment ability of borrowers. Thus, literate borrowers can have higher loan repayment rates than illiterate borrowers (Kono, 2007).

In the study area, most microfinance clients are married people. Out of the 375 borrowers, 78.9 percent were married while 21.1 percent were unmarried. Table 3 shows that 15.7 percent were widowed while 5.3 percent were divorced.

Table 3: Marital status of CWE borrowers

Marital status	Frequency	Percent
Married	296	79.0
Single (never married)	0	0.0
Widowed	59	15.7
Divorced	20	5.3
Total	375	100.0

N=375

Source: Field work, 2011

In terms of marital status, clients who are married are argued to be more responsible and so honour debt obligations than unmarried people. In line with this, Pollio and Obuobie (2010) noted in their study in Ghana that majority of loan defaulters are unmarried. On the other hand, unmarried clients may not face the risks of borrowing by their spouses and so are more likely to invest the full amount borrowed and thus make greater returns for timely repayment than married women. Thus, marital status has strong influence on loan repayment.

Table 4 shows that members of the MFIs in this study were mostly Dagombas and of the Islamic religion (80.0%). Very few (5.0%) borrowers were Dagombas and Non-Muslims. Other tribes with lower frequencies include Gonjas,

Ashantis, Kotokolis, Wangaras and Moshis. All the Ashantis and Gonjas were Non-Muslims, while the Kotokoli and Wangaras were Muslims. Moshis however comprise both Muslim and Non-Muslim members. In all, 90 percent of client respondents were Muslims, while 10 percent were Non-Muslims. The results within religion show that Dagombas and Muslim clients made up the majority of respondents. This was expected since Dagombas are usually the majority in most areas in Tamale and Islam is the dominant religion in the Tamale Metropolis (Abugbil, 2007).

Table 4: Religion and tribe of CWE borrowers

Religion	Non-Muslim		Muslim		Total	
and Tribe	Frequency	Percent	Frequency	Percent	Frequency	Percent
Dagomba	20	5.0	298	80.0	318	85.0
Gonja	2	0.5	0	0.0	2	0.5
Ashanti	2	0.5	0	0.0	2	0.5
Kotokoli	0	0.0	8	2.0	8	2.0
Wangara	0	0.0	8	2.0	8	2.0
Moshe	15	4.0	22	6.0	37	10.0
Total	39	10.0	336	90.0	375	100.0

Source: Field work, 2011

In a focus group discussion (FGD), borrowers argued that their close relations are easy to draw into group based association than people from other groups. This confirms the findings of Simtowe, Zeller and Phiri (2006) that

almost half of microcredit group members are related to each other. CWE borrowers place considerable weight on known information about potential members because the main collateral to obtain loan from MFIs are group cohesion and joint liability.

Respondents in the FGD also maintained that issues of adverse selection and moral hazard are very possible in a joint liability group. They insisted that because of information asymmetry and lack of collateral in micro lending, the CWE programme transfers the screening process to group members. Before a group is put up, group members would have screened their colleagues to ensure that only credit worthy colleagues are engaged. They also select members that they feel comfortable working with, in order to ensure comfortable arrangement in times of loan defaults.

The age distribution of respondents showed that the oldest CWE borrower was 70 years old, while the youngest was 22 years old (Table 5). The average age of the borrowers was 43.9 years old. The age distribution showed a positive skewness of 0.52, implying a slight cluster of ages at the lower end of the normal distribution curve. The results therefore indicate a higher number of younger respondents. Reinke (1998) argues that young borrowers - those below 25 or 30 years - typically have lower repayment rates than older borrowers. So, while it may be seen as socially desirable to lend to youth, there is a risk premium attached. Reinke further noted that not only is it more expensive to lend to youth,

but they also appear to be less successful in using the loans for setting up viable enterprises.

On the other hand, Roslan and Mohd (2009) stated that older borrowers are wiser and more responsible than younger borrowers. Hence, age might have positive effect on loan repayment rates.

Table 5: Socio-economic characteristics of Borrowers

	Median	Min	Max	Mean	Skewness
Age (yrs)	43	22	70	43.99	0.52
Number of dependents	5	0	10	5.13	-0.08
Household size	10	4	40	11.10	2.10
Business experience (yrs)	10	1	40	12.46	1.09
Monthly income	200	60	500	193.92	0.88

N=375

Source: Field work, 2011

While some borrowers had no dependants at all, others had as many as 10 dependents. The mean number of dependents was five persons with a standard deviation of 1.95. Dependents refer to the number of people in the household who rely on the business income of the borrower. Bwonya-Wakuloba (2008) established that about three-quarters of the defaulters had five or more dependents, and that many defaulters who had a large number of dependents also experienced poor business performance, diverted funds, or had domestic

problems. Other studies found that households with fewer dependents have a smaller claim on their business income, which should serve to reduce the default rate (Pollio & Obuobie, 2010). Thus, number of dependents might have negative effect on loan repayment.

Distribution of the respondents based on their household size revealed that the borrowers had between four and 40 individuals in households. The average (median) household had 10 members. With the positive skewness of 2.1, majority of the respondents have household size bellow the mean household size of 11 people. The microcredit literature presents varying results regarding the effects of household size on repayment. Chirwa (1997) and Godquin (2002) found no effect of household size on repayment whereas Eze and Ibekwe (2007) and Oladeebo and Oladeebo (2008) found significant effect. Thus, household size could have an effect on timely loan repayment.

Respondents' experience, measured in number of years in business shows that the borrower with most business experience had been in business for 40 years while the least experienced borrower had been in business for a year. A positive skewness, however, showed most borrowers had experience less than 11 years. Borrowers with many years of experience in business are more likely to earn more and repay loans more readily than those with less experience in business (Rosland & Mohd, 2009). Thus, number of years of experience in business is likely to have positive relationship with repayment.

Income of respondents calculated on monthly basis included all forms of income irrespective of source. From Table 5, the poorest borrower earned GH¢60.00 while the richest one earned GH¢500.00. Most borrowers earned below the mean of GH¢193.92. Some studies have shown that income is not significantly related to the repayment performance. As argued by Godquin (2004), even though they had enough money, some borrowers also opted to default their loan repayments intentionally. On the other hand, Oni, Oladele, and Oyewole, (2005) found that borrowers with more annual income are more likely to repay their loans on time than those with smaller incomes. Thus, income level can have significant effects on loan repayment.

Effects of socio-economic characteristics of borrowers on loan repayment

In terms of repayment performance, the results of the study indicated that 80 percent of the 375 borrowers were able to repay their loans on-time. Only 20 percent had delayed repayments. The results show a performance which conforms with the high repayment performance claimed by the MFIs using the CWE methodology in the Tamale Metropolis. A number of variables related to borrower characteristics were studied to examine their effects on the repayment performance. Variables related to socio-economic characteristics of the borrowers include the Educational level, marital status, religion, residence status, household size, number of dependents, access to market, experience, and income level. Other

variables related to the borrower characteristics include age of borrower, number of loans taken, amount of loan taken, and amount invested in business.

Results of the study show that the age of the CWE groups ranges between two and five years. The average CWE group was two years old. Most of the groups were younger than three years. The age of microcredit group tends to influence loan repayment. Oni, Oladele and Oyewole (2005) found that older groups have more problems of repayment than younger groups. This is because when group members stay together over time, there occur distinct evolutions of varying individual private needs encouraging tensions within groups, which have the tendency to drop the social control inside the group and reduce the probability of timely repayment (Bassem, 2008). Bassem noted that since group membership is relatively fluid, it is likely that the frequent influx of new members prevents the groups to reach a sclerosis stage that affects their repayment performance.

The study results indicated that the average number of loans received by borrowers was three. However, some borrowers took as many as six loans while others took loans as low as two times. Most respondents however, took loans less than three times. In the graduated loan system, where borrowers stand a chance of getting bigger loans in future, the number of times a client accesses loans has a lot to do with business success and for that matter loan repayment (Bassem, 2008). Others found that most borrowers repay their loans on time because many microcredit institutions grant continuous access to loans to only borrowers who

fulfil their repayment obligations. Thus, some borrowers repay their loans in time mostly because they want to get access to many loans in future (Godquin, 2004).

Loan amounts that respondents took in the last loan cycle varied between GH¢80.00 and GH¢800.00 with an average of GH¢200. The amount of loan received has an influence on the investment a client makes in his/her business. Rosland and Mohd (2009) argue that the smaller amounts of loans are insufficient, creating cash flow problems to the borrowers and significantly affecting investments in business. Loan amount invested in the business affects the level of returns earned on the business and the ability to repay the full loan. Thus, the larger the amount of loan, the higher the repayment rate.

Out of the total of 375 respondents, 69.1percent had access to market for their produce. Only 30.9 percent reported inability to access market for the sale of their produce. Access to market is believed to have an influence on business success and better repayment performance (Paxton, 1996).

The socio economic characteristics of borrowers in this study were subjected to regression analysis using the binary logistic regression. A binary logistic regression was run to explain the relationship between the socio-economic characteristics of borrowers and their timely loan repayment ability. The analytical technique was so used because the dependent variable is a dichotomous categorical variable. The explanatory variables were, however, made up of both dichotomous categorical and continuous variables. The total number of cases (sample size) included in the analysis was 375 with no missing cases.

The classification table (Table 6) shows the guess results of the binary logistic regression analysis on the socio-economic characteristics of borrowers and their ability to make timely loan repayment. This result did not include the predictor variables used in the model. The output served as the basis upon which the classification ability of the model was compared with and without the independent variables.

In Table 6, the overall percentage of correctly classified cases was 80.0 percent. The table suggests that if one knew nothing about the variables and guessed that a person would not repay the loan on the due date, one would be correct 80 percent of the time. By implication, the model was able to predict that 80 percent of the borrowers paid their loans on or before the due date.

Table 6: Analysis of borrower characteristics without independent variables

Observed		Predicted		
		Loan repayment on due date		
		Yes	No	Percentage
Loan repayment on due date	Yes	0	75	0
	No	0	300	100.0
Overall percentage (without predictors)				80.0

Source: Field work, 2011

Comparing the above to the overall percentage (in block 1) when predictor variables were included in the model, it was observed that, the predictive ability

of the model improved. The result with independent variables included showed an overall percentage prediction as 89.9 which is higher than the initial 80.0 percent.

Fourteen independent variables went into the microcredit repayment model with the dependent variable (Table 7). The omnibus test of model coefficients showed a chi square value of 203.046, degrees of freedom of 14 and a p-value of 0.00.

Table 7: Omnibus test of model coefficients for borrower characteristics

	Chi-square	Degrees of Freedom	Sig.
Step	203.046	14	0.000
Block	203.046	14	0.000
Model	203.046	14	0.000

Source: Field Work, 2011

The large chi-square value implied that the model was a good fit and confirms the robustness of the study. Another test of model fit that was used to assess the model was the Hosmer and Lemeshow test. Results of this test confirmed the results from that of the Omnibus test of coefficients. The latter test showed a chi-square value of 22.242, a degree of freedom of 8 and a significance value of 0.064. To support the model (in terms of robustness), the significance value should be greater than 0.05. Therefore, with the significance value of 0.064, the Hosmer and Lemeshow goodness of fit test supported the repayment model.

To explain the amount of variation in the dependent variable caused by the model, the model summary table was used. However, the individual effect of these variables made use of the coefficients table. The Cox and Snell R^2 and the Nagelkerke R^2 were 0.418 and 0.661 respectively. This suggests that between 41.8 percent and 66.1 percent of the variability in the dependent variable is explained by the set of independent variables. These R^2 values were considered high compared to an R^2 of 0.36 found in a study conducted by Oke, Adeyemo and Agbonlahor (2007) on empirical analysis of microcredit repayment in South Western Nigeria. Their study was carried out among small holder businesses that took loans from a nongovernmental microcredit organisation.

The coefficients of the microcredit repayment model (Table 8) showed that four variables were significant at 0.05 alpha level. These variables included age of borrower, household size, access to market, and number of loans received. Three variables, age of borrower, access to market information and the number of loans received had direct relationship with on-time repayment. However, household size had an inverse relationship with timely loan repayment.

From Table 8, the variables with significant contribution to the microcredit repayment model did so at different levels. This information is shown by the Wald statistic of each predictor. Borrowers access to market opportunities was the highest (40.07) contributor to the model. This was followed by age of borrower (11.45), and the borrower's household size (8.11). The significant

predictor with the least contribution to the model was the number of loans taken by borrower, its Wald statistic was 5.47.

Table 8: Microcredit repayment model for borrower characteristics

					95% CI for EXP(B)	
Variable	B	Wald	Sig	EXP(B)	Lower	Upper
Educational level	-1.32	4.16	0.410	0.27	0.075	0.950
Marital status	1.70	2.90	0.088	5.46	0.775	38.526
Age	0.10	11.45	0.001	1.12	1.044	1.177
Religion	2.30	4.20	0.400	0.10	1.107	90.610
Residence status	-2.37	2.65	0.104	0.09	0.005	1.623
Household size	-0.17	8.11	0.004	0.84	0.751	0.949
Amount invested	0.001	0.19	0.667	1.00	0.998	1.003
Access to market	5.48	40.07	0.000	2.38	2.29	13.10
Experience	-0.007	0.05	0.825	0.99	0.937	1.053
Income level	0.004	1.63	0.201	1.00	0.998	1.010
Age of group	-0.30	0.86	0.355	0.74	0.394	1.397
Number of loans	1.52	5.47	0.019	4.56	1.278	16.241
Loan amount	0.00	0.20	0.659	0.99	0.997	1.002
Constant	-9.91	15.61	0.000	0.00		

Source: Field work, 2011

Religion was coded as 1 if a borrower was a Muslim and 0 if a borrower was not a Muslim. The analysis in Table 8 shows that religion of borrowers has a

direct but no significant effect on their ability to make timely repayment (B=2.30, p=0.40). Other variables that did not have significant effect on repayment included educational level, marital status, income level, and experience of borrowers.

One of the variables that had a direct and significant effect on timely loan repayment was the age of the borrower (B=0.10, p=0.00). This implied that older borrowers were more likely to make timely loan repayment than younger borrowers. Base on the Exp (B) value, an additional year in the age of a borrower increases the odds of timely loan repayment by 1.12. The conceptual frame work explains that the age of the borrower in joint liability schemes influences their repayment performance in the presence of joint liability, group pressure and supervision by loan officers.

Contrary to the findings of this study, Godquin (2004) in using a probit model, found no significant relationship between the age of borrowers and their repayment performance. The difference may be due to the differences in study area and the kind of analytical tool used. For instance, in the Tamale metropolis where this study was carried out, older people (especially women) consider it a serious shame to be chased around by debtors. Results of the FGD in this study revealed that in extreme cases, some CWE groups put pressure on defaulting group members by visiting them at home. The purpose of the visit is to embarrass and force them to pay back the loan. However, in some instances, colleagues

simply report the person to the leaders of the community or the loan officer so as to discontinue the supply of loans to that particular member.

Access to market was coded as 1 if borrowers had access to market and 0 otherwise. Table 8 shows that access to market information also had direct effect on timely microcredit loan repayment (b= 5.48, p-value=0.00). The positive B value of 5.48 and significance value of 0.00 meant that borrowers who had access to ready market for their produce had a higher likelihood of making timely repayment of loan.

The odds ratio for borrower's access to marketing opportunities was 2.38. This means that borrowers with access to market were more likely to repay their loans on time than those without access to market. This result contradicts the results obtained by Guttman (2007). Guttman used ordinary least square multiple regression analysis and found that access to market information was a negative and a statistically significant determinant of loan repayment at an alpha level of one percent. Guttman's findings was inconsistent with apriori expectation since market access allows a borrower to sell his/her produce and get faster returns to be able to settle their loans. The finding of this study however, corroborates the findings of Oke et al. (2007) that increase access to market increases financial returns and ability of borrower to repay their loans.

The study also revealed through FGD that borrowers access to market was based on the fact that they sell food related produce which are bought everywhere in the community. Besides, one of the strategies borrowers adopted to meet their

joint liability obligations is to ensure that individuals within a solidarity group do not do the same business. This is to make sure that some group members would have money to pay for their colleagues when market for some products is not good. Additionally, groups give peer advice on the business of colleagues and how they can diversify their products in the face of market uncertainties.

The number of times borrowers received loans had a significant and positive coefficient (B) of 1.52. The implication of this is that borrowers who had taken higher number of loans stood a higher chance of repaying back those loans on time. Further probe on respondents through focus group discussions (FGD) indicated that these borrowers receive loans on time and also understood that on-time repayment guarantees timely disbursements in future. Odds ratio on the number of times borrowers received loans was 4.56. This meant that an increase in the number of loans provided to borrowers within a particular period is likely to increase the likelihood of timely repayment by 4.56 times (all things being equal).

Godquin (2004) and Bassem (2008) found similar results but attribute it to the simple reason that borrowers with many loans repay better just to get more in future. In an FGD with the groups however, the borrowers attributed the result to enforcement of sanctions such as decrease in loan amount in future, penalty fees, naming and shaming, and reporting to community leaders.

Household size of borrowers is another independent variable that showed a negative relationship with timely loan repayment. Table 8 shows the coefficient for household size as -0.17 which is significant at 0.05 alpha level. This implied

that borrowers with bigger household size were less likely to make timely loan repayment than borrowers with smaller household size. An additional member in the household of respondent decreased the odds of repaying on time by a factor of 0.84 or increased the odds of non-repayment by 1.19. The explanation is that clients with larger households tend to have more mouths to feed, thus more pressure on the savings of the borrower.

Similarly to this finding, Achoja et al. (2008) found an inverse relationship between household size and loan repayment performance both at five percent and one percent alpha level. Their study was carried out on self help microcredit groups in Nigeria, using ordinary least square multiple regression.

Effects of loan officer characteristics on the timely collection of loans

Objective two of this study sought to examine the relationship between the socio-economic characteristics of CWE loan officers and their ability to collect loans. Variables related to loan officer' socio economic characteristics were sex, age, household size, number of dependents, educational level, experience, number of groups handled and number of group members related to loan officer. Other variables include participation in initial training and number of refresher trainings received by the loan officer and relationship between loan officers and clients. A total of 23 loan officers from Grameen Ghana and Bonzali Rural Bank provided data for this study.

In terms of repayment performance, the results of the study indicated that 70 percent of the 23 loan officers were able to recover their loans on-time. Only seven loan officers (30%) had delayed recovery of their loans. It was also found that 25 percent of the loan officers had relatives among the joint liability groups that they handled. There is therefore the likelihood that loan officers will attach certain preferential treatment and will not go all out to recover loans when their relatives are involved.

In a key informant interview some loan officers admitted that they work with clients in the same area they reside and so enforcing strict sanctions become a problem when their relatives are present in a group. Besides, some of them claim they have no motivation to overwork themselves to recover loans. This is because of low remuneration, inadequate reward system for hard work and lack of cooperation from groups.

The study revealed that 75 percent of loan officers visit their groups frequently. These visits could ensure that loan officers are abreast of what borrowers do with the money given them. It could also provide opportunity to identify and address challenges that can affect the repayment of groups.

Key informant interviews with management of the MFIs revealed that the joint liability scheme, as it is practised by CWE, hinges on tenets of the financial intermediation theory as professed by Ghatak and Guinane (1999). The interview revealed that the MFIs place more emphasis on monitoring and supervision to avoid issues of moral hazard both at the scheme level and the joint liability group

level of the CWE programme. This is done through regular supervision of the loan officers by the credit manager on the one hand, and regular monitoring of the groups by the loan officers on another. The aim is to ensure that borrowers are utilizing the loan for the intended purpose so that they would be able to repay. Other measures put in place to encourage timely repayment include training and education of borrowers on the economic activity they are engaged in.

Table 9 presents results of the sex and marital status of loan officers in the CWE programme. The table indicates that 17 out of the 23 loan officers were males while only six were females. The presence of more male loan officers in this study is consistent with both literature and prevailing conditions in most microfinance institutions. Croson and Gneezy (2009) argue that the work of microfinance is involving and competitive and is therefore friendlier to loan officers who are males than those who are females.

Table 9: Sex and marital status of loan officers

Sex	Single	Married	Total
Female	3	3	6
Male	7	10	17
Total	10	13	23

Source: field work, 2011

Evidence from economic and sociological literature suggest that the sex of loan officers as agents of microfinance institutions affects loan repayment performance in different ways (Alesina, Lotti, & Mistrulli, 2008; Barasinska

2009; Ravina 2008; Wilson, Carter, Tagg, Shaw, & Lamz, 2007). Female loan officers are said to be more likely to use stricter criteria when deciding upon loan applications in order to avoid defaults (Dufwenberg & Muren, 2006).

Economic studies by Eckel and Grossman (2008) and Croson and Gneezy (2009) broadly confirm that females exhibit both greater risk aversion and lower overconfidence and are more likely to perform better in loan recovery than men. The analysis of Beck, Behr and Guettler (2009) suggests cultural affinity as the possible explanation for the positive effect on loan performance associated with female loan officers who deal with female borrowers.

Other studies provide counter argument that male loan officers are more likely to get accurate information about the borrowing behaviour of borrowers and would therefore make informed decisions leading to better loan recovery than female loan officers (Karlan & Zinman, 2010). Another study by Croson and Gneezy (2009) found that women are often considered to be more "other-regarding" than men and so can be more considerate to defaulting women. This makes men more likely to recover loans than females. Consistent with these findings is the notion that women are less sensitive to incentives and display a greater sense of solidarity with borrowers (Bellucci, Borisov, & Zazzaro, 2010).

The results in Table 9 also reveal that majority of the respondents (13) were married people. Only 10 people were single. In line with the previous results, males dominated in both the married and single category. Only three out of the 13 married loan officers were females.

Marital status is argued to have effects on performance of employees including loan officers. Sociological studies argue that marriage fosters a sense of accountability in employees that leads to responsible behaviour and improved performance (Nock, 2003). Beck, Behr and Guettler (2009) found that married women are less mobile and are more dependent on the existing job, and this increases their incentive to excel in performance as loan officers than unmarried women loan officers. These findings suggest that the tendency for loan officer to perform better in loan recovery and to account responsibly for monies recovered is higher if he or she is married than unmarried.

The other descriptive statistics of the characteristics of loan officers that are hypothesized to have effects on timely repayment of loans are presented in Table 10. The table presents information on the mean and median to explain the average response for each of the variables under study. It also provides skewness of the distribution of these variables so as to give readers an idea of the concentration of the loan officers' responses. The minimum and maximum values of the responses are also included to demonstrate magnitude of difference between different categories of respondents. This is particularly important for appreciating reasons for unusual outcomes of inferential statistical analysis in the latter parts of the chapter.

Table 10: Socio-economic characteristics of Loan Officers

Variable	Median	Min.	Max.	Mean	Skewness
Age	32	25	46	32.04	1.26
Household size	10	5	16	10.48	-0.166
Total years in school	16	12	18	14.83	-0.394
Years of Experience	4	3	8	4.48	1.061
Number of groups handled	12	6	21	12.61	0.246
Duration of CWE Training	0	0	4	1.61	0.447
No. of refreshers trainings	1	0	2	0.91	-0.170

Source: Field work, 2011

Table 10 indicates that the youngest loan officer was 25 years old while the oldest loan officer was 46 years old. The median age of a loan officer within the sample was 32 years. The positive skewness of 1.26 shows that the loan officers varied greatly in age but most of them were below the mean age of 32 years. Theoretical and empirical works on microfinance have provided mixed hypothesis regarding the effects of age on loan officers' ability to recover loans. Anderson (2004) argues that age has a positive effect on loan officers' performance and so older loan officers are likely to be associated with better loan recovery than younger ones.

Contrary to this argument, Argawal and Wang (2008) provide justification, through the career concern theory that young officers have more

motivation to work harder to achieve higher repayment performance than older loan officers. This is because the former are more enthusiastic to impress management for promotions and incentives. On the other hand, older loan officers have achieved much of their promotions and incentives and may not exert much effort to achieve excellence in repayment performance. Thus, age can positively or negatively influence performance of loan officers.

The results of the study revealed that the median household size of loan officers was 10 people. The loan officer with the highest household size had 16 people in his/her household while the least household size was five people. Loan officers with higher household size tend to have higher number of dependents to cater for. Therefore, as household size increases, there is potential increase in claims against the loan officer's income and this is likely to encourage the diversion of resources to direct household consumption purposes such as paying school fees, food, funerals and other social commitments (Pollio & Obuobie, 2010). The size of the household therefore has potential negative effect on loan recovery by loan officers.

The study found that the highest number of years loan officers have been in school is 18 years, while the least numbers of years in school was 12 years of education. The median years of schooling for a loan officer were 14.8 years. The theoretical assumption in the conceptual framework is that loan officers with higher levels of education tend to have knowledge on issues of credit and loan recovery. This conforms to the human capital theory which suggests that

education increases abilities and knowledge that triggers desirable human attributes such as diligence and self-motivation which are necessary for job performance (Swenson-Lepper, 2005).

According to Thomas and Daniel (2009), higher education impacts better work values, increases achievement orientation and reduces counterproductive behaviours among employees. These positive effects of education are likely to translate to better loan recovery among loan officers who have more years of education than those who have less years of education.

Result on the experience of loan officers indicated that the median years of experience as loan officer was four. It was found that the loan officer with the highest level of experience on the job had been working for eight years while the least experienced had three years working experience. With the positive skewness of 1.06, most of the loan officers had lower years of experience.

The level of experience on the job plays a significant role in their ability to recover loans. Loan officers with higher levels of experience would theoretically make higher levels of loan recovery because they are more likely to make informed judgements (Lipshitz & Shulimovitz, 2007). This is often due to the better practices that they discover on the job. In line with the career concern theories however, loan officers with least experience are more likely to produce better repayment results through hard work and discipline so as to impress management for promotions and incentive packages (Agarwal & Wang, 2008; Hertzberg et al., 2009).

The results revealed that loan officers handled 12.61 groups on the average. However, the highest number of groups handled by a loan officer was 21, while the least number of groups per loan officer was six. Most loan officers however, handled over 12.61 groups. The empirical examination strengthens the hypothesis that workload has significant impact on the performance of employees (Yang, Edwards & Love, 2004). According to Shah, Jaffari, Aziz, Ejaz, Ul-Haq and Raza (2011), increase in workload leads to increased stress which affects ability of an employee to perform effectively on the job. Thus, loan officers with fewer groups are expected to recover loans on time more than those with many groups.

The findings suggest that 56.5 percent of the credit officers did not undergo any formal training before handling the CWE groups. On the contrary, 10 CWE loan officers out of 23 had some form of training. Further analysis show that credit officers took part in training activities that lasted about a week. Some credit officers, however, had training that lasted as long as four weeks before they were assigned CWE microcredit groups. Other credit officers also had some amount of refresher training while on the job.

Training is considered an important factor in increasing employees' knowledge and commitment necessary for increasing individual staff performance and organisational outcomes (Owens, 2006). Brum (2007) noted that employees who receive more training on the job turn to perform better than those who have less trainings. Following these findings, this study hypothesised that credit

officers with training opportunities before taking on borrowers and those with refresher training over longer periods would record higher level of loan recovery.

The model on loan officer socio-economic characteristics and their ability to retrieve loans from borrowers on time comprised eight predictor variables and the dependent variable. The independent variables included both continuous and categorical variables and a dependent dichotomous variable. The sample size of loan officers was 23 and this featured in the model with no missing cases.

The classification table (Table 11) shows the guess results of the binary logistic regression model involving the socio-economic characteristics of loan officers and their timely loan repayment ability. The classification table however, excluded the effect of the independent variables in the model. The output of the classification table served as the basis upon which the classification ability of the model was compared with and without the independent variables.

Table 11: Analysis of loan officer characteristics

Observed		Predicted Loan recovery on due date		
		Yes	No	Percentage
Loan repayment on due date	Yes	0	6	0
	No	0	17	100.0
Overall percentage (without predictors)				70.0

Source: Field work, 2011

The overall percentage of correctly classified cases was 70.0 percent as shown in Table 11. The table suggests that a prediction that a loan officer would not recover loans on time would be correct 70 percent of the time. In comparison, the overall percentage of correctly classified cases increased (in block 1) when predictor variables were included in the model. The model's predictive ability improved by 3.9 percent (from 70% to 73.9%) when the independent variables were introduced.

Table 12: Omnibus tests of model coefficients for loan officer characteristics

	Chi-square	df	Sig.
Step	26.40	8.00	0.00
Block	26.40	8.00	0.00
Model	26.40	8.00	0.00

Source: Field work, 2011

The omnibus test of model coefficients showed a chi square value of 26.40, degrees of freedom of 8 and a p-value of 0.00. This implied that the model was a good fit and confirms the robustness of the study. Another test of model fit that was used to assess the model was the Hosmer and Lemeshow test. Results of this test confirmed that of the omnibus test of model coefficients. The latter test showed a chi-square value of 3.74, degrees of freedom of 8 and a p-value of 0.88.

The model summary output explains the amount of variation in the dependent variable caused by the model. However, the individual effect of these variables made use of the coefficients table. The Cox and Snell R^2 from the output

was 0.47 while the Nagelkerke R^2 was 0.68. This implies that between 47 percent and 68 percent of the variability in the dependent variable is explained by the set of independent variables in the loan officer loan retrieval model.

The coefficients of the microcredit repayment model (Table 13) showed that three variables had a significant effect on the dependent variable at 0.05 alpha level. These significant independent variables were age of the loan officer, household size of the loan officer, and the number of days of initial training the loan officer had.

Table 13: Microcredit repayment model for loan officer characteristics

					95.0% C.I. for EXP(B)		
Variables	B	S.E	Wald	Sig.	Exp(B)	Lower	Upper
Sex	0.49	1.05	0.22	0.64	0.62	0.08	4.70
Age	0.40	0.20	4.19	0.04	1.67	0.46	2.98
Household size	-0.87	0.38	5.36	0.02	0.42	0.20	0.88
Educational level	5.57	5.63	0.98	0.32	0.00	0.00	23.08
Experience	0.40	1.57	0.06	0.80	0.67	0.03	14.64
No. of groups handled	-0.26	0.14	3.43	0.06	0.77	0.59	1.02
Initial training	2.48	1.22	4.16	0.04	1.08	0.01	3.91
No. of refreshers	3.71	6.01	0.38	0.54	4.67	0.00	53.25
Constant	20.62	14.84	1.93	0.16	905.48		

Source: Field work, 2011

Out of the three variables that showed significant effect, only the household size showed a negative effect on timely loan retrieval. The age of loan officer and the number of days of initial training however, showed a direct effect on timely loan retrieval. Information on the contribution of individual variables in a binary logistic regression model is shown by the Wald statistic of each predictor. The higher the Wald statistic the more the contribution of the variable in the loan officer loan retrieval model. From the results in Table 13, the variable with the highest contribution (5.36) in the model was the house hold size of loan officer. This was followed by age of loan officer (4.19), and whether loan officer had initial training or not (4.16).

The age of loan officers had a positive and significant relationship with timely loan retrieval by these loan officers. From Table 13 the age of loan officers had a coefficient value of 0.40 with a p-value of 0.04. The coefficient value implies that the older the loan officer, the more likely he/she will make timely loan retrieval. Based on the odds ratio, an increase in the age of a loan officer by one year increases the odds that he/she will make timely loan retrieval by 1.67 all things being equal.

This finding supports an earlier study by Anderson (2004) that age improves loan officer performance. However, the results conflicts with the career concern hypothesis that age has an inverse relationship with employee performance (Agarwal & Wang, 2008). The reason for this contradiction might be related to the fact that experience plays a pivotal role in loan recovery and age has

been found to be positively related to experience (Beck, Behr, & Guttler, 2009). This is confirmed by the earlier results that the average loan performer has as many as four years experience. The loan officer with the least experience had worked for three years. These results are in line with the assumptions in the conceptual framework of the study.

The study also found that household size of loan officers has an inverse and significant effect on loan retrieval by loan officers. The negative coefficient (-0.87) implies that loan officers with larger household size are less likely to make timely loan recovery. On the other hand, loan officers with smaller households are more likely to retrieve loans on time. The Exp (B) in Table 13 confirms the significance (p-value=0.02) of the relationship between household size of loan officers and their loan retrieval ability. A unit increase in the size of a loan officer's household reduces his/her likelihood of making timely loan retrieval by 0.42 or increases the odds of not retrieving loans by 2.38.

Loan officers with larger household sizes are more likely to have more dependants and therefore, more demand for financial resources and time than those with smaller households. The extra pressure to cater for their households may push loan officers to pursue motives contrary to the objectives of the organisation and this could reduce their loan recovery ability. This behaviour is attributed to the undesirable consequences of moral hazard as enshrined in the conceptual framework and the agency theory. This result also supports the empirical findings of Pollio and Obuobie (2010) that many dependents means

increased claim on the income of the loan officer thereby exposing him or her to the temptation of diverting the moneys collected and recording lower repayments.

Results of key informant interview with officials of the two MFIs indicated that apart from loan officer characteristics, other agency issues such as family pressure affect the behaviour of loan officers in relation to superiors and joint liability groups that they handle. In relation to management, reports were made about loan officers who diverted loans recovered from borrowers into their personal use. These agency issues also in one way or another influenced the loan recovery performance of some loan officers. Yet when loan officers failed to recover loans, there was just verbal warning or no sanction at all given to them.

Agier and Assuncao (2009) found contrary results in their study. Their study revealed a positive relationship between household size of loan officers and their ability to recover loans. Agier and Assuncao's study was, however, carried out among small borrowers with a microcredit scheme in Brazil called Vivacred. Unlike the CWE programme which uses group guarantee, the Vivacred microcredit ensures that clients come with guarantors as collateral before they can access the loan facility. Another issue of difference is that Vivacred clients are expected to pay back at a fixed interest, while those of the CWE pay at different interest rates depending on the product.

The number of groups handled by loan officer was not a significant determinant of loan retrieval (p-value=0.06). The coefficient (B= -0.26) of number of groups however, showed an inverse effect on loan retrieval. This

finding is in line with a-priori expectation. Higher number of groups implies increased workload which has the tendency to increase stress, reduce frequency and quality of monitoring and ultimately decrease performance (Yang et al., 2004; Shah, et al., 2011). The result corroborates the finding of Beck, Behr and Guettler (2009) that in the microfinance sector, loan officers with fewer groups tend to monitor groups effectively, leading to better loan retrieval than loan officers with many groups.

Table 13 indicated that whether or not loan officers had initial training before handling groups had a direct and significant effect on timely loan retrieval at five percent alpha level. The positive coefficient of 2.48 (p-value of 0.04) means that loan officers who received initial training stand a better chance of timely loan recovery than loan officers who did not have initial training. The value of the odds ratio (1.08) implies that loan officers with initial training are 1.08 times more likely to recover loans on time as compared to those who did not get initial training. This confirms the propositions of Owens (2006) that training is an important factor that influences employees' commitment and their ability to perform.

Similar to the finding of this study, Lancaster (2006) used logistic regression and found a positive and significant relation between initial training and the effectiveness in recovery of loans. He also added that, initial training of MFIs' newly employed staff is considered critical to their performance. Loan officers knowledge on record keeping and business may help borrowers to

manage their cash flows and make better business decisions, especially for borrowers who are starting new businesses, and this will eventually lead to better loan retrieval levels. The results reflect the very reasons for which education is much emphasized by the CWE programme.

Effects of loan conditions on loan repayment

The conditions surrounding a loan facility has effect on how borrowers apply these loans, manage their businesses and pay back these loans on the due day (Field & Pande, 2007; Guttman, 2007; Oke, 2007; Oladeebo & Oladeebo, 2008; Roslan & Mohd, 2009). Objective three of this study therefore sought to assess the effects of loan conditions on borrowers ability to make timely loan repayment. Issues pertaining to loan terms included the loan adequacy, access to multiple loans and amount of savings made by borrowers per repayment meeting. Other variables were interest on loan, loan disbursement lag, repayment frequency, frequency of visits by field officers, days of training attended by borrowers and availability of continual training of borrowers.

Loan conditions represented by nine independent variables were used in the repayment model with a dichotomous dependent variable (ability to pay back loans on time). In order to assess this relationship between the variables for loan conditions and loan repayment, binary logistic regression was used. According to Pallant (2005), binary logistic is used when the dependent variable in the model is

dichotomous. However, the independent variables could be categorical, continuous or even both.

Frequencies were presented on the variables like adequacy of loans, access to other sources of credit, frequency of repayment meetings, visits by credit officer and continual education. Descriptive statistics on the other hand were discussed on continuous variables of loan conditions (savings per week, interest rate, disbursement and training before loan) in the model.

The results show that more than half (54.1%) of the CWE borrowers were unsatisfied with the loan amount given to them. On the other hand, 45.9 percent were satisfied with the loan amounts that they received. Reasons for the lower amounts given to borrowers varied from default by colleague group members, the young age of CWE group, low savings by borrowers to low financial standing of MFIs. Most (98%) of the borrowers argued that loan adequacy is very vital to the success of businesses and repayment by borrowers. This is supported by empirical evidence that when the amount of loan is adequate for the business the borrower is more likely to make more revenue and so can repay the loan on time (Roslan & Mohd, 2009).

Majority (64.7 %) of the sampled CWE borrowers did not take loans from any other source. Only 5.3 percent took loans from other institutions and private sources. Some of these other sources included family and friends, other NGOs and private susu collectors. It is argued that clients that acquire multiple loans tend to use the proceeds from one loan to pay for other loans (Jain, 2010). When

this happens, loan repayment can be good in the short run. However, the situation would change in the long run when the repayment times from different sources get closer. In the latter case therefore, the borrowers would be forced to delay payment or default in repayment of one of the loans in order to fully meet the repayment demands of the other.

Groups within the credit with education programme either meet weekly or fortnightly. Borrowers that had a weekly group repayment meeting were 66.4 percent while those that met fortnightly were 33.6 percent. The frequency of their meetings also corresponded to the frequency of visits by the CWE loans officers for monitoring and loan recovery. Therefore, borrowers who were frequently visited by loans officers were expected to have higher on time repayment than those who were not frequently visited. This is because all borrowers were expected to present an agreed amount to their group leader during each repayment meeting. This amount was subsequently submitted to the loan officer.

Roslan, Faudziah, Mohd and Rahimah (2007) argued that frequent monitoring leads to early detection of problems that may lead to non-repayment of loans. This happens because frequently visited borrowers are monitored to ensure that loans are being put to use as stated by the loan contract and this contributes positively to loan repayment (Oke et al., 2007). However, Roslan and Mohd (2009) noted that when repayment frequency is shorter, borrowers may not have enough time to do any meaningful business to generate enough revenue for repayment. This may put a lot of burden on the clients leading to delayed

repayment. In another study, Nawai and Mohd (2010) found that frequent monitoring increases closer relationship with groups leading to bridging the information asymmetry gap and preventing strategic default by borrowers.

Contrary to the finding of Roslan and Mohd (2009), Kono and Takahashi (2010) argue that the nature of business embarked upon by the poor is such that sales are easily made over short period and so money is available for repayment. Thus, if the repayment frequency is longer, the money might end up being used to meet household recurrent expenditure leading to delays in repayment. On the other hand, if the repayment frequency is shorter, the amount generated will easily be used for repayment.

Education is vital to the business success of micro borrowers (Oladeebo & Oladeebo, 2008). A good number (72.8%) of the borrowers in the CWE programme agreed that credit officers provide education to them. Educational packages such as business management, record keeping, credit management, profit management and market access were considered vital to business success. Some argued strongly that education in the form of market information and technical assistance will increase the chances of clients' on-time repayment of loans (Guttman, 2007; Oladeebo & Oladeebo, 2008). Other borrowers (27.2%) however, thought otherwise. According to the latter, no form of education is given to them when the credit officer visits.

Table 14 presents data on the descriptive statistics of variables related to loan conditions. These variables include amount of savings per repayment meeting, interest rate, disbursement lag and number of days of training received.

Table 14: Loan conditions for borrowers

	Median	Min.	Max.	Mean	Skewness
Amount of savings/week (¢)	2.00	1.00	10.00	1.96	2.79
Interest rate (%)	30.00	30.00	36.00	20.16	0.70
Disbursement lag (weeks)	2.00	1.00	8.00	2.80	1.61
Number of days training	6.00	3.00	6.00	5.63	-1.89

Source: Field work, 2011

Amount of savings per week was measured in Ghana cedis. The results in Table 14 show that the median saving made by a borrower was GH¢ 2.00, with a mean of 1.96 and a standard deviation of 1.57. The highest amount saved in the week by a borrower was GH¢10.00 while the least was GH¢1.00. With the positive skewness value of 2.79, most borrowers made savings less than GH¢ 2.

Economic literature on savings turn to suggest that borrowers face difficulty in saving money due to self-control problems or to pressures from neighbors and relatives for handouts or from their spouse (Kono & Takahashi, 2010). Therefore, encouraging savings at the group level ensures that money is out of the house soon after it is earned, making it less likely for the earned money to be used up by themselves, their spouse, relatives, or neighbors. The implication

of this is that borrowers with more savings can get money for repayment even when they are not able to generate business profit at the time of repayment

Interest rate of CWE loans varied between 30 percent and 36 percent. The median interest rate was 30 percent, with a mean rate of 20 percent and a standard deviation of 2.84. The skewness (0.70) shows that most clients paid interest rates of about 30 percent. It is argued that higher interest rate on loans puts a higher burden on borrowers which might lead to lower business profitability and delay repayment of loans (Kohansal & Mansoori, 2009; Achoja et al., 2008). The highest period between loan requests by client and the actual grant of these loans was eight weeks while the minimum period was one week. The median period for disbursement lag was two weeks while the mean was 2.8 weeks with a standard deviation of 1.87 weeks. Further analysis revealed that most clients (62%) however, received their loans in less than the two weeks.

It is argued that when there is a shorter disbursement period and borrowers receive money immediately after application, they are more encouraged to pay back on time than if the disbursement delays (Oni, 1999). Oke et al. (2007) had a similar finding that, since borrowers request for loans for specific purposes, when these loans are not given at the right time, borrowers tend to divert the money into other ventures such as funerals and other family matters. Consequently, the repayment of these loans either delays or never comes.

Borrowers of the CWE programme undergo an average of six days of compulsory training before they acquire their first loan. With a maximum of six

days and a minimum of three days, borrowers are taken through training to improve their business management skills so as to ensure prudent use of loan. The negative skewness of -1.89 meant that most borrowers received training up to the six days.

Godquin (2004) argued that when borrowers undergo more days of training, they tend to understand and abide by loan conditions and are committed to loan repayment contract. Similarly, Rosland and Mohd (2009) found that training provides better business skills and management leading to higher profitability and on time repayment. Therefore, borrowers with more training are more likely to make timely repayment of the loans they have contracted than those with limited number of training days.

To explain the relationship between loan conditions of CWE loans and the ability of respondents to repay on time, a binary logistic regression was run. The model was made up of seven independent variables and one dichotomous dependant variable. The independent variables were both continuous and categorical in nature. The total sample size was 375, with no missing cases.

To study the analysis without the predictor variables, the classification table was used. This table (Table 15) shows the guess results of the binary logistic regression analysis on the loan terms of the CWE partner microcredit institutions and the ability of borrowers to make timely loan repayment. The output served as the basis upon which the classification ability of the model was compared with

and without the independent variables. It therefore also shows the overall percentage predicted when the predictor variables were included in the model.

From the classification table, the overall percentage of correctly classified cases was 80.0. It means that, the loan terms and credit repayment model was able to predict that 80.0 percent of the time, a guess that a person would be able to or not be able to repay his/her loan on-time would be correct. Comparing the above to the overall percentage (in block 1) when predictor variables were included in the model, it was observed that, the predictive ability of the model improved (90.1%) over the initial 80.0 percent.

Table 15: Analysis of loan conditions without independent variables

Observed		Predicted		
		Loan repayment ability		Percentage
		No	Yes	
Loan repayment ability	No	0	75	0
	Yes	0	300	100
Overall % without predictors				80

Source: Field work, 2011

Results of the omnibus test of model coefficients, revealed a chi square value of 165.767, with six degrees of freedom, and a p-value of 0.00. This meant that the model was a good fit, implying that the study was robust. A test of model fit that was used to access the model was the Hosmer and Lemeshow test. Results of this test showed a different picture from that of the Omnibus test of

coefficients. The Hosmer and Lemeshow test showed a chi-square value of 28.195, degrees of freedom of 7, with a p-value of 0.000. At this significance level, the Hosmer and Lemeshow goodness of fit test did not support the loan terms and microcredit repayment model.

Table 16: Omnibus test of model coefficients for loan conditions

	Chi-square	Df	Significance
Step	188.135	6	0.000
Block	188.135	6	0.000
Model	188.135	6	0.000

Source: field work, 2011

The model summary results revealed the Cox and Snell R^2 and Nagel Kerke R^2 of 0.394 and 0.624 respectively. The implication is that between 39.4 percent and 62.4 percent of the variability in clients ability to make timely repayment is explained by the joint effect of the independent variables in the loan conditions and credit repayment model.

The loan conditions microcredit repayment model (Table 17) revealed that the number of loans that clients had access to within a particular period of time and the number of days of training they received were significant at the alpha level of 0.05. Both access to multiple loans and number of days of training had positive coefficients. The two variables also conformed to theoretical explanation. In line with the conceptual framework, if borrowers have access to multiple loans and training, they are likely to utilize the knowledge gained in trainings to be able

to manage the loans better and repay on time. On time repayment would be further enhanced by group pressure and monitoring. The other variables; loan amount, loan adequacy, interest on loan, disbursement lag and availability of continued education were, however, not significant at 0.05 alpha level.

Table 17: Microcredit repayment model for loan conditions

Variable	B	Wald	Sig	Exp (B)	95.0% C.I. of Exp B	
					Lower	Upper
Multiple loans	1.684	25.047	0.000	5.385	2.785	10.413
Amt of savings	0.189	1.229	0.286	1.208	0.865	1.689
Interest rate	0.151	0.782	0.376	1.163	0.832	1.627
Disburse. lag	0.184	0.754	0.385	1.202	0.793	1.822
Days of training	2.328	86.620	0.000	10.256	6.282	16.746
Continuous edu.	-1.489	2.066	0.151	0.226	0.030	1.719
Constant	-21.52	14.537	0.000	0.000		

Source: Field work, 2011

From Table 17, borrowers access to multiple loans show a positive coefficient of 1.684. By implication, the more borrowers had access to multiple loans, the greater the likelihood that they will make timely loan repayment. Therefore a borrower with an additional loan is 5.385 times more likely to make timely loan repayment, all things being equal. The results also showed that multiple loans contribute 25.047 units to the loan terms and credit repayment model.

This finding confirms that of Field and Pande (2007) who used linear multiple regression to study the factors that influence repayment ability of microcredit borrowers. They however, indicated that the financial prudence of discipline of the borrower could also affect their ability to make timely repayment even when they have multiple loans. Relating the findings to the conceptual framework, it can be said that when borrowers are given multiple loans in the presence of monitoring and supervision by both loan officers and their group members, they will be able to pay back these loans.

The positive coefficient of the training variable implies that borrowers who have had more days of training are more likely to make timely loan repayments. Hence an additional day of training increases the odds of repayment by 10.256 all things being equal. Results from Table 17 show that the number of days of training that a borrower had contributed the highest to the loan terms and credit repayment model with a Wald statistic of 86.620.

This finding is in contrast to the findings of Guttman (2007) that duration of training had no significant effect on borrower's ability to repay loans. The two studies, however, agree that the duration of training has a positive association. It was expected as per the conceptual framework that borrowers with more days of training in the presence of group pressure and supervision will be able to make timely loan repayments.

Results of this study did not differ much from the work of Field and Pande (2007) who found that duration of training has no effect on the likelihood of

default. The only point of departure was the type of clients studied (whether the borrowers were old or new members). Field and Pande's study only targeted new borrowers, 80 percent of whom did not have other sources of income. This study, however, targeted borrowers who have been with CWE for a long period irrespective of whether they have access to other sources of income.

The results for savings showed a positive effect (B=0.189) on timely repayment even though the relationship is not significant. The findings suggest that the higher the amount of savings made, the more borrowers are likely to make timely repayment. This could be attributed to a risk adverse behaviour which pushes some borrowers to use part of the loan to make savings instead of investments at the beginning of the loan cycle and use these savings to meet the initial repayment obligations. The results support the debt deflation theory called the paradox of debt which suggests that people sometimes save not to increase savings, but rather to pay down debt (Fisher, 1993). The findings also confirm empirical expectation that amount of savings have positive relationships with timely loan repayments (Bassem, 2008; Manalo, 2003).

On the other hand, the results also contradict Keynesian theory of the paradox of thrift which states that an ex-ante increase in saving may lead via multiplier to an ex-post decline in real output, investment and saving itself, thereby contradicting the very purpose for which the savings was intended (Abu, Mohammad & Abdullah, 2008). The implication of the paradox of thrift theory, according to Abu et al. (2008), is that the borrowers' attitude of saving to meet

early repayment will, in the long run, reduce the amount of money used to run their businesses since saving is inversely related to investment.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary of the findings of this study, the conclusions and recommendations. The first part of the chapter highlights the key findings that helped to answer the research objectives. The second provides the specific answers to the research objectives while the third part presents specific recommendations for the MFIs, the CWE groups and researchers.

The high incidence of poverty in the Tamale Metropolis attracted the attention of many microcredit schemes including the CWE programme to the area. Implemented by Grameen Ghana and Bonzali Rural Bank, CWE hopes to improve the livelihoods of people living in the area. High repayment rates could be an indication of an improvement in the living conditions of borrowers. Doubts have however, been raised against the encouraging repayment rates recorded by these financial institutions, necessitating an investigation into the factors that influence repayment rates in the area.

Summary

Generally, the study set out to examine the factors influencing loan repayment within the Credit with Education Programme in the Tamale Metropolis. Specifically, the study sought to examine the effects of socio-economic characteristics of CWE borrowers on loan repayment. The study also sought to examine the effects of socio-economic characteristics of loan officers on loan repayment as well as to assess the effect of loan conditions on repayment.

In order to achieve the objectives, the study used a combination of cross sectional survey and relational research designs. Selection of 375 respondents was done through simple random sampling and a census of 23 loan officers from the two CWE financial institutions in the study area. Specifically, data were collected using structured questionnaires, interview schedules and interview guides. The quantitative data were analysed using SPSS version 13.

The first objective was to examine the effects of the socio economic characteristics of borrowers on loan repayment and the following are the key findings:

1. majority of the CWE borrowers had no formal education (82.4%) and married people dominated (78.9%) the membership of groups.
2. much of the loans (80%) received by the CWE borrowers were repaid on time. Between 41.8 percent and 66.1 percent of the variability in repayment is explained by the socio-economic characteristics of CWE borrowers.

3. Age of the borrower had a direct and significant relationship with timely loan repayment. Older borrowers were 1.12 times more likely to repay their loans on time than younger borrowers.
4. Access to market had also had a positive and significant relationship with timely loan repayment. Borrowers who had access to market had greater chances of repaying their loans on time than borrowers without access to market.
5. Borrowers of CWE who had taken a higher number of loans stood a greater chance of making timely loan repayment, meaning that access to subsequent loans was directly related to timely loan repayment.
6. Household size of borrowers had a negative relationship with timely loan repayment. Borrowers with a larger household size were less likely to repay loans on time than borrowers with smaller house hold size.
7. The study found positive but less significant effect of religion, marital status, and income level on timely loan repayment. Similarly, educational level and experience of borrowers were not statistically significant predictors of timely loan repayment. However, these variables were inversely related to timely loan repayment.

The effects of socio-economic characteristics of loan officers on loan retrieval were examined as the second objective and the key findings that emerged were:

1. Loan officers were able to recover much of the loans they disbursed. As much as 70 percent of the loan officers fully recovered the loans disbursed within

the due date. Between 47 percent and 68 percent of the variability in loan recovery was explained by socio-economic characteristics of loan officers.

2. Age of loan officers had direct influence on timely loan recovery. Older loan officers had higher likelihood of recovering loans timely than younger loan officers.
3. Household size of loan officers had an inverse relationship with their ability to recover loans on time. The larger the household size of the CWE loan officer, the less he/she made timely recovery.
4. Participation in initial training was significant and positively related to timely loan recovery. Loan officers who took part in initial training before handling CWE groups had a better loan recovery performance than those who did not take part in initial training.
5. Educational level, sex, experience, and number of refresher trainings attended by loan officers were positively related to loan recovery but this relationship was not significant. Similarly, the number of CWE groups handled by a loan officer was negatively related to timely loan recovery but this relationship was not significant.

Examination of the effects of loan conditions on repayment led to these emergent issues:

1. Collectively, variables related to loan conditions explained between 39.4 percent and 62.4 percent of the variability in borrower's ability to make timely loan repayment.

2. Borrowers' access to multiple loans positively and significantly affected timely loan repayment. Borrowers who had access to loans from more than one source were more likely to repay loans on time than borrowers who relied only on the CWE loans.
3. The number of days of initial training had a direct and significant effect on timely loan repayment. Borrowers who had more days of initial training were able to repay loans on time than borrowers who had fewer days of initial training.
4. Amount of weekly savings, interest rate and disbursement lag (number of days between loan application and loan disbursement) were all positively associated with timely loan repayment. However, the effect of these variables was not significant.
5. Access to continuous education in the CWE programme was negatively associated with loan repayment. The effect of this variable was also not significant.
6. Issues of moral hazard, adverse selection, and enforcement exist in the CWE programme. These issues play some role in the repayment performance of borrowers and loan recovery by loan officers.

Conclusions

The socio-economic characteristics of borrowers had mixed effects on loan repayment. While increases in age, access to market, and number of loans improved the chances of loan repayment, increases in household size decreased the chances of loan repayments. The most important borrower characteristics were access to market, age, household size and number of loans in that order. Other characteristics like educational level, marital status, religion, number of dependants, residential status, experience, and income level affected loan repayment, but they were not important.

The socio-economic characteristics of loan officers had varied effects on loan recovery. Whereas increases in age and provision of initial training improved the chances of loan recovery, increases in household size decreased the chances of loan recovery by loan officers. The characteristics of loan officers that had the greatest influence on loan repayment were household size, age, and initial training in that order. Characteristics such as sex, experience and educational level also affected loan recovery by loan officers, but they were not important.

Loan conditions had similar effects on loan repayment. Increase in borrowers' access to multiple loans and increases in the number of days of initial training improved loan repayment. The major loan conditions were number of days of initial training and number of multiple loans in that order. Other loan conditions like amount of savings, interest rate and number of days between loan

application and disbursement affected borrower's ability to repay loans on time, but they were not important.

The study generally confirmed that loan repayment in the CWE programme in the Tamale Metropolis is affected by socio-economic characteristics of CWE borrowers, socio-economic characteristics of loan officers, and loan terms and conditions. It revealed that these characteristics have mixed effects on loan repayment but the success of CWE hinges on its emphasis on monitoring and group pressure. This conclusion reflects similar patterns as shown by the conceptual framework that agency and joint liability issues affect characteristics of borrowers and loan officers leading to repayment on time or delay repayment.

The findings of this study have significant implications for development. The research results have generally provided an insight into the reasons for the success of rural financial intermediation programmes in the Tamale Metropolis. It has explained how the rural financial sector can build sustainable poverty reduction programmes through on-time loan repayment for development. The results emphasize that MFIs could succeed in building enough capital in the study area through excellent repayment from borrowers. This would allow them to reach out to many more economically active poor whose activities would contribute significantly to revenue mobilisation and implementation of development programmes by government. Failure to achieve on-time repayment

may lead to accumulated debt and financial crunch which can retard development. This is in accordance with economic development theory.

Recommendations

Based on the key findings and conclusions, it is recommended that the Bonzali Rural Bank and Grameen Ghana should:

1. consider giving more loans to borrowers who are older and matured so as to take advantage of their high repayment performance. This is particularly important as it will contribute to reducing poverty among the elderly.
2. increase the number of days of initial training and ensure that only individuals who fully participate in the training are provided loans.
3. provide education on marketing skills as well as lobby for the establishment of market facilities in the areas where borrowers are located. It is also important to consider access to market as conditions for expansion of CWE to communities.
4. target and provide loans to more of the borrowers with small households and encourage such borrowers to plan their families well in order to cut down cost, expand their business and make timely loan repayment.
5. consider age in selection and recruitment of loan officers as a way of improving loan recovery. Matured loan officers should be given preference in recruitment of loan officers.

6. do background checks to ensure that loan officers with smaller household sizes are given opportunity. Individuals whose household size is smaller could be given preference in recruitment of loan officers.
7. make sure that all newly recruited loan officers participate fully in initial training before they are allowed to handle groups. An assessment system should also be instituted to ensure that loan officers gain the right knowledge and skills from the initial training before handling groups.
8. continue to emphasise proper monitoring and supervision of loan officers to ensure compliance with the conditions of contract and the CWE rules.
9. establish dynamic incentive packages to motivate staff to direct their considerable talents to obtaining desired results. The incentive packages will not only improve the effectiveness of loan collections, but also promote a workplace environment of healthy competition among loan officers. The incentives could be defined based on results of collection activities, simply through the difference between loans contracted and loans recovered on time.

The CWE groups are also advised to:

1. ensure that members who fail to participate fully in initial trainings are not allowed to take loans in the group until they get another opportunity to be trained.
2. secure access to market for their produce before taking loan from MFIs. Care should be taken not to allow members who engage in businesses that do not have market within the area.

3. avoid giving preferential treatments to educated people who want to join their groups for loans. Admission of an educated person into a group should be based purely on the person's business and the group's trust in her and not on her education.
4. continue to do proper screening of new members to ensure that only members who share common characteristics with the group are admitted. Also, CWE bye-laws and sanctions against delay repayment should be strictly enforced without discrimination based on members' backgrounds.
5. continue to monitor each other to ensure loans are put into proper use so as to increase the chances of repaying.

Suggestions for further research

Further research is recommended on the long term effect of multiple borrowing on repayment. This is important for providing collective recommendations to MFIs on how to deal with multiple borrowing in the wake of rising competition. The study also recommends further research on the effect of educational level of CWE borrowers and loan officers on timely loan repayment. This is necessary to provide more explanation as to why this variable has no significant influence on loan repayment as well as why it has negative relationship with borrowers repayment ability.

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APPENDIX A

QUESTIONNAIRE FOR LOANS OFFICERS

AN EXAMINATION OF THE FACTORS INFLUENCING LOAN REPAYMENT: A STUDY OF THE CREDIT WITH EDUCATION PROGRAMME IN THE TAMALE METROPOLIS

This study intends to examine the factors that influence loan repayment in the credit with education programme in the Tamale Metropolis. The study is strictly for academic purpose. You are kindly required to read the instructions carefully and provide your candid and appropriate responses where applicable. Your response will be treated with utmost confidentiality. Please respond by ticking (√) an appropriate box or filling in appropriate spaces.

SECTION A: LOAN RECOVERY PERFORMANCE OF MFI

1. Please provide information on your 2010 loan recovery in the following repayment cycles?

Loan status data	Cycles				Total
	1st	2nd	3rd	4th	
Amount due					
Amount repaid					

2. Please provide information on your 2011 loan recovery in the following repayment cycles?

Loan status data	Cycles				Total
	1st	2nd	3rd	4th	
Amount due					
Amount repaid					

3. What are the reasons for the repayment performance recorded above?

   .....

4. Do you always recover all the loans on the due date?

   1Yes [ ] 0 No [ ]

SECTION B: SOCIO-ECONOMIC CHARACTERISTICS OF LOAN OFFICER

4. Sex 1 Male [ ] 0 Female [ ]
5. Age (number of years) …….....
6. Marital status 1 Married [ ] 2 Unmarried [ ] 2 Widowed [ ]
7. Religion.....
8. How many children do you have? …….....
9. How many people are in your household? .....
10. Highest academic qualification 0 None [ ] 1 Primary [ ] 2 BECE [ ]

    3 SSSCE [ ] 4 HND [ ] 5 First degree [ ] 6 others (specify) …...

11. Total number of years in school …….....
12. Please list your sources of income.....

    .....

13. How much is your total monthly income? GH₵.....

14. Number of years worked as credit officer…….....

15. How many groups do you handle? …….

16. What is the total number of clients that you handle? .....

17. How many of these clients are your relatives? .....

18. What motivates you to recover loans? .....

    .....

19. How will you feel if you are accused of embezzling loans? .....

20. Did you attend CWE training before handling the groups? 1 Yes [ ] 0 No [ ]

21. How long was the CWE training? ……

22. How effective was this training? 3 Very Effective [ ] 2 Effective [ ]

    1 Ineffective [ ] 0 Very ineffective [ ]

23. How many refresher trainings have you attended as a CWE credit officer? .....

APPENDIX B

INTERVIEW SCHEDULE FOR BORROWERS

AN EXAMINATION OF THE FACTORS INFLUENCING LOAN REPAYMENT: A STUDY OF CREDIT WITH EDUCATION PROGRAMME IN THE TAMALE METROPOLIS

This study intends to examine the factors that influence loan repayment in the Credit with Education programme in the Tamale Metropolis. The study is strictly for academic purpose. You are kindly required to provide your candid responses to the following questions/items. Your response would be treated confidentially.

SECTION A: REPAYMENT PERFORMANCE OF CWE CLIENTS

1. Please provide information on your 2009 loan repayments as follows

Loan status data	Cycle				Total
	1st	2nd	3rd	4th	
Amount due					
Amount repaid					

2. Please provide information on your 2010 loan repayment as follows

Loan status data	Cycle				Total
	1st	2nd	3rd	4th	
Amount due					
Amount repaid					

3. What are the reasons for the repayment performance recorded above?

.....

5. Do you always pay your loan amount on the due date? 1Yes [ ] 0 No [ ]

6. How many times have you failed to make timely repayments? ….....

7. What were your reasons for failure? …….....

8. What sanctions did you face? .....

SECTION B: SOCIO-ECONOMIC CHARACTERISTICS OF CLIENTS

9. Educational level: 0 None [ ] 1 non-formal [ ] 2 primary [ ]

   3 secondary [ ] 4 others (specify) ……..…….....

9. Marital status: 1 Married [ ] 2 Unmarried [ ]

10. Age (in years) …….....

11. Religion.....

12. Residence status 1 Native [ ] 0 Non Native [ ]

13. How many children do you have? …….....

14. How many people are in your household? .....

15. What type of business do you do at the moment? .....

16. How many years have you been in this business? .....

17. What other business do you do? .....

18. How old is your CWE group (number of years)? ……..……

19. How many members are in the group? .....

20. How many years have you been with this group? .....

21. When did you take your first loan as a member of this group? ….....

22. How many times have you taken a loan as a member of this group? ….....

23. How many of the group members are your relatives? .....

24. How much is your total monthly income? GH¢.....

25. What are your sources of income? .....

    .....

26. What are your main sources of income for repayment of loans? .....

    .....

27. What motivates you to repay loans? .....

    .....

28. How do you fill about being in debt? .....

    .....

29. If you are under situation of default, what are you most likely to do to repay your loan?

    .....

30. How many days of training did you attend before taking the CWE loan? ...

31. How frequent do you receive education from credit officers within a month?...

32. What issues does the education programme deal with? .....

    Health [ ] Business management [ ] Marketing [ ] Social issues [ ]

    Environment [ ] Farming [ ] Agro-processing [ ] Banking [ ]

    Others (specify).....

33. How relevant are the education programmes to your business?

    3 Very relevant [ ] 2 Relevant [ ] 1 Irrelevant [ ] 0 very irrelevant [ ]

34. How will you rate the quality of information gained from the education?

3 Very good [ ] 2 Good [ ] 1 Bad [ ] 0 Very bad [ ]

SECTION C: EFFECTS OF LOAN TERMS

35. How much did you borrow in this cycle? .....

36. How much did you apply for in this cycle? .....

37. Are the loans you take adequate enough for your business? 1 Yes [ ] 0 No [ ]

38. Do you always get the amount you request for? 1 Yes [ ] 0 No [ ]

If No what is the reason? ….....……

39. Do you have other sources of credit apart from the CWE? 1Yes [ ] 0 No [ ]

If yes please specify them.....

40. How much savings do you make a week? ….....

41. How many times have you used your savings to make repayments? ….....

42. What is the interest rate of your CWE loans? .....

43. How long does it take for your group to get a loan after application? …….

44. What is the frequency of your normal group meetings? 0 Weekly [ ]

1 Fortnightly [ ] 2 Monthly [ ] 3 Others (specify)…….....

45. What is the frequency of your group's repayment meetings? 0 Weekly [ ]

1 Fortnightly [ ] 2 Monthly [ ] 3 Others (specify)…….....

46. How many times does a credit officer visit your group? 0 Weekly [ ]

1 Fortnightly [ ] 2 Monthly [ ] 3 Others (specify)…….....

47. What other conditions are attached to the loans you take? .....

APPENDIX C

INTERVIEW GUIDE FOR MFI MANAGEMENT OFFICIALS

AN EXAMINATION OF THE FACTORS INFLUENCING LOAN REPAYMENT: A STUDY OF CREDIT WITH EDUCATION PROGRAMME IN THE TAMALE METROPOLIS

This study intends to examine the factors that influence loan repayment in the Credit with Education programme in the Tamale Metropolis. The study is strictly for academic purpose. You are kindly required to provide your candid responses to the following questions/items. Your response would be treated confidentially.

1. What issues affect the relationship between loan officer and management of your institution?
2. How do you monitor activities of loan officers?
3. What systems of reward or sanctions do you have to motivate loan officers to recover loans on time?
4. Which management practices do you think should be introduced to sustain the higher on-time repayment?

APPENDIX D

INTERVIEW GUIDE FOR LEADERSHIP OF CWE GROUPS

AN EXAMINATION OF THE FACTORS INFLUENCING LOAN REPAYMENT: A STUDY OF CREDIT WITH EDUCATION PROGRAMME IN THE TAMALE METROPOLIS

This study intends to examine the factors that influence loan repayment in the Credit with Education programme in the Tamale Metropolis. The study is strictly for academic purpose. You are kindly required to provide your candid responses to the following questions/items. Your response would be treated confidentially.

1. When was your group formed?
2. What processes did you follow to form the group?
3. What were the criteria for choosing of members of the group?
4. What sanctions and measures do you have against people who fail to repay loans?
5. What systems do you put in place to regulate the behaviours of members in the group?
6. How do you monitor activities of your group members?
7. What issues affect the relationship between loan officer and your group?