CHAPTER 1
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

It is argued that a growing small business sector can contribute to a wide range of development objectives such as improvement in income distribution and poverty reduction (DFID, 2000), production of goods and services to meet basic needs (Cook and Nixson, 2005), employment creation, and entrepreneurship (Abor and Quartey, 2010). The sustainable growth of small businesses in Ghana, which account for about 92 percent of all enterprises in the country, is therefore critical to Ghana's socio–economic development. Small businesses account for 85 percent of employment in the private sector (Kayanula and Quartey, 2000) and are therefore the bedrock of private sector employment in Ghana (Kufour, 2008).

Despite the substantial role of small businesses in developing economies like Ghana, their development is hampered by a lack of access to financial resources (Carpenter, 2001; Bigsten, Collier, Dercon et al, 2000). A World Bank study carried out by Parker, Riopelle, and Steel (1995) reported that about 90 percent of the small enterprises surveyed cited lack of credit as a major constraint to new investment. Unfortunately, the formal financial institutions have failed to effectively provide credit facilities to small businesses. Small businesses are expected to be sustainable, progressive and above all, to grow into large businesses. But many fail due to inadequate financial support and even when they survive, their performance is not impressive. They are unable to achieve the growth rates necessary to play an effective role in the economy.

It is to address this problem of inadequate access to credit for small businesses that Microfinance institutions (MFIs) emerged, with a focus on poverty reduction and the economic survival of the poor (Afrane, 2002). It is expected that small-scale loans to small business owners, would enhance the survival rate and profitability of their businesses and enable them to grow out of poverty (Makina and Malobola, 2004; Littlefield, Morduch, and Hashemi, 2003). This objective underscores the growing importance of microfinance as an essential poverty alleviation mechanism (Khandker, 2005; Brau and Woller, 2004; Chowdhury, Ghosh, and Wright, 2005). Microfinance therefore, provides opportunities for entrepreneurship which in turn reduce unemployment and poverty by enabling the poor to fulfil their creative potential (Yunus, 2001).

Microfinance has received a lot of attention from donor communities and governments because of its institutional innovations which appear to greatly reduce the risk and cost of providing financial services to the poor. Innovations such as provision of non-collateralized, jointly liable, group-based loans are seen as effective for: maintaining high repayment rates (Kono and Takahashi, 2009); providing contracts that give borrowers incentives to reduce bad credit risks and monitor other borrowers' activities; scheduling bigger size loans over time, dependent on successful performance of borrowers; and enabling borrowers to repay at short intervals (weekly or semi-weekly) (Morduch, 1997; 1998). Theoretical models have been developed to explain how these innovations enhance the welfare of the poor and repayment performance. Examples include:

- Stiglitz's (1990) model which considered how peer monitoring can improve the operations of MFIs and welfare of borrowers;
- Banerjee, Besley and Guinnane's (1994) model demonstrated how social sanctions in joint-liability lending enhance repayment performance;
- Ghatak's (1999; 2000) model explained how the utilization of local information leads to assortative matching in group formation which consequently enhances repayment rates and welfare of the borrowers;
- Ghatak and Guinnane (1999) also showed how joint-liability in group lending promotes screening, monitoring, state verification and enforcement of repayment;
- Gangopadhyay, Ghatak and Lensink (2005) demonstrated how the use of local information in joint-liability lending compared to standard debt contracts improves efficiency.

Although evidence from empirical studies on joint-liability lending are mix, the general consensus is that joint-liability lending enhances repayment rates because of its ability to solve the asymmetric information problems associated with standard debt contracts (Hermes, Lensink, and Mehrteab, 2005; Cassar, Crowley and Wydick, 2007; Sharma and Zeller, 1997). It must be noted that MFIs' programmes that perform well in terms of repayment rates are sustainable (Meyer, 2002).

Realizing the potential of microfinance to improving the welfare of the poor, the United Nations declared 2005 as the "International Year of Microcredit" which was then linked to

achievement of the Millennium Development Goals (MDGs) (Kono and Takahashi, 2009). The enthusiasm accorded microfinance with the support of the United Nations led to an increase in the number of MFIs from 655 in 1997 to 3,352 in 2007 and a corresponding increase in the number of clients from 16.5 million to 154.8 million over the same period (Daley-Harris, 2009). Of this, 106.6 million clients were reported as being in the bottom half of those living below their nation's poverty line or were living in households earning under US$1 per person per day (Daley-Harris, 2009).

With an increase in the number of MFIs, especially in developing countries, regulation has become necessary for effective governance and protection of stakeholders from scams and fraudulent activities. A good regulatory environment would also enable MFIs to access deposits. This would in turn enable increased outreach to the poor who operate small businesses and whose demand for microfinance remains largely unmet. This study aims at investigating the effect of regulations on the performance of MFIs in promoting the growth of small businesses in Ghana.

1.2 PROBLEM IDENTIFICATION

Researchers have employed various measures to assess performance of MFIs. Some such as Tucker (2001) and Agarwal (2010) examined financial performance while others such as Cull, Demirgüç-Kunt and Morduch (2007), Hartarska and Nadolnyak (2007), Kereta (2007) and Hermes, Lensink and Meesters (2011) assessed outreach and financial sustainability. A third group investigated performance in terms of outreach, financial sustainability and impact (Meyer, 2002; Zeller and Meyer, 2002). This study will measure performance in terms of outreach, financial sustainability and impact for a holistic assessment of performance of MFIs.

Sustainability of MFIs is imperative if they are to fulfil their objectives of meeting the financial needs of their clients, many of whom operate small enterprises. While studies on performance of MFIs have been carried out mostly in Asia, Latin America and East Africa (see for example, Agawal, 2010; Hermes and Lensink, 2007; Hermes et al, 2011; Turker, 2001; Ferro Luzzi and Weber, 2006; Hartarska, 2005; Hartarska and Nadolnyak, 2007; Mersland, 2009; Navajas, Schreiner, Meyer, Gonzalez-Vega, and Rodriguez-Meza, 2000; Arsyad, 2005), studies of this nature are lacking in Sub-Saharan Africa in general and for Ghana in particular. One of the few studies on MFI performance by Ghana Microfinance Network (GHAMFIN, 2008) reported

higher performance for BoG regulated MFIs compared with the self-regulated MFIs. However, a downside of the study was that performance assessment was limited to financial performance. Similarly, in a "baseline study of Ghanaian MFIs," Aboagye (2012) investigated only the financial performance of rural and community banks (RCB) and credit unions (CUs) in Ghana and found that both RCBs and CUs had reasonably good financial performance outcomes. While both had good potential for long-term survival, the CUs appeared to be better positioned than the RCBs although in general RCBs operate in a more rigorous regulatory environment than the CUs.

This study adds to the existing studies on MFI performance in Ghana by examining their impact on performance of their small business clients, in addition to financial sustainability and outreach. The question of impact is relevant in the sense that it assesses whether the services of MFIs have enhanced the wellbeing of their clients or whether the interventions have increased their dependence on the MFIs' programmes thereby limiting their ability to evolve out of their poverty trap (Fosu, 2008). Up to date only few studies have assessed the impact of microfinance on small businesses and poverty levels in Ghana, but these studies limit their assessment of performance to impact and not the other performance measures. Some of the studies are presented next.

In a case study of the impact of microfinance on rural women farmers in Ghana, Effa and Herring (2005) reported that rural women who participated in the MFI's programme gained an increase in income and savings compared to those who did not. MFI clients also adopted agricultural innovations at a significantly higher rate than non-clients. However, clients complained of high interest rates and lack of access to loans at the time the loans were needed. In an impact assessment of financial NGOs in Ghana, Fosu (2008) found evidence that capital and stock increased for 70 percent of clients as a result of loans from MFIs to start or expand their businesses. Moreover 24 percent achieved increases in profit, 32 percent expanded their businesses while only 6 percent did not experience any change in their businesses. She concluded that even though a greater percentage of the beneficiaries had found the intervention to be beneficial, some were worse off due to the small loan sizes and stringent loan terms. Another study by Afrane (2002) revealed a positive impact on the businesses of the clients of the two MFIs in Ghana and South Africa. Assessing income and profit, the findings showed that the businesses of clients in both projects increased significantly after disbursement of the loans. On average, income of clients of Snapi Aba Trust (SAT) from Ghana and Soweto

Microenterprise Development (SOMED) from South Africa, increased by 157 percent and 118 percent respectively after accessing and using the loans. However, 12 percent of the eighty-two sampled enterprises in South Africa recorded negative growth. To have impact on the businesses of the poor, MFIs must first be financially sustainable and must reach out to the poor in society. This current study therefore adds to existing studies on impact by investigating performance of MFI with respect to all three areas – impact, outreach and financial sustainability.

Studies on outreach of MFIs in Ghana include one by Adjei and Arun (2009) who reported that a high percentage of the Snapi Aba Trust (SAT) microfinance programmes (46 percent) went to the less poor, while 39 percent went to the moderately poor and 15 percent benefited the very poor. The study found that SAT microfinance programmes targeted a disproportionately smaller proportion of the very poor in its operational areas. This is not surprising since SAT aims at providing both financial and non-financial services to the economically active poor for enterprise development and income generation. This finding confirmed other studies which argued that the majority of MFIs tends to serve the moderately poor and not the poorest of the poor (Montgomery and Weiss, 2005), indicating a mission drift for MFIs. However, Adjei and Arun (2005) argued that since SAT depended on debt and equity capital for its operations, it was very likely to exclude the poorest of the poor from its financial services. This means that MFIs pursuing sustainability are inclined to focus on a wealthier clientele to guarantee full repayment of loans (Sharif, 1997 cited in Adjei and Arun, 2009). Another study on outreach and efficiency by Hermes et al (2011) also found a trade-off between outreach and efficiency of MFIs, suggesting that the two variables are negatively correlated. Robinson (2001; 1998) on the other hand, maintained that financial self-sustainability does not necessarily limit the MFIs ability to reach the very poor. She contended that financial sustainability enables the MFI to have access to various sources of capital, thereby increasing outreach (both depth and breadth) and scope of operations. In effect, the relationship between financial sustainability and outreach is contentious in the literature and this study helps to clarify the position.

The above discussions reveal the absence of research that assesses all three areas of performance: outreach, financial sustainability and impact and their interrelationships. Although studies have examined the impact of MFIs on small businesses, none has investigated how outreach and financial sustainability affect impact. Outreach, financial sustainability and impact referred to as the "critical microfinance triangle" (Meyer, 2002) are interrelated and

contribute to the overall performance of MFIs. This study therefore contributes to knowledge by assessing performance of MFIs in all three areas and examining the interrelationships among the three areas of performance. In particular, there is as yet no study that examines how regulations affect MFI performance in all three areas. It is these gaps that the present study seeks to fill.

Evidence in the literature has shown the importance of MFIs role in providing financial services to the poor and their small businesses (Afrane, 2002; Effa and Herring, 2005; Fosu, 2008; Nanor, 2008; Kotir and Obeng-Odoom, 2009; Makina and Malobola, 2004). However, for MFIs to be able to perform their critical role of reaching large numbers of the poor with the financial services they need, the MFIs should conduct their business on sound operating principles. This can be achieved when the MFIs are regulated. Regulation enables appropriate policy, legal and regulatory framework to be adopted and consequently promote viable and sustainable systems of microfinance (Omino, 2005). All other things being equal, regulatory environment is expected to: ensure the provision of financial services to the poor on a large scale by financially sustainable institutions; promote microfinance; enhance performance of MFIs; protect depositors; and ensure financial system stability (Chiumya, 2006). Studies on the effect of regulation on the performance of MFIs are sparse. The limited research available has centered on the effect of regulation on institutional measures of outreach and financial sustainability of well performing MFIs in Asia (Cull et al, 2007; Hartarska and Nadolnyak, 2007). This study goes a step further to examine the effect of regulation not only on institutional measures of outreach and financial sustainability but also on the impact of MFIs on their client's businesses in Ghana.

Providers of microfinance in Ghana can be classified into three groups: formal institutions such as the rural and community banks (RCBs) and the savings and loans companies (S&Ls) which are regulated by the Bank of Ghana (BoG); semiformal institutions including the financial non-governmental organizations (FNGOs) and the credit unions which are self-regulated; and informal institutions such as "susu" collectors also self-regulated.
However, in 2011 the Bank of Ghana began a process of regulating MFIs. This led to the restructuring of the microfinance sub-sector. The MFIs were categorized under tiers (see Table 1.1).

Table 1.1 The New Structure of Microfinance Sub-Sector in Ghana

Categorization	Type of MFI
Tier 1	-Rural and Community Bank -Savings and Loans Companies -Finance Houses
Tier 2	-Susu Companies -Financial Non-Governmental Organizations (FNGOs) These are deposit taking and profit making institutions. -Credit Unions
Tier 3	-Money Lenders -Non-deposit taking FNGOs
Tier 4	-Susu Collectors -Individual Money Lenders

Source: Compiled by Author with information from BoG (2011).

All Tier 2 activities, except credit unions, were to be undertaken by companies limited by shares. Companies undertaking Tier 2 activities were to include the word "microfinance" in their names (BoG, 2011). However, this study covers the state of the micro finance sector before the advent of regulation.

While the microfinance industry was previously dominated by the self-regulated providers, their success in providing finance to the small business sector, previously ignored by traditional financial institutions, has attracted the attention of these institutions. Traditional financial institutions are therefore seeking to use microfinance methods such as group lending to reach out to the poor. Their ability to do so effectively is however unclear, given that pursuit of profit maximization may run counter to the objective of reaching out to the poor. This study makes a contribution by investigating the effect of regulations on MFI performance in each performance area independently and through the other performance areas.

1.3 OBJECTIVES OF THE STUDY

Realizing the important role played by microfinance in enhancing the growth potential of small businesses, and the importance of regulations to their performance, this study aims at examining the effect of regulation on performance of microfinance institutions in promoting the growth of small businesses in Ghana. Specifically, the study seeks to achieve the following objectives:

1. Determine the performance of MFIs in terms of outreach, financial sustainability and impact
2. Assess the interrelationships among outreach, financial sustainability and impact
3. Investigate the effect of regulation on each performance measure independently- that is outreach, financial sustainability and impact of MFIs
4. Investigate the indirect or mediation effect of regulation on the relationship between the performance measures
5. Identify barriers to performance of MFIs in Ghana

1.4 RESEARCH QUESTIONS

The following research questions will guide the study to achieve the objectives above

1. How do MFIs in Ghana perform in terms of outreach, financial sustainability and impact?
2. How are the performance measures of outreach, financial sustainability and impact interrelated?
3. What is the effect of regulation on outreach, financial sustainability and impact of MFIs in Ghana?
4. What are the extent of indirect relationships, if any, between outreach, financial sustainability and impact through regulation?
5. What are the barriers to performance of MFIs in Ghana?

1.5 THE SIGNIFICANCE OF THE STUDY

In pursuance of the objective of eliminating widespread poverty and growing socio-economic inequalities, especially among the productive poor, the government of Ghana identified the private sector, specifically small business, as an engine for growth, and microfinance as a strategy for financing the poor and enabling wealth creation and poverty reduction (GHAMP, 2006; Asiama and Osei, 2007). Microfinance has therefore received a lot of attention from the government because of its potential to empower the poor by providing access to finance to enhance their business activities and livelihoods, thereby alleviating widespread poverty.

The initial thinking of the pioneers in the microfinance industry was that access to credit alone might resolve the numerous problems of the poor. This was pursued vigorously with heavy dependence on subsidies and grants. While some programmes succeeded, many failed because

the MFIs were small and vulnerable to constraints on their resources, and some mature programmes had low loan recovery rates (Zeller and Meyer, 2002). This called for a rethink of strategy for reaching out to the poor. It became clear that to reach out to more clients MFIs must focus on their sustainability and efficiency – that is, they must assume an institutional as opposed to a welfarist position (Hermes et al, 2011). This position has given birth to a new development finance paradigm which emphasizes sustainable and innovative institutions that operate efficiently and with reduced risk within a market-driven system of allocating financial resources (Meyer, 2002).

According to the literature, as MFIs increase breadth of outreach, they are likely to enjoy economies of scale and reduce costs. Financial sustainability can therefore be achieved as a result of reduction in costs and financially sustainable institutions tend to improve welfare of their clients (impact) (Navajas et al, 2000). It is therefore necessary to develop a model that encompasses the three MFI performance areas of outreach, financial sustainability and impact and assess how they are affected by regulations. Existing research on MFIs in Ghana has examined performance in each of the areas separately. A holistic analysis of performance in all three areas is required that examines performance in each area separately as well as the interrelationships among the performance measures. This study therefore seeks to fill the gap by analysing performance of MFIs in Ghana in all three areas and explaining interrelationships among the performance measures.

It is not enough to assess the performance of MFIs as a homogenous group since they differ in a number of respects including their regulatory status. Self-regulated MFIs are not permitted to mobilise savings from the public, limiting their sources of revenue and their ability to reach out to as large a client base as the BoG regulated and relatively bigger MFIs. While financial sustainability of self-regulated MFIs are compromised by this restriction, they are in a better position to reach out to very poor members of society by reason of their smaller loan sizes (Hartarska and Nadolnyak, 2007) and location in the rural areas close to their poor clientele. Regulatory reforms are new in the landscape of the young microfinance industry in Ghana. There is currently no study that examines the effect of regulations on performance of MFIs with respect to outreach, financial sustainability and impact in Ghana. This study will help to establish performance differences between the two institutional types.

The study has implication for policy makers in the sense that they will be informed on performance of MFIs with respect to outreach, financial sustainability and impact and the interrelationships among these performance measures for the BoG regulated and self-regulated MFIs. The study will also inform policy with respect to regulating the industry, by revealing how regulations affect performance in each of the three areas. In particular, the extent to which regulations affect outreach of MFIs is critical to assessing the ability of MFIs to help reduce poverty and meet the millennium goals.

As the number of MFIs operating in Ghana has increased over time, the need for a framework to guide their performance measurement has become pressing. Findings of this study will therefore present to the institutions, new insights into the measurement of their performance from perspectives not previously considered. Information gathered from this study will also enable both the BoG regulated and self-regulated MFIs to understand the need to develop innovative products and services to meet the needs of the clients. Furthermore, the findings will encourage MFIs to develop credit delivery methods that reach the poor without compromising financial sustainability. Again the study will help both the BoG regulated and self-regulated MFIs to gain an understanding of the factors that are critical to their outreach and financial sustainability. The study will therefore present relevant information for developing the microfinance sector in Ghana.

1.6 RESEARCH METHODOLOGY

A mixed method involving both quantitative and qualitative approaches was adopted for the study. The mix of quantitative and qualitative approaches allowed for both statistical validation and qualitative interpretation of the variables concerned (Chen and Snodgrass, 2001). The study was conducted in Ashanti and Greater Accra regions of Ghana. The quantitative phase of the study involved 55 (24 BoG regulated and 31 self-regulated) MFI managers and 164 clients of the MFIs surveyed by structured and semi-structured questionnaires using face–to–face interviews. Performance data was collected for the period 2009 to 2011. The qualitative phase involved the use of in-depth interviews and focus group discussions to investigate the performance of the MFIs and confirm the findings from the quantitative analyses. Fifty-seven (57) participants comprising 13 BoG regulated MFIs and 20 non BoG regulated MFIs and 24 clients of the MFIs were used for the qualitative study.

Hierarchical regression analysis and correlation analysis were used to test the hypotheses developed and binary mediation tests were carried out to investigate mediation effects of regulation on the performance measures of outreach, financial sustainability and impact. Deductive thematic analysis was also employed to analyze the qualitative data.

1.7 DEFINITION OF KEY TERMS

While some of the terms used in the thesis report are generally understood by business readers, the following section presents the definition of key terms as used in this study.

Microfinance and MFIs

Microfinance is the provision of financial services such as small collateral free loans, savings and micro-insurance to poor households to enable them to start businesses, acquire assets and finance emergency needs. These services are provided by MFIs.

Regulation

Regulation is a rule or directive made and maintained by an authority (Oxford Advanced Dictionary, 2000). Bank regulation refers to specific rules issued by authorized agencies under governing law, for the conduct and structure of a bank (Harvey, 2012). Regulation is also seen as a body of specific rules imposed either by a government or other external agency or self-imposed by an agreement within the industry which limits the activities of the financial institutions (Llewellyn, 1986).

Performance

Performance in general terms is the end result of activities of an institution or organization over a period of time. Researchers have used financial and/or non financial indicators to measure performance of organizations (Carter, 2000). This study deals with the performance of MFIs measured by the three indicators of outreach, financial sustainability and impact. Together these measures provide an indication of the extent to which MFIs have achieved their overarching objective of providing financial services to the poor.

Outreach

Outreach is a multidimensional concept. At a glance it refers to the number of clients or accounts that are active at a given period of time (Meyer, 2002). MFIs may have a large number

of clients who may be inactive for a given period of time. In estimating outreach the active clients or accounts reflect the actual service delivery of the MFI. Active number of clients is therefore used as a measure of the breadth of outreach (Rosenberg, 2009). Women often face greater difficulties than men in accessing financial services and are perceived as poorer than men (Meyer, 2002; De Crombrugghe, Tenikue and Sureda, 2008). In view of this, percentage of women clients is used as a measure of the depth of outreach. It has been observed that people with less income and assets often demand smaller loans. Thus, average loan size is also used as a measure of the depth of outreach (Kumar and Gupta, 2011; Ayayi and Sene, 2010). Other indicators of outreach are cost of outreach (the price of outreach and transaction costs), worth of outreach to clients (their willingness to pay), length of outreach (the time frame of the supply of microfinance) and scope of outreach (number of types of financial contracts supplied) (Navajas et al, 2000). However, the majority of studies on outreach have used the breadth and depth of outreach due to the fact that the other indicators are difficult to measure (Schreiner, 2002). This study used the number of active clients (breadth of outreach), average loan size and percentage of women clients (depth of outreach) as measures of outreach to allow comparison with existing studies.

Financial Sustainability

Financial sustainability refers to the ability of an MFI to cover all its present costs and risk provisions and to survive in the long run from the interest income it generates (Sa-dhan, 2009). An MFI is financially sustainable if it is able to cover costs, earn profits and continue its activities without relying on subsidies and grants from donors (Armendariz, de Aghion and Morduch, 2005; Micro Banking Bulletin, 2005). Indicators used to measure financial sustainability include financial self-sufficiency, operational self-sufficiency, subsidy dependency index, transaction costs, return on assets and return on equity. This study used the financial self-sufficiency, operational self-sufficiency and return on assets to assess financial sustainability as data for these measures are readily available from the MFIs.

Impact

Impact is seen as the effect of an action on something. Impact of MFIs refers to the effect of the services and products of MFIs on the lives of the beneficiaries (CGAP, 2003). The financial and non-financial services provided by MFIs are expected to positively affect the lives of the beneficiaries (Bhatt and Tang, 2001). Changes in the lives of clients as a result of microfinance can be seen in the areas of household income and assets; social improvement in health and education, and empowerment (in terms of increased self-esteem and control of household

resources among women); business profit or revenue; and business assets, stock and employment (Isangula, 2012; Saramathi and Mohan, 2011; Karlan and Zinman, 2010; Nanor, 2008). This study used the indicators of business profit, stock, business assets and employment to assess the impact of microfinance on the small businesses of clients.

Small Business

There is no single definition for small business (Steel and Webster, 1992). However, definition of small business is usually based on the number of employees and/or the value of fixed assets (Boeh-Ocansey 1996; Alabi, Alabi, and Ahiawodzi, 2007). The problem associated with number of employees is the arbitrariness and differences in cut off points used by various sources. The use of the value of fixed assets is also limited by heterogeneity of assets coupled with the rapidly depreciating value of the local currency against major trading currencies. This makes it difficult to identify businesses of various sizes (Amonoo, Acquah and Asmah, 2003). This study used both the number of employees and the value of total assets in its definition of small business. This definition takes cognizance of the inherent weaknesses and arbitrariness employee numbers and value of fixed assets when used alone. The study focused on micro and small businesses, together referred to as small businesses in the thesis.

1.8 ORGANIZATION OF THE STUDY

This study is organised into seven chapters. Chapter 2 examines the microfinance industry by reviewing the literature on the structure and mode of operations of microfinance institutions. It begins with the evolution of microfinance followed by a discussion on group lending with joint-liability to small businesses, highlighting how group lending addresses the screening, monitoring and enforcement problems of microfinance. The products and services provided by MFIs and the sources of funds available to them as they evolve through four stages of growth and maturity are presented. The various types of institutions providing microfinance and their operations in Ghana are also highlighted. The chapter ends with a discussion on the impact of MFIs on small business in Ghana.

Chapter 3 focuses on the performance of the microfinance industry and the regulatory framework for MFIs in Ghana. The chapter begins with a review of the two schools of thought on the goals for MFIs. This is followed by a discussion on the performance measures of MFIs which paves the way for a review of research on the performance of MFIs. Regulation of MFIs

in Ghana is discussed. The regulatory frameworks for BoG regulated MFIs and the self-regulated framework for non-BoG regulated MFIs are examined. The issue of regulation on performance is discussed leading to development of the conceptual framework and hypotheses relevant to the research questions.

The research methodology adopted for the study is elaborated in Chapter 4. The chapter begins with an illustration of the research process. A justification for adopting a mixed method that comprises both quantitative and qualitative approaches is provided. This is preceded by presentation of steps followed in the quantitative phase of the study, which cover the methods used to collect data, sampling procedures adopted, the data collection process and the technique used to analyse the data. The research methods employed in the qualitative phase of the research comprising data collection, sampling strategies, and the data analysis method are also discussed.

Findings from the quantitative data analysis are presented in Chapter 5 and include results from the descriptive statistics. Findings from the hierarchical regression, correlation analysis and binary mediation tests used to test the hypotheses are also presented.

Chapter 6 covers the findings from the qualitative data. It explains the processes followed in the deductive thematic analyses of the data and presents the findings with respect to each research question.

Chapter 7 summarizes and concludes the thesis by discussing the findings. The implications of the findings for policy and practice are identified and recommendations delineated to improve performance of MFIs in Ghana. The thesis ends with limitations of the study and directions for future research.

CHAPTER 2
THE MICROFINANCE INDUSTRY

2.1 INTRODUCTION

It is estimated that 40 to 80 percent of the populations of developing economies lack access to formal sector banking services (Beck, Demirguc-Kunt and Martinez Peria, 2007; World Bank, 2007), despite its potential for improving the wellbeing of the millions of low-income people (Cull et al, 2009). The evolution of microfinance as an economic development tool which targets low-income people (Ledgerwood, 1999), has to a large extent met this need. Microfinance focuses on low income people, especially in developing countries, who with no access to formal financial services (Yunus, 2001), find it difficult to start businesses, finance emergency needs, acquire assets and insure themselves against illness and disasters (Zeller and Myer, 2002). Microfinance therefore, aims at improving the welfare of poor households through better access to small loans (Navajas et al, 2000).

This chapter reviews literature on the structure and mode of operations of microfinance institutions (MFIs). The second section covers the definitions of microfinance and sets the scene for a discussion on how microfinance has evolved over the years in the third section. The fourth section discusses group lending with joint-liability to small businesses. It highlights how group lending addresses the screening, monitoring and enforcement problems. This is followed by a discussion on the products and services that MFIs provide and the sources of income for MFIs in the fifth and sixth sections respectively. The structures and types of MFIs that provide financial services to the poor are examined in the seventh section. The eighth section focuses on the operations of MFIs in Ghana. Small business and MFIs in Ghana are then examined in the nineth section. The chapter concludes in the tenth section.

2.2 DEFINITIONS OF MICROFINANCE

Robinson (2001, p. 9) defined microfinance as " small-scale financial services, primarily credit and savings – provided to people who farm or fish or herd; who operate small enterprises or micro-enterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages or commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both rural and urban". Similarly, Ledgerwood (1999) viewed

microfinance as the provision of financial services, generally savings and credit, to low-income clients, including the self-employed. She explained that these low-income clients are often traders, street vendors, small farmers, service providers (hairdressers, rick-shaw drivers) and artisans and small producers, such as blacksmiths and seamstresses. These activities provide a stable source of income to the clients of MFIs.

Hossain (2002, p. 7) also defined microfinance as "the practice of offering small, collateral-free loans to members of co-operatives who otherwise would not have access to capital necessary to begin small business." Microfinance refers to the provision of financial services to the poor and financial services goes beyond the granting of loans. Hossain's definition of microfinance though restricted to just an aspect of financial services, touches on an important aspect of microfinance, which is provision of collateral-free loans. Unlike the formal banks, MFIs do not require collateral security from their clients but instead accommodate collateral substitutes such as joint-liability of group borrowers (group guarantees) or compulsory savings (Remenyi, 2000).

The Consultative Group to Assist the Poor (CGAP) (2003) defined microfinance as the provision of a broad range of financial services such as loans, savings, money transfer services and micro insurance to the poor. The CGAP's definition of microfinance touches on other aspects of financial services not covered by the definitions above, namely money transfer services and micro insurance. CGAP pointed out that people living in poverty, like everyone else, need a diverse range of financial services to run their businesses, build assets, smoothen consumption and manage risks. In line with CGAP's definition, Adjei (2010) viewed microfinance as the provision of financial services to the poor with the intention of helping poor households out of poverty by enabling their engagement in productive economic activities.

Based on the above descriptions, a workable definition adopted for this thesis is that, microfinance is the provision of financial services such as small collateral free loans, savings and micro-insurance to poor households to enable them to start businesses, acquire assets and finance emergency needs. This definition encompasses the main areas of financial services needed by the poor to improve their economic circumstances. It emphasizes the importance of small business in the process and is consistent with the general recognition of MFIs as a crucial tool for alleviating poverty.

2.3 EVOLUTION OF MICROFINANCE

In the 1950s, it was believed that the rural areas were important to the economic growth of developing countries and that high-yielding agricultural technologies adopted extensively, would improve agricultural production in these areas (Robinson, 2001). Since farmers could not pay the full cost of such technologies, credit subsidies were required to assist them with such purchases. Governments of developing countries therefore, saw the provision of credit subsidies as a way of promoting agricultural production by small landholders (Ledgerwood, 1999). Interventions in rural financial markets were also motivated by the need to curb the operations of money lenders (Sinha, 1998) who exploited the poor through high interest charges (Ledgerwood, 1999; Johnson and Rogaly, 1996).

Supply-leading finance, which refers to the provision of loans in advance of demand for credit, was advocated as a means of generating economic growth in rural areas through the financial system (Robinson, 2001). Consequently, development finance institutions such as Agricultural Development Banks were made responsible for the delivery of cheap credit to poor farmers (Johnson and Rogaly, 1996), to encourage the adoption of various technologies and ultimately increase land productivity, employment and agricultural wages (Armendariz de Aghion and Morduch, 2005). However, many of the state-run banks were operationally inefficient, had high default rates, practiced political favoritism (Adams and Von Pischke, 1992) and were therefore financially unsustainable (Sinha, 1998). During the mid-1970s and the 1980s, the model of subsidized credit was subjected to steady criticism (Ledgerwood, 1999; Johnson and Rogaly, 1996), as it became apparent that it was ineffective in bringing about agricultural growth (Penny, 1983). Penny (1983) argued that there was no need to bribe farmers with cheap credit to adopt profitable innovations if there was a satisfactory market for their outputs.

It was not possible to turn to traditional financial institutions to fill in the gap left by the development finance institutions. The traditional banking system which serves large enterprises and wealthier customers in the modern sector of poor economies typically found it impossible to service small market of poor households using traditional banking practices for a number of reasons. First, commercial lending institutions require that borrowers have a stable source of income out of which principal and interest can be repaid in accordance with the terms agreed upon. Meanwhile, the income of many self-employed households is not stable,

regardless of its size. A large number of small loans are therefore needed to serve the poor, but lenders (commercial banks) prefer dealing with large loans in small numbers to minimize administration costs. Second, the commercial banks demand collateral with a clear title which many low income households cannot provide. Third, banks tend to consider low income households a bad risk, imposing exceedingly high information monitoring costs on operation (Vetrivel and Kumarmangalam, 2010).

In a study on the relationship between commercial banks and microfinance institutions, Ghate (1992) argued that commercial banks (formal finance) are more able to accommodate large and long-term loans due to their greater dependence on the pooling of deposits and maturity transformation. Thus, they have access to broader resource base and high leverage through deposit mobilization. They therefore enjoy economies of scale and scope and are better suited to the needs of large and medium – scale industry, organized trade and commerce, and well-to-do urban households. These banks have however, failed to serve the needs of low-income people in the rural areas in developing countries, such as micro and small entrepreneurs, small traders and poor borrowers due to being subject to strict regulations with respect to capital, reserve and liquidity requirements, ceilings on lending and deposit interest rates, mandatory credit targets, audit and reporting requirements, and bureaucratic procedures. These requirements according to Ghate (1992) raise transactions costs.

Remenyi (2000) also noted that poor people were perceived in banking and finance circles as a poor market, offering few if any opportunities for investment. This implies that there is little opportunity for entrepreneurs in banking and finance to make a profit from "banking with the poor." This notion, according to Remenyi, favoured the view that banking with the poor cannot be undertaken unless it is heavily subsidized. However, microfinance, which is about profitable banking with the poor, challenges this view. Remenyi argued that subsidized credit and subsidized banking are inimical to "best practice" in microfinance.

The failure of the subsidized credit model and inability of traditional financial institutions to serve the needs of the micro and small business sector prompted donors and other resource allocators to shift attention from state intervention to market-based solutions (Johnson and Rogaly, 1996). A new approach that considered microfinance as an integral part of the overall financial system was therefore adopted (Ledgerwood, 1999). With the new approach came a shift in emphasis from rapid disbursement of subsidized loans to target populations, toward the

building of local, sustainable institutions to serve the poor (Ledgerwood, 1999). The aim of serving poor farmers with subsidized credit turned to the financing of small and micro-enterprises (Robinson, 2001), that is, non-farm enterprises run by people in villages and towns. An important advantage of the shift to non-farm concerns was that the target population was less vulnerable to vagaries of weather and crop prices and therefore income could be generated on a fairly steady basis to repay amounts loaned (Cull et al, 2009).

The Grameen Bank in Bangladesh is cited as a pioneering microfinance institution to pilot a group lending scheme for landless people (Ledgerwood, 1999; Cull et al, 2009). The Grameen Bank was established in 1976 when Professor Muhammad Yunus, Head of the Rural Economics Program at the University of Chittagong, launched an action research project to ascertain the possibility of designing a credit delivery system to provide banking services to the rural poor. The Grameen Bank demonstrated that an institution lending exclusively to the poor could become successful and financially self-sufficient. As an MFI, the Grameen Bank maintained a peer monitoring model and the provision of custom-made credit (Latifee, 2006; Dieckmann, 2007). The success story of the Grameen Bank encouraged its replications in other parts of the world (Hossain and Knight, 2008) and paved way for a broadening of access to finance for hundreds of millions of low-income people who would have been excluded from formal financial services (Cull et al, 2009). Against this background, microfinance emerged as a potential system for rethinking banking for the poor (Armendariz de Aghion and Morduch, 2005). The rise of the microfinance industry has therefore debunked the idea that the poor are not bankable (Brau and Woller, 2004), or banking with the poor can only be undertaken if it is heavily subsidized (Remenyi, 2000).

Although it has not been demonstrated that microfinance can lead to poverty reduction on a large scale, access to microfinance can expand the ability of households to cope with emergencies, manage cash flows and invest for the future (Cull et al, 2009).

2.4 GROUP LENDING WITH JOINT-LIABILITY

Before institutionalized broad recognition of the microfinance, formal lending institutions perceived small businesses as unbankable, unable to repay loans and provide collateral security to guarantee loan repayments (Bakshi, 2008; Armendariz de Aghion and Morduch, 2005).

Problems associated with lending to the small business sector cover screening, monitoring and enforcement.

Screening problems arise from asymmetric information between a borrower and a lender, where borrowers have full information about their productivity and their risk types, which is not available to lenders (Haugen, 2005). Such unequal access to information can lead to adverse selection, which occurs when lenders are unaware of particular characteristics of borrowers, such as their preferences for undertaking risky projects (Besley, 1994), and therefore are unable to evaluate the likelihood of default (Wenner, 1995).

Moral hazard arises when lenders are unable to discern from borrowers' actions whether or not the funds will be used for appropriate purposes. This post-contractual verification of the use of amounts loaned, adds to lenders' monitoring costs. Both adverse selection and moral hazard increase the default rate of a bank's loan portfolio (Robinson, 2001). Consequently, the bank may increase its interest rates to compensate for these risks. This situation could cause low-risk borrowers to drop out, thereby increasing the average riskiness of loan applicants and decreasing the expected returns to the lender (Robinson, 2001). This eventually leads to credit rationing (Stiglitz and Weiss, 1981). The situation is worsened by the enforcement problem where the lender cannot pressurize a borrower to repay in case of default because of weak judicial systems and socio-political pressure (Bakshi, 2008).

The above problems have encouraged local money lenders to thrive in spite of their unusually high interest rates. This is because money lenders face lower screening and monitoring costs as a result of social proximity and close relationships with clients. Access to detailed information about borrowers enables money lenders to identify high-risk and low-risk borrowers and charge them appropriate interest rates. Also, they are able to monitor their borrowers more effectively, ensuring that loans granted are used productively and thereby reduce the default rate. In relation to enforcement, the local money lender can seize and sell off assets of borrowers more easily than formal financial institutions or use social ostracism or coercion as sanctions to enforce repayments (Stiglitz, 1990; Zeller, 1998).

The problems associated with lending, summarized as adverse selection (screening problem), moral hazard (monitoring problem) and enforcement could be mitigated if formal lenders have access to cheap methods for gathering information on their clients and enforcing contracts.

Unfortunately, formal lenders normally face relatively high transactions costs when handling many small transactions of borrowers in poor communities. This goes to support the argument that servicing many small transactions is far more expensive than servicing one large transaction for a more financially secured borrower (Armendariz de Aghion and Morduch, 2005). The challenge is for development oriented practitioners, policy makers and formal financial institutions to design appropriate credit provisions and delivery mechanisms to tackle these problems. An innovation which seems to have solved the above problems is group lending microfinance with joint-liability by members, pioneered by Professor Yunus of the Grameen Bank in Bangladesh (Yunus, 1994).

2.4.1 The Grameen Bank Model

The Grameen Bank Model as described by Satgar (2003) is based on the voluntary formation of small groups of five people in which all borrowers are jointly liable for each other's loans. The group self-selects its members based on similar economic background and social status. Only two members in a group are eligible for taking the initial loan. Two other members of the group become eligible for the loan after the first two have repaid the loan with 20 percent interest within a given period of time. The 20 percent is the annual percentage rate (APR) which is the effective interest rate. The leader of the group is the last to be given the loan. All loans must be approved by all group members. The groups formed are trained by the bank to monitor and assist each other in times of difficulty. Group members are jointly accountable for the repayment of each other's loan. To ensure repayment, peer pressure and joint-liability are enforced. The entire group is disqualified from accessing further loans if a member of the group defaults. Every borrower in a group is expected to save a small amount a week to encourage savings among the members. Five percent of every approved loan is also set aside as a group fund. This is managed by the group to provide insurance against default, disability, death and other accidents. From the group, fund members can access loans (which are interest free), for different purposes up to a maximum of 75 percent of the group loan. The Bank's operations are characterized by intensive discipline, supervision and servicing (Murray and Boros, 2002; Satgar, 2003; Khan and Rahaman, 2007).

2.4.2 Screening, Monitoring and Enforcement Problems in Group Lending

The main characteristics of micro lending based on group joint-liability are a lack of physical collateral, the group's access to information about members for effective screening, monitoring of repayments by the group, and the imposition of social sanction on members who default.

Since the clientele of MFIs are poor households who do not own tangible assets, group lending provides mutual, morally binding group guarantees in lieu of the collateral required by conventional banks (Satgar, 2003). Furthermore, members of a group-lending programme have significant information about each other's assets, capabilities and character as a result of living close to each other and strong social ties. They are therefore well informed about each other's activities and as a result are able to screen potential members and allow only trustworthy members into the programme. Hence, the borrower self-selection process solves the screening problem (Hermes and Lensink, 2007; Wenner, 1995; Giné and Karlan, 2006). Group members are also able to monitor each other's investment decisions closely due to their close social ties and ready access to information on each member. Group members therefore, have an incentive to ensure that funds are properly utilized (Bakshi, 2008; Giné and Karlan, 2006). Ghatak (1999) noted that the more reliable the pool of borrowers, the better the repayment rates and outcomes of the loan.

Group lending is generally based on the principle of joint-liability (Brau and Woller, 2004) which means the group takes over the underwriting, monitoring and enforcement of loan contracts from the lending institutions (Wenner, 1995). In effect, participant borrowers within each group are jointly liable for the entire group's loan obligation. Therefore, in addition to repaying their own share of the loan, each group member accepts the responsibility to repay the obligations of their defaulting members; otherwise the whole group is denied access to future financing (Armendariz de Aghion and Gollier, 2000).

Stiglitz (1990) attributed the success of the Grameen Bank to peer monitoring where members of the group are jointly liable for re-payment of loans, and cannot access loans unless the debts of the group are settled. Denial of further credit can, therefore, be effective at lowering default risk in group lending. However, Stiglitz (1990) noted that in group lending the cost of monitoring is transferred from the bank to group members. The small size of lending groups increases the risk to the group from a member's default and this in turn incentivizes peer

monitoring by members. He demonstrated that the gains from peer monitoring more than offsets the loss in expected satisfaction from the increased risk-bearing that ultimately leads to improvements in the borrowers' welfare.

Banerjee, Besley and Guinnane (1994) addressed the issue of "non-financing threat" ignored by Stiglitz (1990). This refers to the use of social sanctions by members to monitor each other. According to Banerjee et al (1994), the availability of social sanctions to group members and the possibility of a member inflicting penalty on another in case of default help to reduce moral hazard and enhance repayment performance. In effect, members of a borrowing group have access to a "superior enforcement technology" enabling lower default rates (Armendariz de Aghion, 1999, p. 81).

Ghatak and Guinnane (1999) in a related article, showed how joint-liability in group lending promotes screening, monitoring, verification and enforcement of repayment. Their model, which is a modification of Stiglitz's model, showed that peer monitoring is costly, contrary to the assumption by Stiglitz. They argued that the net benefit of continual access to credit also plays a role in the repayment of loans. In other words, if a member realizes that the benefit of defaulting is less than the net benefit of continual access to credit, that member will have the incentive to repay his/her loan obligation. Ganpopadhyay, Ghatak and Lensink (2005) also addressed the adverse selection problem and its solution. They argued that the use of local information on clients in joint-liability lending can improve efficiency compared to standard debt contracts involving asymmetric information about borrower types.

Armendariz de Aghion (1999) analysed the optimal design of collective credit agreements with joint-liability, demonstrating that such agreements can induce peer monitoring, thus reducing the incidence of strategic default and improving repayment. She also showed that the relative benefits from peer monitoring are maximized when risks are correlated positively across borrowers and also when the size of the borrowing group is optimized. In a related model, Armendariz de Aghion and Gollier (2000) focused on the relative effectiveness of borrowers compared to banks in monitoring their peers as a result of living close to each other, and also in relation to enforcing loan contracts as a result of borrower ability to impose social sanctions. They demonstrated that inducing peer monitoring among borrowers in group lending can lead to an interest rate reduction and solve the credit rationing problem. An additional insight from this study is the position that assortative matching or self-selection by group members is not a

necessary condition for improving welfare in peer group lending. Chowdhury (2005) also demonstrated that sequential financing schemes provide incentive for monitoring by borrowers. He argued that sequential financing may succeed in the absence of joint-liability although repayment rates would be higher if sequential financing schemes are combined with joint-liability. Chowdhury (2005) explained that although joint-liability, in itself, is not enough to mitigate the moral hazard problem, when combined with sequential financing, joint-liability enhances the rate of monitoring.

While Stiglitz (1999), Ghatak (1999; 2000) and Ghatak and Guinnane (1999) did indeed make significant contributions to understanding how peer monitoring or local information can be used to mitigate the monitoring and screening problems, they failed to address an important aspect of group lending which often takes the form of denial of future credit in cases of collective default. The important role of sanctions in improving the willingness of borrowers to repay their loan obligations was discussed by Besley and Coate (1995). They suggested that strong social ties among group members minimize wilful default and that the fear of facing sanctions from the community and the lending organization will keep potential defaulters in check. Sufficiently strong sanctions in group lending as well as the lending institution can therefore solve the moral hazard problem.

Wydick (1999, cited in Cassar, Crowley and Wydick, 2007) observed that sanctions represent a credible threat that forms part of a perfect "Bayesian equilibrium punishment strategy." He showed that even with a sufficiently low level of peer monitoring among borrowers, it is rational for group members to replace a defaulting member (group expulsion) with a new member in the absence of information on risky borrower's behaviour. Cassar et al (2007), on the contrary contended that although the threat of social sanctions can discipline borrowers, it is unclear whether group expulsion acts as an effective substitute for social sanction.

The articles addressing adverse selection assumes that borrowers have significant information about each other's investment decisions than lenders because they live close to each other, which make the models discussed more applicable to developing countries characterized by close-knit stable rural communities than the more individualistic and high-mobility societies of developed countries (Schreiner and Morduch 2001). It is therefore important to consider the informational environment when replicating successful microfinance institutions in other locations (Ganpopadhyay et al, 2005).

Examining the repayment performance in group-based credit programmes in Bangladesh, Sharma and Zeller (1997) revealed that repayment rates of group-based institutions are far higher than those of the National Commercial Banks (NCBs) which provide individual lending. They observed communities with higher than average rates of poverty and explained that, the secret to success derives from both the innovations that reduce cost of screening, monitoring and enforcement of loan contracts as well as successful demonstration to the borrowers of the importance of the innovations for their long-term benefit. To the authors, self-selection through peer monitoring leads to better repayment rates.

An empirical study by Cassar et al (2007) on the effect of social capital on group-loan repayment indicated that socially heterogeneous groups consistently perform worse than socially homogeneous groups. This suggested that social ties (social capital) play an important role in group lending. Cassar et al (2007) also reported that personal trust between specific pairs of group members significantly affects performance, confirming the importance of informational social capital to the group self-selection and screening processes in group lending. Kevane (1996, cited in Ghatak and Guinnane, 1999), investigated the Credit with Education Lending Programme groups in Burkina Faso and also reported that groups ill-formed by programme officials had group members who had never met before and this created confusion over who was liable for bad loans. Zeller (1998) analysed the repayment performance of six group-based lending programmes in Madagasca and reported that joint-liability group lending repayment increases when groups are formed endogenously and that groups with strong social ties experience higher repayment rates. These findings supported the importance of self-selection or screening of group members using information available to the other group members. They also indicated that these informal screening and monitoring processes are most effective in homogenous groups where information on group members and their activities is readily available to their peers. The next section examines criticisms levelled against group lending.

2.4.3 Criticisms of Group Lending

The role of the group leader was highlighted by Hermes et al (2005) in a study on repayment problems among group members in two group-based lending programmes in Eritrea. The study found evidence that monitoring and social ties of the leader play an important role in enhancing

repayment performance. Hermes et al's (2005) work questioned existing theoretical models on how group-based lending works. For instance, while the majority of studies assumed that all members in a group engage in monitoring and enforcement activities leading to improved repayment performance, their results suggested that monitoring is delegated to the group leader. They recommended more research into the role of the leader in the monitoring process to enhance knowledge in this area and assess generalization of their findings.

Group lending with joint-liability is not without its weaknesses as it has been found to cause much tension among group members. Mallick (2002) cited an extreme case were a member of a group lending programme hanged herself as a result of pressure from her fellow group members. In addition, borrowers may shirk their responsibility for repaying their loans, believing that other members will pay it for them. Joint-liability lending can therefore be costly to members with good credit risk who are often depended upon to repay the loans of their peers. This situation leads to high dropout and makes it difficult to attract new members (Giné and Karlan, 2006). These weaknesses have led some MFIs to either shift from joint-liability to individual liability lending or add individual liability lending to the original joint-liability lending.

According to Armendariz de Aghion and Morduch (1998) and Ghatak and Guinnane, (1999) the majority of studies on group lending with joint-liability address the joint-liability aspects of institutions but fail to address other financial contracts, such as direct monitoring by the lender, which affect the repayment performance of borrowers. For example, in the Grameen Bank Model, the leader monitors group members who receive training from bank employees on a weekly basis (Chowdhury, 2005). Active lender monitoring through training therefore enhances success of group lending programmes (Ghatak and Guinnane 1999). .

The effectiveness of joint-liability lending has also been questioned by other studies which argue that joint-liability works only in relatively remote areas where borrowers have no access to alternative sources of financing (Bakshi, 2008). This assertion is not supported by the existing evidence which indicates that there is often more than one lending organization operating in an area. It has also been observed that too much emphasis is given to the positive aspects of joint-liability programmes and the negative aspects are almost ignored, although some of the joint-liability programmes have been found to perform poorly (Chowdhury, 2005). In view of this, there is a need to investigate the reasons for the poor performance of these

programmes and to identify ways to improve performance. Further, methodological problems usually associated with empirical studies limit the ability to generalize findings and may explain the mixed positions presented in the literature (Morduch, 1998).

Group lending with joint-liability schemes are being used by many MFIs inspite of their weaknesses. This is because they are useful for mitigating the problems of adverse selection, moral hazard and enforcement prevalent in rural credit markets. Given the empirical evidence associated with the effectiveness of joint-liability lending in enhancing repayment performance by reducing problems with asymmetric information, joint-liability lending may enable sustainability of MFIs.

2.5 MFIs' PRODUCTS AND SERVICES

MFIs provide their clients a variety of products and services such as financial services and non-financial services. While the main thrust or purpose of MFIs is to provide the poor access to financial services, especially credit, the ability to do so would require MFIs to mobilise funds through savings. Insurance services provide another source of income for MFIs, and may help reduce the risk of default. Insured clients are in a better position to deal with contingencies, enabling them to continue to meet their loan repayment obligations. Non-financial services, especially training enhance clients' knowledge and empower them to use the loans effectively for impact on their livelihood. Not all MFIs provide all the financial and non-financial services. Provision of non-financial services can add to cost of operation for MFIs and threaten sustainability. The financial products and non-financial services of MFIs are presented in this section.

2.5.1 Financial Services

MFIs provide financial services such as credit, savings and micro-insurance, credit cards and payment systems to their clients. While the scale and method of delivery may differ, the fundamental services of savings, loans and insurance follow the same processes as for the traditional financial institutions (Brau and Woller, 2004). Each of the services is described below.

2.5.1.1 Credit

Loans are generally given by MFIs for productive purposes that is, to generate revenue within a business. Enterprise lending, which is loans for enterprise formation and development, remain the dominant product of MFIs (Ledgerwood, 1999; Nourse, 2001). However, some MFIs also provide loans for consumption, housing, emergency, or for financing special occasions. Loan proceeds are also used to pay for school fees, or care for a sick family member (Karlan and Zinman, 2010). Therefore although many MFIs insist on providing only productive loans, any loan that is not directly given for productive purpose but increases the liquidity of the household helps to reduce pressure on enterprise funds for these purposes (Karlan, 2001). The method of credit delivery used by MFIs is group-based lending although some MFIs also lend on individual basis. Group lending has been discussed extensively above.

2.5.1.2 Savings

Microfinance was originally referred to as microcredit since lending was the main focus. The transition from micro credit to microfinance extended the services provided from credit or lending to other financial services such as savings and insurance (Armendariz de Aghion and Morduch, 2005). Savings, referred to as "the forgotten half of rural finance," is more crucial to microfinance clients than credit (Robinson, 2001). Savings remain forgotten because it is generally assumed that the poor cannot save because they are "wasteful, immoral and irrational" (Bouman, 1990, p. 154). Another view is that "they spend all their income and still do not get enough to eat" (Matin, Hulme and Rutherford, 2002, p. 276). This view of the poor leads to over-emphasis on the role of microfinance as credit for investment. However, Matin et al (2002) argued that it is because of such survival uncertainties that the poor need to and do save.

A large number of informal savings schemes have evolved in recent years in MFIs around the world. In particular, credit union organizations have been very successful at mobilizing savings (Ledgerwood, 1999) which attests to the fact that the poor can and do save. Paxton (1996) noted that many of the largest, most sustainable microfinance institutions rely heavily on savings mobilization to fund their operations. According to Paxton (1996, p. 8) "deposits provide a highly valued service to the world's poor who seldom have reliable places to store their money or the possibility to earn a return on savings." He showed that the amounts held in deposits by MFIs significantly exceed amounts in active loan accounts.

Savings by the poor do not follow the conventional process of savings of surplus of income after consumption. In general, savings services from MFIs can be grouped into forced or compulsory savings and voluntary savings. Compulsory savings must be contributed by borrowers as a condition for receiving a loan, sometimes calculated as a percentage of the loan, or a nominal amount (Ledgerwood, 1999). In a compulsory savings programme, microfinance clients are made to save a minimum amount each week (or other set period of time) (Brau and Woller, 2004). Brau and Woller (2004) observed that forced savings teaches financial discipline and provides the MFI with additional information about clients. According to Ledgerwood (1999), compulsory savings serve as an additional guarantee mechanism to ensure repayment of loans. They also demonstrate the ability of clients to manage cash flow and make periodic contributions (important for loan repayment) and finally help build the asset base of clients. Ledgerwood noted that since compulsory savings cannot be withdrawn by clients while they have an outstanding loan, savings then act as a form of collateral. The second form of saving is voluntary or flexible savings (Nourse, 2001) and is open to both borrowers and non-borrowers who can deposit or withdraw according to their needs. Voluntary savings are therefore not obligatory to accessing credit (Ledgerwood, 1999). A large number of poor people who do not operate businesses save small amounts (Brau and Woller, 2004; Matin et al, 2002) and at inconsistent intervals (Beverly and Sherraden, 1999). Savings play a crucial role in allowing the poor to take advantage of productive investment opportunities (Brau and Woller, 2004). Savings mobilization is therefore, both a service in high demand and a source of finance for MFIs (Robinson, 1997; Robinson, 2001).

Yaron et al (1997) noted that provision of savings services by an MFI can contribute to improved financial intermediation. However, Ledgerwood (1999) contended that savings mobilization is not always desirable for MFIs because the administrative complexities and associated costs may be very high, especially for small amounts. She explained that institutions may find it difficult to comply with prudential regulations that apply to deposit-taking. What is more, the volatility of microfinance loan portfolio may put savings deposits at unusually high risk if the MFI depends on savings to fund unsafe lending operations. Thus, MFI that provide voluntary saving services must have high liquidity to meet unexpected increases in savings withdrawals.

2.5.1.3 Micro-Insurance

Micro-insurance is a financial product offered by MFIs on an experimental basis (Meyer, 2001; Armendariz de Aghion and Morduch, 2005). The CGAP working group on micro insurance and the International Association of Insurance Supervisors (IAIS) (2007) jointly define micro-insurance as a type of insurance accessed by low-income people, and provided by a variety of entities but operated in accordance with generally accepted insurance practices (Kwon, 2009). It is believed that there is a large and unmet demand for formal insurance as for savings and loans (Churchill, 2002, cited in Brau and Woller, 2004). It must be noted however, that micro-insurance is in the early stages of development and efforts are being made to formalize it (Brau and Woller, 2004). Meanwhile, Meyer (2001) observed that MFIs providing insurance service are on the increase although not as licensed insurance companies but as corporate agents of one or more conventional insurance companies.

There are a number of success stories on micro-insurance. The Foundation for International Community Assistance (FINCA) Uganda, sells health and other types of insurance to its clients through a subsidiary based in South Africa (Brau and Woller, 2004). Furthermore, crop insurance experiments are available in India. Mishra (1994) analysed crop insurance in Gujarat, India, and reported a significant increase in the flow of credit to insured farmers. Rhyne and Otero (2006) noted that although some MFIs are offering health insurance, for example, SEWA Bank (Self Employed Women's Association) in India, the progress is slow. Reforms in health care and assurances of delivery will be required for success of health insurance schemes. Despite these examples, progress in the provision of micro-insurance has been modest. Brau and Woller (2004) attributed this partly to the very different nature of insurance compared to savings or loans and to the fact that few MFIs possess specialized knowledge on how to set up or run insurance programmes. In addition to credit, savings and insurance services, some MFIs are beginning to offer other financial services such as credit cards, smart cards and payment services. All these will benefit clients of MFIs if appropriate infrastructure is in place (Ledgerwood, 1999).

2.5.2 Non-Financial Services

MFIs also provide non-financial services such as social intermediation, social services, and enterprise development services to their clients. While non-financial services such as training in business management enhance the ability of the clients to manage their businesses, these

services are provided at an additional cost to the MFIs, a situation that may impact their financial sustainability. The general belief is that it is not enough to provide financial services to the poor because to use financial services effectively they must be integrated with other social services. There are principally three forms of integration of financial services with non-financial or social services (Dunford, 2001). The first is a linked service where a specialized MFI offers financial services to its clients and cooperates with one or more independent organizations to provide social services to these clients. The second form is the parallel service where the same organization or MFI provides both financial and social services to its clients through two or more different programmes. The last form is the unified service where, both financial and social services are provided simultaneously to clients through a unified programme using the same employees (Dunford, 2001). The second and third form of integration is commonly used by MFIs.

2.5.2.1 Social Intermediation and Social Services

Social intermediation is "the process of building the human and social capital required for sustained financial intermediation with the poor" (Ledgerwood, 1999, p.77). Successful financial intermediation according to Von Pischke (1991) is often accompanied by social intermediation for individuals whose social and economic disadvantages place them "beyond the frontier" of formal finance. Social intermediation therefore prepares marginalized groups or individuals to enter into firm relationships with MFIs. Moreover, it is easier to establish sustainable financial intermediation systems with the poor in societies with high levels of social capital (Ledgerwood, 1999). Group social intermediation, used by many MFIs for group loans, enhances group cohesiveness and self-management capacity. These ultimately help lower the costs of providing financial intermediation to a large number of small borrowers and savers by relying on peer pressure to reduce default rates (Bennett, Hunte, and Goldberg, 1995).

Realizing the importance of social intermediation to effective financial intermediation, some MFIs have focused on capacity building of their clients. They build self-reliant groups through training in participatory management, accounting, and basic financial and management skills (Bennett, 1997). Financial intermediation builds social capital, especially the trust between the borrower and the lender. The provision of social intermediation services therefore lays a solid foundation for individuals to do business with MFIs (Bennett et al, 1995). Social services such as health, nutrition, education and literacy training are also provided by some MFIs. For example, Freedom from Hunger, an MFI which is an international NGO with operations in

Latin America, Africa and Asia provides training on education, health and nutrition in addition to microfinance to its clients. Other MFIs providing social services to their clients include Grameen Bank and BRAC in Bangladesh (Khandker, 1996; Bhatt and Tang, 2001).

2.5.2.2 Enterprise Development Services

Some MFIs provide business development services such as marketing and technology development as well as training in production and business management to their clients. It is argued that although these services should be fee based, they must be subsidized and should never be a requirement for obtaining financial services (Ledgerwood, 1999). Examples of MFIs offering enterprise development services include CARE International, OXFAM, Catholic Relieve Service (CRS), and Freedom from Hunger (FFH) (Maes and Foose, 2006).

There has been much debate as to whether MFIs should adopt a minimalist approach and provide only financial intermediation services or provide a broader range of services including financial intermediation. Some writers have argued that MFIs that aim at becoming financially self-sufficient, must "concentrate only on financial services" (Otero, 1994, p. 99). This is because, although training and technical assistance could be beneficial to micro and small enterprises, these services are costly to provide and may undermine the financial self-sufficiency of microfinance programmes. They are therefore not necessary for successful microfinance operations. However, many practitioners have questioned the rationale behind the minimalist approach. For example, Bhatt and Tang, (2001, p. 323) believed that "poverty is not simply a lack of funds, but ....vulnerability, powerlessness, and dependency. Development finance institutions that offer only traditional microfinance services are not as effective as institutions that also help borrowers overcome the psychological burdens of poverty."

In support of the provision of integrated services, Dichter (1996) argued that many micro-loan recipients would have great difficulty in making productive use of small loans without other inputs. He acknowledged the importance of providing poor entrepreneurs with market and business development services. Maes and Foose (2006) explained that the poor lacks the experience to manage small businesses and would therefore need some entrepreneurial and/or vocational skill development in addition to financial services. Thus, the more vulnerable and poorer the clients, the more such non-financial services seem to be essential in helping them manage their small businesses. Examples of MFIs that provide these services are: Grameen

Bank which provides services such as consciousness raising, health and nutrition and training in children's education and sanitation (Khandker, 1996); Bangladesh Rural Advancement Committee (BRAC) also provides health education to households and informal education to children (Bhatt and Tang 2001); Foundation for International Community Assistance (FINCA) and Freedom from Hunger (FFH) use the village banking model (described in section 2.7.2.3 below) to empower women by encouraging them to participate in self-help groups (Holt, 1994; Maes and Foose, 2006).

Some studies have examined integration of microfinance with intermediation services. Cook et al (2001) and Edgcomb (2002) used case methodology to analyze MFIs with business development training. They reported that business development training significantly improved micro- and small-enterprise performance and empowered entrepreneurs. Smith (2002) also compared minimalist MFIs services in Ecuador and Honduras to MFIs integrating financial services with health education. They reported that clients in integrated programmes were more able to improve the health of their families than those in minimalist programmes. The debate on using the minimalist or integrated approach to microfinance is still ongoing with each side providing evidence to support its claim. The next section discusses sources of income of MFIs since these affect their ability to provide services to the poor.

2.6 SOURCES OF INCOME FOR MFIs

To function effectively, MFIs must have an income base. Sources of income differ among the MFIs and those unable to mobilise savings compromise their performance with respect to financial sustainability, ability to reach out to the poor and ability to make an impact on the lives of their clients. Sources of income available to MFIs include donor and government grants and soft loans, savings, private sector capital and equity capital. These are examined in this section.

2.6.1 Donor and Government Grants and Soft Loans

For the majority of MFIs who cannot borrow funds from commercial markets, grants and soft loans (highly subsidized loans) become their principal source of funding, especially during the initial establishment period. MFIs receive grants and soft loans from donors such as development banks, multilateral and bilateral organizations. Examples of these organizations are the Asian Development Bank (ADB), German Development Bank (KfW), World Bank,

government aid agencies such as the United Kingdom Department for International Development (DFID), United States Agency for International Development (USAID), and the Canadian International Development Agency. Other sources of soft loans are foundations such as Ford foundation and the Skoll foundation in the USA (Soni, 2005) and apex organizations such as Women's World Banking. Grants and soft loans are also used to totally or partly cover operating expenses. Such funds therefore, facilitate MFI startups and act as substitutes for deposits that some MFIs cannot mobilize due to legal restrictions.

Grants and soft loans are available for only a short period of time, a situation that limits their reliance for viability and growth of MFIs. Furthermore, subsidized sources of funds lack clear ownership in the sense that legally, they are not provided by shareholders who can be held accountable in event of default. This distorts incentive structures for donors and undermines sustainability of the MFIs (Wisniwski, 1999; Philip et al., 2008; Shrestha, 2008). Estimates from CGAP reveal that international agencies provide approximately US$0.5 to 1.0 billion annually in grants and soft loans to the microfinance sector (Shrestha, 2008). The volatile nature of grants and soft loans means MFIs will have to look elsewhere for capital in order to meet their objective of making loans to the poor (Fehr and Hishigsuren, 2004). Some of these other sources of income are savings, private sector capital, and equity capital.

2.6.2 Savings

Deposits, covering demand deposits, passbook savings, time deposits and certificates of deposits constitute a primary source of funds for financial institutions. Hempel and Simonson (1999, cited in Fehr and Hishigsuren, 2004) noted that 97 percent of total liabilities of US commercial banks are made up of demand deposits and time deposits, indicating a heavy dependence of traditional banks on deposits to fund their lending activities. Wisniwski (1999) observed that this situation applies widely, regardless of where the financial institutions are located. However, in most developing countries MFIs are not permitted to mobilize voluntary savings for lending purposes until they can meet certain minimum capital requirements mandated by regulatory authorities. Although some mature institutions are able to meet the capital adequacy requirements (Fehr and Hishigsuren, 2004), this is not the case for the majority of MFIs. Mature MFIs which mobilize small voluntary savings are able to satisfy demand for loans from their clients and ultimately broaden their outreach.

Mobilized savings remain more stable than other funding sources and provide incentives and discipline for MFIs to improve their operational efficiency. However, mobilizing small savings can lead to high administrative cost and high institutional requirements in treasury management and controls (Wisniwski, 1999; Gadway and O'Donnel, 1996). Therefore it may not be practical for new MFIs to use savings as a major source of funds (Schmidt and Zeitinger, 1996). Despite this, Lafourcade, Isern, Mwangi and Brown (2005) reported that more than 70 percent of the MFIs in their study provided savings as a core financial service for clients and used it as an important source of funds for lending.

2.6.3 Private-Sector Capital

The last decade has seen a shift in sources of funds for microfinance institutions from donor-funding to private sector capital, especially debt in the form of commercial loans, guarantee funds, bonds, securitization and equity. This shift is due mainly to the limitations of donor funding, government grants and soft-loans as a means for achieving significant scale and scope of activity (Dieckmann, 2007). The use of each of the private sources of funding by MFIs is examined below.

2.6.3.1. Debt Capital

MFIs can borrow from commercial banks for on-lending to their clients. This allows them to mobilize large amounts of funds on a permanent basis. Commercial loans also provide incentives for good governance and management (Wisniwski, 1999), so that the link between MFIs and bank credit benefits all participating parties. Banks with idle funds benefit in terms of profit and business expansion; the borrowing MFI gains from a sustainable source of funding, enabling outreach to more clients; and the clients of the MFI are able to access loans for economic activities that result in increased earnings. Debt capital comprise over one-third of the total funding of MFIs. While debt capital has become a popular source of funds for MFIs, new and small MFIs may find loans from commercial sources very expensive since they are generally priced at market rate (Sapundzhieva, 2011; Fehmeen, 2010).

2.6.3.2 Credit Guarantees

A credit guarantee is a financial instrument used by financial institutions to lend to retail MFIs and/or directly to microenterprises with good credit risks, but which are unable to provide sufficient collateral or do not have suitable record of financial performance (Bass, 2000). It is

also used by banks to provide protection against defaults in repaying cash-loan facilities. The guarantee is a promise by a guarantor to the lender that in the event that the borrower defaults, the guarantor will repay the lender. This facility has a potential advantage of strengthening the relationship between the MFIs and their banks and eventually inducing banks to grant loans to MFIs or clients who under normal circumstance would not be eligible for bank credit (Fehr and Hishigsuren, 2004; Shrestha, 2009). Examples of guarantee schemes funded by multilateral donor agencies and financial institutions include a loan portfolio guarantee (LPG) programme established by USAID for the CompagnieBancaire de I'AfriqueOccidentale (CBAO) in Senegal and innovative financial instruments including guarantees also used by USAID to facilitate lending to MFIs around the world under its Micro and Small Enterprise Development Programmes (Fehr and Hishigsuren, 2004). Credit guarantee schemes are also provided by Government sponsored entities such as Eximguaranty in Bank of Tanzania. Credit guarantee schemes are provided to banks which target well performing institutions for the funds (Dalberg, 2011).

2.6.3.3 Securitization

Securitization is another mechanism by which MFI raise money. It refers to a process of turning assets into securities. According to Martin-Oliver and Saurina (2007, p. 3) "securitization allows banks to transform into liquidity assets that otherwise would be stuck on the balance sheet until their maturity. With the new funds raised, they can increase lending." Assets are securitized by selling a portfolio of loans (which can either be in the form of mortgages, consumer loans or loans to small businesses) to a Special Purpose Vehicle (SPV). The SPV at the same time issues asset-backed bonds to fund the transaction. Such bonds are then bought by investors via Special Investment Vehicles (SIV) (Martin-Oliver and Saurina, 2007). Securitization therefore, makes it possible for international investors to issue bonds or debentures to enable MFIs to access capital markets (Ming-Yee, 2007; Fehr and Hishigsuren, 2004). International Investment funds also known as Microfinance Investment Vehicles (MIVs) act as intermediaries between investors and MFIs by selling the securitized debt. In 2006 for instance, the Bangladesh Rural Advancement Committee (BRAC), one of the largest MFI in Bangladesh, raised US$180 million through securitization for a term of six years (Ming-Yee, 2007).

Successful MFIs with a proven track record in collections, management, profitability, good governance and good risk-return profile, can be expected to expand their microfinance outreach through securitization, but few MFIs meet these requirements (Latifee, 2006).

2.6.3.4 Equity Capital

Equity is a source of capital for MFIs that are formal financial intermediaries with shareholders. Equity is raised through the sale of ownership shares in capital markets. It is the most expensive source of capital for MFIs because shareholders require a high risk premium to compensate for the high risk inherent in equity capital compared with other types of investment. It is however, the most attractive investment for investors because of the expected high returns (Fehmeen, 2010). Equity capital is the most stable funding source for MFIs because it cannot be easily withdrawn. It also entails true ownership rights for investors. The objectives of maximising profits and avoiding losses provide strong incentive for MFIs to ensure sound management and efficient operations (Wisniwski, 1999; Dieckmann, 2007). Equity capital increases the capital available to MFIs, allowing them to expand their client base. Each additional dollar invested will translate to a new opportunity for a poor person to become an entrepreneur (Brookfield, 2007).

Available records of equity funding for MFIs indicate that MFIs will be able to attract investment from global capital sources if they continue to grow sustainably. This is the only way microfinance will be able to serve the millions of low income people requiring microfinance (Brookfield, 2007; UNCDF, 2006). Few examples of equity capital raised by MFIs are worth mentioning. In 2007, Compartamos issued an initial public offer (IPO) which valued the company at more than $1.5 billion. The successful IPO indicates financial market recognition of BancoCompartamos and affirms the crucial role that capital markets can play in scaling up microfinance. ACCION invests as equity holders in MFIs worldwide that meet stringent investment criteria with respect to their operations, management and financial strength (ACCION, 2011).

Although equity capital is available to sustainable MFIs in Asia, Latin America and East Africa, the rest of Africa is yet to gain access to this source of funding. This is because institutional microfinance is quite new in Africa compared to Asia and Latin America. It must also be noted that the microfinance industry in general is yet to be fully developed. Thus,

although recently, there have been attempts at providing equity capital, many investors are either skeptical or not aware of the potential of MFIs.

2.6.4 Evolution of Sources of MFI Financing

Table 2.1 presents a chronology of the sources of funding used by MFIs, moving from donor grants and soft loans to equity financing. During the early stages (start-up, operational self-sufficiency stages) MFIs are characterized by high dependency on grants and soft loans from donors and governments owing to their inability to qualify for commercial funding. As the MFI matures to financial self-sufficiency, through stages II and III, private debt capital in the form of commercial loans becomes available and can become a continuous source of reliable funding. Matured MFIs, therefore, tend to display high debt leverage from domestic and foreign borrowing. Over time, some of these MFIs have evolved into formal financial institutions (Fehr and Hishigsuren, 2004; Dieckmann, 2007). Restrictive covenants associated with the loans provide appropriate discipline to MFIs.

At stage III, the MFI can be transformed into a regulated financial institution and can access voluntary client savings. At this stage, the MFI begins to retain earnings; can access quasi-equity such as medium to long-term soft subordinated loans, designed to be repaid out of profits; use asset securitization; and is in a good financial position to attract both socially responsible and commercial equity. The MFI is profitable at stage III and has access to experienced management. It is able to absorb commercial funding and to effectively channel it to micro borrowers (Fehr and Hishigsuren, 2004; Dieckmann, 2007). At stage IV the MFI is efficient, profitable and able to access both private and commercial equity, providing greater capacity to increase its scale of outreach to the poor or micro borrowers who mostly operate micro and small businesses.

Table 2.1 Evolution of MFI Financing

	Stage I: Startup	Stage II: Operational self-sufficiency	Stage III: Financial Self-sufficiency		Stage IV: Commercial level Return	
	MFI	MFI	MFI	Licensed financial institution	MFI	Licensed financial institution
Donor						
Grant and soft loans	×	×	×	×	×	×
Internal						
Forced savings	×	×	×		×	
Voluntary savings				×		×
Private						
Debt						
Commercial loans		×	×	×	×	×
Guarantee funds		×	×	×	×	×
Bonds			×	×	×	×
Securitization			×	×	×	×
Inter-bank borrowing				×		×
Equity						
Quasi-equity			×	×	×	×
Retained earnings			×	×	×	×
Socially responsible equity				×	×	
Commercial equity					×	×

Source: Calvin (2001 cited in Fehr and Hishigsuren, 2004) with some modification.

It is clear from the above that matured MFIs have better opportunities to access commercial funding needed to expand their operations. Unfortunately, only about 10 percent of MFIs worldwide are regulated and financially sustainable and in a position to do so (Dieckman, 2007).

The preceding section has examined the various sources of funding available to MFIs. However, MFIs are varied in size, structure financial capacity and regulatory status. The different types of MFIs are covered in the next section.

2.7 TYPES OF MFIs

A major goal of MFIs is to meet the financial needs of un-served or underserved markets and ultimately the development objectives of reducing poverty. This works on the basis that by enabling access to finance by small business owners not served by the main institutions, they (the small businesses) will be able to create employment, grow and diversify their activities. Successful business operation will in turn empower women or other disadvantaged population groups and encourage new business development (Ledgerwood, 1999).

Institutions that provide microfinance have varying structures and can be grouped into formal, semi-formal and informal providers. Formal MFIs are subject to specific banking regulations and supervision while semiformal and informal MFIs are registered entities and self-regulated but are not licensed or under bank regulations and supervision. The categorization of the types of MFIs under formal, semi-formal and informal institutions depends on the countries in which they operate. For instance, while savings and credit associations may fall under semi-formal in one country, they may be informal in another country. Institutions that provide microfinance in Ghana are listed in Table 2.2 and examined below. These institutions are also present in other developing countries.

Table 2.2 Types of Institution Providing Microfinance in Ghana

BoG Regulated	**Formal Institutions**	• Rural banks • Savings and Loans Companies
Self-regulated	**Semi – formal Institutions**	• Credit Unions • Non-governmental Organizations (NGOs) • Village banking
Self-regulated	**Informal Institutions**	• "Susu" Collectors • Rotating Savings and Credit Associations (ROSCA) • Money Lenders

2.7.1 Formal Microfinance Institutions (MFIs)

Formal institutions that provide microfinance in Ghana include the rural and community banks (RCBs) and the savings and loans companies (S&Ls).

2.7.1.1 Rural and Community Banks (RCBs)

Introduced in 1976, the RCBs in Ghana are unit banks owned by members of the rural community through purchase of shares. They are regulated by the Bank of Ghana (BoG) and thereby form part of the regulated financial sector in Ghana (GHAMFIN, 2008). The RCBs are the largest providers of formal financial services in the rural areas and also represent about half of the total banking outlets in Ghana (IFAD 2008). The RCBs were established with a required minimum capital of US$ 43,000 to expand savings mobilization and credit services to rural areas not served by commercial and development banks. This was to help deepen the provision of financial services, especially to the poor. The number of RCBs increased rapidly in the early 1980s mainly to service the government's introduction of special checks instead of cash payment to cocoa farmers. At the time rural outlets of commercial banks were few and inadequate to meet the demand to cash these checks (Steel and Andah, 2003). The RCBs

finance their activities mainly through deposits from clients, borrowing, equity and concessionary loans from microfinance programmes of the government and the development partners (GHAMFIN 2008; Steel and Andah 2003).

The RCBs went through several challenges in the late 1980s and early 1990s, which resulted in only 23 out the total of 123 RCBs achieving "satisfactory" status. Some of the challenges included currency depreciation, economic decline, mismanagement of funds and weak supervision. A re–capitalization and capacity building of the RCBs under the World Bank's Rural Finance Project, led to about 61 out of 128 RCBs in 1996 achieving satisfactory status. Additionally, a combination of very high primary and secondary reserve requirements imposed by BoG (62 percent) and high Treasury bill rates helped to reduce the risk assets and increase the net worth of the RCBs, enhancing their financial performance. By 2001, the number of RCBs achieving satisfactory status had increased to 87 out of a total of 115 (Steel and Andah, 2003). The need to "promote and strengthen the rural banking concept" led to establishment of the Association of Rural Banks (ARB) Apex Bank in 1981 as a licensed banking institution under the Banking law. Owned exclusively by RCBs, the ARB Apex Bank is responsible for providing check clearing, liquidity management, capacity building, computalization and other services for member RCBs (Steel and Andah, 2003; Boapeah, 2011). Most of the RCBs provide individual and/or group loans (Chord, 2000) and have introduced innovative programmes for reaching out to poor clients. For example, many of the RCBs encourage compulsory upfront savings of 20 percent of the value of loans which is retained as security against the loans (Chord, 2000). Some of the RCBs have also adopted the "susu" methodology (discussed in section 2.7.3.2 below) to collect repayment of loan on daily or weekly basis.

2.7.1.2 Savings and Loans Companies (S&Ls)

Established in 1990, Savings and Loan Companies (S&Ls) are deposit–taking financial institutions regulated by the Bank of Ghana under the Non–Bank Financial Institution (NBFI) law 1993 (PNDCL 328). The required minimum capital of the S&Ls is 100 million cedis (US$ 150, 000) which is much lower than that of the commercial banks (US$ 650,000) and higher than that of the rural banks (US$ 43,000) (Quaye and Sarbah, 2014).

Through the NBFI law S&Ls became a flexible vehicle for regulating three types of MFIs by: transforming NGOs into licensed financial intermediaries; formalizing actual or potential

informal money-lending operations; and establishing small private banking operations serving a market niche (Steel and Andah, 2003).

The women's World Banking Ghana (WWBG) was the first NGO to be transformed into an S&L company in 1994. Snapi Aba Trust (an NGO) has also been transformed into a licensed S&L company. An example of a money lending MFI transformed into an S&L Company is the First Allied S&L which has become one of Ghana's largest rural micro finance institution (RMFIs).

The S&Ls normally operate in urban and peri–urban areas of Ghana, serving mostly the economic active but unbanked population and offering tailored products to meet their needs (Quaye and Sarbah, 2014). S&Ls generally engage in deposit mobilization, provision of credit to low income clients and small businesses as well as money transfers and training in financial literacy. S&Ls specialize in individual loans rather than group loans. Some S&Ls also use the susu methodology to collect loan repayments on a daily or weekly basis.

Realizing the benefits of doing business with micro-entrepreneurs and small farmers, some commercial banks now have a significant portfolio of microfinance loans and deposits (Ledgerwood, 1999). Some of the commercial banks with microfinance units in Ghana have also adopted the susu methodology for mobilizing savings and collecting loan repayments from small business clients.

2.7.2 Semi-Formal Microfinance Institutions

Institutions operating in the semi-formal sphere include credit unions and cooperatives, non-governmental organizations (NGOs) and village banking.

2.7.2.1 Credit Unions or Cooperatives

Bouman (1995) and Rutherford (2000) referred to Credit Unions (CUs) as accumulating savings and credit associations (ASCA). ASCA in its most formalized form is essentially a credit union or credit cooperative. Credit unions gather funds from community members and channel them to investors in a lump sum. The size of loans can vary with need (Armendariz de Aghion and Morduch, 2005). Members do not have to wait their turn to borrow or bid for a loan. Armendariz de Aghion and Morduch (2005) explained that the managing of credit unions

is complex as funds must be stored and records kept. All members, savers and borrowers are shareholders of the credit union. Key decisions about interest rates, maximum loan size, and changes to the constitutional chart of the credit cooperative are taken democratically by all members on a one–share–one vote basis. Furthermore, credit unions share a common bond with their shareholders in that they are located in the neighbourhood (Armendariz de Aghion and Morduch, 2005). All members are savers but not necessarily borrowers (Robinson 2001). Credit unions grow their funds over time by disbursing loans that are repaid at regular intervals (Bouman, 1990).

The first CU in Africa was established in Jirapa in the Upper West region of Ghana in 1955 by Canadian Missionaries. Credit Unions are registered under the Law of Cooperatives. In 1968, the Credit Union Association (CUA) was formed as an apex body of CUs. The number of CUs at the time was 254 (64 of them rural) with a membership of 60,000. The number increased to almost 500 by mid 1970s, but poor financial performance and high inflation eroded their capital and resulted in a drastic fall in their numbers in the 1990s (Steel and Andah, 2003). The number of CUs as at the end of 2011 was 549 with a membership of 378,451 (CUA, 2012). Credit Unions provide their members with a range of services such as savings and checking accounts, a variety of loans, insurance, convenient methods of accessing and sending funds, investments and other financial services (WOCCU, 2005).

2.7.2.2 Non-Governmental Organizations – NGOs

Non-governmental Organizations combine provision of microfinance services with social services such as education and health (Dunford, 2001). Bhatt and Tang (2001, p. 321) provide three reasons why NGOs have had widespread appeal among donors, technical co-operation agencies and consumers as microfinance delivery vehicles. First, NGOs demonstrate concern for their constituencies by their close association with civil society. Second, some NGOs have been entrepreneurial in providing the poor with non-financial services such as training and technical assistance in areas of adult literacy, health and business practices. It is believed that provision of such non-financial services enhances the sociopolitical position of the poor, especially the empowerment of women. Third NGOs, recognized as operating on the principles of "trust, generosity and ideology" are considered more reliable as agents for serving the poor than either government or private sector organizations. Bhatt and Tang (2001) concluded that because NGOs adopt formal management practices and attend to efficiency of operations and

development of innovative saving/credit delivery practices, they have made significant improvements in the lives of the poor.

Non–governmental organizations are well known for adopting internationally tested microfinance methodologies. These methodologies are often based on group solidarity methods. NGOs often develop linkages with community based organizations identified by location, occupations, friendship, family ties, gender or other grounds to reach a wide range of people at the community level (Chord, 2000). In Ghana, NGOs are mostly found in the Northern part of the country where commercial banks and rural banks are few (Adjei, 2010). While some NGOs have transformed into commercial MFIs (e.g. S&Ls), others are still dependent on donor funds, specializing in small loans to the poor, mostly women. They do this in part because of their welfare orientation. Some NGOs use the "village banking" model (explained below) of microfinance in their operations. An example is the Catholic Relief Services which operates in collaboration with the Netherlands Development Programme. Other NGOs such as the Freedom From Hunger (FFH) Credit with Education programme use individual savings with group credit to target women while providing non-financial services such as training in health, nutrition, family planning, financial planning and budgeting as well as micro enterprise development (Chord, 2000).

2.7.2.3 Village Banking

The village banking model of financial service delivery was developed by the foundation for International Community Assistance (FINCA) and is used by a range of NGOs, including Catholic Relief Services, Freedom from Hunger, and CARE, in a number of countries (Johnson and Rogaly, 1996). In the original village banking model, a sponsoring agency lends "seed capital" to a village bank, normally consisting of 30 and 50 members (Holt, 1994). The loan agreement is signed by all members and the first loans of approximately US$50 are given out to the members. The loans are repaid on a weekly basis and each member is expected to save approximately 20 per cent of the loan during each loan cycle. Loan amounts also increase for clients after repayment of each loan. Through this process the village bank is expected to build up its internal capital, pay back the seed capital to the sponsoring agency with interest, and reach internal sustainability within three years (Holt, 1994).

The village banking model can be found in developing countries such as El Salvador, Thailand, Burkina Faso, Ghana and Benin (Ledgerwood, 1999). Village banking gives the responsibility

of running the bank's activities to the clients. Participation is very important and the entire management of the loan (distribution, collection of repayment, repayment, book keeping) is handled by the group members (Dunford, 2001). Dunford (2001) noted that the group members normally go through an initial period of training where they learn the rules of the village banking and how to manage their own village bank. Clients of village banks are usually from rural or sparsely populated, but sufficiently cohesive areas. These clients generally have very low incomes but with saving capacity, and are predominantly women. However, the programme extends to men or mixed groups (Ledgerwood, 1999).

2.7.3 Informal Microfinance Institutions

Informal microfinance providers include rotating savings and credit associations (ROSCAs), "susu" collectors and money lenders. Each is discussed below.

2.7.3.1 Rotating Savings and Credit Associations (ROSCAs)

ROSCAs are nearly universal and have simple structures usually comprising a group of individuals who agree to regularly contribute money to a common "pot" and to allocate the total contributions for each period to one member of the group (Armendariz de Aghion and Morduch, 2005). Twenty people for instance may agree to contribute a fixed amount of money (for example, US$15) over twenty months, generating a monthly pot of US$300. The group meets to collect contributions and allocate the proceeds on a monthly basis, rotating recipients of each month's total contributions until every member is allocated the $300 pot (Armendariz de Aghion and Morduch, 2005). ROSCAs therefore successfully mobilize surplus funds that come into households into a large chunk that can be used to fund a major purchase (Armendariz de Aghion and Morduch, 2005).

Group lending in ROSCAs therefore makes it possible for the poor to access commercial credit (Todaro and Smith, 2003) and engage in any micro business of their choice or cater for consumption or emergency needs. For people on low-incomes, ROSCAs can permit reasonably secure savings and facilitate regular savings habits (Armendariz de Aghion and Morduch, 2005). While ROSCA members are all both savers and borrowers, it has been observed that ROSCAs are vulnerable to failure if their managers are corrupt, members lack discipline or when a collective shock occurs (Robinson, 2001).

2.7.3.2 "Susu" Collectors

"Susu" collectors are individuals who collect daily amounts set by each of their clients, usually traders and artisans, and return the accumulated amount at the end of the month, minus one day's amount as a commission (GHAMFIN, 2008). "Susu" collectors are mostly in Ghana and have provided an important form of savings in the country. The susu collectors are the most visible form of providers of microfinance services in Ghana (Adjei, 2010).

Table 2.3 Types of "Susu" (Savings Collection) in Ghana

	Types of Susu	Mode of Operation
1.	Susu collectors	Individuals collect daily amounts set by each of their clients (e.g., traders in the market) and return the accumulated amount at the end of the month, minus one day's amount as a commission;
2.	Susu associations or mutualist groups are of two types: - ROSCA - Accumulating	 Members regularly (e.g., weekly or monthly) contribute a fixed amount that is allocated to each member in turn (according to lottery, bidding, or other system that the group establishes) whose members make regular contributions and whose funds may be lent to members or paid out under certain circumstances (e.g., death of a family member)
3.	Susu clubs	They are a combination of the above systems and are operated by a single individual, in which members commit to saving toward a sum that each decides over a 50-or 100-week cycle, paying a 10% commission on each payment and an additional fee when they are advanced the targeted amount earlier in the cycle.
4.	Susu companies	Operate as registered businesses whose employees collect daily savings using regular susu collector methodology, but promised loans (typically twice the amount saved) after a minimum period of at least six months.

Compiled with information from Steel and Andah (2003)

Some licensed financial institutions such as commercial banks, RCBs, S&Ls, CUs and NGOs have introduced savings products term "susu." These institutions sometimes use salaried or commissioned agents for the daily collection of the "susu." The traditional methodologies of the "susu" scheme have made it possible for the microfinance suppliers to reach lower-income people, especially women who form 65 percent to 80 percent of the clients of these "susu" schemes (Steel and Andah, 2003). However, many "susu" collectors remain unregistered and operate on trust with their clients (Ernest, 2010). "Susu" collectors are located both in the urban and rural areas. They sometimes provide credit to their clients, which they term as "advances"

(GHAMFIN, 2008). Though income obtained from "susu" is normally spent on consumer goods, many customers use it as a source of capital to start or expand their business enterprises (Aryeetey, 1995; Alabi et al, 2007). The different types of susu is presented in Table 2.3 above.

2.7.3.3 Money Lenders

Money lenders are also informal providers of microfinance. In Ghana they were the first microfinance providers to be officially licensed by the police in Ghana under the Money Lenders Ordinance 1957, although they are still classified as informal providers of microfinance. Money lenders have been an important source of emergency and short-term finance for a large percentage of the population lacking access to commercial financing (IFAD, 2000; Steel and Andah, 2003). Money lenders are usually the wealthier farmers or traders who have either their own funds to lend or access to credit from banks. They normally lend money for weddings, funerals, urgent medical expenses, the purchase of extra food, or for more productive activities in farming or off-farm activities at exorbitant rates of interest. They are however, not concerned about savings. Loans given out are based solely on the capacity of the borrower to repay (IFAD, 2000).

The various types of MFIs discussed above contribute immensely to providing capital for the various activities of small businesses.

2.8 OPERATIONS OF MFIs IN GHANA

The informal microfinance industry comprising money lenders and susu collectors have always existed in Ghana and credit unions were started in 1968 as semi-formal MFIs. However, the industry became formally recognized with the establishment of the Rural and Community Banks in 1976. Ghana has since experienced an increase in the number of MFIs over the last few years (Table 2.4) pushed by various financial sector policies and programmes implemented by Governments of Ghana (Adjei, 2010). These policies resulted in the emergence of three broad categories of microfinance institutions – formal, semi-formal and informal as described above in section 2.7.

Table 2.4 Number of Microfinance Institutions in Ghana

MFIs	2004	2005	2006	2007	2012
RCBs	119	120	122	125	133
S & Ls	10	12	11	14	12
CUs	261	373	279	322	549
FNGOs	29	29	20	40	20
"Susu" Collectors	911	1,016	1,000	1,259	2,100*

Complied with information from GHAMFIN (2008; 2014); CUA (2012)
*Information from Ghana Co-operative "Susu" Collectors Association (GCSCA)

As shown in Table 2.4, the formal providers are made up of RCBs and S&Ls while the semi-formal providers comprise the Financial Non-governmental Institutions (FNGOs) and Credit Unions (CUs). The informal providers include "susu" collectors. (GHAMFIN, 2008).

As part of a rigorous effort at promoting microfinance, Ghana developed a National Strategic Framework (NSF) to remove impediments to effective delivery of financial services especially to micro and small enterprises. The aim of the framework is to foster a fully integrated financial sector supported by a reliable regulatory system. The regulatory system offers a broad range of financial products and services on a sustainable basis to micro and small enterprises, especially those in the informal sector. In effect, a major goal of the NSF is to establish a decentralized and sustainable microfinance system, prudentially regulated with close links to the formal financial sector, and providing an effective outreach to the poor (Steel and Andah, 2003). In addition to the NSF, the Ghana Microfinance Institutions Network (GHAMFIN) was established in 1998 as an umbrella network of microfinancial service providers (GHAMFIN, 2008) that seeks to promote the growth and development of the microfinance industry in Ghana. GHAMFIN's main focus has been to build the capacity of MFIs to improve upon their performances and ultimately provide long-term sustainable and affordable access to financial services to their clients, mostly women in rural areas (GHAMFIN, 2010).

The Microfinance and Small Loans Center (MASLOC) was also set up in 2006. Its mandate is to administer government's microfinance and small loans scheme and undertake the necessary reforms and development measures that would strengthen microfinance operations as an effective and viable strategy for poverty reduction (Quansah, Amankwah and Aikins, 2012). MASLOC has been set up in almost all the regions of Ghana. Unfortunately, high default rates

in loan repayment are negatively impacting effective implementation of the scheme (Domfeh, 2010).

The Bank of Ghana (BoG) is actively participating in the Rural Financial Services Project (RFSP) with support from donors such as the International Development Agency (IDA) of the World Bank, the International Fund for Agricultural Development (IFAD) and the African Development Bank (AfDB). The main aim of RFSP is to broaden and deepen financial intermediation in rural areas through measures such as: capacity building of the informal financial sector; capacity building of rural and community banks; and the establishment of an Apex Bank for the Rural Banks in Ghana. In addition to the RFSP, on-going projects for the promotion of the small business sector include the Financial Sector Improvement Project (FINSIP), the United Nations Development Programme (UNDP) Microfinance Project, the Social Investment Fund (SIF), the Community Based Rural Development Programme (CBRDP), Rural Enterprise Project (REP), and Agricultural Services Investment Project (ASSIP) (Asiama and Osei, 2007). All these are government and donor initiatives developed to improve the delivery of microfinance to small businesses in Ghana. Apart from the government other microfinance providers such as development and commercial banks (with microfinance programmes and linkages), rural banks, savings and loans companies, financial NGOs, credit unions, and "susu" operators have been providing loans to small businesses. Loan disbursement by the sector is discussed next.

2.8.1 Loan Disbursement

With the exception of "Susu" Collectors, the main key players in the micro-finance industry comprising Rural and Community Banks (RCBs), Savings and Loans Companies (S&Ls), Financial Non-governmental Organizations (FNGOs), and Credit Unions (CUs) disbursed a total loan portfolio of US$130.0m, US$217.21m and US$227.04m for the years 2004, 2005, and 2006 respectively. The total loan portfolio increased to US$376.45m in 2007 and almost doubled in 2012. This is shown in Table 2.5.

Table 2.5 Total Loan Portfolio (in millions of US$)

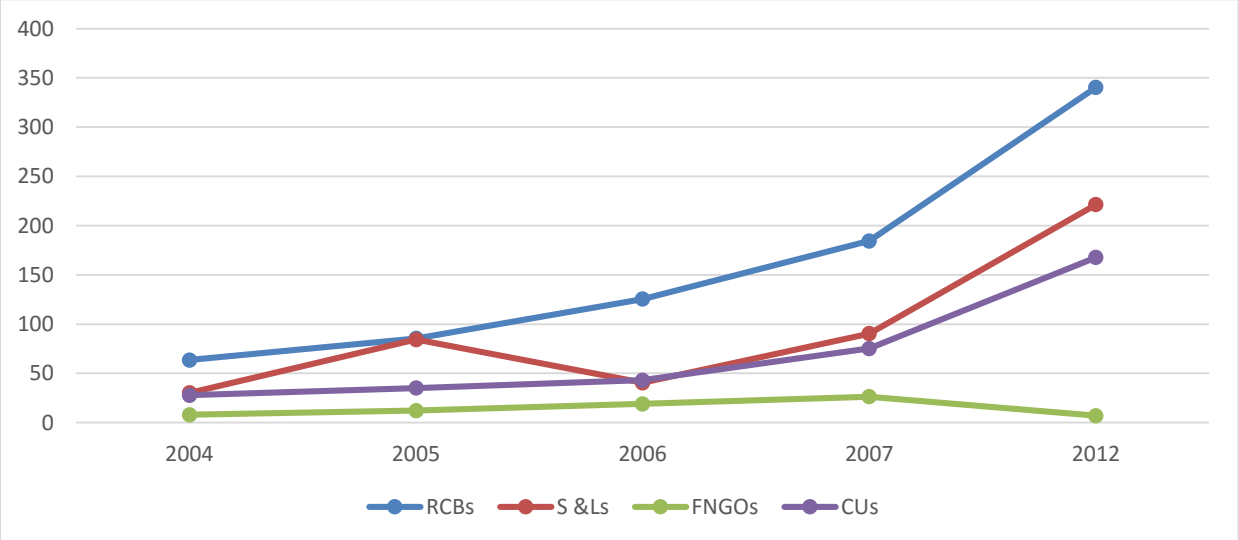
MFIs	2004	2005	2006	2007	2012
RCBs	63.59	85.45	125.45	184.46	340.33
S &Ls	30.20	84.39	40.45	90.35	221.31
FNGOs	8.04	12.22	19.09	26.35	7.03
CUs	27.77	35.14	43.04	75.29	167.78
Totals	**US$130.0**	**US$217.21**	**US$227.04**	**US$376.45**	**US$736.45**

Source: GHAMFIN (2008; 2014).

In 2004 loans were disbursed to 452,000 borrowers and to 745,000 borrowers in 2006 registering a growth rate of 74.5 percent. The amount of loan portfolio in 2007 represents a growth rate of 65.8 percent from 2006. Loans disbursed in 2012 to 6,084,000 borrowers represent a growth rate of 95.6 percent from 2007. The above figures indicate significant growth in the MFI sector in Ghana with about 466.5 percent increase in loan disbursements between 2004 and 2012.

Apart from the savings and loans companies (S&Ls), which suffered a fall in the size of loan portfolio in 2006 but picked up again in 2007, the RCBs and the CUs have seen a steady increase in the size of their loan portfolio over the years under review. In contrast, the loan portfolio of the FNGOs increased from 2004 to 2007, but dropped in 2012. Loan disbursements from S&Ls fell because they decreased in number from 10 to 8 in 2006, following restructuring of the sector in 2005 (Figure 2.1). The loan amounts in Figure 2.1 are in nominal terms.

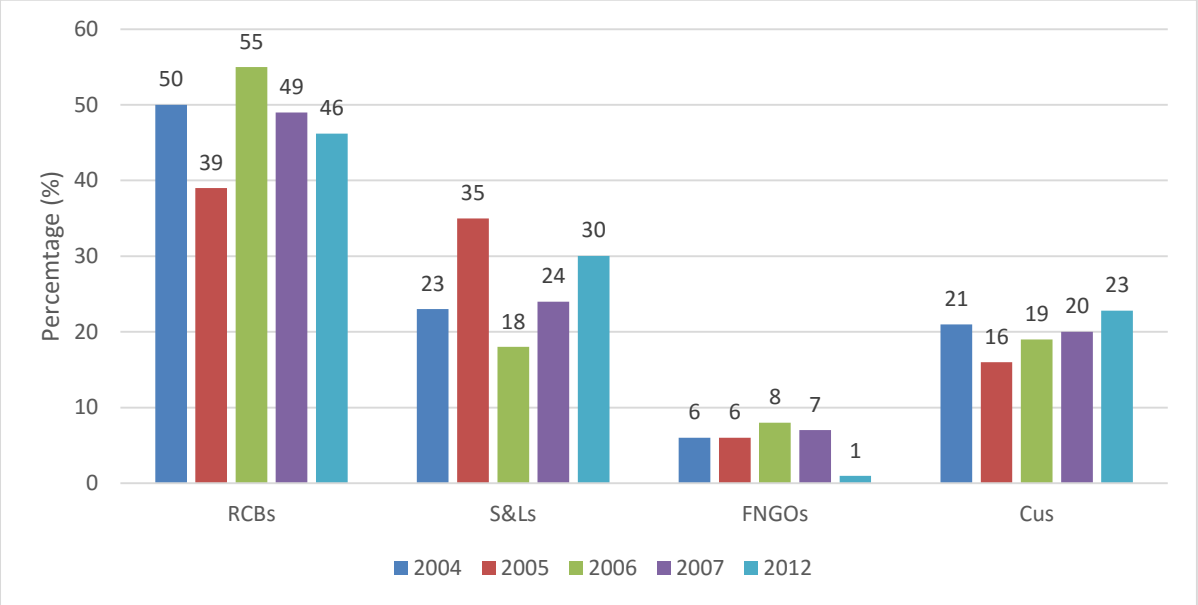
Figure 2.1 Trends in Loan Portfolio by Subsector (million US$ from 2004 to 2012)



Source: Authors construct with information from GHAMFIN (2008; 2014).

It can be seen from Figure 2.2 that the RCBs' share of the loan portfolio increased above the 50 percent mark to 55 percent in 2006 but dropped to 49 percent in 2007 and dropped further in 2012. Despite this they maintained the highest share of the loan portfolio. There was however, a 21 percentage drop in share of loan disbursements by the S&Ls to 18 percent between 2004 and 2006. This is attributed to the absorption of City and Loan Company into Intercontinental Bank and Midland Savings and Loan Company (MSLC). The MSLC was restructured in 2005, reducing the number of S&Ls from 10 to 8 in 2006. S&Ls share of the loan portfolio however, increased to 24 percent in 2007 and further to 30 percent in 2012, a result of more institutions transforming into S&Ls.

Figure 2.2 Loan Portfolio as a Percentage of Industry Total



Source: GHAMFIN (2008; 2014)

The CUs also increased their loan portfolio by 4 percent from 2005 to 2007 and saw a further increase to 23 percent in 2012. The portfolio of the FNGOs remained the smallest even though they managed a small increase to 8 percent in 2006 which fell 1 percent to 7 percent in 2007. The FNGOs' share of loan portfolio dropped further to 1 percent in 2012. This situation was due largely to the limited access to lending funds by the FNGOs, which are not allowed to mobilize savings from the public or borrow from the financial market. They are more heavily reliant on donor funds or targeted project funds compared to the RCBs, which mobilize savings all over the country (GHAMFIN, 2008; GHAMFIN, 2014).

The RCBs serve a much larger clientele than any other category of MFI. They have a wider geographic coverage of about 560 offices, branches and agencies all over the country, allowing better interaction with clients than the other categories of MFIs. Moreover, the RCB microcredit programmes are based on the group lending so that they were able to reach many clients. The FNGOs also engage in extensive group-based lending, although both FNGOs and RCBs also lend to individuals. The S&Ls on the other hand, operate mostly from their urban offices in Kumasi and Accra and only few engage in group lending, with majority lending on individual basis. The CUs use mainly the individual-based lending.

2.8.2 Savings Mobilization

In terms of savings mobilization, a total of US$2.65m was realized in 2004. Both RCBs and S&Ls (regulated by BoG) were responsible for 70 percent of the total savings portfolio compared to 30 percent by Credit Unions and Susu collectors. The low contributions from the self-regulated microfinance institutions are because they are not allowed under the non-Bank Financial Institutions law (NBFI) to mobilize voluntary deposits from the general public. As shown in Table 2.6, total savings fell from US$2.65m to US$2.01m in 2005 with the RCBs and S&Ls contributing about 72 percent of the savings portfolio in 2005 (Adjei, 2010). Total savings increased to US$481.8m in 2007 and the RCBs and S&Ls contributed 76 percent (GHAMFIN, 2014). Again the RCBs and the S&Ls were responsible for 80 percent of the total savings of US$1,074m in 2012, while the CUs and Susu contributed only 20 percent.

Table 2.6 Savings Mobilization by MFIs (in percentage)

MFI	2004	2005	2007	2012
RCB	57	60	57	57
S&Ls	13	12	19	23
CU	15	15	17	19.6
"Susu"	15	13	7	0.4
Total	100	100	100	100
Total Savings	**US$2.65m**	**US$2.01m**	**US$481.8m**	**US$1,074m**

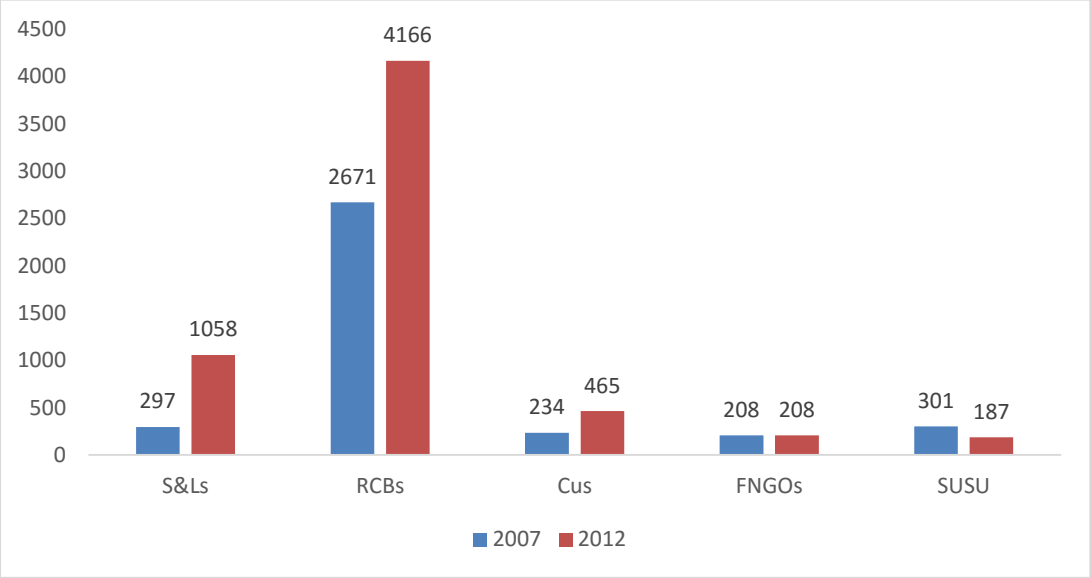
Compiled by author with information from Adjei (2010) and GHAMFIN (2014)

2.8.3 Outreach

The RCBs reached out to the highest number of clients (2,671,000) in 2007 (Figure 2.3) with the figure increasing to 4,166,000 in 2012. The FNGOs had the least number of clients (208,000) in 2007 but the "Susu" operators registered the least number of clients (187,000) in 2012. It appears from Figure 2.3 that RCBs may continue as the main players in the

microfinance industry for a long time. The operators of micro and small businesses form the bulk of the clientele of MFIs in Ghana.

Figure 2.3 Number of Clients by type of MFIs in 2007 and 2012 ('000)



Source: GHAMFIN (2014)

The percentage of women clients reached with microfinance depends on the type of MFI. The FNGOs had the highest percentage of women clients of 94 in 2007 (Table 2.7). Although this dropped to 83 percent in 2012, they still maintained the lead. This is mainly because of their social orientation and specific targeting, a requirement of their donors (GHAMFIN, 2014).

Table 2.7 Female Composition of Outreach in 2007 to 2012

MFIs	Percentage (%)	
	2007	2012
S&Ls	59	47
RCBs	41	43
CUs	37	44
FNGOs	94	83
"SUSU"	60	68
OVERALL	67	57

Source: GHAMFIN (2014)

The "Susu" providers followed with 60 percent in 2007 increasing to 68 percent in 2012. Forty-one percent of clients of the RCBs were women and this rose slightly to 43 percent in 2012. The CUs ranked the lowest with 37 percent of their clientele being women in 2007, rising to 44 percent in 2012. Generally, the percentage of women clients served by the various MFIs did

not change much between 2007 and 2012. The overall percentage of women clients of MFIs in Ghana for 2007 was 67 slightly above that for Africa region, which was 65.3 percent (GHAMFIN, 2014).

The analysis shows a thriving microfinance sector in Ghana dominated by RCBs which account for most of the loans and savings in the sector. The Savings and Loans companies follow with respect to loan disbursement but not savings. These two MFIs, which are in the formal sector and are regulated, have the highest percentage of clients in the industry. The trend reverses when the percentage of female clients in the total client base of the MFIs is considered. While female clients of both the RCBs and the S&Ls would out-number those of the other MFIs, proportionately both the FNGOs and the susu operators, which are self-regulated, are able to reach out to more women than the RCBs and the S&Ls. Since women comprise a large percentage of micro and small business owners in Ghana, the analysis indicate a relatively lower penetration rate by the BoG regulated MFIs into the small business sector compared with the self-regulated MFIs.

The small business sector and its access to finance in general and specifically from MFIs are examined next.

2.9 SMALL BUSINESS AND MFIs IN GHANA

Available data from the Registrar General's Department in Ghana indicate that 90 percent of registered businesses are small enterprises. These enterprises also account for about 92 percent of businesses in the informal sector (Mensah, 2004; Boeh-Ocansey, 1996; Kufuor, 2008), the sector with the majority of the working poor. Undoubtedly, access to financial services by small businesses is very crucial for development of the informal sector. For instance, provision of loans would increase the productivity of enterprises and encourage mobilization of savings for investment (Mensah, 2004; Asiama and Osei, 2007). This section examines the definition of small business and small business access to finance in Ghana.

2.9.1 Definitions of Small Enterprises in Ghana

Small Enterprises can be classified into micro and small enterprises (Fida, 2008). Small enterprises in Ghana are identified by various criteria but the most common criterion is number of employees (Kayanula and Quartey, 2000). A problem associated with this criterion is the

arbitrariness and differences in cut off points used by various organizations (Kayanula and Quartey, 2000). The Ghana Statistical Services (GSS) for instance, considers firms with less than 10 employees as small enterprises. Steel and Webster (1991), and Osei et al (1993) used a cut-off point of 30 employees to define small-scale enterprises in Ghana while Osei et al (1993) classified small-scale enterprises into three categories as follows:

(i) micro - employing less than 6 people
(ii) very small – employing 6 to 9 people
(iii) small – employing between 10 to 29 people

The National Board for Small-Scale Industries (NBSSI) employs both the fixed asset and number of employees in its definition of small businesses as shown in Table 2.8. Using the value of fixed assets poses a problem; the heterogeneity of assets coupled with the rapidly depreciating value of the local currency against major trading currencies, limit the reliability of assets as a criterion for identifying businesses of various sizes (Amonoo et al, 2003; Kayanula and Quartey, 2000).

Table 2.8 Definition of Small Enterprise by NBSSI

Enterprise Size	Number of People Employed	Value of Fixed Assets
Micro Enterprise	1 -5	Less than $1,000
Small Enterprise	6 – 29	Between $1,000 to $10,000
Medium Enterprise	30 – 99	Between $10,000 to $100,000
Large-Scale Enterprise	100 and above	Above $100,000

Source: Boeh-Ocansey (1996) and Alabi et al (2007).

The definition of small business by NBSSI is used for purposes of this research because it covers both the number of employees and fixed assets and is widely used for official purposes. The study will focus on micro and small businesses together referred to as small businesses in the thesis.

2.9.2 Small Business Access to Finance in Ghana

Finance is critical for the development of small businesses (Cook and Nixson, 2000) and lack of finance stifles their growth (Newberry, 2006) but a significant number of small businesses in Ghana do not have access to adequate and appropriate forms of credit and equity (Mensah,

2004; Parker et al, 1995). Ghana's financial liberalization policies of the 1980s opened the banking system to competition with a consequent positive effect on incentives to lend. However, other measures implemented to stabilize the economy and strengthen the banking system had a negative impact on credit to small businesses (Aryeetey et al, 1994). The Bank of Ghana (BoG) established a secondary reserve ratio which compelled banks to buy its treasury bills, reducing their liquidity levels and funds available to the general public for investment. The banks preferred the risk-free nature of the treasury bills to lending to the public which has high default risk. In addition to inadequate funding, banks are unable to assess the credit risk of small businesses because they are informational opaque and are unable to prepare business plans that demonstrate their ability to repay. Moreover, assessing applications and monitoring loans to small business are costly to the banks because of the small size of these loans. Banks therefore provide loans to small businesses at high interest rates (Newberry, 2006; Mensah, 2004).

On the demand side, collateral requirements and cumbersome application and monitoring processes discourage small businesses from borrowing from the banks. A study of SMEs in six African countries by Bigsten et al (2000) reported that 64 percent of micro firms, 42 percent of small firms and 21 percent of medium firms appeared constrained to access bank loans. The principal sources of finance for small business at start-up are the owners' savings and equity or loans from family and friends (OECD, 2006). However, small businesses require more capital than can be met from internal sources for growth and they turn to money lenders, bank overdraft or loans, and trade or supplier's credit for funding (Ross, Jaffe, and Jordan, 2001). It is at this stage that they encounter difficulties in accessing finance (OECD, 2006; Aryeetey et al 1994).

Titman and Wessels (1988) noted that small firms seem to use short-term finance directly or indirectly for capital investment purposes. This is due to the fact that they incur higher transaction costs for long-term debt or external equity. However, Titman and Wessels (1988) argued that over-dependence on short-term borrowing may cause a "small firm risk effect," increasing the sensitivity of the sector to temporary economic downturns and raising the default rate. This occurs when small businesses use short-term finance for long-term investments and are unable to make repayments (Dalberg, 2011). In many instances, lack of long-term finance results in lost opportunities for growth. In view of the problems of access to finance by the small business sector, various Ghanaian governments have taken bold initiatives to promote

small businesses by providing both financial and non-financial assistance through various programmes. Table 2.9 shows the various finance programmes to the sector. However, several of these have not produced the desired outcomes and despite improvement in small business access to finance, a large percentage continues to be disadvantaged from lack of access.

Table 2.9 Credit Flow to Small Businesses in Ghana

Source	Examples of Schemes
1. Financial Institutions	Major banks with microfinance programmes, Rural and Community Banks, Non-bank Financial Institutions.
2. Financial NGOs, Credit Unions (CUs)	Sinapi Aba Trust, Maata- N-Tudu, Action Aid, Care International, Grameen Ghana, Community Action for Development, ENOWID Foundation, Mayfair Trust Microfinance etc.
3. Government Schemes	MASLOC, Poverty Alleviation Fund, SIF, CBRDP, FINSIP, President Special Initiative (PSI).
4. Donor-Assisted SME Loans Projects	IFAD, IDA, AfDB, UNDP

Source: Asiama and Osei (2007) and author's compilation

More recently the government has turned to microfinance for poverty reduction. By providing loans and other facilities to small businesses, microfinance is able to promote small scale investment that generates sufficient revenues from otherwise unrealized market activities (Ferro Luzzi and Weber, 2006). Microfinance is able to do this more effectively than existing finance programmes because of the innovative lending technologies, such as group lending and individual non-collateralized loans provided by MFIs. Furthermore, MFIs disburse small-size loans which are gradually increased in amount depending on repayment ability of their clients (Hartarska and Nadolynyak, 2007). It is also held that microfinance, unlike other development efforts, provides quick and tangible results (Srinivasan and Sriram, 2006). Microfinance therefore provides the opportunity for those small businesses often ignored by commercial banks to have access to finance.

The government aims at building a robust and sustainable microfinance industry which addresses poverty reduction, empowers women, and attends to household welfare (Adjei, 2010), as a strategy for reaching the Millennium Development Goals (MDGs). This is because microfinance offers the potential for sustainable development while having a positive impact on the lives of the poor (Littlefield et al, 2003). It must be noted that although microfinance is not a panacea for poverty reduction, when properly organized it can make sustainable contributions through financial investment which will ultimately empower the poor (GHAMP, 2006) who operate micro and small businesses.

2.10 CONCLUSION

The chapter described the microfinance industry, discussing its structure and mode of operations. The evolution of microfinance from its inception to the present state was highlighted. It was established that the failure of the subsidized credit scheme prompted resource allocators to shift attention from state intervention to market-based solutions. The new approach emphasized the building of local, sustainable institutions to serve the poor. Group lending with joint-liability to small businesses was seen as the most appropriate method to do this because of its effectiveness in addressing the problems of adverse selection, moral hazard and enforcement. The products and services provided by MFIs to their clients were presented, explaining in particular the importance of non-financial services to effective use of financial services by MFI clients. The sources of funds available to MFIs as they evolve through four stages of growth and maturity were presented. The various types of institutions providing microfinance in developing countries and especially in Ghana were also examined. It was noted that the benefits of doing business with micro and small businesses have prompted formal institutions which hitherto had no business with the poor, to now have significant microfinance portfolio of loans and deposits.

The operations of MFIs in Ghana were also discussed. It became clear that the RCBs and S&Ls (BoG regulated MFIs) account for most of the loans and savings in the sector and have the highest percentage of clients in the industry. However, the FNGOs and the "Susu" operators (self-regulated MFIs) are able to reach out to more women. The analysis showed that the self-regulated MFIs have a relatively higher penetration rate into the small business sector than the BoG regulated MFIs since women comprise a large percentage of micro and small business owners in Ghana. The chapter ended with a discussion on small business and MFIs in Ghana.

Having reviewed the structure, and mode of operations of MFIs servicing the small business sector, the next chapter examines the performance of MFIs and the regulatory framework of MFIs in Ghana. Drawing from the theoretical literature on the performance of MFIs, a conceptual framework and hypotheses relevant to the research questions are developed to guide the study.

CHAPTER 3

PERFORMANCE OF THE MICROFINANCE INDUSTRY AND REGULATORY FRAMEWORK OF MFIs IN GHANA

3.1 INTRODUCTION

In the face of rising competition among the growing number of MFIs for both funding and clients, the need to improve performance has become crucial for MFIs. Financiers of MFIs want to be sure that their funds are being used effectively before they provide additional funding. Externally, performance is affected by the regulatory environment which designs the policy and legal framework necessary for effective functioning of the microfinance industry (Omino, 2005). Regulations ensure that MFIs have the appropriate governance systems and structures to legitimize their activities and assure the public that it is safe to transact with them. Regulations also enable MFIs to attract funding from savings and other sources for lending to their clients, many of who use the loans to finance their small businesses. Regulations therefore, allow MFIs to remain viable and to support the small business sector which in turn adds to economic development of the country.

This chapter consists of six sections. Section two presents the two schools of thought on the goals of MFIs. This is followed by a discussion of the performance measures for MFIs in section three, leading to a review of research on performance of MFIs in section four. Section five examines regulation of MFIs in Ghana. Issues such as the regulatory framework for the BoG regulated MFIs and self-regulated framework of the other MFIs are highlighted. The conceptual framework and hypotheses relevant to the research questions are developed in section six and section seven ends the chapter with a conclusion.

3.2 TWO SCHOOLS OF THOUGHT ON THE GOALS FOR MFIs

A major objective of microfinance institutions is to improve the welfare of the poor by providing credit and saving services (Arsyad, 2005; Rhyne, 1998). This objective is however, achieved through two different approaches: the welfarists approach and the institutional approach. The welfarist approach measures success by how well financial services have been used to alleviate directly the worst effects of deep poverty among individuals and communities (Woller, Dunford and Woodworth, 1999). The institutional approach measures success by

institutional sustainability with the belief that self-sustainable microfinance institutions would be in a good position to contribute to income growth and poverty reduction (Arsyad, 2005). Therefore, while welfarists focus on poverty alleviation by emphasizing the depth of outreach, institutionalists focus on institutional sustainability through financial self-sufficiency to be able to serve significant numbers of the poor (breadth of outreach). The terms, "institutional" approach and "institutionalist" approach are used interchangeably.

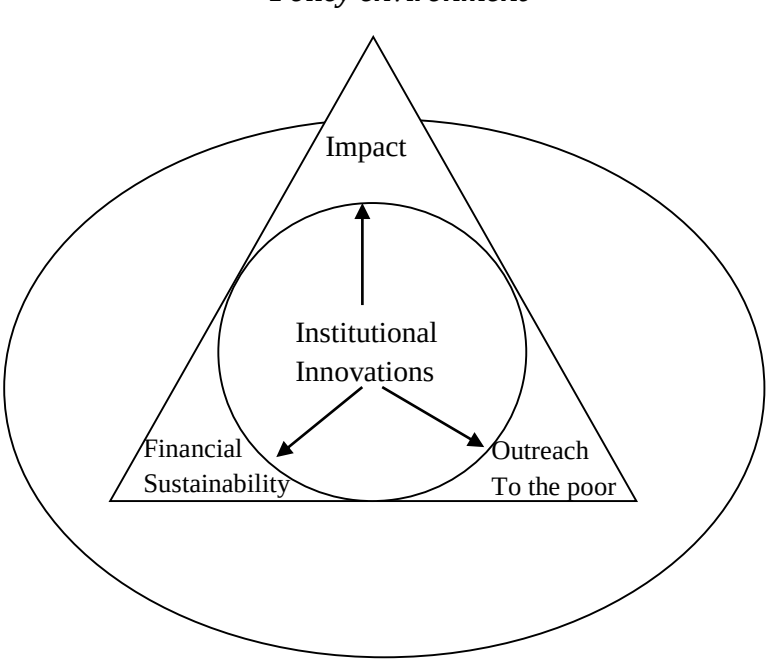
Welfarists argue that microfinance institutions can achieve sustainability without achieving financial self-sufficiency (Woller et al, 1999). Proponents see donations as a major form of capital for MFIs and donors as social investors. Unlike private investors, social investors do not expect to earn monetary returns but social (intrinsic) returns (Brau and Woller, 2004). Welfarists place relatively greater weight on depth of outreach than breadth of outreach; they measure institutional success by social metrics (Brau and Woller, 2004) and view profitability as secondary to these. To them, charging subsidized and low interest rates by relying on donor funds is the right approach to poverty alleviation (Ejigu, 2009).

Institutionalists on the other hand argue for the need to build sustainable microfinance institutions capable of operating independent of subsidies as the only means of achieving the goal of poverty eradication through MFIs. The institutionalist approach therefore, focuses on creating financial institutions to serve clients not served or underserved by the formal financial system. It emphasizes financial self-sufficiency and breadth of outreach over depth of outreach (Woller et al, 1999). Institutionalists also view donor funds as unreliable and contend that MFIs must be able to generate enough revenue through their interest charges and focus on efficiency to generate profit and reach out to more poor people (Ejigu, 2009).

In effect, the ultimate goal of the two schools of thought is to alleviate poverty – although this is to be achieved by different means. The two approaches are therefore not in conflict as proposed by some (Ejigu, 2009). Rhyne (1998) argued that the two approaches are two sides of a whole, each incomplete without the other. She pointed out that reaching the poor and sustainability are in large complementary, and particularly that sustainability serves outreach. In her view, it is only by achieving a high degree of sustainability that microfinance programmes have had access to the funding they need over time to reach out to significant numbers of their poor clients.

MFIs must be financially viable and achieve self-sustainability in order to be able to provide services to the poor. Consequently, performance measurement of MFIs in part has to be based on their financial viability. It must be noted however, that performance measurement of MFIs in the literature is not based on sustainability alone but also on the outreach of the institutions, measured by the number of households serviced and the extent of services provided (Arsyad, 2005). In view of this, the twin criteria of sustainability and outreach are often used as yardsticks for microfinance performance evaluation (Yaron, Benjamin and Piprek, 1997; Yaron, Benjamin et al. 1998; Arsyad, 2005). However, taking a broader view of MFIs' performance, Zeller and Meyer (2002) suggested the "critical microfinance triangle" (outreach, financial sustainability and impact) as important measures of the performance of MFIs. They argued that MFIs' performance assessment should not be limited to outreach and financial sustainability but must include the impact of the MFIs' programmes on their clients. Impact refers to the benefits the clients of MFIs derive from the financial services they receive. The critical microfinance triangle is illustrated in figure 3.1, below.

Figure 3.1 The Critical Triangle of Outreach, Financial Sustainability and Impact.



Source: Zeller and Meyer eds. (2002). Reproduced with permission from International Food Policy Research Institute.

The critical triangle consists of inner and outer circles. The inner circle represents types of institutional innovations that contribute to improving: financial sustainability (such as

employment of cost-reducing information systems); impact (such as designing demand-oriented services for the poor coupled with effective training of clients), and outreach (such as effective targeting mechanisms or introducing lending technologies that attract a particular group of clients). The outer circle represents improvement in the policy environment such as the socioeconomic environment and the macroeconomic and sectoral policies that affect the performance of MFIs. Both innovations at the institutional level (inner circle) and improvements in the policy environment (outer circle) help to improve the overall performance of MFIs (Zeller and Meyer, 2002).

The performance measures of outreach, financial sustainability and impact therefore form the basis of the conceptual framework developed for this study. These measures are discussed in detail in the ensuing sections.

3.3 PERFORMANCE MEASURES FOR MFIs

Performance measures of outreach, financial sustainability and impact together with their respective indicators are examined in this section.

3.3.1 Outreach of MFIs

Outreach is the ability of an MFI to provide high quality financial services to a large number of clients (Congo, 2002). The concept is multidimensional and involves several indicators such as breadth of outreach (number of clients served), depth of outreach (the value that society attaches to the net gain of a given client), cost of outreach (the price of outreach and transaction costs), worth of outreach to clients (their willingness to pay), length of outreach (the time frame of the supply of microfinance) and scope of outreach(number of types of financial contracts supplied) (Schreiner, 2002; Navajas, 2000). However, Schreiner (2002) noted that many of these indicators are difficult to measure. In view of this, the majority of studies use the breadth and depth of outreach (Hartarska 2005; Cull et al 2007; Hermes et al 2011; Kar 2011; Ferro Luzzi and Weber 2006). Breadth of outreach is measured by the number of active borrowers of an MFI (Koveos, 2004; Schreiner, 2002; Kar, 2011) or number of active clients (Rosenberg 2009; Kereta, 2007); the higher the number of active clients or borrowers the more extensive the breadth of outreach of the MFI. Nonetheless, extensive outreach does not provide an indication of reaching the poor as the MFI may be serving wealthy clients with higher

repayment potential. To reach the poor an MFI must also demonstrate reasonable depth of outreach.

It is argued that people with less income and assets will demand small-sized loans (Gonzalez and Rosenberg, 2006). Therefore, very small average loan sizes provide an indication that an MFI is reaching the very poor. The average loan size is usually taken as a proxy for the depth of outreach. The percentage of female borrowers is another proxy for the depth of outreach (Hermes et al, 2011; Weber, 2006; Hassan, Hasan, and Uddin, 2009). Women in developing countries are perceived as poorer than men and less autonomous at any given level of wealth or income (De Crombrugghe, Tenikue and Sureda, 2008). Therefore, the higher the percentage of women served by a MFI, the greater the depth of outreach. These measures of outreach help to differentiate between institutions serving the poorest clients and those that serve wealthy clients (Cull et al, 2011).

3.3.2 Sustainability

Edgcomb and Cawley (1994, p. 77) defined sustainability as the ability of an organization to: "sustain the flow of valued benefits and services to its members or clients over time." Navajas et al (1998, p. 5) also defined sustainability as "to reach goals in the short-term without harming your ability to reach goals in the long-term". Both authors made it clear that an MFI can become truly sustainable if it reaches financial self-sufficiency (Woller et al, 1999). Sustainability in microfinance can therefore be seen as the long-term continuation of the microfinance programme after the initial project that established it is discontinued. This implies that appropriate systems and processes are in place to enable the microfinance services to be available on a continuous basis and clients would continue to benefit from these services in a routine manner in the long-term (Sa-dhan, 2009). Sustainability thus, requires operating at a level of profitability that makes it possible for sustained service delivery without dependence on subsidized inputs.

Although sustainability is often understood in financial terms, it has a number of dimensions, with financial sustainability only one of the major dimensions. This study focuses on financial sustainability because of the emphasis on performance of MFIs in promoting growth of small businesses. However, another major sustainability dimension, market sustainability, is discussed because it is to a large extent dependent on financial sustainability. Both financial

and market sustainability of MFIs affect the growth of small businesses in the sense that a financially sustainable MFI will be able to access the funding needed to promote the growth of small businesses. Financial and market sustainabilities are examined in the ensuing sub-sections.

3.3.2.1 Financial Sustainability

According to Sa-dhan (2009) financial sustainability is achieved when an MFI is able to cover all its present costs and the costs incurred in expanding operations as well as its risk provisions from the interest income it generates. An MFI is therefore, financially sustainable if it is able to cover all its costs and its core work will not collapse even if external donor funding is withdrawn (Sa-dhan, 2009; Adongo and Stork, 2005). In other words, a sustainable institution depends on its own resources to cover costs and continue operations without resorting to subsidies and grants and is able to make a profit from its business activities (Armendariz, de Aghion and Morduch, 2005, Micro Banking Bulletin, 2005; Seibel, 1997).

Financial sustainability can be achieved through the ability of MFIs to: receive loan repayment on time, earn enough interest revenue, and ensure efficient use of resources (de Crombrugghe et al, 2008). Charging an interest rate that is high enough to cover operating costs, loan losses and interest and adjustment expenses is therefore crucial to financial sustainability ((Ayayi and Sene, 2010; Crombrugghe et al, 2008; Cull et al, 2007). However, interest charges must be reasonable, affordable and competitive (Sa-dhan, 2009).

Meyer (2002) pointed out that financial sustainability requires that MFIs maintain good financial records and follow recognized accounting practices that ensure full transparency for income expenses, loan recovery, and potential losses. Achieving financial sustainability is important because, first, the aim of reaching the poor with financial services require that MFIs perform well enough to be able to access commercial finance. Second, sustainability is necessary to prevent MFIs from concealing bad practices with ongoing subsidies. This includes, using subsidies for unintended purposes (Baumann, 2005).

A. Levels of Financial Sustainability

In a study carried out for USAID by Christen, Rhyne, Vogel, and McKean (1995), MFIs were classified into three levels based on their sustainability. Level 1 comprised subsidy dependent MFIs whose costs are funded through grants and subsidies from donors. For these MFIs,

revenues from interest and fees are inadequate to cover operating costs. Christen et al (1995) examined microfinance institutions in Asia, Africa and Latin America and found that most of the world's microfinance programmes belong in this category. It is estimated that about 70 percent of all MFIs fall in this category (Hermes and Lensink, 2011). The credit programmes of such MFIs are heavily dependent on subsidies and the spread between the lending interest rate and the cost of funds are too low to cover operating costs (Robinson, 2001). Robinson (2001) explained that the inability of an MFI to cover its operating costs may be due to factors such as: charging very low interest rates on loans; high loan losses; very low loan volumes; and operating inefficiencies. Microfinance institutions that fall in level 1 are mostly new or are undergoing a period of planned expansion, that is, they are in a transitional stage. Niger's Bankin Raya Karara (BRK), a three year old NGO at the time of Christen et al's research was in this category.

Level 2 MFIs were labelled operational efficiency MFIs because their revenues cover operating costs such as salaries and administrative costs, depreciation of fixed assets and cost of loan defaults but not commercial cost of loanable funds (Christen et al, 1995). These MFIs still depend on subsidies to varying degrees for the cost of loanable funds and are therefore prevented by government regulation from mobilizing voluntary savings from the public. Examples of MFIs in this group are the Dominican Republic's Asociación-Dominican-apara el Desarrollo de la Mujer (ADOPEM), Senegal's Agence de Crédit pour I'EnterprisePrivée (ACEP), Costa Rica's Fundación Integral Campesino (FINCA), and the Kenya Rural Enterprise Programme (K-REP) (Robinson, 2001). Twenty percent of all MFIs fall in the second category. These MFIs are not yet financially sustainable but are likely to be sustainable in the near future (Hermes and Lensink, 2011; Dieckman, 2007).

Level 3 MFIs are fully self-sufficient or profitable and are able to cover both non-financial and financial costs and risks to generate a profit without being subsidised. Because they are profitable they have access to commercial loans for on-lending. Interest charges are calculated on a commercial basis and include premiums to cover inflation. Institutions in this category are able to mobilize savings from the public and may be able to access domestic or international commercial investment, allowing them to expand their outreach. Examples of microfinance institutions in this category are the BancoSol (Bolivia); the Lembaga-PerkreditanDesa (LPD) of Bali (Indonesia); BRI's unit desa system; the BadanKreditDesa (BKD), or village credit organizations of Java and Madura (Indonesia). It is suggested that MFIs become financially

sustainable between seven and ten years from commencement (Johnson and Rogaly, 1997). About 10 percent of all MFIs fall under the third category (Dieckman, 2007).

The discussions so far indicate that the majority of the world's MFIs fall under the first category; are heavily dependent on subsidies and grants and are not financially sustainable. But how is financial sustainability of MFIs measured? A discussion of the indicators of financial sustainability follows.

B. Indicators of Financial Sustainability

There are a number of measures of financial sustainability of MFIs, one of which is financial self-sufficiency (FSS). FSS measures the extent to which the adjusted business revenue of MFI, including interest and fee income, covers adjusted costs (Yaron and Manos, 2007). An MFI with less than 100 percent FSS is subsidy dependent while a FSS of more than 100 percent indicates a self–sufficient (subsidy independent) MFI (Ledgerwood, 1998; Yaron and Manos, 2007). However, one limitation of FSS is that it treats equity as a cost free item. Thus, when accounting for inflation-related erosion of net monetary assets, it is difficult to estimate own funds or the opportunity cost of such funds with the FSS measure (Micro Banking Bulletin, 2005).

Operational self-sufficiency (OSS) is also used as a proxy for financial sustainability. It measures how well an MFI can cover costs such as salaries, loan loss, reserve expense and other administrative costs from operating revenue (Micro Banking Bulletin, 2005; Hartarska and Nadolnyak, 2007). The OSS does not account for the level of subsidies in operating expenses nonetheless it helps to assess the ability of a manager to effectively run an organization by covering the operating costs incurred from revenue (Hartarska and NadoInyak, 2007).

The subsidy dependence index (SDI) is another indicator of financial sustainability. SDI measures the percentage increase in the average on-lending interest rate required to eliminate subsidy in a given year while keeping its return on equity to the approximate non-concessionary borrowing cost. It shows whether a MFI can compensate society for the opportunity cost of public funds used in a short time frame and still show a profit (Yaron, 1992). An *SDI* of zero implies full self-sustainability, meaning that profit is equal to the social cost of operation. A positive index would show that economic costs exceed profit; here the on-lending interest must

be increased by the amount of SDI to eliminate the amount of net subsidy. In other words, an increase in the yield of 100 percent would wipe out subsidy and make the SDI zero. A negative SDI means that the MFI could compensate society for its opportunity cost and still make profits (Yaron, 1992; Schreiner and Yaron, 1999; Nawaz, 2009). In effect, a positive SDI shows that the MFI is subsidy-dependent while a negative SDI shows that the MFI is not subsidy dependent.

Traditional financial ratios often used to measure financial sustainability of MFIs are return on assets (ROA) and return on equity (ROE). However, Yaron and Manos (2007) argued that ROA and ROE are based on accounting data, unadjusted for subsidies, and so may not be suitable for measuring the financial sustainability of MFIs that rely on subsidies. In view of this, Nawaz (2009) recommended the use of the subsidy adjusted return on assets (SAROA) and subsidy adjusted return on equity (SAROE) to cater for the effect of subsidies on the ROA and ROE of such MFIs.

Loan repayment (measured by default rate) is also used as an indicator of financial sustainability. Low default rate would enable future lending (Khandker et al, 1995). Meyer (2002) argued that a MFI may become financially unsustainable due to low repayment rate.

In measuring the financial sustainability of the MFIs, this study will use the FSS, OSS, and ROA because they are reliable and are commonly used in existing research, allowing comparison across research (Kar, 2011; Cull et al, 2007; 2011; de Crombrugghe et al, 2008; Kumar and Gupta, 2011). The calculations for the above ratios are in the Appendix I.

As mentioned earlier, market sustainability is linked with financial sustainability in the sense that, a financially sustainable MFI should be able to access commercial sources of funding and increase its client base. Market sustainability is discussed next.

3.3.2.2 Market Sustainability

Market sustainability relates to demand and supply of microfinance. The demand for microfinance covers the different types of the clientele, their differing needs and the products that meet the needs of each clientele. Sustainability of demand will therefore be achieved if these needs are served in the most client friendly manner (Sa-dhan, 2009). Supply of microfinance on the other hand deals with the availability of MFI products to meet the needs

of clients, in particular credit. A sustainable supply of microfinance will require that the MFI is financially self-sufficient and meets all its costs from operations. Additionally, the MFI must have access to resources from clients and from external sources at commercially viable rates of interest (Sa-dhan, 2009). However, the poverty focus of many microfinance institutions constraints their ability to achieve long-term financial sustainability (Micro Banking Bulletin, 1998). In view of this, many MFIs are financially unsustainable (Brau and woller, 2004; Hermes and Lensink, 2007). Market and financial sustainability are therefore interrelated.

A. Demand for Microfinance

The demand for microfinance services is largely unmet. In 1999 it was estimated that 4.5 billion people or 75 percent of the world's population lived in low- and lower-middle– income economies. About 2.4 billion out of these were from low-income economies with an average annual GNP per capita of $US410, while 2.1 billion lived in lower-middle–income economies with an average annual GNP per capita of $US1,200 (World Bank Development Report 2000/2001).

About 80 to 90 percent of the world's 4.5 billion people living in low and lower-middle–income economies do not have access to formal sector financial services. Out of this figure, 1.8 billion people made up of 360 million households (an average of five people per household) account for the unmet demand for commercial savings or credit services from financial institutions (Robinson 200, p. 11). Although demand for financial services is still unmet for many poor and low income people in developing countries, the number of customers that use microfinance has increased by between 25 to 30 percent annually over the past five years (UNCDF, 2006). Access to appropriate institutional credit and saving services could increase the average productivity of these households (Robinson, 2001). Robinson enumerates four reasons why the demand for institutional microfinance remains unmet. First, there is the lack of appropriate and efficient technology and reliable information on the profitability of microfinance. Second, there is limited interest in microfinance among policy makers and managers of financial institutions. Prohibitive government regulations, especially with regard to ceiling on interest rates on loans, are the third reason. The fourth reason is lack of basic infrastructure and sparsely settled population.

Until recently, policy makers did not see microfinance as a development tool that can be used together with other interventions to address the problem of poverty reduction. The declaration

of the year 2005 as the international year of microcredit by the United Nations helped to put microfinance in its right perspective. Despite this many developing countries are still grappling with the regulatory framework for microfinance.

Lack of reliable information on the operations of microfinance has contributed to the unmet demand for microfinance (Robinson, 2001). For instance, formal financial institutions have been poorly advised that they cannot engage profitably in microfinance due to high transactions costs (Robinson, 2001). They are also warned of high institutional risk because of asymmetric information, moral hazard and the adverse selection of borrowers. Furthermore, they believe that most rural economies in developing countries do not generate sufficient volume of business to be attractive. These factors have prevented formal financial institutions from participating in microfinance. As discussed above several of these assumptions are inaccurate. Although transactions costs are relatively high for MFIs due to their small loan sizes, they have good cheap information on the credit risk of potential borrowers, made possible through community and neighborhood ties. This helps to reduce transactions costs (Robinson, 1998; Ghatak, 1999; 2000). Institutional risk is also significantly reduced in microfinance through peer monitoring (Stiglitz, 1990). The problem of adverse selection and moral hazards can therefore be less severe in microfinance (Robinson, 2001) due to group lending. It must be noted that there are different types of microfinance clientele, with different types of needs. The challenge is for MFIs to design products that suit the needs of the different types of clientele and this is dependent on the availability of appropriate and efficient technology. Many MFIs are underperforming due to their inability to design products that meet the needs of their clientele.

B. Supply of Microfinance

As mentioned earlier, microfinance services are generally supplied by formal, semi-formal and informal institutions. Sustainable microfinance is carried out by institutions that deliver financial services to the economically active poor at interest rates that make it possible for the institutions to cover all costs (including cost of funds) and risks, and generate a profit (Robinson, 2001). Access to capital is very essential to MFIs but because they consist mostly of NGOs with limited access to capital, there is the tendency for them to allow their own success to drive them into insolvency as they scale up or grow. Consequently, MFIs interested in long-term sustainability must be concerned with capitalization and not only retained earnings (Christen, 1998) if they are to meet the increasing demand for microfinance services. Strong

financial performance by MFIs enhances the potential of attracting commercial investors. This is perceived as the ultimate solution to the funding problem faced by MFIs (Christen, 1998).

Market sustainability therefore implies that the MFI is able to provide products and services that meet the needs of the clients and it is also financially self-sufficient. The variety of products provided by the MFIs, their outreach and financial sustainability should provide an indication of market sustainability. This is because clients' needs are met through the variety of products and services provided by MFIs and financially sustainable MFIs are able to access capital to reach out to more clients and meet more of their needs. While financial sustainability, depth and breadth of outreach and the variety of products supplied by the MFI can be used as indication of market sustainability, market sustainability is not a focus of this study and therefore not directly assessed.

The foregoing discussions have examined outreach and financial sustainability as measures of performance. Although many researchers advocate for institutional level assessment of MFIs by using outreach and financial sustainability measures (Yaron, 1992; 1994; Khandker et al, 1995; Cull et al, 2007) others emphasize the need to assess performance of MFIs by measuring "change" in incomes, assets, productivity, and general wellbeing of clients as a result of accessing financial and nonfinancial services (Bhatt and Tang, 2001). Hulme and Mosley (1996, p. 86) pointed out that "the ultimate test of an institution is not whether it exists or sustains itself, but whether it manages to do something useful", useful in the sense of having an impact on the lives of the beneficiaries. This study recognizes the interrelationships among outreach, financial sustainability and impact in that, financially sustainable MFI would be able to reach out to a significant number of the poor (Robinson 2000; Otero 2002) and improve their wellbeing, thereby making an impact on their lives (Navajas, 2000). MFIs that are financially sustainable with high outreach would have positive impact on the growth of small businesses since these businesses are assured of sustainable access to credit (Rhyne and Otero, 1992). The next section examines impact as a measure of performance of MFIs and the problems associated with measuring impact.

3.3.3 Impact of Microfinance

Impact can be viewed as a measure of the tangible and intangible effects (consequences) of an entity's action or influence upon another (Business dictionary, 2012). Impact of MFIs therefore

refers to the effect of the MFIs' programmes on the lives of the beneficiaries. Impact has been identified as a measure of MFI performance (Zeller and Meyer, 2002). The services delivered by the different MFIs are expected to have positive impact on the lives of the poor. The positive changes that occur in the life of the poor family or small business have to be sustained over the long-term for the beneficiaries to gradually emerge out of the state of poverty (Sa-dhan, 2009). However, assessing impact is the most difficult and controversial aspect of measuring MFI performance due to the associated methodological problems (Hulme, 1997; Meyer, 2002). In order to ascertain the impact of MFIs programmes on a target group, it is necessary to discuss these methodological problems.

3.3.3.1 Assessment of Impact

Measuring or assessing impact requires attributing specific effects, impacts, or benefits to specific interventions, such as improved access to financial services (Meyer, 2002). Kirkpatrick et al (2001) defined impact assessment as a process of identifying the anticipated or actual impacts on the economic, social and environmental factors which the intervention is expected to affect or may inadvertently affect. Assessing the impact of microfinance has become a very important development activity because development agencies, foundations and governments seek to ensure that funds are well spent. Second, impact assessments allow microfinance programme to be validated externally for continuity in intervention. Third, the effectiveness of microfinance can be compared with the return on alternative resources, which will invariably contribute to efficient allocation of resources. Fourth, since MFIs aim at improving the socio-economic lives of their clients, impact assessment would enable evaluation of the extent to which they are achieving this aim (Khalily, 2004; Hulme, 2000).

Studies on impact assessment show mixed results. While some argue that microfinance has a positive impact on the lives of the beneficiaries (Pitt and Khandker, 1998; Khandker, 1998; 2005; Remenyi and Quinones, 2000; Zaman, 2000; Otero and Rhyne, 1994; Wright, 2000; UNICEF, 1997; Kotir and Obeng-Odoom, 2009; Taiwo, 2012) others caution against such optimism and draw attention to the negative impacts that microfinance can have (Mallick, 2002; Rogaly, 1996; Wood and Sharrif, 1997). A third group of research work is located in the middle, and although identifies the beneficial impacts of microfinance, argues that it does not help the poorest as claimed (Hulme and Mosley, 1996) or that the poorest are deliberately excluded from microfinance programmes (Simanowitz, 2000). The outcome of this study

would therefore add to the literature on impact assessment and would confirm one of the positions above.

3.3.3.2 Methodological Problems Associated with Impact Assessment

The impact assessment literature is fraught with methodological problems. One such problem is the difficulty of estimating the counterfactual situation in order to compare with factual conditions of the target group. For example, when considering changes in incomes of clients of a microfinance programme, it is possible to look for "before" and "after" participation in a lending programme and to determine whether incomes have increased (Odell, 2010).

The difficulty of dealing with the "before" and "after" participation is determining the extent to which any change in the conditions of the beneficiaries of any microfinance programme can be attributed specifically to the intervention of credit (referred to as the problem of attribution). It has been observed that microfinance interventions often take place alongside other economic and social activities all geared towards promoting the wellbeing of participants (Afrane, 2002; Hulme, 2000). As a result, it may be possible that the changes in the incomes of the recipients of microfinance are not necessarily the result of the lending programme, but rather a result of other unobserved factors such as work ethic, entrepreneurial spirit, or inherent talent for business. It is therefore, important to employ an approach that will help to approximate the counterfactual. Generally, this calls for designating a treatment group which has access to a lending programme and a control or comparison group which is identical to the treatment group in every way, except access to the lending programme. The counterfactual would show what would have happened to those incomes in the absence of the lending programme (Odell, 2010).

Another problem which has to be grappled with is the selection bias (Odell, 2010; Hermes and Lensink, 2011; Hulme, 2000). Selection bias may occur due to difficulties in finding a location at which the control group's economic, physical and social environment matches that of the treatment group (Hulme, 2000). In effect, borrowers and non-borrowers may be systematically different from each other, hence the selection bias. This situation poses a big challenge to programme evaluators (Odell, 2010).

Furthermore, there is the problem of the fungibility of cash, that is, the possibility of using funds for purposes other than those intended (Johnson and Rogaly, 1997). It is very difficult to determine the use to which fungible loans are put. But no study has been able to successfully control for the fungibility of funds between the household and the assisted enterprise (Gaile

and Foster, 1996 cited in Hulme, 2000). However, for all studies except those that focus exclusively on the enterprise, the issue of fungibility may be irrelevant. This is because although loans intended for one purpose in a household may be used for something else, they may eventually improve "consumption" (in terms of developing or maintaining human capital through school fees and doctors' bills or buying food in times of crisis) and the overall impact may be positive. Fungibility therefore becomes a vital strategy for the client and not a problem for the assessor (Hulme, 2000; Johnson and Rogaly, 1997).

Inspite of the methodological problems associated with impact assessment, a number of impact assessments of MFIs' programmes on the lives of their clients in such areas as income, employment, acquisition of business assets, education, nutrition, health and gender equity have been carried out (Coleman, 1999; 2006; Banerjee et al, 2009; Mckenzie and Woodruff, 2008; Karlan and Zinman, 2010; Remenyi and Quinones, 2000; Fosu, 2008). A holistic approach to performance of MFIs requires that this study considers impact (in addition to outreach and financial sustainability) as a measure of performance. This study will measure the impact of MFIs' programmes on the businesses of MFI clients. Impact indicators such as changes in profit, stock and employment as well as growth through acquisition of assets will be assessed to determine improvements before and after access to microfinance.

The foregoing discussions have explained the three measures of assessing the performance of MFIs namely, outreach, financial sustainability and impact. The next section reviews existing research on these measures of performance. The evidence from the studies discussed below shows that the majority of researchers use outreach and financial sustainability as measures of MFI performance. The addition of impact as a measure of performance by few researchers emphasizes the holistic approach to performance assessment pursued in this study.

3.4 REVIEW OF RESEARCH ON MFI PERFORMANCE

MFIs aim at providing financial services to the poor to enable them set up their own income generating activities to gain both social and economic empowerment and eventually evolve out of poverty. However, MFIs face a double challenge of providing financial services to the poor (outreach) as well as covering all costs associated with the provision of the financial services (financial sustainability) to avoid bankruptcy (Ferro Luzzi and Weber, 2006; Hartarska and Nadolnyak, 2007, Hartarska, 2005). Consequently, although researchers and practitioners have

proposed various measures of performance for microfinance programmes, the majority encompass the two main criteria of self-sustainability and outreach.

Table 3.1 Ledgerwood's Performance Indicators of Microfinance Institutions

Areas	Indicators
Portfolio quality	• Repayment rates • Portfolio quality ratios (arrears rate, portfolio at risk, ratio of delinquent borrowers) • Loan loss ratios
Productivity and efficiency	• Productivity ratios (number of active loans per credit officer, average portfolio outstanding per credit officer, amount disbursed per period per credit officer) • Efficiency ratios (operating cost ratio, cost per unit currency lent, cost per loan made)
Financial viability	• Financial Spread • Operational self-sufficiency • Financial Self sufficiency • Subsidy Dependence Index
Profitability	Return on Asset Ratio • Return on Business Ratio • Return on Equity Ratio
Leverage and capital adequacy	• Leverage (debt to equity ratio) • Capital adequacy standards
Scale, outreach, and growth	• Clients and staff (number of clients, number of staff, number of branches, percentage of total target clientele serviced, etc.,) • Loan outreach (number of currently active borrowers, total balance outstanding loans, average outstanding portfolio, average disbursed loans size, average disbursed loan size as a percentage of GDP per capita, value of loans per staff member, number of loans per staff member, average outstanding loan size, average outstanding loan size as a percentage of GDP per capita, etc.) • Savings outreach (total balance of voluntary savings accounts, total annual average savings as a percentage of annual average outstanding loan portfolio, number of current voluntary savings client, value of average savings accounts, number of savers per staff member, average saving deposits as a percentage of GDP per capita, etc.)

Source: Ledgerwood (1999), tabulated by Arsyad (2005, p. 54).

Ledgerwood (1999) for instance proposed six performance areas for MFIs namely; portfolio quality, productivity and efficiency, financial viability, profitability, leverage and capital adequacy, scale, outreach and growth. She contended that each of the performance indicators is chosen on the basis of its usefulness in managing MFIs. Thus, although these indicators are useful internally, many of them (including financial viability, profitability, leverage and capital adequacy ratios, and scale outreach and growth) are also useful to external parties such as

investors and donors (Ledgerwood, 1999). A summary of Ledgerwood's performance indicators are presented in Table 3.1, above.

Ledgerwood's performance measures are extensive, covering several areas of the MFI's operations, in addition to the financial viability (self-sustainability) and outreach. This study assesses financial sustainability and outreach which are similar to Ledgerwood's financial viability and outreach indicators.

The Consultative Group to Assist the Poor (CGAP) also recommended five performance indicators for evaluating microfinance programmes based on decades of experience working with MFIs (Rosenberg 2009). These are presented in Table 3.2.

Table 3.2 CGAP Performance Indicators of Microfinance Institutions

Areas	Indicators
Outreach (breadth)	-Number of active clients or accounts.
Outreach (depth)	-Average outstanding balance per client or account. Shows how poor the clients are.
Loan repayment	-Annual loan loss rate (ALR), an indication of how well loans are being collected by the lender.
Financial sustainability (profitability): **a. For nonsubsidized institutions:** **b. For subsidized institutions:**	-Return on assets (ROA) -Return on equity (ROE), -Financial self-sufficiency (FSS), or -Adjusted return on assets (AROA), or Subsidy dependence index (SDI). These ratios show the ability of the MFI to be able to maintain and expand its services without continued injections of subsidies.
Efficiency	-Operating expense ratio (OER) or Cost per client. This shows how well the MFI controls its operating costs.

Source: Rosenberg (2009) tabulated by author.

The choice of a performance measure depends on the interest of the researcher or practitioner. While some researchers or practitioners are interested in the efficiency of MFIs, others may want to assess the financial sustainability of MFIs. Yet others may be interested in the asset quality or risk analysis of the MFIs. Since this study is concerned with the performance of MFIs, it draws on the measures that relate to outreach and financial sustainability of the MFIs. Therefore, Ledgerwood's and the CGAP's financial sustainability and outreach indicators will form part of the performance measures adopted in this study.

Several empirical studies have been carried out to assess the performance of MFIs. A review of the empirical studies on performance of MFIs is provided to demonstrate the extent to which each of the performance indicators in this research have been used in the literature.

Hasan, Hassan and Uddin (2009) assessed the outreach and sustainability of the Bangladesh Unemployed Rehabilitation Organization (BURO), a prominent microfinance institution in Bangladesh and showed evidence of BURO's progress towards achieving outreach and financial sustainability from 2001 to 2005, although the trend deteriorated in 2006 and 2007. For outreach, Hassan et al (2009) used the breadth (number of clients served by MFIs) and depth (average loan size) of outreach together with the percentage of women borrowers. They also used the sustainability dependency index (SDI) and sustainability dependency ratio (SDR) to measure financial sustainability. The focus was on MFIs ability to enhance financial efficiency and reduce reliance on subsidies.

Kereta (2007) also used the breadth, depth of outreach and percentage of women clients as indicators of outreach while ROA and ROE were employed to measure financial sustainability of 26 MFIs in Ethiopia. He found that outreach to the poor increased by 22.9 percent from 2003 to 2007. He also reported that the MFIs were operationally sustainable but found no trade-off between outreach and financial sustainability. However, he noted numerous challenges that constrained the efficient operations of the MFIs.

In examining the performance of MFIs in Burkina Faso, Congo (2002) used outreach (breadth of outreach and percentage of women clients) and financial sustainability (SDI) indicators. He found that the outreach performance of MFIs in Burkina Faso remained low compared with potential demand as a result of high costs of supply of microfinance services and inability of the majority of MFI to mobilize local savings. His study revealed that MFIs in Burkina Faso were not viable and sustainable since they depended heavily on subsidies.

Adongo and Stork (2005) used the breakeven interest rate, an indicator of financial sustainability, to examine factors influencing the financial sustainability of MFIs in Namibia. They investigated 95 MFIs which they reported were financially unsustainable because their interest charges were not high enough to cover all their financial and non-financial costs.

Using data from 114 MFIs from 62 countries, Hartarska and NadoInyak (2007) highlighted the performance of regulated and unregulated MFIs in terms of outreach and financial sustainability. Number of active borrowers was used to measure breadth of outreach while operational self-sustainability (OSS) was used for financial sustainability. The results revealed that regulatory involvement does not directly affect performance either in terms of operational self-sustainability or outreach. Hartarska and NadoInyak (2007) however, reported that less leveraged MFIs experienced better sustainability. The findings also showed that MFIs that accept saving deposits reach more borrowers. This suggests an indirect benefit from regulations, since only regulated MFIs are allowed to take savings.

De Crombrugghe, Tenikue and Sureda (2008), in a performance analysis of a sample of 42 MFIs in India, found that although most institutions in their sample did not cover costs, a situation that may endanger their long-term ability to reach out, MFIs were capable of covering costs on small and partly unsecured loans while keeping the focus on the poor. According to them, this was possible by charging interest rates that covered operating and financial costs and by increasing the number of borrowers per field officer to reduce costs. The high transactions costs associated with providing small loans to the poor reduced the feasibility of low interest charges. DeCrombrugghe, et al (2008) used number of active borrowers and average loan size to measure breadth and depth of outreach respectively and financial self-sustainability (FSS) and OSS as financial sustainability indicators.

In a related article Kumar and Gupta (2011), highlighted the significance of performance indicators in ensuring better performance of MFIs. They analyzed performance indicators of MFIs in East Asian, Pacific and South Asian countries and argued that increase in the breadth of outreach of the MFIs decreased the depth of outreach (average loan per borrower). In other words, MFIs emphasizing scale of outreach (breadth) were unable to increase the depth of outreach (reaching the very poor) due to the cost of making small loans. Kumar and Gupta (2011) used OSS and FSS together with the breadth and depth of outreach as financial sustainability and outreach indicators respectively.

Ayayi and Sene (2010) also used data from 217 MFIs in 101 countries to examine factors that drive MFIs' performance. They reported that high quality credit portfolios, together with the application of sufficiently high interest rates that made it possible for reasonable profit to be earned and sound management to be attained, were crucial to financial sustainability of the

MFIs. They used breadth (number of active borrowers) and depth of outreach (average loan size) as outreach indicators and ROA and OSS as financial sustainability indicators.

Using breadth (number of active borrowers) and depth (average loan size) of outreach as outreach indicators and ROA and OSS as financial sustainability indicators, Gonzalez and Rosenberg (2006) examined the performance of 2,600 MFIs from the Microcredit Summit (MCS) Database, the Mix Market (MM) database and the Micro Banking Bulletin (MBB) database and reported that 44 percent of all micro borrowers were being served by profitable MFIs. They noted however, that the majority of MFIs were unprofitable (unsustainable) especially the many small MFIs that do not report to the international databases.

An assessment of the performance of selected South African microcredit non-governmental organizations, against various benchmarks drawn from the Micro Banking Bulletin by Baumann (2005) revealed striking difference between South African MFIs and their counterparts elsewhere. Owing to the high income and social inequality in the country, operating a microcredit business is very expensive compared to other developing countries. MFIs have to pay high salaries to attract professionals to various positions, due to intense competition for skilled labour within the country. However, MFIs are unable to afford the high salary rates at interest rates affordable to their clients. Meanwhile, the average loan size of MFIs in South Africa is very small compared to other countries and the smaller the average loan the more clients are needed per MFI employee to cover personnel costs. This affects the sustainability of MFIs in South Africa (Baumann, 2005). Baumann (2005) measured breadth (number of active borrowers) and depth (average loan size and percentage of women borrowers) of outreach as outreach indicators as well as OSS and FSS as financial sustainability indicators.

Cull, Demirguc-Kunt and Morduch (2007) examined the financial performance and outreach of 124 MFIs from 49 countries. Breadth of outreach was measured by number of active borrowers and depth of outreach by average loan size and percentage of women clients while FSS (financial self-sufficiency), OSS (operational self-sufficiency) and ROA (return on assets) were used to measure financial sustainability. Their results showed that MFIs that provide individual loans perform better in terms of ROA than their counterparts that provide group-based lending. But the group-based lenders have a high percentage of the poor and female borrowers in their loan portfolio, suggesting that the group-based MFIs are more able to reach

the poor with financial services than the MFIs that provide individual loans. This is consistent with studies that show that MFIs' programmes that provide individual loans reach few of the very poor (Hulme and Mosley, 1996).

Another empirical investigation of outreach and sustainability was carried out by Kar (2011). Outreach indicators of number of active borrowers (breadth of outreach) and average loan size and percentage of women clients (depth of outreach) (and financial sustainability indicators of OSS and ROA were used in the study. Kar (2011) investigated 426 MFIs in 81 countries and reported that MFIs can attain sustainability without necessarily increasing average loan size. The smaller the average loan size, the more the depth of outreach, however, because it is more costly to provide small loans, some MFIs would want to sacrifice depth of outreach for breath of outreach. Kar (2011) argued that the implementation of a good interest rate policy and solidarity-group-based loan method, coupled with an increase in the number of clients reached would help an MFI to attain financial sustainability (cover all its costs from interest earnings) and still keep a focus on the poor.

A study on whether regulatory supervision curtails microfinance profitability and outreach was carried out by Cull, Demirguc-Kunt and Morduch (2011). Cull et al (2011) used the indicators of number of active borrowers, and average loan size and percentage of women clients to measure breadth and depth of outreach respectively while the financial sustainability indicators were FSS and ROA. They assessed the performance of 245 leading MFIs from different countries. Their study showed that regulatory supervision has a negative effect on outreach. They also found no significant relationship between regulatory supervision and ROA. With many MFIs raising high amounts of deposits from the public (especially the regulated MFIs), the need for prudential supervision is relevant (Hermes and Lensink, 2011). Their results suggested that profit-oriented MFIs that have to comply with prudential supervision do so by reducing their outreach to the poor areas that are costly to serve.

The research on performance of MFIs discussed so far shows that the majority of studies assessed performance by the outreach and financial sustainability of the institutions. Nonetheless, other researchers are of the view that the MFIs should be evaluated in terms of a critical triangle: outreach, financial sustainability and impact. This is because the ability of MFIs to provide access to finance for the poor and help to eliminate poverty is affected by all the three broad indicators and not only outreach and financial sustainability (Zeller and Meyer,

2002). Studies on MFI performance that employ the critical triangle of outreach, financial sustainability and impact are reviewed

Zaigham and Asghar (2011) examined the sustainability of MFIs in Pakistan by measuring their outreach, financial sustainability and impact. Their results showed that although outreach of the MFIs increased within the period under investigation, only few well performing MFIs achieved increases in both depth and breadth of outreach. Results also indicated that the MFIs exhibited low financial sustainability in terms of returns to assets (ROA) and operational self-sufficiency (OSS). They concluded that the MFIs were not quite sustainable and attributed their low sustainability to the 2001 floods in Pakistan which made it difficult for borrowers to repay their loans.

Meyer (2002), in a study on track record of financial institutions in assisting the poor in Asia, considered the performance of the MFIs by evaluating their outreach, financial sustainability and impact. Twenty-nine (29) MFIs grouped under Asia large, Asia Pacific, Asia South and Asia Central where compared with all MFIs and with MFIs that were financially sustainable. Data was obtained from the Micro Banking Bulletin. The study showed that many of the 29 Asian MFIs had expanded and were able to serve thousands of clients, the majority women. The average number of borrowers for Asia Large of 2,278,992 was far higher than the average for all MFIs (10,710) and financially sustainable MFIs (89,370).

Concerning the financial sustainability of the MFIs the study revealed that MFIs in three of the four Asian groups (Asia Large, Asia Central, and Asia Pacific) were quite sustainable on average compared to the average of all MFIs but Asia South had not reached self-sufficiency because of their low interest charges compared to MFIs in the other regions. While admitting the difficulty of assessing impact of MFIs' programmes on clients' businesses and households because of methodological problems, Meyer carried out a World Bank study of the impact of three MFIs' programmes on their clients. The MFIs investigated were the Grameen Bank (GB), the Bangladesh Rural Advancement Committee (BRAC), and the Rural Development Project-12 of the Bangladesh Rural Development Board (RD-12). He reported that borrowing by clients had an expected positive impact on household weekly expenditures and that the increase in access to the programme by women was roughly the same for all three programmes. Accordingly, Meyer (2002) noted that all the three MFIs made significant impact on women clients but impact was significant only for men borrowing in RD-12. The result also showed

an increase in household income of borrowers from the three MFIs. The performance indicators used by the authors whose works are referred to above are summarized in Table 3.3 below.

Table 3.3 Summary of Performance Indicators of MFIs used by Various Empirical Studies

Author	Performance indicators used
Hasan et al (2009)	Examined the outreach and financial sustainability of the Bangladesh Unemployed Rehabilitation Organization (BURO). Used the number of active clients, average loan size and together with the percentage of women borrowers as outreach indicators while financial sustainability indicators such as the sustainability dependency index (SDI) and sustainability dependency ratio (SDR) were used to assess the financial sustainability of BURO.
Kereta (2007)	Used number of active clients, average loan size and percentage of women clients as indicators of outreach and ROA and ROE as financial sustainability indicators to analyze 26 MFIs in Ethiopia.
Congo (2002)	Assessed the performance (financial sustainability and outreach) of 6 MFIs in Burkina Faso. Employed number of active clients and percentage of women clients as outreach indicators and SDI as financial sustainability indicator.
Adongo and Stork (2005)	Examined the financial sustainability of 143 MFIs in Namibia. Used breakeven interest rate to assess the financial sustainability of the MFIs
Hartarska and Nadolnyak (2007)	Investigated the impact of regulation on the sustainability and outreach of 114 MFIs from 62 countries. Used number of active borrowers and OSS as outreach and financial sustainability indicators respectively.
de Crombrugghe et al (2008)	Analyzed the performance of 42 MFIs in India by evaluating the financial sustainability (FSS and OSS) and outreach (number of active borrowers and average loan size) indicators of the MFIs.
Kumar and Gupta (2011)	Analyzed the performance of 298 MFIs in East Asian, Pacific and South Asian countries by using number of active borrowers and average loan size as outreach indicators and OSS and FSS and ROA as financial sustainability indicators.
Ayayi and Sene (2010)	Examined factors that drive MFIs performance. Evidence showed that high quality credit portfolios, together with the application of sufficiently high interest rates and sound management are crucial to the financial sustainability of MFIs. Used number of active clients and average loan size as outreach indicators and ROA and OSS as financial sustainability indicators.
Gonzalez and Rosenberg (2006)	Examined the performance of 2,600 MFIs worldwide, in terms of outreach, profitability and poverty. Used number of active borrowers and average loan size as outreach indicators and ROA and OSS as financial sustainability indicators.

Author	Performance indicators used
Baumann (2005)	Investigated the performance of 4 MFIs in South Africa using number of active borrowers, average loan size and percentage of women borrowers as outreach indicators and OSS and FSS as financial sustainability indicators.
Cull et al (2007)	Examined the financial performance and outreach of 124 leading micro banks in 49 countries. Used average loan size and percentage of women clients as outreach indicators and financial sustainability indicators of OSS, FSS and adjusted ROA.

Kar (2011)	Did a cross – country empirical investigation of outreach and financial sustainability of 426 MFIs in 81 countries. Outreach indicators such as number of active borrowers, average loan size and percentage of women borrowers and financial sustainability indicators of OSS and ROA were used.
Cull et al (2011)	Examined whether regulatory supervision curtails microfinance performance in terms of profitability and outreach – utilized data from 346 MFIs in 67 developing countries. Used outreach indicators such as average loan size and percentage of women clients and financial sustainability indicators of FSS and ROA.
Zaigham and Asghar (2011)	Investigated the sustainability of 3 MFIs in Pakistan by examining the outreach, financial sustainability and impact of the MFIs. Used number of active borrowers, average loan size together with the percentage of women clients as outreach indicators and financial sustainability indicators of ROA, OSS and transaction cost per borrower.
Meyer (2002)	Assessed the performance of 29 MFIs in Asia against a bench-mark of all MFIs and financially sustainable MFIs. Used outreach, financial sustainability and impact indicators in assessing the performance of the MFIs. Outreach indicators used were number of active clients and proportion of women clients. OSS, FSS and SDI were used as financial sustainability indicators. Impact of the MFIs' programmes on clients' household was also assessed by considering indicators such as increase in household consumption, increase in income and labour supply.

Source: Author's compilation

Although many of the studies reviewed above show increases in the outreach of MFIs', financial sustainability of the majority of the MFIs was low. The impact of the MFIs' programmes on their clients' lives as per Meyer's (2002) research was also quite moderate.

One thing that these studies fail to show is the impact of regulation on MFI performances in the three areas of outreach, financial sustainability and impact. An investigation of the effect of regulation in these three performance areas is relevant given that the microfinance industry, previously dominated by informal providers has attracted the attention of the formal financial sector. This follows from the success of MFIs in providing finance to the small business sector where the formal financial sector has failed. Furthermore, it is important to know how regulation affects MFI performance because the regulatory framework in a number of countries, including Ghana, is being expanded to incorporate previously unregulated MFIs. This will enable the newly regulated MFIs to accept deposits and increase their loan portfolio for on-lending to clients, thereby broadening their outreach (Fiebig et al, 1999; Campion and White, 1999). Regulation is therefore expected to expand outreach of financial services to the poor, promote microfinance and enhance the performance of MFIs (Chiumya, 2006). However, the need to comply with regulatory requirements may divert attention of MFIs from serving the poor to serving wealthy clients. It is important therefore to investigate the impact of

regulation on performance of MFIs. In particular, how regulation affects outreach to the poor and the ability of MFIs to make an impact on the livelihoods of their poor clients. The next section examines the regulatory framework for MFIs in Ghana.

3.5 REGULATION OF MFIs IN GHANA

Through the provision of financial services to the poor MFIs deepen the financial system and expand the economic contribution to sections of the population that previously lacked access to financial products (Churchill, 1997), including small business operators. With the increased interest in microfinance as a mechanism for poverty alleviation, the regulation of MFIs is essential for financial system stability and for safeguarding the deposits of customers (Christen, Lyman and Rosenberg, 2003; Arun, 2005; Llewellyn, 1999).

According to Chaves and Gonzalez-Vega (1994, p. 55) regulation is "a set of enforceable rules that restrict or direct the actions of market participants and as a result alter the outcomes of those actions." Llewellyn (1986, p. 9) provides a comprehensive definition of regulation as "a body of specific rules or agreed behaviour, either imposed by some government or other external agency or self-imposed by explicit or implicit agreement within the industry, that limits the activities and business operations of financial institutions." It is clear from these definitions that the behavior of market participants are altered by externally- or self- imposed rules. Although regulation and supervision are sometimes used interchangeable, Barth et al, (2006, p.4) explained the differences, noting that "regulation typically refers to the rules that govern the behaviour of financial institutions whereas supervision is the oversight that takes place to ensure that financial institutions comply with those rules".

In discussing regulation of MFIs, Christen et al (2003, p. 7) differentiate between prudential and non-prudential regulation. According to them regulation is prudential when "it is aimed specifically at protecting the financial system as a whole as well as protecting the safety of small deposits in individual institutions." Non-prudential regulation, on the other hand, relates to how financial firms conduct business with their customers (Llewellyn, 1999). It is concerned with issues such as consumer protection, information disclosure, prevention of fraud and financial crimes and fair business practices (Christen et al, 2003). While a public and specialized supervisory body should be responsible for the oversight of prudential regulation,

non-prudential regulation could be self-imposed or controlled by any other authority (Christen et al, 2003; Llewellyn, 1999).

As explained in section 2.7 providers of microfinance regulated by the Bank of Ghana comprise formal institutions such as the rural and community banks (RCBs) and the savings and loans companies (S&Ls). These are microfinance providers that are incorporated under the companies Code 1963 and licensed by the Bank of Ghana under either the Banking Law 1989 or the Financial Institutions (Non- Banking) Law 1993 (NBFI Law) to provide financial services. The self-regulated providers comprise semi-formal institutions such as the financial non-governmental organizations (FNGOs) and the credit unions (CUs) as well as informal institutions covering "susu" collectors, self-help organizations and money lenders. The self-regulated MFIs are legally registered and self-regulated but not licensed by the Bank of Ghana (GHAMFIN 2008). The regulatory framework for MFIs in Ghana is discussed next.

3.5.1 Regulatory Framework for Microfinance in Ghana

Ghana's legally recognized MFIs come under different legislation adopted at different points in time in response to different circumstances and needs (Steel and Andah, 2003). The regulatory framework under which each type of MFI operates is as follows:

- Rural and Community Banks: Banking Law 1989 (PNDCL 225)
- Savings and Loans Companies: Financial Institutions (Non-Banking) law, 1993 (PNDCL 328 (NBFI Law)
- Credit Unions: Co – operative Decree, 1968 (NLCD 252);
- NGO's: Charitable institutions under the provision of the law on Trust and Charitable Institution.
- Money lenders: money lenders Ordinance, 1940 and 1957

The list shows that MFIs differ with respect to the regulatory framework under which they operate. While RCBs and S&Ls are licensed and regulated by the Bank of Ghana (BoG), CUs, NGOs, Susu Companies and collectors were up until 2011 not licensed and regulated by the Bank of Ghana, but supervised and/or regulated by their respective associations (self-regulation). The requirements of the various regulatory bodies are presented next.

3.5.1.1 Regulations Applicable to MFIs Licensed as Financial Intermediaries.

The BoG is responsible for ensuring the smooth operation and soundness of licensed MFIs. Consequently, the Bank of Ghana exercises its mandate to ensure that depositors' funds are safe and that the solvency, good quality assets, adequate liquidity and profitability of licensed financial institution are maintained (BoG, 2011).

The prudential standards imposed by the BoG on licensed MFIs consist of minimum capital requirements and capital adequacy levels, asset quality standards, limits on risk exposure and liquidity management guidelines. These are discussed below.

A. Minimum Capital Requirements

Minimum capital requirements ensure an adequate cushion for MFI operations and are used to restrict the number of licensed institutions permitted to mobilize deposits from the public (Gallardo, Quattara, Randhawa, and Steel, 2005). The minimum capital requirements for licensed MFIs, that is, RCBs and S&Ls are significantly lower than that for the commercial banks. Prior to 2001 RCBs were required to have 20 million cedis (US$22,000) in paid–up capital, while MFIs registered as S&Ls were required to have a paid–up capital of 100 million cedis (US$154,000). These minimum capital requirements were reviewed upwards in 2001 when the BoG became concerned about the poor portfolio quality and non–compliance with capital adequacy ratios in majority of the RCBs and S&Ls (Steel and Andah, 2003; Gallardo, 2002). The minimum capital requirements of the RCBs and S&Ls were raised to 500 million cedis (US$67,000) and 15 billion cedis (US$2 million) respectively. The BoG also required that the shareholdings of individual shareholders of the licensed MFIs should not exceed 30 percent of total shares while that of corporate bodies were not to exceed 50 percent of total shares (BoG, 2011). Following a devaluation of the Ghana cedi, the minimum capital requirement was revised to GH¢150,000 (US$176,070) and GH¢7,000,000 (US$8,216,600) for the RCBs and S&Ls respectively in 2008. However, the shareholding limits have remained the same (BoG, 2008a; 2008b). RCBs have limited scope of operational area; they cannot establish branches beyond a region. In contrast, S&Ls can operate in all regions of the country, hence the higher minimum capital requirement for S&Ls. The S&Ls face higher credit exposures and consequently a higher capital adequacy ratio is required because the wider the operational area the higher the risk and the risk cover needed.

B. Capital Adequacy

Capital adequacy is the statutory minimum reserves of capital which a financial institution must hold. The capital adequacy ratio is measured as a percentage of the adjusted capital base of the bank to its adjusted asset base set by the Bank of Ghana regulations (BoG, 2004). Prior to the promulgation of the Banking Law (1989) the capital adequacy ratio prescribed for banks was 5 percent of total mobilized resources. The capital adequacy at the time was in direct relationship with deposits. With the promulgation of the Banking Law (1989) the capital adequacy or solvency standard set up by the BoG for all banks including RCBs changed to 6 percent of risk assets, in line with international best practice (Asiedu-Mante, 1998). A higher standard of 10 percent of risk assets is prescribed for S&Ls and deposit taking NBFIs (Gallardo et al, 2005) because of their wider geographical coverage.

C. Liquidity Reserve Requirements

Bank liquidity is a measure of the ability of the bank to readily find cash to meet demand made on it. Liquidity reserves take the form of securities that can be sold quickly with minimum loss (Elliott, 2014). Liquidity reserves serve as a buffer that provides the resources needed by the bank at any time when its debt obligations fall due. They prevent banks from running into crisis (Elliott, 2014). Accordingly, Bank of Ghana prescribes the primary and secondary reserves assets that licensed deposit-taking institutions must hold relative to their total deposit liabilities. The primary reserves can be held in cash and balances with other banks and secondary reserves in Government and BoG bills, bonds and stocks (Gallardo, 2002; Steel and Andah, 2003). Up until 2002, Rural and Community Banks were to maintain a high secondary liquidity reserve of 52 percent, intended to strengthen poor performing RCBs. However, since the regulation did not differentiate between strong and weak RCBs, the efficient and strong RCBs were penalised by limiting their ability to reach out to more clients with their loan products (Gallardo, 2002).

The need to encourage efficient performance of the RCBs resulted in the BoG lowering the reserve requirements in 2002. The reserve requirements were varied in accordance a classification system based on loan recovery performance. This new system enabled those with good recovery to increase their lending and forced relatively high liquidity on those with weaker recovery as shown in Table 3.4. The liquidity requirements for S&Ls have remained 10 percent for primary reserves and 15 percent for secondary reserves (Gallardo, 2002).

Table 3.4 Current Reserve Requirements for RCBs (as percentage of deposits)

Classification	Loan Recovery Rate		
	90% or more	75 – 90%	Below 75%
Placement with ARB Apex Bank*	5	5	5
Primary Reserves	8	8	8
Secondary Reserves	20	25	30
Total	33	38	43

Source: Steel and Andah (2003, p. 23).
*Figure meant to facilitate check clearing

D. Security for Loans

Prudential regulation requires all licensed financial institutions to obtain physical assets, deposit balances or Treasury bills from borrowers to secure loans. These requirements are however, beyond the reach of poor households. The special characteristics of microfinance loans (small loans) preclude the use of physical assets to secure loans. The BoG in collaboration with the Ministry of Finance and Ghana Microfinance Institutions Network (GHAMFIN) has formalized the status of group guarantees as acceptable collateral in microfinance loans (Gallardo, 2002). Some of the RCBs and S&Ls also encourage clients to make compulsory deposits for three months or less before qualifying for loans. Such deposits, referred to as cash lien, are acceptable as collateral for loans.

E. Asset Quality (Delinquency and Provisioning)

Licensed financial institutions are required to monitor and review their portfolio of loans and risk assets at least once every quarter. For Non Bank Financial Institutions (NBFIs) assets are generally classified into four grades of risk: (a) standard, (b) sub–standard, (c) doubtful, and (d) loss. Assets in risk grades (b) to (d) are considered non-performing. No income may therefore be accrued on such assets (Gallardo, 2002). A loan is said to be performing if the payment of the principal and interest charges are up to date as agreed upon by the lender and borrower. Non–performing loans in contrast, are loans which do not generate income for a relatively long period of time, that is loans that are ninety days or more past due (Alton and Hazen, 2001; Fofack, 2005).

Bank of Ghana has specified prudential norms for micro-enterprise and small business loans which take into account the characteristics of these small business activities. Micro and small business loans are expected to be reviewed once every month and are classified into (a) current

or (b) delinquent. A delinquent loan is one on which payment of interest or scheduled payment of principal has not been received as of due date (Gallardo, 2002). BoG does not permit licensed institutions to earn interest income on delinquent accounts.

Bank of Ghana requires that provisioning for delinquent micro and small business loans is made on a "basket" basis rather than on individual loan basis. Basket–based provisioning is a blanket provision on the aggregate outstanding balances of loans grouped in each arrearage basket without regard to securities available for individual loans (Gallardo, 2002). Bank of Ghana prescribed rate of provisioning for MFIs is shown in Table 3.5.

Table 3.5 S&Ls Provisioning Rate for Micro and Small Business

Number of days delinquent	Percent (%)
Up to 30 days	5
30 days and less than 60 days	20
60 days and less than 90 days	40
90 days and less than 120 days	60
120 days and less than 150 days	80
150 days and less than 180 days	100

Source: Gallardo (2002, p. 14).

Assets of all financial institutions (both traditional banks and RCBs) are classified into five grades of risk: (a) current, (b) other loans especially mentioned (OLEM), (c) sub–standard, (d) doubtful, and (e) loss. In addition to the specific loss provisions to be made for delinquent and non-performing micro and small business loans, licensed MFIs are required to maintain a general loss provision of 1 percent of the aggregate amount outstanding on all the current or standard class of loan assets. These are presented in Table 3.6.

Table 3.6 Provisioning Rates for RCBs

	Past due	Rate %
Current /standard	–	1
OLEM	>30 days	10
Sub– standard	>90 days	25
Doubtful	>180 days	50
Loss	>540 days	100

Source: Steel and Andah (2003, p. 25).

All financial institutions are also required to separately disclose the specific and general loss provisions made for non-performing delinquent loans and standard/current loan assets in their financial accounts and reports (Gallardo, 2002). The information available on reserve

requirements and provisioning for delinquent loans is dated and there are no current studies on the subject.

F. Risk Exposure Limits

The Banking law 1989 restricts all financial institutions from granting secured loans in excess of 25 percent of the net worth of the institution in which any of its directors or officials are connected as a partner or principal shareholder. For unsecured loans, the financial exposure limits is 10 percent of the bank's net worth (Gallardo et al, 2005, BoG, 2004).

3.5.1.2 Supervision and Monitoring of MFIs

The Bank of Ghana has overall supervisory and regulatory authority in all matters relating to banking and non–banking financial business in the country. Its functions, as stipulated by the Bank of Ghana Act 2002 (Act 612), Banking Act 2004 (Act 673) and Non–Bank Financial Institutions Act 2008 (Act 774), are to regulate, supervise and direct the banking and credit system and to license, promote and supervise non– anking financial institutions.

The supervisory functions of BoG are carried out by the Banking Supervision Department and Non–Bank Financial Institutions Department. The methods of supervision used by BoG for its regulatory functions are: off–site surveillance, on–site examination, follow–ups and special assignments.

A. Off–Site Examination

Financial Institutions are required to submit periodic reports on their operations and financial results. Off–site examination involves the analysis of such reports. Information relating to the assets, liabilities, income, and expenditure of the MFI or any of the institutions affairs in the prescribed form are to be submitted for inspection and analysis by BoG. The analysis is intended to verify compliance and performance on on-going basis (Gallardo et al, 2005; BoG, 2004; Steel and Andah, 2003).

B. On–Site Examination

On-site examination involves a supervisory staff physically visiting the financial institution without prior notice and examining the operations and affairs of a bank. Books and records inspected include, minute books, customer files, personnel files, cash and securities and

information in an electronic medium. This is carried out at least once a year for each RCB and S&L (BoG, 2004).

C. Follow–up On–site Visits

These are also carried out to discuss supervisory issues identified during examination and to ensure compliance with recommendations (Steel and Andah, 2003). Failure to comply may attract a fine (BoG, 2004).

D. Special Assignments

Special assignments may be undertaken by a supervisory staff of BoG to investigate embezzlement, irregular payments, manipulation of customers' accounts, granting of unauthorized facilities, and illegal discounting of Treasury-bills. Such special assignments have helped to minimize fraud and enhance internal controls of RCBs and S&Ls. Additionally, special assignments have resulted in improving credit administration as well as customer confidence in the RCBs and S&Ls (Steel and Andah, 2003).

3.5.1.3 Compliance

The BoG employs enforcement mechanisms such as fines, suspensions, criminal penalties and revocation of license for non–compliance. For example, a bank may be asked to pay a fine for non–submission, incomplete submission, delayed submission, or inaccurate submission of the required information, data, statements or returns. Furthermore, a bank which fails to hold liquid assets or capital adequacy ratio as directed by the BoG may be asked to discontinue or limit a specified activity such as the granting of credit, accepting of deposits or making of investments, or capital expenditure and not to distribute dividends to its shareholders (BoG, 2004). In 1998, twenty–three distressed RCBs had their licenses revoked. The enforcement mechanisms have helped weak RCBs and S&Ls to work towards improving their image.

3.5.1.4 Self-Regulatory Framework of Self-Regulated MFIs

Apart from the RCBs and S&Ls which are regulated directly by the BoG under the Banking Law and Financial Institutions (Non – Banking) Law, other MFIs such as the CUs, FNGOs and the Susu collectors and companies were until 2011 (the period of this research) not licensed by BoG but registered with their respective associations and were self–regulatory. The self-regulation frameworks for the CUs, FNGOs and the Susu collectors and companies are presented next.

A. Credit Unions (CUs) Self–Regulation Framework

Credit Unions are registered by the Department of Cooperatives and are self-regulated. The Credit Union Association (CUA) serves as a self–regulation apex body for the credit unions. CUA applies prudential norms that are supported by the Canadian Cooperative Association (CCA) which are similar to the operating and financial standards of the World Council of Credit Unions (WOCCU) (Gallardo, 2002). There were 549 credit unions in Ghana in 2011 (CUA, 2012). Some of the rules and regulations governing the formation and operations of credit unions are as follows:

i. Minimum membership of 100 with potential membership of not less than 600.
ii. Three – month initial training for executive members of the credit union.
iii. Payment of an entrance fees of not less than 5,000 cedis (US$ 0.70) by each member and savings of not less than 10,000 cedis (US$1.40) per month for Industry Credit Unions and 5,000 Cedis per month for Community and Parish Uredit Unions.
iv. Accumulated savings of at least 5 million cedis (US$ 700). Each registered credit union must transfer 25 percent of its annual declared profit to the CUA, for investment in Government Securities in a Central Finance Facility. Member Credit Unions are not to pay out more than 50 percent of their annual profits without approval from CUA.

The requirements of the CUA must be met as a condition for full registration of a new credit union by the Department of Cooperatives. Supervisory and monitoring role are carried out by supervisory managers at the regional level who supervise the individual credit unions at the district and local level. The supervisors ensure that rules and regulations governing the operations of credit unions are adhered to, prudent financial practices are adopted, and accounts prepared regularly and audited (CUA, 2012).

To ensure that the operations of the credit unions are carried out efficiently, CUA provides education and training at all the levels of the organisation, that is, regional, district and local. Short courses/training are provided to credit union staff as well as CUA field staff at the Credit Union Training Center at Kasoa, Accra. While efforts are made by CUA to ensure that credit unions remain viable, Credit Unions found to be distressed are dealt with by dissolving the board of directors and dismissing the staff. Some of the causes of distress include loans delinquency, incompetent staff or entrenched leadership (CUA, 2012).

B. "Susu" Collectors and Companies Self-Regulation Framework

The Ghana Co-operative "Susu" Collectors Association (GCSCA) is registered under Paragraph 4-7 of the Co-operative Society Law (NLC Decree 252) 1968 and affiliated to the Ghana Cooperative Council. Established in 1994, the GCSCA is an umbrella organization for all Regional "Susu" Collectors and Companies Societies in Ghana. The GCSCA is a self-regulatory body. The purpose of the self-regulatory framework is to: "Protect and manage the business of "susu" collectors by preserving its flexible character while managing the risks in order to provide safe custody for clients' deposits" (GCSCA, 2007, p. 2).

Under the GCSCA, a prospective member must meet certain criteria for admission to the association and for operating as a "susu" collector. The prospective member must be recommended by a zonal executive, and must submit a written application, provide two sworn guarantors, deposit 1 million (about US$130) into a security fund, and save 5,000 Ghana cedis a month. Prospective members must also take a medical examination and undergo three months training with an existing member. The security fund serves as a reserve to protect depositors' funds. The GCSCA performs its supervising and monitoring role through regular field monitoring of operations of registered members at the local level. This is carried out by the District or Zonal Society Executive who ensures that clients receive their savings. Members are required to submit reliable monthly reports to the District or Zonal society office. The GCSCA has Zonal and District outfit teams, responsible for auditing the books of registered members and submitting reports to the regional office (GCSCA, 2007). Currently, there are about 4,000 "susu" collectors nationwide and eight regional "susu" collectors' cooperative societies which operate under the overall umbrella of GCSCA. Registered members however, account for less than half of the total number of collectors (Adjei, 2010).

The GCSCA provides training and capacity building programmes to its members to enhance their performance in managing risk and reporting. The training programmes are mostly in the areas of risk and delinquency management, financial management, report writing, book keeping and policy formulation. The association also guarantees on-lending schemes for credible members. In order to enforce compliance, GCSCA sanctions registered members who act outside its regulations. For example, fines are applied to members who default in payment of dues and who fail to compile and submit monthly or quarterly reports. Fines are reviewed periodically. If the defaulting member persists he/she is queried, counselled, denied

participation in any on-lending scheme or disallowed to renew his/her membership (GCSCA, 2007; Ghana Microfinance, n.d).

C. Non-Governmental Organizations (NGOs)

The NGOs are incorporated as companies limited by guarantee (not-for-profit) under the Companies Code 1963 (Act 179). Their focus on poverty leads the majority to provide a variety of services, especially micro-credit to poor clients. There are about ninety-six (96) financial NGOs (FNGOs) in Ghana. The Association of Financial NGOs (ASSFIN) was inaugurated in 2005 as an apex organization of all FNGOs in Ghana. Its aims are to regulate the activities of member institutions and advocate for the development of financial NGOs (Ghana Microfinance, n.d; Ajei, 2010).

ASSFIN has established three zonal councils and organizes periodic meetings in the various zones to deepen and strengthen members' knowledge on microfinance issues with financial assistance from the Rural Financial Services Project (RFSP). Some of the members of ASSFIN have been trained in the area of financial management, microfinance operations, and governance. ASSFIN also assists members to secure funding for on-lending to micro and small businesses (Ghana Microfinance, n.d). The RFSP is a Government project with support from development partners such as the International Development Agency (IDA) of the World Bank, the International Fund for Agricultural Development (IFAD) and the African Development Bank (AfDB) (Asiama and Osei, 2007).

The legal and regulatory requirements for the different types of MFIs are summarised in Table 3.7. It can be seen from the table and from the presentations above that the RCBs and S&Ls face more rigorous regulations from the BoG than the other self-regulated MFIs. Regulations of CUs are less stringent than the BoG regulations for RCBs and S&Ls but more demanding than those of the FNGOs, which in turn do not have to comply with several requirements. From the table, individual "susu" collectors and companies have the most liberal regulatory framework, a situation that poses a threat to their clients. "Susu" collectors are examined in this research as self-regulated MFIs with the least regulatory requirements.

This section has examined the regulations that govern the operations of various types of MFIs in Ghana. The conceptual framework and hypotheses relevant to the research questions are developed in the next section.

3.6 HYPOTHESES DEVELOPMENT

The hypotheses developed for testing are organised into three areas: i) those that examine interrelationships among the performance variables, ii) those that examine the direct effect of regulations on the performance measures, and iii) hypotheses investigating the indirect effect of regulations on the relationships between the performance variables.

3.6.1 Interrelationships among the Performance Variables

There is some debate about the expected relationship between outreach (breadth and depth) and financial sustainability. Microfinance institutions aim at reaching the poor with financial services (Mersland and Strom, 2010) but reaching the poor with credit may be very costly. This is because making small loans involves high transaction and administration costs per loan (Meyer, 2002; Hulme and Mosley, 1996; Gonzalez, 2007). This law of decreasing unit transaction costs with larger loans means that serving the less poor would enhance the potential to reach financial sustainability (Meyer, 2002).

Opposing researchers such as Otero (2000), Otero and Rhyne (1994) and Robinson (2001) have argued that, outreach and financial sustainability are complementary because by increasing numbers of borrowers MFIs are able to achieve economies of scale and reduce costs. Others including Hulme and Mosley (1996) failed to find a complementary relationship, arguing that a trade-off might indeed exist between outreach and financial sustainability since the desire to be financially sustainable would compel MFIs to provide financial services to the less poor. Supporting this view, Navajas et al (2000), in a study of five Bolivian MFIs, reported that sustainable MFIs tend to target less poor clients because of the potential benefit from economies of scale.

Table 3.7 Legal and Regulatory Requirements for Different Types of MFIs – Ghana

	Type of Institution	Permitted Activities	Requirement for Entry		Capital Adequacy	Portfolio Quality	Liquidity Reserves	Area Restriction	External Regulation	Prudential Supervision
			Organizational Format	Required Minimum Capital						
Rural Banks	Specialized Bank	Limited Banking services, savings, deposits, loans	Limited liability Co. Unit Bank	US$67,000 equivalent	6% of risk asset	Provisioning 1% Current	8% Primary 20 – 30% Secondary	Rural District	Co. Registrar; Bank of Ghana	BSD – Bank of Ghana
Savings & Loans Company	NBFIs	Limited Banking services, savings, deposits, loans	Limited liability company	US$ 2 million equivalent	10% of risk asset	ditto	10% Primary 15% Secondary	None	Co. Registrar; Bank of Ghana	NBFID – Bank of Ghana
ARB Apex Bank	Apex Fin. Inst.	Apex bank functions	Limited liability Company	US$133,000 equivalent	6% of risk asset	ditto		None	Co. Registrar, Bank of Ghana	BSD – Bank of Ghana
CUA	Apex Fin. Inst.	Wholesale loans/deposits, central capital fund, training assessment	2nd-tier members' Cooperative Association	Not Applicable	Int'l (CCA – WOCCU) Standards	Int'l(CCA -WOCCU) standards	Int'l(CCA-WOCCU) standards	None	Dept. of Cooperatives Bank of Ghana	Dept. of Cooperatives Bank of Ghana
Credit Union	Credit Union	Deposits and loans to members only	Cooperative Association	Not Applicable	Int'l(CCA – WOCCU) Standards	Int'l(CCA -WOCCU) standards	Int'l(CCA-WOCCU) standards	None (Common Bond)	Dept. of Cooperatives Bank of Ghana	Credit Union Association of Ghana

NGOs – MFI	NGO	Micro-credit	Company limited by guarantee (not-for profit Trust)	Not Applicable	Not Applicable	N/A	N/A	None	Registrar of Companies	None
National Ass'n of Susu Collectors	Cooperative Society	Deposits and loans to member collectors	Cooperative Association	Not Applicable	Not Applicable	N/A	N/A	None	Dept. of Coop. Bank of Ghana	None
Individual Susu Collectors and Companies	Informal	Collecting & safekeeping of clients' savings and giving out small loans	Informal individual Enterprise	Not Applicable	Not Applicable	N/A	N/A	N/A	N/A	National Ass'n of Susu Collectors (GCSCA)

Source: Steel and Andah (2003) with some modification

BSD – Banking Supervision Department

NBFID – Non – Bank Financial Institutions Department

CCA – Canadian Cooperative Association

WOCCU – World Council of Credit Unions

The issue of a possible trade-off between outreach and financial sustainability has been empirically investigated. Hermes et al (2011), using data for 435 MFIs, found evidence of a trade-off between outreach to the poor and efficiency of MFIs. The report also showed that MFIs with low average loan size (an indicator of depth of outreach) are also less efficient.

Cull et al (2007), in a study based on a data set of 124 MFIs in 49 countries, investigated empirically whether there is a trade-off between the depth of outreach and profitability of MFIs. They examined different lending methods of the MFIs and their impact on outreach and the profitability and did not find evidence of a trade-off between outreach and the profitability of the MFIs. However, there was evidence of a trade-off when outreach was varied by lending type. The results showed that MFIs that provided individual loans performed better in terms of profitability but the percentages of poor borrowers and female borrowers in the loan portfolio were lower than for MFIs that provided group loans. Their study further supported the finding that individual-based MFIs increasingly target wealthier clients than the group-based MFIs. Kereta (2007) found no evidence of a trade-off between financial sustainability and outreach.

Gonzalez and Rosenberg (2006), on the othe hand, argued that there may be relatively limited divergence between improving sustainability and reaching poorer clients. According to them, it is not difficult to find MFIs that are profitable despite serving very poor clients. In support of this position, other studies such as by Kar (2011) and de Crombrugghe et al (2008) have suggested that financial sustainability can be achieved without necessarily increasing average loan size. In other words, financial sustainability can be achieved while maintaining a focus on the poor. Both studies recommended the implementation of a better interest rate policy, increase in the breadth of outreach and adoption of group-based lending methods to ensure both financial sustainability and outreach to the poor.

It must be noted, from the above review, that the relationship between financial sustainability and outreach is inconclusive in the literature. As mentioned earlier, BoG regulated MFIs in Ghana are able to increase breadth of outreach due to access to more funds than the self-regulated MFIs. By increasing breadth of outreach, the BoG regulated MFIs are likely to enjoy economies of scale and reduce costs, thereby achieving financial sustainability. However, because of the relatively high transactions costs associated with processing small loans, BoG regulated MFIs may target wealthier clients in their quest to be financially sustainable. In light of this, the following null hypotheses are developed for testing:

Hypothesis 1a: Breadth of outreach is unrelated to the financial sustainability of MFIs in Ghana

Hypothesis 1b: Depth of outreach is unrelated to the financial sustainability of MFIs in Ghana

The literature on microfinance suggests that financially sustainable MFIs may have the capacity to increase breadth of outreach (Otero, 2000) through access to commercial sources of funding. Such MFIs may be able to enhance the impact of their programmes on their clients' lives and businesses (Navajas et al 2002) by designing demand-oriented services and training facilities for their clients. It is expected that these factors would raise the profitability of loan-financed projects of their clients (Zeller and Meyer, 2002). Due to the methodological difficulties of impact studies, few studies have investigated the relationship between financial sustainability and impact. A study by Mosley and Hulme (1998) ranked MFIs by indicators of financial sustainability and showed a positive and high correlation between financial sustainability and impact generation. However, the study did not differentiate between regulated and unregulated MFIs in addressing financial sustainability and the impact of the MFIs on their clients. The study has also been criticized for methodological shortcomings such as inconsistencies in sample sizes and in the quality of control groups (Morduch, 1998). Nevertheless, it can be inferred that financially sustainable MFIs are likely to have an impact on the lives and businesses of their clients. The null hypothesis developed for testing is that:

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses.

3.6.2 The Direct Effect of Regulation on Performance of MFIs

In Ghana, just like in many developing countries, the microfinance industry was originally dominated by non-bank institutions lacking the resources to deal with the necessary reporting requirements (WWB, 2004) and therefore legally prevented from mobilizing voluntary savings. Regulated MFIs are able to grow their loan portfolios for on-lending to clients from savings mobilized (Fiebig, Hannig and Wisniwski, 1999). Furthermore, saving mobilization enables MFIs to reduce their dependence on donors, because the amounts raised can be used

to finance their loan portfolios. Saving mobilization also helps the MFIs to adhere to strict financial discipline which ultimately improves their operational efficiency. Savings could therefore broaden outreach of MFIs (Wisniwski, 1999; Robinson, 2001; Otto and Ashta, 2012). Since BoG regulated MFIs are able to increase funds available for lending through mobilization of savings, they should be able to reach out to more clients than the self- regulated MFIs. However, complying with regulation and its associated supervision can be costly (Cull et al, 2011). In view of this, some have argued that regulatory involvement may lead to a "mission drift," shifting the focus from serving poor clients to serving wealthier clients (Hartarska and Nadolnyak, 2007).

Summary statistics from the MicroBanking Bulletin No. 10 (cited in Hartarska and Nadolnyak, 2007), indicated that regulated MFIs serve wealthy clients. Similarly, Paxton and Cuevas (2002) found that since unregulated MFIs have deeper outreach; they are able to serve the poorer segments of the society better than the regulated MFIs. Results from a study by Cull et al (2011) also showed a positive relationship between supervision and loan size, meaning that the higher the prudential supervision, the larger the loan size and the less deep the outreach. It is clear from the discussions above that regulated MFIs would have greater breadth of outreach than the unregulated MFIs. Furthermore, since regulation can be costly, regulated MFIs would reach out to more wealthy clients than the unregulated MFIs.

In Ghana the BoG regulated MFIs should be able to increase the breadth of outreach more than the self-regulated MFIs because of access to clients' deposits together with private sector capital. However, they would be inclined to target less poor clients to guarantee full payment of their loans. Furthermore, there are economies of scale to regulatory costs; so that MFIs are likely to face higher average cost than the bigger financial institutions (Elliehausen and Kurtz, 1988 cited in Cull et al, 2011). Consequently, BoG regulated MFIs would increase services to wealthier clients to improve their ability to absorb regulatory costs. In view of the above position, the following null hypotheses are developed for testing:

Hypothesis 2a: Regulation has no effect on breadth of outreach for MFIs in Ghana

Hypothesis 2b: Regulation has no effect on depth of outreach for MFIs in Ghana.

As discussed earlier in section 3.3.2.1A, financially sustainable MFIs are those that are able to cover cost (both financial and non-financial) and make profits on services to clients (Copestate

et al, 2002). Regulation provides an avenue for MFIs to be financially sustainable. While regulation helps to ensure security of deposits and soundness of the financial market (Chiumya, 2006), it also protects the microfinance industry from fraudulent activities by increasing transparency in financial accounting and transaction reporting (Meagher, 2002). As a result, regulated MFIs would improve managerial processes and enhance liquidity management through good governance. Additionally, regulation would help MFIs to build confidence among clients through appropriate capital management, and earnings and strong internal control mechanisms (Haq et al, 2008). Regulated MFIs could therefore attract commercial funding since owners of such funds would like to invest in MFIs with good financial performance. Ultimately, such MFIs could increase their financial sustainability.

It is however, argued that stringent regulation may stifle the flexibility of operations of MFIs and hold back innovation in lending which has been the driving force behind MFIs' ability to reach out to many poor clients (Hartaska and Nadolnyak, 2007). Nevertheless, Meagher (2002) asserted that a regulatory structure that accommodates the special features of MFIs would help MFIs to grow. A study by Paxton and Cuevas (2002) on outreach and financial sustainability of regulated and unregulated MFIs showed that the regulated MFIs achieved financial sustainability while the unregulated MFIs did not. It can therefore be inferred that regulated MFIs have the potential to be financially sustainable and the services of financially sustainable MFIs are more likely to have an impact on the lives and businesses of their clients than services from unregulated MFIs. The foregoing discussions show that regulated MFIs are more able to achieve financial sustainability than the unregulated MFIs. By improving breadth of outreach and financial sustainability of MFIs, regulations could enhance the impact that MFIs make on their clients' livelihood.

In Ghana the majority of MFIs began as unregulated financial NGOs (heavily dependent on donor subsidies and grants) with a focus on social goals rather than financial sustainability. While still less regulated, some have grown in size and scale of operation. The desire of some FNGOs to become regulated is pushing them to work hard towards improving their financial performance. This should enable them to improve their impact on their clients' livelihood, especially those with small businesses. In view of this the following null hypotheses are developed for testing:

Hypothesis 2c: Regulation has no effect on financial sustainability of MFIs in Ghana.

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses.

3.6.3 Impact of Regulation on the Relationship between the Performance Variables

From the discussions above, breadth of outreach is argued to have a positive relationship on financial sustainability of MFIs while small loan sizes to a high percentage of women clients (depth of outreach) would reduce financial sustainability. It is also postulated that regulation could enhance breadth of outreach but reduce depth of outreach. It follows therefore, that by pushing MFIs to expand their breadth of outreach, regulations could help improve financial sustainability of MFIs. Similarly, the reduction in depth of outreach, following regulation of MFIs, should enhance their financial sustainability as operations efficiency is improved from bigger-sized loans. Following from these positions the null hypotheses below are developed to investigate the mediating role of regulations on the relationships between breadth and depth of outreach and financial sustainability of MFIs.

Hypothesis 3a: Regulation mediates the relationship between breadth of outreach and financial sustainability such that BoG regulated MFIs have greater breadth of outreach and are therefore likely to be more financially sustainable than self- regulated MFIs in Ghana.

Hypothesis 3b: Regulation mediates the relationship between depth of outreach and financial sustainability such that self-regulated MFIs in Ghana have greater depth of outreach and are therefore likely to be less financially sustainable than BoG regulated MFIs in Ghana.

It is posited in section 3.6.1 that by enabling MFIs to increase the variety of products to clients and breadth of outreach, financially sustainable MFIs would be able to make a positive impact on their clients' livelihood, especially those with small businesses. It is also argued in section 3.6.2 that regulations would enhance the impact that MFIs make on their clients' businesses. If the two positions are considered together, it could be contended that by enhancing the financial sustainability of MFIs, regulations would enable MFIs to improve impact of their services on their clients' small businesses. The null hypothesis below is therefore drawn for testing:

Hypothesis 3c: Regulation mediates the relationship between financial sustainability and impact such that BoG regulated MFIs in Ghana have greater financial sustainability and are therefore more likely than self- regulated MFIs to make a positive impact on their clients' businesses.

The above hypotheses are summarized in figure 3.2 below which show the relationships denoted by the hypotheses tested.

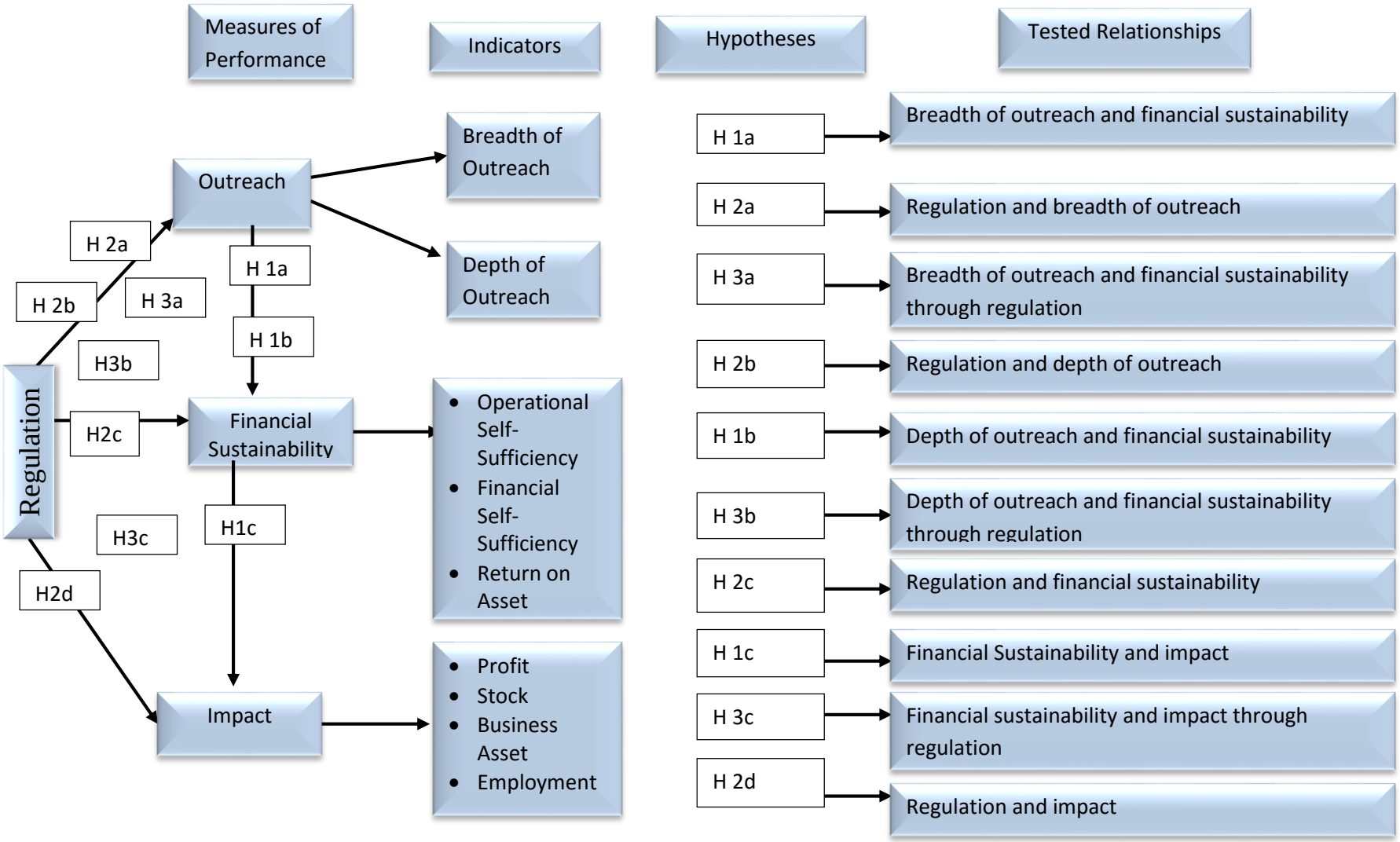
3.6.4 Factors Controlled for in Testing the Hypotheses

Factors such as the products and services provided by MFIs, their sizes and ages affect their performance in terms of outreach, financial sustainability and impact. These factors are therefore, controlled for in testing the hypotheses that examine the direct and indirect effects of regulations on performance of MFIs. Products of MFIs were discussed in section 2.5 and include financial products such as loans, savings and micro insurance as well as non-financial services such as personal and enterprise development. These products and services may have a bearing on performance of the MFIs. Outcomes from providing both financial and non-financial products and services as opposed to only financial products were discussed in section 2.5.2.2. Some researchers have argued that provision of financial products and services alone will improve financial sustainability of the MFIs, since the provision of other non-financial services will be carried out at a cost to the MFIs (Otero, 1994). Others are of the view that the provision of both financial and non-financial products and services will have better impact on the businesses of MFI clients (Bhatt and Tang, 2001; Maes and Foose, 2006). The evidence is inconclusive.

Many MFIs in Ghana provide only financial services and only few provide both financial and non-financial services to their clients. The provision of financial services alone is likely to increase breadth of outreach since MFIs may not have to incur extra costs in providing non-financial services.

The size of a MFI may also have a bearing on their performance. The size of an MFI is measured in terms of total assets. Therefore, an MFI with a large total asset base would be bigger in size than one with a small asset base (Kar, 2011). A study by Hartarska and Nadolnyak (2007) showed that MFIs with bigger endowments would be efficient and could stand the chance of attracting additional capital from investors for their operations.

Figure 3.2 A Conceptual Framework showing the Relationship between Regulation and the Three Performance Measures



This is because investors are willing to provide equity to MFIs with good performance as indicated by their sizes. This means as MFIs in Ghana increase their total asset base, they are likely to increase breadth of outreach, possibly achieve financial sustainability and make an impact on their clients' businesses. To remain financially sustainable, MFIs may have to focus on the less poor clients.

It can be argued from the discussion in section 2.6.4 that as MFIs advance in age, they move from dependence on donor grants and soft loans to equity finance, making it possible to gain access to commercial funding and expand their operations. This means, more matured MFIs would be able to take advantage of economies of scale and thereby reduce their operational expenses (Kar, 2011). Age of MFIs may therefore have an effect on the performance of MFIs. For instance, a more matured MFI in Ghana is likely to increase breadth of outreach as a result of access to commercial funding, achieve financial sustainability and ultimately make an impact on clients' businesses. However, depth of outreach of the MFI may reduce as the MFIs move to target less poor clients who will be able to pay for the cost of credit.

3.7 CONCLUSION

The aim of this chapter was to examine the performance of the microfinance industry in Ghana. Donors and investors are very much interested in the performance of MFIs to assess whether their resources are being used effectively. A review of the literature showed that various performance measures are used to assess the performance of MFIs. While outreach and financial sustainability are commonly employed, the need to consider the "critical triangle of microfinance" that is, outreach, financial sustainability and impact was highlighted. According to proponents of the critical triangle of microfinance, it is not enough to assess performance of MFIs with respect to outreach and financial sustainability alone but it is equally important to ascertain the impact of the products of the MFIs on their clients' livelihood. This is particularly necessary for evaluating the extent to which MFIs have met their mandate of reducing poverty. Empirical studies on the three measures of performance were reviewed. The effect of regulation on performance of MFIs was discussed. The regulatory framework for BoG regulated MFIs as well as the self-regulated framework for non-BoG-regulated MFIs were examined. The conceptual framework and hypotheses relevant to the research questions were developed to examine the interrelationships among the performance measures and the direct and indirect effects of regulations on performance of MFIs in Ghana.

With the various measures of the performance of MFIs and the effect of regulations on their performance examined, the next chapter discusses the research design and methods adopted by this study to test the hypotheses developed in chapter three.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 INTRODUCTION

The preceding chapters have reviewed the literature on microfinance in general and in Ghana specifically. Since the study aims at assessing the performance of MFIs and the effect of regulations on performance of MFIs, there is the need to design a methodology that will facilitate the collection of relevant and accurate data to enable the hypotheses formulated in the previous chapter to be tested.

This chapter discusses the research methodology adopted for the study in six sections. It begins with an illustration of the research process adopted. This leads to a discussion of the two dominant research philosophies, which have a bearing on the research approaches, types and methods used for the study. A justification for adopting a mixed method design that comprises both quantitative and qualitative approaches is provided in section three. Section four explains the quantitative phase of the study in terms of the methods used to collect data, sampling procedures, the data collection process and the technique used to analyse the data. The qualitative phase is presented in section five. These include the sampling strategies and the data collection and data analysis methods. The chapter concludes in section six.

4.2 THE RESEARCH PROCESS

Research is described as a systematic investigation that involves data collection, analysis and interpretation in a way that enables the researcher to understand, describe, predict or control an educational or philosophical phenomenon or to empower others (Mertens, 2005, p. 2). The research process begins with identifying the philosophical assumptions underlying the research which determines the research approach chosen. The philosophical assumption and research approach then determine the appropriate research types and research methods to be adopted (Salkind 2012; Cooksey, 2008; Creswell, 2003, 2007; Mertens, 2005; Denzin and Lincoln, 2005; Yin, 2009). Cooksey and McDonald (2011, p. 188) advise that "it is good practice to let the problem inform the choice of the most suitable and feasible paradigm assumptions, practices and methodological choices." I argue that my research problem and research questions stated in chapter 1 determined the research approach, types and research methods adopted for the study.

Figure 4.1 The Research Process

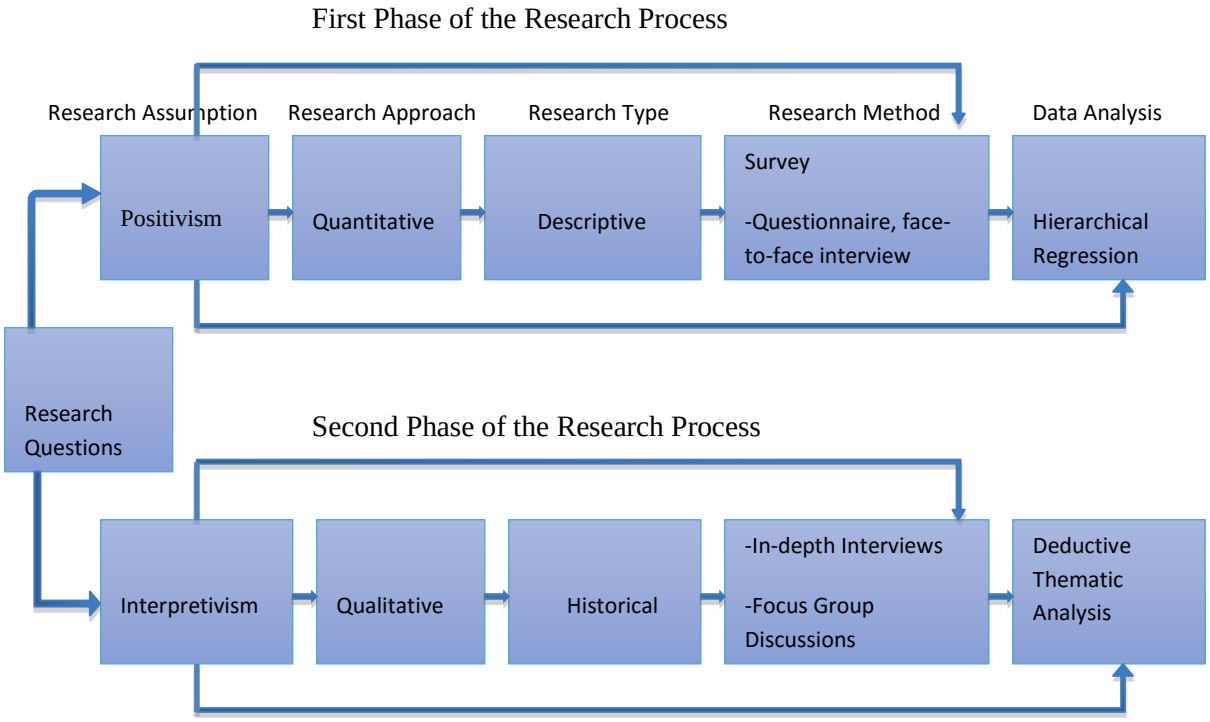


Figure 4.1 outlines my research process which begins with the development of my research questions and subsequent philosophical assumptions. The philosophical assumptions informed the choice of research approaches, types and methods and the data analysis adopted for the study. Specifically, my positivist orientation influenced my choice of the quantitative approach involving the use of survey methods for data collection and quantitative analytical techniques to test the hypotheses formulated in chapter three. The need for in-depth understanding of the performance of MFIs and to triangulate the findings from the quantitative approach led to a second phase of the study where qualitative approach was adopted (Figure 4.1). The next section explains the philosophical assumptions and how they influenced the choice of research approaches and methods used in this study.

4.3 RESEARCH PHILOSOPHIES

Essentially there are two dominant philosophical assumptions or paradigms that guide the choice of methodologies employed in social science research. These are positivist and interpretive paradigms (Matveev, 2002). Kuhn (1970, p. 175) defined a paradigm as "a set of beliefs, values and techniques which is shared by members of a scientific community, and which acts as a guide or map, dictating the kinds of problems scientists should address and the types of explanations that are acceptable to them." According to Bogdan et al (1998, p.22)

paradigm refers to "a loose collection of logically related assumptions, concepts or propositions that orient thinking and research." Paradigm therefore refers to the overall configuration of the research, which includes the research questions addressed and the evidence gathered, the sources from which they are gathered and how such evidence is analysed and interpreted.

The positivist paradigm is based on the premise that an objective truth exists in the world which can be measured and explained scientifically (Matveev, 2002). Positivists therefore argue that reality consists of what is available to the senses, that is, what can be seen, smelt and touched. Reality is independent of human consciousness. It is objective, rests on order and is governed by strict, natural and unchangeable laws (Matveev, 2002). Creswell (2003, p. 7) noted that "positivism reflects a deterministic philosophy in which causes probably determine effects or outcomes." The positivist paradigm therefore, maintains that, since natural and human sciences deal with facts and not values, inquiry should be based upon scientific observation. In line with this, Blaikie (2007) argued that anything that cannot be verified by experience is meaningless.

Accordingly, if something can be observed it can be defined and quantified. Positivism thus, emphasizes quantifiable observations that lend themselves to statistical analysis (Crofts, Hungria, Monfires and Wood, 2011; Saunders et al 2007; Amaratunga, Baldry, Sarshar and Newton, 2002). An implication of this approach is that the observer must be independent of and must neither affect nor be affected by the subject of the research (Bryman, 2008; Gray, 2004). Positivists therefore, seek the facts or causes of social phenomena, with little regard to the subjective state of the individual (Amaratunga et al, 2002; Hussey and Hussey, 1997). This study is concerned with the effect of financial sector regulations on the performance of MFIs in promoting the growth of small businesses in Ghana. The performance of MFIs, such as their financial sustainability entails a reality that can be measured objectively. I am therefore predisposed to the positivist view which emphasizes quantifiable observations.

Positivism is critiqued on the grounds that social life is considered in many ways to be different from studying science in a laboratory. For instance, social research involves values, experiences and politics that cannot be separated from the data that the research produces (Hughes, 2006), contrary to the view held by positivists. In view of this, it is not possible to treat people as separate from their social contexts and they cannot be understood without examining their perceptions of their own activities. Hussey and Hussey (1997) asserted that researchers bring

their own interests and values to the research. Researchers are, therefore, not objective but part of what they observe.

Interpretivism emerged as a reaction to the deficiencies of positivism as a social science research paradigm. Interpretivist theorists assert that reality is internally experienced. It is socially constructed through interaction and interpretation of perceptions of the actors. Thus, reality is not objective but subjective (Sarantakos, 2002) and based on how people see it. Human beings occupy a central position in interpretivism and research helps to interpret and understand their social actions, the way they construct their lives and the meanings they attach to their actions. Interpretivism therefore takes account of and seeks to understand the social context of actions (Sarantakos, 2002).

In effect, the relevant issue is not the observable social action but rather the subjective meaning attached to such actions. Interpretivism asserts that natural reality (and the laws of science) is different from social reality. In view of this, the principles and methods of the natural sciences are not applicable to the study of societies (Crofts et al, 2011). For instance, the natural sciences look for consistencies in the data in order to deduce "laws," but the social sciences often deal with the actions of the individual (Gray, 2004). Thus, while the researcher in positivist paradigm focuses on facts by locating causality between variables and formulating and testing hypotheses (deductive approach), the researcher in interpretivist paradigm focuses on meanings by trying to understand what is happening and construct theories and models from the data (inductive approach) (Amaratunga et al, 2002). Creswell (2003, p. 8) asserted that "the interpretivist researcher tends to rely upon the participants' views of the situation being studied." This study is not only interested in capturing the performance of the MFIs but it is also concerned with why the MFIs achieve various performance levels and how regulation affects their performance. These enquiries lend themselves to subjective interpretation of reality, where the emphasis is on the participants' interpretation of the situation (Creswell, 2003; 2007).

In summary, while the study generally adopts the positivist stance because it is concerned with gathering of facts rather than impressions to measure the observable social reality of performance of MFls, it nevertheless adopts some aspects of the interpretivist stance for an enhanced understanding of how the MFIs perform, and the effect of regulations on their performance.

4.3.1 Quantitative and Qualitative Research Approaches

Research may be categorized into two distinct types: quantitative and qualitative according to the two dominant epistemological stances discussed above. Positivism uses quantitative approach to test hypothetical–deductive generalizations while interpretivism employs qualitative approach to inductively and holistically understand human experience in context–specific settings (Amaratunga et al, 2002).

Creswell (1994) defined quantitative research as a type of research that explains phenomenon by collecting numerical data that are analysed with the use of mathematically based methods (in particular statistics). Quantitative research is thus, based on the idea that social phenomena can be quantified, measured and expressed numerically (Hesketh and Laidlaw, n.d; Mamia, 2006). What is more, quantitative research emphasizes the causal relationship between variables and helps to reduce the whole to the simplest possible elements to facilitate analysis (Easterby-smith, 1991). Examples of commonly used research methods associated with quantitative approach are surveys, experiments, and scientific observation (Nardi, 2003; Sukamolson, 2007).

In contrast, qualitative research approach does not focus on numbers but on words and observation and so does not involve rigorous mathematical analysis (Punch, 2005; Zikmund, 2003). Another feature of qualitative research is that it emphasizes detailed examination of cases that arise in the natural flow of social life (Neuman, 2006). Accordingly, qualitative research focuses on naturally occurring, ordinary events in natural settings (Amaratunga et al 2002; Nardi, 2003). The emphasis of qualitative research on people's "lived experience" enables it to focus on the meanings people place on the events, processes and structures of their lives, while connecting these meanings to the social world around them (Amaratunga et al, 2002). One can therefore conclude that the main goal of qualitative research is to understand with more depth and sensitivity people's subjective understandings while acting in their social situations (Nardi, 2003). Examples of research types associated with the qualitative approach are case study and grounded theory with research methods covering participant observation, field research, in-depth interviews and focus groups (Nardi, 2003).

Both qualitative and quantitative research approaches have their strengths and weaknesses. Quantitative research allows for independence of the observer from the subject being observed

(Amaratunga et al, 2002; Matveev, 2002). This prevents the researcher from influencing the outcome of the research. Through the use of structured questions, quantitative research also ensures precision and standardized outcomes which can be coded and analyzed statistically. Consequently, quantitative research allows research to be conducted with relative ease and speed. Furthermore, the large sample size employed in quantitative research, allows for comparison and replication of the research (Sukamolson, 2007).

Table 4.1 Comparing Quantitative and Qualitative Research

Research aspect	Quantitative research	Qualitative research
Common purpose	Test hypotheses or specific research questions	Discovers ideas, used in exploratory research with general research objects
Approach	Measure and test	Observe and interpret
Data collection approach	Structured response categories provided	Unstructured, free-form
Researcher independence	Researcher uninvolved observer. Results are objective	Researcher is intimately involved results are subjective
Samples	Large samples to produce generalizable results (results that apply to other situations)	Small samples – often in natural settings
Most often used	Descriptive and causal research designs	Exploratory research design

Source: adapted from Zikmund et al (2013, p.136).

Quantitative research has, however, been criticized on the grounds that it simplifies and "compresses" the complex reality of situations, thereby providing an abstract and constrained perspective of social phenomenon (Mamia, 2006). Quantitative research restricts experience by directing research to what is perceived by the senses and by employing only standardized tools, based on quantified data to test hypotheses. By so doing, it fails to capture the real meaning of social behavior since the description of people's perspectives, intentions and meanings are difficult to gauge with quantitative research (Mamia, 2006; Sarantakos, 2002).

Qualitative research, on the other hand, provides a more realistic feel of the world that cannot be experienced with the numerical data and statistical analysis used in quantitative research. The qualitative research approach provides a holistic view of the phenomenon under investigation by portraying respondents' experiences and views in their own words, (Sarantakos, 2002; Nardi, 2003; Patton 1990). However, it fails to investigate causality between different research phenomena. Additionally, it is unable to explain differences in the quality and quantity of information obtained from different respondents, invariably leading to

inconsistent conclusions (Matveev, 2002). It is time consuming and relatively expensive to carry out compared with quantitative research.

While quantitative research differs from qualitative research in a number of ways such as the nature of data, and methods for collecting and analysing data, the two research methods complement each other (Punch, 2005; Mack, Woodsong, Macqueen, Guest and Namey, 2005). This has led researchers to advocate for a mixed methods approach to research (Miles and Huberman, 1994; Bryman, 2008). Combining quantitative and qualitative research helps to capitalize on the strengths of the two approaches and to compensate for the weaknesses of each approach (Punch, 2005; Bryman, 2008). This is the essence of triangulation in research. For example, semi-structured group interviews may be used to triangulate the results from data collected by questionnaires (Saunders et al, 2007) to enhance the validity of findings.

4.3.2 Justification for the use of Mixed Method Research Approach

This study focused on the effect of regulation on the performance of MFIs in promoting small business growth in Ghana. A mixed methods approach was used to address the research questions and research objectives outlined in chapter 1. The quantitative approach used a survey method to gather quantitative data from the MFIs. These were analysed empirically to identify the effect of regulation on performance of the MFIs. The results were then corroborated by qualitative information from in-depth interviews and focus group discussions with the managers of the MFIs. The aim was to provide a more comprehensive understanding of the performance of MFIs than could be obtained using only the quantitative approach. The impact of MFIs' programmes on their clients' businesses was also assessed using the "before and after" method of impact assessment and the results corroborated by qualitative information from focus group discussions. This presented a holistic view of the effect of regulations on performance of the MFIs.

The mixed method research approach for this study has a number of benefits. First, the use of quantitative research approach to establish relationships among the performance variables of outreach, financial sustainability and impact and to assess the effect of regulations on the performance variables was complemented by the qualitative study which explained the factors underlying the broad relationships established (Punch, 2005). In effect, the qualitative research approach helped to uncover additional information to that provided by the quantitative

approach. Second, the complementary strengths of the quantitative and qualitative research approaches helped overcome the limitations of each individual approach (mono-method research). Furthermore, the mixed method led to a comprehensive account of the subject under study. It provided a broader perspective and a deeper understanding of the performance of MFIs and the effect of regulations on their performance than could be achieved with one or the other approach (Bryman, 2008; Creswell and Plano Clark, 2011).

The mixed research approach covered two phases of the research process. The first phase, involving the quantitative approach, used survey questionnaire to examine the performance of MFIs and their clients' businesses. The second phase of the study adopted a qualitative approach by organizing in-depth interviews and focus group discussions with the managers of the MFIs and small business owners who were clients of the MFIs. The aim was to provide greater understanding of how regulations affected their performance than would be possible from the quantitative or qualitative method alone. The next section explains the research methods used to collect the quantitative data.

4.4 RESEARCH METHODS USED IN THE QUANTITATIVE STUDY

Research methods are the tools of data generation and analysis and are based on the research approach adopted (Sarantakos, 2002). Data collection tools generally used for quantitative study include survey, experiments and structured observation (Nardi, 2003) presented in Table 4.2 below. This study adopted the survey method discussed in the next sub-section.

4.4.1 Survey Method

Surveys involve the systematic gathering of information from respondents for the purpose of understanding and/or predicting some aspects of the behaviour of a sampled population (Sukamolson, 2007). Gray (2004) also described survey as a system for collecting information to describe, compare or explain knowledge, attitudes and behaviour. Surveys have become popular because of the ability to collect a large amount of data from a sizeable population in a highly economic way (Saunders et al, 2007; Gray, 2004). Large samples are feasible enhancing the statistical significance from analysis of the data. Furthermore, standardized questions are used to collect data, allowing for precision in measurement of variables. Survey data enables sub-samples of the data to be compared and relationships among the variables examined. What is more, surveys provide quick, inexpensive and efficient means of assessing information about

the population. However, poor survey construction and administration can undermine otherwise well-designed studies (Zikmund, 2003; Cherry, n.d). The design of a survey questionnaire depends on how it is to be administered (Saunders et al, 2000; Nardi, 2003).

Table 4.2 Quantitative and Qualitative Research Types and Methods

Quantitative Research	Qualitative Research
Types	**Types**
Descriptive*	Ethnographic
Correlational	Phenomenological
Quasi experimental	Historical*
Experimental	Grounded Theory
	Case Study
Methods	**Methods**
Survey* • Self-administered questionnaire* • Face-to-face Interviews* • Telephone interviews • Internet	In-depth interview*
Structured observation	Focus group discussions*
	Document Analysis
	Participant observation

Source: Compiled with information from Nardi (2003); Bryman, (2008); Zikmund et al. (2013)
*Research types and methods used in this study.

Generally, there are three common ways to administer surveys; using mail and self-administered questionnaires, personal interviews and telephone interviews. In self-administered surveys, questionnaires are mailed or administered directly to respondents who read instructions and questions and record their answers (Neuman, 2006). The use of questionnaires has an advantage of enabling a geographically dispersed sample to be reached at a relatively low cost. Respondents in isolated areas who are difficult to reach can be contacted more readily by mail. This method allows respondents to maintain their anonymity and avoid interviewer bias. Questionnaires can be completed at the respondent's convenience. It also ensures rapid data collection with minimal labour cost (Sukamolson, 2007; Neuman, 2006; Zikmund, 2003). However, self-administered questionnaires do not allow probing, prompting and clarification of questions, since no interviewer is present. Response rate may be low and may not be appropriate if respondents have limited writing skills (Sarantakakos, 2002; Cooper and Schindler, 2001).

Face-to-face interview is a purposeful discussion between an interviewer and a respondent (Saunders et al., 2007) with the aim of obtaining relevant information from the respondent. Face-to-face interviews are the most flexible type of survey. They can be used to administer

both structured questionnaires with specified but variable question sequences and unstructured questionnaires requiring a close rapport between the interviewer and the respondent (Cherry, n.d). Interviewers can also improve the quality of information received by asking complex questions requiring detailed information. They can make extensive probes with additional questions and gather supplementary information through observation (Cooper and Schindler, 2001; Neuman, 2006). Personal interviews may allow the interviewer to provide visual aids and devices where necessary. Among the survey methods, response rates are highest for personal interviews. These advantages notwithstanding, personal interviews tend to be the most expensive survey method. The cost of travel and training and supervising interviewers make personal interviews very costly compared to other survey methods. Interviewer bias is also greatest with this method, since the appearance, tone of voice, gestures and question wording may influence the response (Nardi, 2003; Cherry, n.d). While the presence of the interviewer helps to improve the quality of information received, respondents' anonymity is not guaranteed. Respondents may therefore feel reluctant to provide confidential information to strangers (Zikmund, 2003).

A number of factors are taken into consideration when choosing a method of data collection. They include availability of facilities, cost, sampling, response rate and the nature of questions asked (Neuman, 2003; McNeill and Chapman, 2005). In light of this, the researcher personally administered structured and semi-structured questionnaire to the MFIs to elicit information concerning their performance. The questionnaire was used given the type of information needed, that is, information relating to their outreach and sustainability. Face-to-face interviews were also used to collect data from the clients of the MFIs due to its flexible nature, coupled with the ability of the interviewer to clarify questions and also ask probing questions. These survey methods were preferred to the telephone and self-administered mail surveys for collecting quantitative data because of the unreliable telephone and postal systems in Ghana. The key variables in the research and their measurement for purposes of the survey are discussed next.

4.4.2 Measurement of Key Variables

A discussion on the measurement of key variables in this study is imperative given its importance in the design of the questionnaire. As discussed in section 3.3, there are various measures of performance of MFIs in the literature with the measures adopted dependent on the aims of the research. In this study, MFI performance is measured on the basis of outreach,

financial sustainability and impact. The indicators for these variables were presented and justified in sections 3.3.1, 3.3.2.1 and 3.3.3. The three measures are used to provide a holistic assessment of MFIs' performance (Zeller and Meyer, 2002). The next sub-sections explain how the variables in this study were measured.

4.4.2.1 Measurement of Outreach in this Study

As discussed in section 3.3.1 this study used the number of active clients within a given period as an indicator for the breadth of outreach. The average loan size and the percentage of women borrowers or clients were also used as indicators for the depth of outreach. These indicators are normally calculated for the annual financial statements and reports of the MFIs. The number of active clients includes borrowers, depositors and other clients who are currently accessing any financial services of the MFI (Rosenberg, 2009). Since microfinance covers not only micro loans and savings but also micro insurance (see section 2.2), the MFIs provided information relating to their total number of borrowers, total number of depositors and total number of micro insurance clients (not all MFIs in Ghana provide micro-insurance). These were summed up to provide the total number of active clients for each MFI. The average loan size and the percentage of women clients for each MFI were also ascertained during the survey.

4.4.2.2 Measurement of Financial Sustainability in this Study

A detailed explanation of the indicators of financial sustainability is given in section 3.3.2.1B This study used the operational self-sufficiency (OSS), financial self-sufficiency (FSS) and the return on assets (ROA) as indicators for financial sustainability of the MFIs. The OSS was measured as the ratio of operating income to the sum of operating expenses, financing costs and provision for loan losses (Barres et al, 2005; Ledgerwood, 1999). The ratio shows how well the MFIs are able to cover their direct cost including all financing costs incurred from their operating revenue. The financial performance section (Section D) of the questionnaire for the MFIs requested the respondents to complete a table with information about their operating revenue, operating expense, finance expense and loan-loss provision expense. This information was used to calculate the OSS of all the MFIs.

The FSS of the MFIs was also measured by comparing the operating income to operating expenses, financing costs, provision for loan-losses and adjusted cost of funds. The ratio shows whether revenue has been earned to cover both direct costs such as financing costs, operating expenses, provision for loan-losses and indirect costs including adjusted cost of capital

(Ledgerwood, 1999). The FSS thus, "measures not only an MFI's ability to cover its operating costs but also its ability to maintain the value of its equity relative to inflation and to operate without subsidy" (Barres et al, 2005, p. 69). The adjusted cost of capital was first calculated to enable the calculation of the FSS. The formulas used by Ledgerwood (1999) and Barres et al (2005) were adopted with provisions made for inflation and expense. The details of the calculations are in Appendix I.

Return on assets for each MFI measured the net income produced by total assets during the period under investigation by comparing the net income to the average total assets (Barres et al, 2005; Arsyad, 2005). ROA shows how efficiently the MFIs are managing their assets to optimize profitability. Section D2, D3 and D4 of the questionnaire for the MFIs requested the institutions to provide information on their incomes, taxes and assets which was used to measure the ROA.

4.4.2.3 Measurement of Impact in this Study

Of particular interest for this study is the extent to which MFI programme benefits reach the poor and the impact of these benefits on their businesses. In view of this, the study evaluated impact by assessing business performance indicators such as profits, stock (inventory), assets and level of employment of MFI clients. The study adopted the "before and after" methodology where clients were interviewed based on the performance of their businesses on these indicators before their loans or other dealings with the MFIs and the change that occurred after receiving the loans and other services. The questionnaire for clients of the MFIs requested information on level of stock, assets, employment and profits before and after accessing the loans and/or other services from the MFI.

4.4.2.4 Measurement of Regulation

The study was interested in examining the difference between the performance of BoG regulated MFIs and self-regulated MFIs in promoting small business growth in Ghana. To this end, regulation was measured by assigning 1 to BoG regulated MFIs and 0 to the self-regulated MFIs. Section A1 of the questionnaire for the MFIs asked the institutions to provide their names. The names enabled the categorization of the MFIs into BoG regulated and self-regulated MFIs.

Having discussed the measurement of key variables, it is necessary to examine the validity and reliability of the measures to ascertain the adequacy of the instruments used to measure the variables.

4.4.3 Validity and Reliability of Measures

Validity and reliability are central to measurement of variables. They are both concerned with how well measures are connected to the constructs they represent (Neuman, 2006). Validity refers to the extent to which an instrument measures what it is supposed to measure (Zikmund, 2003). There are four main forms of validity: content validity, is the extent to which a measuring instrument provides adequate coverage of the concept it is intended to measure; face validity refers to a subjective judgment by the scientific community that an indicator accurately measures the construct; criterion–related validity is the degree to which a measure correlates with other measures of the same construct; construct validity (or measurement validity) is the extent to which a measure confirms a network of related hypothesis generated from a theory based on the concepts (Neuman, 2006; Bryman, 2008; Zikmund, 2003).

Reliability on the other hand is the extent to which any measuring procedure yields the same results on repeated trials. Reliability is therefore concerned with the consistency of a measure of a concept (Punch, 2005; Bryman, 2008). Two main aspects of reliability worth mentioning are consistency over time (or stability) and internal consistency. A measure is said to be consistent over time if the administration of the same instrument under some condition at two points in time yields the same results. The test-retest reliability is used to determine the stability of a measure (Punch, 2005). Internal consistency refers to the degree to which instrument items are homogeneous and reflect the same underlying construct(s) (Cooper and Schindler, 2001). Statistical techniques such as the split-half techniques and Cronbach alpha (co-efficient alpha) can be used to assess the internal consistency of the measures (Bryman, 2008; Cooper and Schindler, 2001). Face and content validity are covered in section 4.4.5. and section 4.4.7.1 and section 5.2.1 discuss how the reliability of the measures used in this study is determined.

The preceding section has dealt with the validity and reliability of measures of variables. The next section discusses the design of the questionnaire used for gathering the quantitative data for the study.

4.4.4 The Design of the Questionnaire

Questionnaire design is one of the most important stages in the survey research process (Zikmund, 2003). This is because the construction of well written and manageable questionnaires and interview schedules invariably lead to the collection of reliable and valid data in survey research (Nardi, 2003). The development of the questionnaire involves decisions relating to question content, response format and scaling, sequencing and layout, each explained below.

4.4.4.1 Question Content

The first thing to consider when developing a questionnaire is the question content. The questionnaire in this study covers the performance measures of MFIs and related issues as presented in section 4.4.2. A good questionnaire requires well-organized content devoid of ambiguity, confusion and vagueness, double–barrelled items, complex and burdensome questions, items involving emotional language, prestige bias and leading questions (Neuman, 2003; Bryman, 2008). Bryman (2008) advised that the questions must be written in clear and simple language, but must be relevant to the research topic. In line with this, a number of steps were taken to ensure that the questions were well written. They include review by peers and supervisors and pre-testing to validate the instruments, which were modified to suit the study context and respondents. The questionnaire was also pilot tested with three Chief Executive Officers (CEOs) of MFIs. The feedback from the two pilot tests was used to modify the questionnaire.

4.4.4.2 Response Format and Scaling

Question format and scaling were also considered to help produce accurate and meaningful data. Generally, questions are open or close-ended. Open-ended questions allow respondents to answer the questions in their own words. Respondents are able to explain their answers uninhibited and in-depth. While this type of question format is beneficial, especially where the range of response is not known, a potential disadvantage is that interviewer bias may influence the responses. Also the coding process is extensive and time consuming. Close–ended questions on the other hand allow for fewer variations in people's responses. This question format provides respondents with a set of standardized answers from which to select the most

applicable. It has the advantages of being easier and quicker for the respondents to complete. It also requires less interviewer skills and is easier to code and analyse (Nardi, 2003; Zikmund, 2003). The questionnaire used in this study included both open-ended and close-ended questions. Close-ended questions were mainly used for clients of the MFIs to assess impact of the MFI products on their businesses. However, open-ended questions were used to solicit responses on the financial performance of the MFIs, which vary considerably from one institution to the other. Participants were asked to provide values that represent performance of their MFIs on the indicators used for the sustainability and outreach variables as well as for other background information.

There are various types of scales of measurement: nominal, ordinal, interval and ratio scales (Zikmund, 2003). This study used nominal, ordinal and ratio scales. Scales help enhance the degree of precision and reliability in measurement of the concepts under study (Sarantakos, 2002). Factors such as information requirements, the goals of the survey, ease of development and administration, cost and the data analysis process, were considered in choosing the scales (Nardi, 2003; Scheuren, 2004). Both nominal and ratio scales were used for questions related to loan disbursement, savings, donations and financial performance of MFIs which required respondents to provide actual values or to state whether or not they provided the services. Nominal and ratio scales were also used to measure the business type, loan repayment and savings of the clients of the MFIs. A combination of ordinal and ratio scales was used to measure employment, business assets and business profit of the clients of the MFIs. Again, respondents were required to provide whole values or indicate how the acquisition of loans benefited them. The use of a variety of scales is recommended to enhance the discrimination among respondents (Malhotra, 1999).

4.4.4.3 Question Sequence

Questions are to be sequenced in a way that minimizes discomfort and confusion for respondents (Neuman, 2003). To this end, questionnaire instruments are to be organized with interesting and simple questions first, while sensitive questions are placed last. It is also recommended that questions on personal demographics are placed at the tail end of the questionnaire. This would encourage respondents to participate in the survey and provide an incentive to complete the questionnaire (Nardi, 2003). In line with this, the first questions in this study were simple to understand and easy to answer.

There were two sets of questionnaires, one for the MFIs and the other for the clients of the MFIs. The questionnaire for the MFIs comprised eight sections. Section A covered types of lending and main clients of the institution. Section B dealt with savings, followed by micro insurance in section C. Sections D and E sought information on the financial performance and donations (subsidy) received by the MFIs respectively. Section F dealt with outreach of the institutions, while section G focused on the effect of MFIs programmes on micro and small businesses. Finally, questions related to demographic characteristics of respondents were placed in section H. The questionnaire for the clients of MFIs consisted of seven main sections. Section A was devoted to business details followed by questions on loan repayment in section B. Sections C, D and E sought information on clients' savings, business assets, and employment respectively. Questions related to business profit and demographic characteristics of the clients were covered in section F and G. The questionnaire was translated for clients of the MFIs who could not read or understand the English language.

4.4.4.4 Layout

A good layout improves accuracy and coherence of the questionnaire (Neuman, 2003). In view of this, much attention was given to the length and number of questions in the questionnaire. Related questions were organized into sections with subtitles to enhance structure of the questionnaire and respondents' understanding of the scope of questions (Zikmund, 2003).

The number of pages in each questionnaire was kept to a minimum to minimize the time required to complete the questionnaire. A cover letter was provided with details of the research – that is, its purpose, completion time and confidentiality. Furthermore, anonymity of the information to be collected was assured. Instructions on how to complete the questionnaire were provided at the beginning of each section. The questionnaires, the cover letter together with the participants' information sheet were approved by the University of New England's Human Research Ethics Committee with an approval number of HE13-006.

Table 4.3 presents the main variables in the study along with the questionnaire items that addressed them. The variables for outreach and financial sustainability were in the questionnaire for the MFIs while the variables for impact were in the questionnaire for clients of the MFIs.

Table 4.3 Links between the Questionnaire Items and the Variables Examined

Variables	Questionnaire Items
MFI	
1. Outreach*	
a. Breadth	A5 – A7, B1 – B5, C1 – C4, F1
b. Depth	
i. Average loan size	A12
ii. Percentage of Women clients	F1
2. Financial sustainability*	
a. Financial self-sufficiency	A2 – A7, D2, D3, E1 – E7
b. Operational self-sufficiency	A2 – A7, D2, D3
c. Return on Asset	D3, D4
Clients	
3. Impact**	
a. Increase in stock	D2, D7,
b. Increase in profit	F1 – F4
c. Increase in asset	D1 – D7
d. Employment	E1 – E6

*Variables are covered in questionnaire for the MFIs
**Variables are covered in questionnaire for the clients of the MFIs

4.4.5 Pre-test of Questionnaire

After considering the content, sequencing, scaling and layout of the questionnaire, the first draft of the instrument was presented to the researcher's supervisors at the University of New England and three Chief Executives of the MFIs to review. This was done to assess the content and face validity of the variables measured, and to ensure that respondents can understand and address the questions. The reviewers suggested improvements in a number of areas including rephrasing ambiguous and poorly framed questions. The suggested changes were made to ensure validity of the questionnaire and enhance response rate. After this, a pilot survey was carried out with a convenient sample of six MFIs and four clients of MFIs. The pilot survey revealed that a number of questions were not well understood by the target respondents. Again the questions were rephrased and the questionnaire reformatted. A number of minor modifications were also made to the translated version of the questionnaire. The two sets of questionnaires and cover letter together with the ethics approval number are presented in Appendix D, E and F respectively. The next section focuses on the collection of quantitative data for the study.

4.4.6 Data Collection

This section discusses the population, sampling and data collection procedures adopted in collecting quantitative data for the study.

4.4.6.1 Population

The population or universe of units from which the sample was selected is the MFIs in the Ashanti and Greater Accra Regions of Ghana. The microfinance industry in Ghana is divided into two zones for effective administration by the industry body, the Ghana Association of Microfinance Companies (GAMC). The northern zone comprises Ashanti, Brong Ahafo, Northern, Upper West and Upper East regions while the Southern zone covers Greater Accra, Central, Eastern, Volta and Western regions. The Ashanti region was chosen for this study because it has the highest number of microfinance institutions in the northern zone, while the Greater Accra region, where the national capital is located, represents the southern zone. Furthermore, MFIs are homogenous with similar characteristics in terms of products provided to their clients (loans, savings, micro-insurance). The sample of MFIs selected from the Ashanti and Greater Accra regions is therefore representative of MFIs in Ghana.

Three categories of respondents were chosen for the purpose of the study. These were:

- The Rural and Community Banks (RCBs), regulated by BoG;
- The Susu companies, now referred to as microfinance companies, not subject to BoG regulations; and
- Clients of both MFIs – i.e. those regulated by BoG and the susu companies.

In total the population of MFIs in the Ashanti region comprised 23 rural and community banks (RCB) regulated by the BoG and 110 self-regulated MFIs (i.e. regulated by their parent bodies). There were 7 BoG regulated RCBs and 115 self- regulated MFIs in the Greater Accra region. For the purpose of this study self-regulated MFIs were limited to susu companies and exclude the credit unions. This is because although credit unions fall under self-regulated MFIs, their mode of operations differs from the other self-regulated MFIs. Credit unions are member driven, that is, their customers are members who own the institution. Furthermore, credit unions are not-for-profit financial cooperatives whose earnings are paid back to members in the form of high interest rates on savings and low rates on loans. This is not so with the other self-regulated MFIs which are for profits and are not member owned (WOCCU, 2005).

4.4.6.2 Sampling

Sampling refers to the process of selecting part of a population for investigation with the aim of making inferences about the entire population (Cooper and Schindler, 2001). The two main sampling methods are probability and non–probability sampling. Probability sampling refers to randomly selecting samples such that each unit in the population has a known chance of being selected. Examples include simple random sampling, systematic sampling, stratified sampling, and cluster sampling. Non–probability sampling occurs when selection of the sample is based on personal judgment or convenience and does not guarantee the probability of each unit's inclusion in the sample (Zikmund, 2003). Examples of non–probability sampling methods are convenience sampling, purposive sampling, snowball sampling and quota sampling. The appropriate sampling method must take account of the requirements of the research, its objectives, the availability of funds and the accessibility of the respondents (Malhotra, 1999).

A sampling frame of the regulated microfinance institutions (RCB) in the Ashanti Region and Greater Accra Region was compiled from a list of rural banks sourced from the Association of Rural Banks (Apex bank). The study used the total population of 30 regulated MFIs that is, 23 and 7 from Ashanti and Greater Accra regions respectively. A sampling frame of the self-regulated MFIs was sourced from the Ghana Association of Microfinance Companies (GAMC). Although there were about 110 microfinance companies in the Ashanti Region at the time of data collection, microfinance companies established before or by 2011 were targeted for the study to ensure they had significant performance history. This reduced the number of microfinance companies in the sampling frame to 48. Although they differ in some respects from the BoG regulated MFIs above, microfinance companies are a homogeneous group with similar characteristics with respect to products provided to their clients (loans, savings and micro insurance) and use of mobile bankers to collect loan repayment from clients on a daily or weekly basis. A cluster sampling, based on location, was used for the sample selection. The 48 microfinance companies were allocated to 5 clusters based on geographical location and 6 companies in each of the clusters randomly selected for the study, a total of 30 companies.

The same process was followed in the Greater Accra region. The population of 115 microfinance companies in the Greater Accra Region were allocated to 5 clusters based on geographical location and 4 companies in each of the clusters were randomly selected for the study, a total of 20 companies. In all, 50 microfinance companies (30 and 20 from Ashanti and

Greater Accra Regions respectively) were selected. The sample of MFIs was representative of the population in the various location clusters.

To assess the impact of MFIs' products on the businesses of their clients, the MFIs were asked to select a maximum of 4 clients each for interview. Each MFI provided a list of clients. With the help of the project officer for each MFI, a maximum of 4 clients were randomly selected for the interview. A total of 172 clients (82 from the regulated and 90 from the self- regulated MFIs) were selected for interview. Banerjee et al (2008); Kondo (2007) and Coleman (2006) suggested the use of new clients of an MFI as a control group in assessing the impact of microfinance. This is because the new clients are yet to use credit while the regular clients would be in the treatment group. However, in Ghana it is very difficult to find new clients of an MFI who have not been regular clients of other MFIs. This made it difficult to identify a control group entirely new to microfinance. In view of this, the study adopted the "before and after" methodology where clients were interviewed based on what used to be the situation before they obtained the loan and the change in their operations after the loans were obtained.

A major challenge of this approach was how to empirically establish the counterfactual situation of the clients who had benefited from the loans. This is because the study used a cross-sectional data without any baseline study to establish the situation of the beneficiaries before contracting the loans. This limitation notwithstanding, the study made an assumption that the respondents would be able to remember fairly accurately their condition prior to assessing the loans (Afrane, 2002).

4.4.6.3 The Fieldwork -Implementation Procedures

The first step in the survey process was to send a covering letter to the Executive Secretary of the Ghana Association of Microfinance Companies (GAMC) for approval to administer the questionnaire to its members. The letter outlined the aim of the research and its benefits to the MFIs. The Executive Secretary provided a letter to be given to the MFIs encouraging them to provide the necessary information. Armed with the approval letter, the researcher contacted the MFIs in the Ashanti and Greater Accra Regions.

The data collection was carried out in four phases. In each of the phases the following items, presented in Appendices A to E, were personally given to the CEOs of the MFIs who gave permission to their operating managers to complete the questionnaires:

i. Questionnaires
ii. A letter from the Executive Secretary of the GAMC which assured the managers of the association's support for the research
iii. A covering letter to the MFIs, introducing the study, its purpose, and assurance of confidentiality and anonymity of information.
iv. Information sheet for survey participants. In addition to the information contained in the covering letter, the information sheet provided contact details of the researcher and her supervisors in case respondents had questions about the research. A third contact detail was provided, in addition to those for the researcher and supervisors, for complaints concerning the manner in which the research was conducted. Participants were also told they could request a summary of the results of the study.
v. A consent form which provided evidence of participants' agreement to voluntarily participate in the survey.

Table 4.4 Phases of Quantitative Data Collection

Phase	Institution	Region	Period
1	BoG regulated MFIs	Ashanti Region	May to August, 2013
2	Self-regulated MFIs	Ashanti Region	August to October, 2013
3	Clients of both BoG regulated and self- regulated MFIs	Ashanti Region	October to December, 2013
4	BoG regulated and self- regulated MFIs together with their clients	Greater Accra Region	January to March, 2014

Table 4.4 presents the phases and the period of data collection. Four research assistants were employed and trained to help with the face-to-face interviews of the clients of the MFIs in the Ashanti and Greater Accra Regions.

Table 4.5 Survey Response Rate

BoG Regulated MFIs	**Response rate**	**Self- regulated MFIs**	**Response rate**
Ashanti Region	91% (21 out of 23 MFIs)	Ashanti Region	67% (20 out of 30 MFIs)
Greater Accra Region	43% (3 out of 7 MFIs)	Greater Accra Region	80% (16 out of 20 MFIs)
Total	**80% (24 out of 30 MFIs)**	**Total**	**72% (36 out of 50 MFIs)**

It can be seen from Table 4.5 that the response rate of the regulated MFIs was 80 percent and that of the self-regulated MFIs was 72 percent. The overall response rate of all the MFIs (both BoG regulated and self- regulated MFIs) is 75 percent (60 out of 80 MFIs).

4.4.7 Data Analysis

The raw data were first checked for possible errors such as missing or overstated values. The MFIs provided their financial reports in addition to the questionnaires. This enabled the researcher to compare the values in the questionnaires with those in the financial reports and correct discrepancies. The raw data were then entered into a database in SPSS and outliers identified and corrected. Five (5) out of the 60 questionnaires for the MFIs were incomplete and were excluded from subsequent analysis so that in all 55 cases were eventually included in the analysis. Prior to carrying out the analysis, reliability of the variables were assessed.

4.4.7.1 Reliability of the Variables

Assessing the reliability or construct validity is important to ascertain the consistency of the variable or its indicator (Bryman, 2008). Cronbach alpha is generally used with values ranging from 0 to 1. Values of 0.70 and above are recommended as indicative of construct validity (Hair, Black, Babin and Anderson, 2010; Fornell, Tellis and Zinkhan, 1982) although a value of 0.60 is accepted as a minimum limit (Robinson et al. 1991). According to Hulland (1999) variables or indicators with reliability coefficients of below 0.5 should be dropped, since they do not add any meaningful explanatory power to the model. This study adopted a minimum reliability coefficient of 0.60.

4.4.7.2 Analytical Technique

Multiple regression analysis is an offshoot of multivariate analysis which refers to the simultaneous analysis of three or more variables to predict interrelationships among the dependent and independent variables (Bryman, 2008; Hair et al, 2010). Multiple regression, which is common in social and behavioural analysis (Lewis, 2007), is used to investigate the relationship between a criterion (dependent) variable and a set of predictor (independent) variables (Boduszek, n.d).

Three main forms of multiple regression analyses are the standard or simultaneous, stepwise and hierarchical regression. In simultaneous regression, all predictor variables are entered into

the regression equation at once and the entry of the predictor variables does not have any theoretical basis (Cohen, Cohen, West and Aiken, 2003). Stepwise regression involves entering the predictor variables into the regression model based on their R^2 contribution at every stage. Variables with low R^2 are therefore removed from the model (Petrocelli, 2003; Cohen et al, 2003).

In hierarchical regression analysis, predictors are entered into the regression model in a sequential way based on theory (Lewis, 2007) so that hierarchical regression is used to test theoretically based hypotheses. It is a popular method for analysing the effect of an independent (predictor) variable on the criterion or dependent variable after controlling for other variables (Lewis, 2007). It is described in detail next.

4.4.7.3 Hierarchical Regression Analysis

Previous studies on the performance of MFIs (for example, Cull et al, 2007; Kar, 2011; Mersland and Strom, 2010; Mersland and Strom, 2009; Hartarska, 2005) made use of Ordinary Least Square (OLS) regression because it is simple and provides a straightforward technique that helps to predict and explain performance (Hair et al. 2010). This study applied the hierarchical regression technique which shares the features of an OLS regression technique because both originate from the same statistical basis. The hierarchical regression was used to examine the relationships between the dependent and predictor variables after controlling for certain variables. Descriptive analysis, and reliability and normality tests of the variables in the study were carried out prior to the hierarchical regression analysis to ensure the data met the assumptions for multivariate analysis. Where the hierarchical regression results were not significant in explaining the dependent variables, they were complemented by correlation analyses (Pearson correlation) and t-tests.

The descriptive statistics were used to address research question 1. Research questions 2 and 3 were addressed by the correlation analysis and hierarchical regression analysis. Research question 4 was addressed with hierarchical regression and mediation analysis. The qualitative approach was used to address research question 5.

The study examined the effect of regulation on the performance of MFIs in promoting the growth of small businesses in Ghana. MFIs in the study were either fully regulated under the Bank of Ghana regulations or faced lower levels of regulations from other industry bodies. In

view of this, the regression equations below were used to test the hypotheses developed in chapter 3. For a more robust assessment of hypotheses 1a, 1b and 1c Pearson correlation analyses were used to complement results from the hierarchical regression analyses.

Hypothesis 1a: Breadth of outreach is unrelated to the financial sustainability of MFIs in Ghana

$$\ln(\mathrm{ROA}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{NOAC_i}) + \varepsilon_i \quad (1)$$

$$\ln(\mathrm{FSS}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{NOAC_i}) + \varepsilon_i \quad (2)$$

$$\ln(\mathrm{OSS}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{NOAC_i}) + \varepsilon_i \quad (3)$$

where:

Age = [Firm Age] Firm age since incorporation

Size = [Size of the firm] sum of total assets of the firm

Product = [Product provided by the MFI] 1 for MFIs providing only financial services and 0 for MFIs providing both financial and non-financial services

β_0 = Intercept

ε_i= Error term

β = Estimated slope coefficient of each variable

Age, size and product were the control variables.

$\mathrm{NOAC_i}$ = [Number of Active Clients] Number of active borrowers and savers of the MFI. This variable is the independent variable measuring the breadth of outreach for the i^{th} MFI.

The dependent variables in equations 1, 2 and 3 were financial sustainability variables, where:

ROA = [Return on assets] Net operating income (profits) after tax as a ratio of total assets

OSS = [Operational Self-Sufficiency] Operating revenue as a ratio of financial, loan-loss provision and operating expenses

FSS = [Financial Self-Sufficiency] Operating revenue as a ratio of financial, loan-loss provision, operating expenses and expense adjustments.

Pearson correlation analyses were carried out to complement the results from the hierarchical regression analyses. The results of the Pearson correlation analyses are reported in Chapter 5 and those for the regression analysis are in Appendix J.

Hypothesis 1b: Depth of outreach is unrelated to the financial sustainability of MFIs in Ghana

$$\ln(\mathrm{ROA_i}) = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ALS_i}) + \beta_5\ln(\mathrm{PWC_i}) + \varepsilon_i \quad (4)$$

$$\ln(\mathrm{FSS}_i) = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ALS_i}) + \beta_5\ln(\mathrm{PWC_i}) + \varepsilon_i \quad (5)$$

$$\ln(\mathrm{OSS}_i) = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ALS_i}) + \beta_5\ln(\mathrm{PWC_i}) + \varepsilon_i \quad (6)$$

Where:

ALS = [Average Loan Size] Average amount of loans to clients, used to measure depth of outreach.

PWC = [Percentage of Women clients] measured the depth of outreach

In testing for the above relationship, ALS and PWC were the independent variables used as proxies for depth of outreach. The financial sustainability variables (ROA, FSS and OSS) were the dependent variables.

Results from the above hierarchical regression analysis are reported in Appendix J and complemented by results from Pearson correlation analyses reported in Chapter 5.

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses.

$$\ln(\mathrm{ACIP}_i) = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ROA_i}) + \beta_5\ln(\mathrm{OSS_i}) + \varepsilon_i \quad (7)$$

$$\ln(\mathrm{ACIS}_i) = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ROA_i}) + \beta_5\ln(\mathrm{OSS_i}) + \varepsilon_i \quad (8)$$

$$\ln(\mathrm{ACIA_i}) = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ROA_i}) + \beta_5\ln(\mathrm{OSS_i}) + \varepsilon_i \quad (9)$$

$$\mathrm{EMPL_i} = \beta_0 + \beta_1\ln(\mathrm{Age_i}) + \beta_2\ln(\mathrm{Size_i}) + \beta_3\mathrm{Product_i} + \beta_4\ln(\mathrm{ROA_i}) + \beta_5\ln(\mathrm{OSS_i}) + \varepsilon_i \quad (10)$$

Equations 7 to 10 tested the relationship between financial sustainability and impact.

Where:

ACIP = Average change in profits earned by clients of MFIs

ACIS = Average change in stock of goods acquired by clients of MFIs

ACIA = Average change in Business assets acquired by clients of MFIs

EMPL = Employment generated by clients of MFIs as a result of access to microfinance

Hypothesis 1c tested the relationship between financial sustainability of the MFIs and their impact on their clients' businesses. The independent variables were the financial sustainability variables of OSS, FSS and ROA while the dependent variables were the impact variables of ACIP, ACIS, ACIA and EMPL.

Pearson correlation analyses were carried out to complement results of the hierarchical analysis for more robust tests of the associations. These are reported in chapter 5 while results of the hierarchical analysis are in Appendix J.

Hypothesis 2a: Regulation has no effect on breadth of outreach for MFIs in Ghana

$$\ln(\mathrm{NOAC_i}) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_i \quad (11)$$

Hypothesis 2a tested the relationship between regulation and breadth of outreach. The independent variable was regulation while the dependent variable was NOAC.

Hypothesis 2b: Regulation has no effect on depth of outreach for MFIs in Ghana.

$$\ln(\mathrm{ALS_i}) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_i \quad (12)$$

$$\ln(\mathrm{PWC_i}) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_i \quad (13)$$

Hypothesis 2b tested the relationship between regulation and depth of outreach. The independent variable was regulation while the dependent variables were ALS and PWC.

Hypothesis 2c: Regulation has no effect on financial sustainability of MFIs in Ghana.

$$\ln(\mathrm{ROA}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_i \quad (14)$$

$$\ln(\mathrm{FSS_i}) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_i \quad (15)$$

$$\ln(\mathrm{OSS}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_i \quad (16)$$

Hypothesis 2c tested the relationship between regulation and financial sustainability. The independent variable was regulation while the dependent variables were ROA, FSS and OSS. The regression results reported in Appendix J are complemented by the t-test results in chapter 5 for a robust assessment of the associations.

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses.

$$\ln(\text{ACIP}_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \quad (17)$$

$$\ln(\text{ACIS}_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \quad (18)$$

$$\ln(\text{ACIA}_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \quad (19)$$

$$\text{EMPL}_i = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \quad (20)$$

Equations 17 to 20 tested the relationship between regulation and impact. The independent variable was regulation and the dependent variables were ACIP, ACIS, ACIA and EMPL.

T-tests were carried out to support results from the hierarchical regression analysis presented in Appendix J . Results of the t-tests are reported in chapter 5.

4.4.7.4 Mediation Effect

The next three equations examined the mediation effect of regulation on the relationships between the performance variables. A variable is said to be a mediator when it influences the relationship between the independent and dependent variables (Baron and Kenny, 1986). Mediation effect therefore exists when there is a strong association between the independent variable and the dependent variable (Holmbeck, 1997). Baron and Kenny (1986, p. 1177) developed four conditions that must be satisfied in order to establish mediation:

1. The independent variable must have a significant relationship with the mediating variable
2. The independent variable must have a significant relationship with the dependent variable
3. The mediating variable must have a significant relationship with the dependent variable
4. The effect of the independent variable on the dependent variable must be less after controlling for the mediator

It is clear from the conditions above that mediation effect would not be present if the independent variable does not significantly affect the dependent variable. The study aims to test the mediating effect of regulation on outreach, financial sustainability and impact to

ascertain whether the relationships between the performance variables are mediated by regulation. The Sobel's (1990) test of indirect effect was used to test for the mediating effect. But the Sobel test in SPSS does not make provision for binary variables (dummy variable with two categories). Since regulation, the mediator variable, was measured on a binary scale, the study used the binary_mediation module developed by Ender (2011) for binary mediators. This binary mediation function however, does not compute standard errors or confidence interval directly. In light of this, the study used the binary_mediation with the bootstrap command recommended by the UCLA Statistical Consulting Group (n.d) to obtain standard errors and confidence intervals.

Equations (1) to (3) below are the three equations for mediation testing, with Y the dependent variable, X the causal variable (independent variable) and M, the mediating variable. Equation 1 regresses the independent variable (X) on the dependent variable (Y). Equation 2 regresses the independent variable (X) on the mediator (M) and equation 3 regresses the causal variable and the mediator as independent variables on the outcome variable (Y).

$$Y = \beta_0 + \beta_1 X + e \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$
$$M = \beta_0 + \beta_1 X + e \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$
$$Y = \beta_0 + \beta_1 X + \beta_2 M + e \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Hypothesis 3a: Regulation mediates the relationship between breadth of outreach and financial sustainability such that BoG regulated MFIs have greater breadth of outreach and are therefore likely to be more financially sustainable than self-regulated MFIs in Ghana.

Hypothesis 3a was to find out whether regulation mediates the relationship between breadth of outreach and financial sustainability. The binary mediation was used to test the mediation effect of regulation. For every mediation test conducted in this study, the three main equations above were estimated as suggested by Baron and Kenny (1986). The dependent variables were the financial sustainability variables (OSS, FSS, ROA) and the independent variable was NOAC, with regulation as the mediator. The following equations were therefore tested:

$$\text{Regulation}_i = \beta_0 + \beta_1 \text{NOAC}_i$$
$$\text{OSS}_i = \beta_0 + \beta_1 \text{NOAC}_i$$

$$OSS_i = \beta_0 + \beta_1 NOAC_i + \beta_2 Regulation_i$$

$$Regulation_i = \beta_0 + \beta_1 NOAC_i$$
$$FSS_i = \beta_0 + \beta_1 NOAC_i$$
$$FSS_i = \beta_0 + \beta_1 NOAC_i + \beta_2 Regulation_i$$

$$Regulation_i = \beta_0 + \beta_1 NOAC_i$$
$$ROA_i = \beta_0 + \beta_1 NOAC_i$$
$$ROA_i = \beta_0 + \beta_1 NOAC_i + \beta_2 Regulation_i$$

Hypothesis 3b: Regulation mediates the relationship between depth of outreach and financial sustainability such that self-regulated MFIs in Ghana have greater depth of outreach and are therefore likely to be less financially sustainable than BoG regulated MFIs in Ghana.

Hypothesis 3b assessed whether regulation mediates the relationship between depth of outreach and financial sustainability. ALS and PWC were the variables for depth of outreach and the financial sustainability variables were OSS, FSS, and ROA. The binary mediation was used to test the mediation effect of regulation based on the following equations:

$$Regulation_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i$$
$$OSS_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i$$
$$OSS_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i + \beta_3 Regulation_i$$

$$Regulation_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i$$
$$FSS_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i$$
$$FSS_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i + \beta_3 Regulation_i$$

$$Regulation_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i$$
$$ROA_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i$$
$$ROA_i = \beta_0 + \beta_1 ALS_i + \beta_2 PWC_i + \beta_3 Regulation_i$$

Hypothesis 3c: Regulation mediates the relationship between financial sustainability and impact such that BoG regulated MFIs in Ghana have greater financial sustainability and are therefore more likely to make a positive impact on their clients' businesses

Hypothesis 3c was to test for the mediation effect of regulation on financial sustainability and impact. The impact variables were ACIP, ACIS, ACIA and EMPL. The binary mediation was used to test for the mediation effect based on the following equations:

$$\text{Regulation}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{ACIP}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{ACIP}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i + \beta_4 \text{Regulation}_i$$

$$\text{Regulation}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{ACIS}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{ACIS}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i + \beta_4 \text{Regulation}_i$$

$$\text{Regulation}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{ACIA}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{ACIA}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i + \beta_4 \text{Regulation}_i$$

$$\text{Regulation}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{EMPL}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i$$
$$\text{EMPL}_i = \beta_0 + \beta_1 \text{OSS}_i + \beta_2 \text{FSS}_i + \beta_3 \text{ROA}_i + \beta_4 \text{Regulation}_i$$

The next section describes the processes followed in the qualitative study.

4.5 RESEARCH METHODS USED IN THE QUALITATIVE STUDY

A qualitative research approach was employed in the second part of the study, using in-depth interviews to collect data from the MFI managers on the performance of their MFIs in terms of outreach, financial sustainability and impact on their clients' business. Clients of the MFIs were also interviewed, in focus group discussions, for an assessment of the impact of the MFIs' products on their small businesses. The interviews and focus group discussions enabled the researcher to get close to the participants to gain in-depth understanding of the realities of performance of their MFIs. Thematic analysis was used to analyse the qualitative data from the

interviews and focus group discussions. The next sub-sections describe the thematic method of analysis, the data collection procedure, and the phases of data analysis. Figure 4.1 shows the stages followed for the qualitative research process.

4.5.1 Thematic Method of Analysis

Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within the data. It enables data to be organized and described in rich details (Braun and Clarke, 2006). Fereday and Muir-Cochrane (2006, p. 82) described thematic analysis as "a form of pattern recognition within the data, where emerging themes become the categories for analysis."

Thematic analysis, also referred to as framework analysis (Ritchie and Spencer, 1994; Ritchie et al, 2003; Lacey and Luff, 2009) uses a framework strategy to analyse the data. Ritchie et al, (2003, p. 219) describes framework analysis as "a matrix based method for ordering and synthesizing data." The method involves the construction of themes and subthemes that are represented in a matrix. The themes and subthemes are identified from thorough reading and coding of the transcripts or field notes that make up the data (Bryman, 2008).

In a thematic analysis, patterns or themes within the data can be viewed from an inductive ("bottom up") approach (Frith and Gleeson, 2004) or from a theoretical, deductive, a priori or "top down" approach (Lacey and Luff, 2009; Boyatzis, 1998). In an inductive approach, one seeks to develop a theory that is adequately grounded in the data and that means the themes identified are linked to the data. Thematic analysis in this instance is data driven (Saunders et al, 2007; Braun and Clarke, 2006). In contrast, in a deductive approach which is in tandem with a "theoretical" thematic analysis, the analysis is driven by the researcher's theoretical or analytical interest in the area of study (Braun and Clarke, 2006). According to Yin (2003) the deductive approach has some specific analytical procedures, particularly applicable to qualitative analysis that must be followed: First, the data collection must commence with well-defined research questions and objectives and a framework derived from theory. Second, the type and number of organizations to select as cases to test the propositions advanced to answer the research questions must be identified. Third, the literature and the theory within it must shape the data collection questions (Saunders et al (2007, p. 491).

This study used the theoretical thematic analysis, and started the data collection process with well-defined research questions and objectives. The study used purposive sampling to select MFIs and their clients in the Ashanti and Greater Accra regions to test the propositions advanced to answer the research questions. The questions asked of the research participants were also influenced by the literature. The analytical process outlined above was used to identify key themes and patterns in the data. The analysis was therefore, guided by the theoretical propositions of the study. Consequently, data were analysed deductively, using themes and patterns to explain participants' perspectives on the performance of their microfinance institutions. Thematic analysis was the preferred analytical method for the qualitative data collected through individual interviews and focus group discussions because of its flexibility, and systematic and visible approach. It also enables in-depth examination of data to generate useful insight (themes) into the reality or experiences of individuals. Additionally, thematic analysis can be useful to informing policy development (Braun and Clarke, 2006; Bryman, 2008; Lacey and Luff, 2009; Fereday and Muir-Cochrane (2006).

4.5.2 The Data Collection Procedure

The study used in-depth interviews and focus group discussions to collect qualitative data from the MFI managers and their clients. The steps followed to collect data are explained in the subsections below.

4.5.2.1 In-Depth Interviews and Focus Group Discussions

In-depth interview "is a technique designed to elicit a vivid picture of the participant's perspective on the research topic" (Mack et al. 2005, p. 29). According to Kvale (1996, p. 1) the interview helps to "understand the world from the subject's point of view, to unfold the meaning of people's experiences, to uncover their lived world prior to scientific explanations." Generally, the interviewee is considered the expert and so his or her perspective and reality is taken seriously. The interview is normally on a one- on- one basis. The focus group technique, on the other hand, involves a minimum of four interviewees and a maximum of ten or twelve (Lacey and Luff, 2007; Mack et al, 2005; Onwuegbuzie, Dickinson and Leech, 2009). It typically emphasizes a specific theme or topic that is explored in-depth (Bryman, 2008). Focus group discussions primarily aim at gaining information in a short period of time about the variety of opinions within the population studied. The technique is based on the assumption

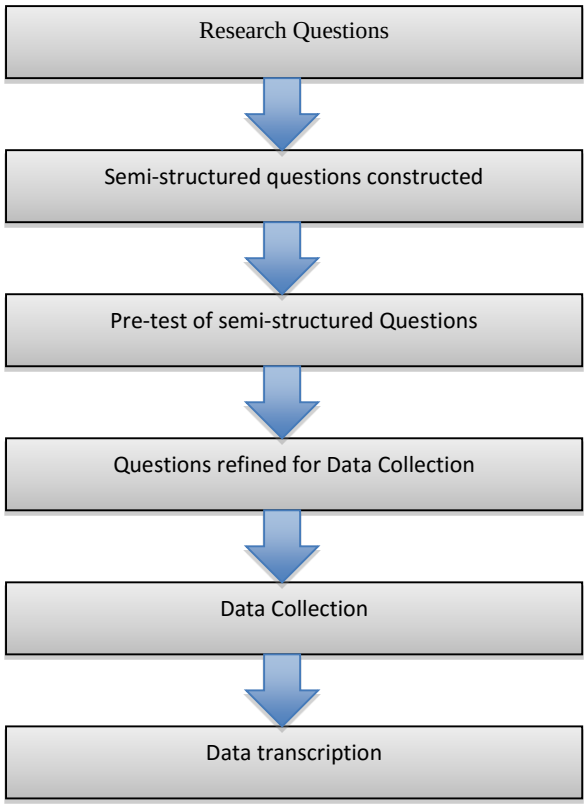
that a group environment will, through mutual stimulation, encourage discussion on a topic (Sarantakos, 2002).

In effect, the use of in-depth interviews to collect qualitative data allows the researcher to elicit individual experiences, opinions and feelings of participants while focus group discussions provide a quick, economic and efficient way of obtaining data from multiple participants (Krueger and Casey, 2000; Novelli, 1986). Additionally, while interviews provide individual participants the opportunity to explore a topic in detail, the group interaction in focus group discussions stimulates richer responses and enables new and valuable insights to emerge (Novelli, 1986; Mack et al, 2005). Although in-depth interviews and focus group discussions can be used as principal methods in qualitative research they can also be used for triangulation in a mixed method study (Sarantakos, 2002).

This study employed individual interviews and focus group discussions as complementary sources of information for determining the performance of MFIs, assessing the impact of MFIs' programmes on their clients' businesses and investigating the effect of regulation on performance. The individual interviews and focus group discussions enabled respondents to confirm or refute the findings from analysing data from the quantitative study.

Semi-structured questionnaires were used for both individuals and focus groups as part of the qualitative interpretivist approach adopted in the study. The semi-structured questions were based on broad themes surrounding the research questions. The essence of using semi-structured questions is to give voice to the participants and allow "them to speak in voices that are clearly understood and representative" (Strauss and Corbin, 1998, p. 56). In light of this, the semi-structured questions were worded in a way that allowed the participants to provide their own opinions on issues related to performance of their MFIs and its impact on their clients' businesses, in an unrestrained manner. Figure 4.2 outlines the development of the semi-structured questions for data collection.

Figure 4.2 Development of Semi-structured Questions



4.5.2.2 Pre-test of the Semi-structured Questions

The semi- structured questions were pilot-tested with two managers of the MFIs to determine their appropriateness and adequacy for the target group. Feedback from the trial test revealed the need to reword and modify some of the questions to enhance understanding. Follow-up and probing questions were rephrased. The interview guide, the cover letter together with the participants' information sheet for the second phase of the research, were approved by the University of New England's Human Research Ethics Committee with an approval number of HE15-077 and presented in Appendix A and G.

4.5.2.3 Sampling Procedures

Participants for the qualitative phase of the study were selected through purposive sampling (Patton, 2002). According to Maxwell (2005, p. 88), purposive sampling is "a strategy in which particular settings, persons, or events are selected deliberately to provide important information that can't be gotten from other choices." Thus, purposive sampling was used in order to increase the probability of obtaining quality information (Tuuli and Rowlinson, 2009), by increasing the possibility of uncovering the full array of multiple realities (Lincoln and Guba, 1985).

A follow up letter was sent to the Executive Secretary of the Ghana Association of Microfinance Companies (GAMC) for permission to conduct interviews with some of the managers of the MFIs and permission was granted. This was necessary to assure the participants that their association supports the research. Letters were sent to 10 managers of the BoG regulated MFIs and 10 managers of the self-regulated MFIs in the Ashanti Region purposively selected with the help of the Executive Secretary of the Association. The same process was followed to select 3 managers of the BoG regulated MFIs and 10 managers of the self-regulated MFIs in the Greater Accra Region. The purpose of the interviews was outlined in the covering letters sent to them. The letters also contained information on voluntary participation, confidentiality and anonymity of the participants.

Focus group discussions were organized for the clients of the MFIs in Ashanti and Greater Accra Regions. Letters were sent to the Chairpersons of the Association of Small Businesses located in the two markets of the Ashanti and Greater Accra Regions for permission to conduct focus group discussions with some of their members who were clients of MFIs. Once again the letters outlined the purpose of the study and issues on voluntary participation, confidentiality and anonymity of the participants. Permission was granted and some of the members voluntarily opted to take part in the focus group discussions. Twelve clients of MFIs in the Ashanti Region and 12 clients in the Greater Accra Region took part in the focus group discussions.

4.5.2.4 Data Collection

Following the approval from the Executive Secretary of the GAMC and the acceptance by some of the managers of the MFIs and clients of the MFIs to participate in the study, the interviews were organized for the BoG regulated and self-regulated MFI branch managers and focus group discussions for the clients of the MFIs.

Interviews were held with branch managers who did not participate in the earlier survey of MFIs at their offices. On average each interview lasted 40 minutes. Before the start of each interview, participants were provided with consent forms which they completed and submitted. They were also reminded of the confidentiality and anonymity of information from the interviews. Permission was sought to audio-record the interviews and transcribe the recordings. In order to enhance the credibility of the data, a copy of the transcribed interview was sent to

the participants for verification. The interviews enabled participants to provide in-depth account of their knowledge of the performance of their MFIs and how regulation affected performance.

Focus group discussions were also held for the clients of the MFIs, providing them an opportunity to share their opinions about the impact of the MFIs' products on their businesses in an unrestrained setting not captured in the quantitative data. Lacey and Luff (2007) suggested factors to consider when choosing a setting for focus group discussions. They advised that the setting: should provide privacy for participants; enable participants to be heard when they speak; and must be comfortable, non-threatening and easily accessible. These factors were considered in selecting convenient locations for the focus group discussions. The first focus group discussion was held in an office at the Santasi Market in Kumasi and the second was held in an office at the Madina market in Accra. The researcher sought permission from the participants to take notes and audio-record the discussion.

To minimize the social effect of information from focus group members, Nancarrow and Bruce (2000) outlined techniques to elicit honest responses from participants including assurance of confidentiality. In each session of the focus group discussions, the researcher commenced the discussions briefly, stated the purpose of the discussions, and assured participants of confidentiality and anonymity of the responses. The need to give honest responses was emphasized and participants were told that the outcome of the study would help to improve the services they receive from the MFIs. A consent form was also given to the participants to complete, indicating their consent to participate in the meeting. In order to build rapport with and among participants, the researcher established a positive, relaxed and mutually respectful environment, by being friendly, speaking in a pleasant tone of voice, and not rushing participants to respond (Mack et al, 2005). I however, ensured that participants discussed questions within the semi-structured questionnaire by reverting participants to the questions where discussions deviated from the main issues. This attitude encouraged fruitful discussions, with participants freely expressing their opinions and realities about the issues discussed. The exercise, which took about 1 hour 30 minutes for each focus group discussion, was carried out by the researcher and two assistants.

Table 4.6 Total Number of Interviews held in Ashanti and Greater Accra Regions

	No. of Persons interviews	Total hours of interview time (Average of 40 minutes each)
Institutions in Ashanti Region		
BoG regulated	10 (In-depth interviews)	6 hours (14th and 15th May, 2015)
Self-regulated	10 (In-depth interviews)	6 hours (18th and 19th May, 2015)
Clients of MFIs	12 (Focus Group)	1hour 30 minutes (22nd May, 2015)
Institutions in Greater Accra Region		
BoG regulated	3 (In-depth interviews)	2 hours (25th May, 2015)
Self-regulated	10 (In-depth interviews)	6 hours (27th and 28th May, 2015)
Clients of MFIs	12 (Focus Group)	1 hours 30 minutes (2nd June, 2015)
Total number of individuals interviewed	**57**	**23 hours**

The interviews and focus group discussions were carried out from the 14th of May, 2015 to the 2nd of June, 2015. In all 20 managers of the MFIs were interviewed in the Ashanti region (10 branch managers of BoG regulated MFIs and 10 managers of the self- regulated MFIs). A focus group discussion was also organized for 12 clients of the MFIs in the Ashanti region. In Greater Accra region, 13 managers of the MFIs were interviewed (3 branch managers of BoG regulated MFIs out of the 7 in the region and 10 managers of the self- regulated MFIs). A focus group discussion was also organized for 12 clients of the MFIs in the region (Table 4.6). A different set of clients from those who completed the survey in the quantitative phase of the research were involved in the two focus group meetings.

4.5.3 Data Analysis

A deductive thematic analysis with a-priori template of codes referred to as template approach, developed by Crabtree and Miller (1999) was used to analyse the data from the interviews and focus group meetings. The template approach refers to the use of a template of codes from a codebook for organizing and subsequent interpretation of the data (Fereday and Muir-cochrane (2006). The deductive analysis allowed for a systematic and efficient evaluation of theory developed from the quantitative analysis (Yukhymenko et al, 2014). Figure 4.3 shows the steps followed for the analysis. It begins with developing a codebook and applying the codes to the data (Crabtree and Miller, 1999). The codebook is used as a data management tool for organizing segments of related text to enable the interpretation of the data and subsequently provide evidence for the credibility of the study (Fereday and Muir-cochrane 2006).

According to Boyatziz (1998, p. 63) codes refer to "the most basic segment, or element, of the raw data or information that can be accessed in a meaningful way regarding the phenomenon." The codes are identified by the code label, name, definition or description (Boyatziz, 1998) and organized into categories based on the research questions and methods (Yukhymenko et al, 2014). Coding refers to the analytical process of classifying and categorizing the qualitative data in order to facilitate analysis (Fielding and Lee, 1998). The process of coding is therefore, part of the analysis (Miles and Huberman, 1994) since it helps to organize data into meaningful groups (Tuckett, 2005). For this study, codebooks were created a-priori based on the research questions and the theoretical framework.

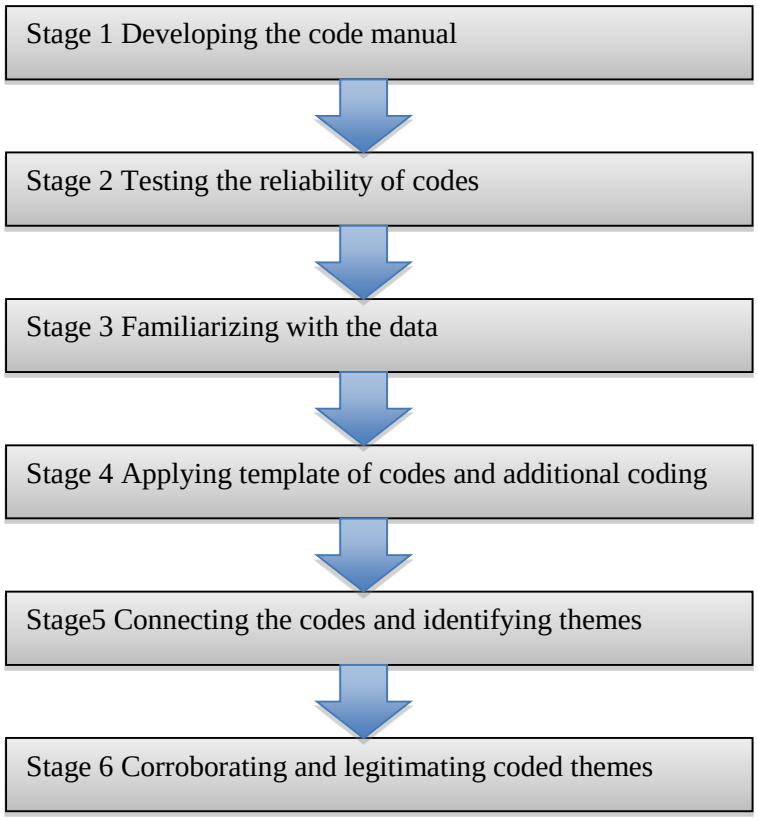
The second phase of the analysis involves testing the reliability of the codes. It is essential to test the applicability of the codes to the raw data at this stage. To do this, a researcher takes a small portion of the raw data or a document or literature related to the phenomenon being investigated as a test piece and codes using the codebook to check for applicability of the themes in the codebook. An independent researcher, apart from the main researcher, is also given the opportunity to code the same piece of data and results are compared. The two results should be consistent, if not the process would have to be repeated and the codes modified (Yukhymenko et al, 2014; Fereday and Muir-cochrane, 2006).

In the next stage of the analysis, the researcher familiarizes himself/herself with the raw data. This involves transcribing the data, reading and re-reading the data, listening to and noting down initial ideas and searching for meanings and patterns in the data (Braun and Clarke, 2006). The template of codes is applied to the data again in stage four to identify additional codes.This leads to connecting the codes and identifying themes in the fifth phase of the analysis. Connecting codes is the process of discovering themes and patterns in the data (Crabtree and Miller, 1999). The discovered themes are clustered under headings that are related to the research questions. They are then reviewed by checking them to the coded extracts (Braun and Clarke, 2006).

The last stage of the analysis is corroborating and legitimating coded themes. Corroborating is the term used to describe the process of confirming the findings (Crabtree and Miller, 1999) and involves further clustering of the themes that were identified in the previous stage. It is essential at this stage to scrutinize the previous stages to ensure that the clustered themes are representative of the initial data analysis and assigned codes (Fereday and Muir-cochrane,

2006). The application of these processes to analysing the research data is presented in chapter six. The themes and sub-themes identified are also presented in a conceptually–clustered matrix display of responses from BoG regulated and self- regulated MFI managers on the performance of their MFIs in chapter six.

Figure 4.3: Diagrammatic Representation of the Stages involved in Data Analysis



Source: Adapted from Crabtree and Miller (1999) and Braun and Clarke (2006)

4.5.4 Testing the Quality of Qualitative Study

Testing the quality of research work is generally associated with the concepts of reliability and validity. The concepts of reliability and validity as used to evaluate quantitative data were explained in section 4.4.3. As a quality assessment concept in qualitative study, reliability aims at "generating understanding" (Stenbacka, 2001, p. 551). A good qualitative study should help readers to "understand a situation that would otherwise be enigmatic or confusing" (Eisner, 1991, p. 58). Testing for quality in a qualitative study is thus paramount to ensuring that the phenomenon under study is well understood (Golafshani, 2003).

The traditional view of reliability "is premised on the assumption that methods of data generation can be conceptualized as tools, and can be standardized, neutral and non-biased" (Mason 1996, p. 145). This may be acceptable for quantitative methods. However, the non-standardization of qualitative research methods makes it impossible to evaluate the reliability of qualitative data, in the same way as for quantitative data. This in effect, calls for evaluation criteria of a different order that will bring out qualitative research ideals and goals. Strauss and Corbin (1998, p. 266) suggested a redefinition of the traditional quality concepts in order to "fit the realities of qualitative research and the complexities of the social phenomena that we seek to understand." This has led some researchers to argue for the examination of trustworthiness of qualitative study. According to Seale (1999, p. 266) "trustworthiness of a research report lies at the heart of issues conventionally discussed as validity and reliability." To this end, there is some degree of agreement among researchers on the need for trustworthiness in qualitative study (Finlay, 2006). Guba (1981) proposed four criteria that should be considered by qualitative researchers interested in a trustworthy study. These are generally accepted in qualitative research (Shenton, 2004). This study adopted the four criteria and explained how each criterion was implemented to ensure the quality of the study.

Guba's criteria are:

- Credibility (parallels with internal validity)
- Transferability (parallels with external validity/generalisability)
- Dependability (parallels with reliability)
- Confirmability (parallels with objectivity)

Shenton (2004) suggested the following factors for ensuring credibility of a qualitative study.

A. Adoption of Research Methods Well Established in Qualitative Investigation.

Shenton (2004) contended that the research methods used and methods of data analysis should be derived, where possible, from those that have been successfully utilized in previous studies. Examples of previous studies that used interviews and/or focus group discussions as qualitative research methods as well as thematic analysis to analyze the data include Fereday and Muir-cochrane (2006); Braun and Clarke (2006); Yukhymenko et al (2014). Fereday and Muir-cochrane (2006) for instance investigated the role of performance feedback in the self-assessment of nursing practice. Through an iterative process, themes were identified and

clustered under headings to reflect research questions. This study was interested in identifying themes from the raw data to uncover meanings central to the performance of MFIs. The study therefore used research and data analysis method that have been successfully applied in previous studies to identify themes or patterns in the raw data which gave meaning to the phenomenon under investigation.

B. Early Familiarity with the Culture of the Participating Organizations

This may involve preliminary visits to the organizations and consulting appropriate documents. I was a co-ordinator of a microfinance training programme organized by my institution, which brought a number of microfinance practitioners together. This gave me the opportunity to visit some of the managers of the microfinance institutions and interact with them on a number of occasions before the actual data collection dialogue commenced. The first phase of the research, which involved a quantitative survey, also provided an avenue for familiarisation and trust building. I also had the opportunity of reading documents relating to the performance of the MFIs in general for this thesis. All these helped to establish a relation of trust between the managers and myself. I was able to secure the trust of the managers such that they provided information on performance of their MFIs without hesitation, enhancing the credibility of information provided.

C. Triangulation

This requires the use of a variety of qualitative methods such as observations, in-depth interviews and focus group discussions to allow offsetting of the weaknesses of each method and to draw on the strength of the methods used (Long and Johnson, 2000; Golafshani, 2003). The study used in-depth interviews and focus group discussions to collect data from the managers of the microfinance institutions and their clients. The positive outcome was the advantage of having different respondents with a variety of rich experiences come together and share their views on the issue of interest. In addition, the in-depth interviews helped to improve the quality of the data obtained. Other documentations such as the financial reports of the MFIs themselves and also reports by Ghana Microfinance Network (GHAMFIN), an external organization which oversees the work of the MFIs in Ghana, were examined to verify particular details that the participants had provided.

Shenton (2004) noted that site triangulation may also be achieved by using participants from several organizations so that the effect on the study of local factors peculiar to one institution may be reduced. Managers from the BoG regulated and self- regulated MFIs in the Ashanti and

Greater Accra regions were purposively selected for in-depth interviews (see Table 4.6). Clients of MFIs in both regions were also purposively selected for focus group discussions. Using participants from different locations (site triangulation) also helped to obtain a variety of perspectives leading to a stable view of reality (Shenton, 2004).

D. Tactics to Ensure Honesty of Participants when Contributing Data

One important aspect of this factor according to Shenton (2004) is to use voluntary participants. This ensures that the data collection dialogue involve only those who are willing to take part and offer data freely. Before each session of the data collection, participants were provided with information sheets explaining that participation is voluntary and that they had the right to withdraw at any time. Participants were also encouraged to be honest about their experiences without fear of intimidation from other group members. In establishing rapport at the beginning of each session, participants were encouraged to respect each other's views and not disclose anything about the discussions once the sessions ended. This encouraged the participants to freely share their individual experiences concerning their performance, thereby enhancing the credibility of the data. Interactive questioning including the use of probes to elicit responses also helped uncover deliberate falsehood in information from participants.

E. Peer Scrutiny of the Research Work.

The researcher had the opportunity to present a paper on an aspect of the research work titled 'Microfinance as a tool for small business growth in urban Ghana' at an international microfinance conference organized by the Economics department of the University of Cape Coast in Ghana. The conference provided an opportunity for peers and senior colleagues to scrutinize the research. Comments from the reviewers of the paper and the feedback from the conference participants, following presentation of the paper, helped to refine the study. In addition to outside scrutiny, member checks are also suggested to bolster credibility (Guba and Lincoln, 1989). Brink (1991) recommended the use of member checks (respondent's validation) to ensure stability. After the data collection, some of the participants were given the transcripts of dialogues in which they participated to ascertain whether the information transcribed matched what they intended to communicate. They agreed that information in the transcripts was a true reflection of what they provided in the meeting.

Another area of member checks utilized in the study involved verification of the researcher's inferences as they emerged during the data collection sessions. This is a strategy recommended by Van Maanen (1983). Participants of the in-depth interviews were asked to confirm or refute

certain patterns observed by the researcher, particularly with respect to the relationship between outreach of the MFIs and their financial sustainability as well as the impact of regulation on performance of their MFIs. The patterns perceived and shared by participants were insightful, going beyond what the quantitative data could provide.

The second important criterion for ensuring the quality of a qualitative study as suggested by Guba (1981) is transferability (external validity or generalization). According to Shenton (2003, p. 69), contrary to the situation for quantitative research where results are likely to be applied to a broader population, "the findings of a qualitative work are specific to a small number of particular environments and individuals, it is [therefore] impossible to demonstrate that the findings and conclusions are applicable to other situations and populations." A detailed description of the phenomenon under investigation is recommended to enable fellow researchers or readers to gain a good understanding of and make value judgments about the findings, by comparing the instances of the phenomenon in the research report with other situations. These would enable the findings to be assessed by others (Carcary, 2009; Brink, 1993; Shenton, 2004).

This study provides a detailed and logical description of how the qualitative study, the second phase of the study, was carried out. It begins with the detailed literature on microfinance and the performance of MFIs in previous chapters. The philosophical stance of the researcher, which had an impact on the research methods employed and the subsequent analytical methods used, are explained in this chapter (see figure 4.1 and sections 4.3, 4.5.2 and 4.5.3). The study utilized the four quality criteria proposed by Guba (1981) and Lincoln and Guba (1985) for judging the quality of the qualitative work. The detailed information provided should give readers a clear picture of the steps followed in conducting the research and a good understanding of performance of MFIs as well as the effect of regulations on their performance. These should enable readers to judge whether or not the findings apply in similar settings.

The third criterion that should be considered in pursuit of a trustworthy study is dependability (reliability). Dependability, according to Guba and Lincoln, (1989, p. 242) "is parallel to the conventional criterion of reliability, in that it is concerned with the stability of data over time." The main concern at the root of dependability (as with reliability) is to ensure that the collection of data is carried out in a consistent manner devoid of undue variation that can affect the nature of the data (Long and Johnson, 2000, p. 31). Lincoln and Guba (1989) emphasized the close

ties between credibility and dependability by noting that a demonstration of the former goes a long way to ensuring the latter.

Shenton (2004) noted that, dependability can be achieved by using "overlapping methods" of data collection such as the focus group meetings and individual interviews. She however, maintained that the issue of dependability can be addressed more directly by detailed reporting of the research process within the study to enable future researchers to repeat the work, even if the same result is not obtained. The processes involved in data collection and analysis were explained in detail in sections 4.5.2 and 4.5.3.

In order to reduce threats to dependability (internal reliability) in data analysis Field and Morse (1985, p. 120) recommended obtaining verbatim accounts of opinions, views or experiences from participants. The individual interviews and focus group meetings with the managers of the MFIs and their clients respectively, were audio-recorded to enhance the accuracy of the transcripts.

The final criterion proposed by Guba to test the quality of a qualitative study is confirmability, that is, objectivity. The concept of confirmability relates to the qualitative researcher's concern for objectivity. While it is impossible to ensure complete objectivity in social research (Patton, 1990), the researcher is expected to act in "good faith", that is, conduct the research in a way that will not allow his/her personal values or theoretical inclinations to sway the research and findings (Bryman, 2008, p. 379). In order to ensure objectivity of the study, and reduce as much as possible investigator bias, the researcher used triangulation of methods (individual interviews and focus group discussions) and transcribed verbatim the data collection dialogue as earlier mentioned. The essence is to show that the findings are a result of the experiences, ideas and realities of the participants and not the ideas and preferences of the researcher. My desire to give the participants "voice" to tell their own story influenced my choice of qualitative methods in the second phase of the study. Throughout the research process, I tried as much as possible to remain neutral or unbiased in order to present the issues arising from the study as clearly as they unfolded.

4.6 CONCLUSION

The chapter presented the research methods used to address the research questions. It began with a graphical illustration of the research process followed to conduct the study. The two

research philosophies which influenced the types and methods of data collection were outlined and discussed. A justification for using the mixed approach was provided. The study comprised two phases. The research methods employed to gather the quantitative data and the analytical techniques used to analyse the data in the first phase of the research were explained. This was followed by a discussion of the research methods used to collect and analyze the qualitative data in the second phase of the study.

While the quantitative phase of the study helped to gather facts to measure the variables that influence performance of the MFIs and assess how regulation affects their performance, the qualitative phase helped to obtain deeper understanding of MFIs performance and how their products impact the business activities of their clients. The findings of the quantitative and the qualitative data are presented in chapters 5 and 6 respectively.

CHAPTER 5
ANALYSIS AND RESULTS OF QUANTITATIVE DATA

5.1 INTRODUCTION

The previous chapters discussed the literature on the microfinance industry, and analysed the performance of the microfinance industry in general and the regulatory framework of MFIs in Ghana. Hypotheses were then developed to assess performance of MFIs and the interrelationships among the performance variables and to test whether regulating operations in the industry affects performance. The mixed method approach (quantitative research augmented with qualitative analysis) adopted for the research was outlined in chapter 4. This chapter presents the empirical results from the quantitative data analyses carried out to test the hypotheses developed in chapter three. The chapter is organized into three sections. The next section presents the descriptive and inferential statistics for the variables examined as well as the results from reliability assessment of the study variables. The second section discusses the results of the hypotheses tests from the hierarchical regression, correlation analysis and binary mediation tests and the findings are summarised in the last section.

5.2 DESCRIPTIVE STATISTICS

The means and standard deviations for the variables in the study sample are presented in Table 5.1. Fifty-five MFIs were examined comprising 21 BoG regulated and 34 self- regulated MFIs (see section 4.4.6.3 and Table 4.5 for the MFIs in each category). The average age of the MFIs was 13.3 years; 26 years for the BoG regulated MFIs (Table 5.2) and 3.5 years for the self-regulated MFIs (Table 5.3). On average total assets (as a measure of size of the institution) was GH¢7,866,900 (US$2,281,401) but was larger for the BoG regulated MFIs at GH¢14,570,938.2 (US$4,225,910.15) than the self- regulated MFIs which was GH¢2,676,632 (US$776,285.38). The mean number of active clients (NOAC), comprising both active borrowers and active savers for the MFIs was 24,172 but again the BoG regulated MFIs had 51,346 active clients which was more than that of the self-regulated MFIs of 3,135. As noted in section 3.3.1 NOAC was used to measure breadth of outreach. Loans advanced range from GH¢500 (US$145) to a maximum of GH¢10,000 (US$2,900) with an average of GH¢2,994.4 (US$868.38) for all MFIs.

Table 5.1 Descriptive Statistics of Variables

Variables	Obs.	Mean	Std. Deviation	Minimum	Maximum
Age	55	13.33	13.28	1.00	33.00
Size	55	7866900	11174500	13000.00	41800000
NOAC	55	24172.0	36343.77	96.00	134000
ALS	55	2994.4	1985.08	500.00	10000.00
PWB	55	57.47	20.11	25.00	91.00
PWC	55	63.54	5.26	45.80	80.03
ROA	55	0.16	0.44	-0.27	2.15
FSS	55	1.25	0.92	0.16	5.69
OSS	55	1.43	0.89	0.31	5.98
ACIP	43	515.60	508.33	-325.00	2250.00
ACIA	43	5702.3	19065.49	0.00	125000
ACIS	43	11559.0	36476.45	25.00	240000

For the BoG regulated MFIs, the loans advanced ranged from a minimum of GH¢500 (US$145) to a maximum of GH¢10,000 (US$2,900) while the average was GH¢3,604.17 (US$1,045.29). With a minimum of GH¢500 and a maximum of GH¢5,000 (US$1,450.12), the average loan advanced by the self-regulated MFIs was GH¢2,522.29 (US$731.52). On average there were more active female clients (PWC = 63.54 percent) than active male clients for all the MFIs. The percentage of women clients (PWC) was 65.24 for the self-regulated MFIs and 61.34 for the BoG regulated MFIs.

Table 5.2 Descriptive Statistics for BoG Regulated MFIs

Variables	Obs.	Mean	Std. Deviation	Minimum	Maximum
AGE	24	26.08	9.51	2	33
SIZE	24	14570938.2	11281102.4	545768.2	41783435.1
NAB	24	5586.38	4771.81	1009	18631
NOAC	24	51345.58	41518.13	4159	133920
ALS	24	3604.17	2260.14	500	10000
PWB	24	51.88	19.20	25	85
PWC	24	61.34	4.86	45.8	65.96
ROA	24	.08	.19	-0.01	.94
FSS	24	.98	.25	0.29	1.5
OSS	24	1.18	.29	0.31	1.77
ACIP	22	614.58	603.50	-325	2250
ACIA	22	3667.59	4565.12	0	16666.67
ACIS	22	8131.77	9366.6	480	39240

Average loan size (ALS) and PWC are used to measure depth of outreach (see section 3.3.1). It is argued that the lower the ALS the greater the depth of outreach, since MFIs are able to reach poor clients who demand small amounts of loans. Given that women are among the vulnerable and less advantaged in the developing world, a high percentage of women clients is

an indication that MFIs are reaching the poor and vulnerable. The mean PWC of 64 percent is close to that for the African region (65 percent) and all MFIs in Ghana (67 percent) (GHAMFIN, 2014), pointing to a representative sample.

Table 5.1 also shows the average values for return on assets (ROA), financial self-sufficiency (FSS) and operational self-sufficiency (OSS) which measure financial sustainability. They were 0.16, 1.25 and 1.43 respectively for all the MFIs. Return on assets measures how well an institution uses its total assets to generate revenue or income. The average ROA of 0.16 means for every 1 cedi invested in assets, 0.16 cedis of revenue was generated. An FSS of more than 100 percent indicates the MFI is self–sufficient. So that a mean value of FSS 1.25 or 125 percent implied that the MFIs were able to pay for the cost of capital and earn profits (see section 3.3.2.1B). The mean OSS for all MFIs in Ghana was 1.07 (107 percent). This is the same as for the African benchmark (107 percent) while the global peer benchmark is 1.11 (111 percent) (GHAMFIN, 2014). The mean OSS of 1.43 (143 percent) for the sample indicates that the MFIs were able to meet all their operating costs from their revenues and generate profits. The higher mean OSS compared with the African and global benchmarks points to higher performing MFIs among the sample.

The ROA, FSS and OSS for the BoG regulated MFIs were 0.077, 0.98 and 1.179 respectively (Table 5.2). For the self-regulated the ROA, FSS and OSS were 0.225, 1.46 and 1.62 respectively (Table 5.3). It is clear that financial sustainability (ROA, FSS, OSS) of self-regulated MFIs is higher than that for BoG regulated MFIs. The differences in the financial sustainability variables of the BoG regulated and the self-regulated MFIs may be attributable to the higher cost of compliance for BoG regulated MFIs.

It can be seen from Table 5.1 that the number of MFIs for which average changes in profit (ACIP), assets (ACIA) and stock (ACIS) of their small business clients were reported dropped from 55 to 43 because only 43 of the MFIs allowed their clients to be interviewed. The mean ACIP, ACIA, and ACIS for the 43 MFIs were GH¢515.60 (US$149.52), GH¢5,702.3 (US$1,653.67) and GH¢11,559.0 (US$3,352) respectively.

Table 5.3 Descriptive Statistics for Self-Regulated MFIs

Variables	Obs.	Mean	Std. Deviation	Minimum	Maximum
AGE	31	3.45	5.71	1	10
SIZE	31	2676632	7962761	13000	38280064
NAB	31	477.55	692.61	24	2456
NOAC	31	3134.81	2825.14	96	8352
ALS	31	2522.29	1627.54	500	5000
PWB	31	61.81	20.03	25	91
PWC	31	65.24	4.98	55.59	80.03
ROA	31	.23	.56	-0.27	2.15
FSS	31	1.46	1.18	0.16	5.69
OSS	31	1.62	1.13	0.45	5.98
ACIP	21	411.90	371.70	-50	1600
ACIA	21	7833.82	27057.87	0	125000
ACIS	21	15149.1	51725.64	25	240000

The mean ACIP, ACIA and ACIS for the BoG regulated MFIs were GH¢614.58 (US$178.24), GH¢3,667.59 (US$1,063.69) and GH¢8,131.77 (US$2,358.40) respectively, while ACIP, ACIA and ACIS for the self-regulated MFIs were GH¢411.90 (US$119.46), GH¢7,833.82 (US$2,271.99) and GH¢15,149 (US$4,393.56) respectively. However, the mean values of ACIP, ACIA and ACIS for the self-regulated MFIs were not representative of the sample as a particular MFI was found to have extremely high values of the impact variables. The median values for the impact variables, which were more representative, were therefore used instead of the mean (Table 5.4).

Table 5.4 Median of Impact Variables

Regulation	ACIP	ACIA	ACIS
BoG regulated	312.50	2600.00	5702.09
Self- regulated	325.00	500.00	3055.00
All MFIs	325.00	1500.00	3775.00

Table 5.4 shows the median value of ACIP for the BoG regulated MFIs to be GH¢312.50 (US$90.63) which was slightly lower than that of the self-regulated MFIs with GH¢325.00 (US$94.26) for ACIP. The median values of ACIA and ACIS for the BoG regulated MFIs were GH¢2,600 (US$754.06) and GH¢5,702.09 (US$1,653.74) respectively, higher than that of the self- regulated MFIs which were GH¢500.00 (US$145) and GH¢3,055.00 (US$886.02) respectively. The median values of ACIP, ACIA and ACIS for all the MFIs were GH¢325.00 (US$94.26), GH¢1,500.00 (US$435.03) and GH¢3,775.00 (US$1094.83) respectively.

Table 5.5 Frequency Distribution of Categorical Variable

Variables	Categories	Frequency	Percent
Regulation	BoG regulated	24	43.64
	Self- regulated	31	56.36
Product	Financial Products only	27	49.09
	Financial and Non-Financial Products	28	50.91
Employment	Employed	30	57.00
	Did not employed	10	25.00

Table 5.5 presents the frequency distribution of 3 categorical variables used in the study. It shows that the sample comprised 24 (44 percent) BoG regulated MFIs and 31 (56 percent) self-regulated MFIs. The MFIs that provided both financial and non-financial services and those that provided only financial services were almost equal in number – 51 percent and 49 percent respectively. Financial services include loans, savings and micro insurance while non-financial services cover training in areas such as book-keeping and provision of business advice. Out of the 43 MFIs whose clients were interviewed, clients of 30 (70 percent) had been able to employ workers on part-time or full time basis. Many of the clients had employed part-time workers and had family members working in their businesses.

Market sustainability refers to the demand for and supply of microfinance. Sustainable demand implies that the MFI is able to provide products and services that meet the needs of the clients. Sustainable supply of microfinance also requires that the MFI is financially self-sufficient and meets all its costs from operations (see 3.3.2.2). Market sustainability therefore implies that the MFI is able to provide products and services that meet the needs of the clients and it is also financially self-sufficient. The variety of products supplied by the MFIs and their financial sustainability provide an indication of their market sustainability.

The total number of loan applications received by all the MFIs during the period under investigation was 44,702 out of which the demand of 32,831 applicants was met. It is likely that applicants who were refused loans did not meet the requirements of the MFIs. Conditions that must be satisfied for individual loans include: saving for not less than three months with the MFI, operation of a viable business, operation within a catchment area, and ability to provide guarantors. For group loans, members are required to have homogeneous business activities, operate in the same catchment area, the group should have an account with the MFI by saving for at least three months, group members should be willing to undergo training, and each member must meet the repayment plan. These requirements were likely to be too onerous

for clients denied finance. For non-financial products, Table 5.6 indicates that most of the MFIs provided training in book-keeping and business development. Therefore, access to non-financial services, in addition to financial products, would have helped clients to acquire the skills and abilities necessary to manage their small businesses. As explained earlier, a mean FSS of 1.25 for all the MFIs indicated that the MFIs were able to cover cost of capital and earn profit, that is, on average the MFIs were financially sustainable. Since financial sustainability provides an indication of market sustainability they could be said to have market sustainability.

Table 5.6 Type of Lending provided by MFIs

MFI Type	Lending Type	Frequency	Percent (%)
BoG Regulated MFI	Both Individual and Group Lending	21	87.50
	Individual Lending	3	12.50
Self- Regulated MFI	Both Individual and Group Lending	17	53.13
	Individual Lending	15	46.87
Overall	Both Individual and Group Lending	38	67.86
	Individual Lending	18	32.14

Table 5.6 shows the percentage of MFIs engaged in both individual and group lending. As indicated in Table 5.6, about 87.5 percent of the BoG regulated MFIs engaged in both individual and group lending compared with 67.9 percent for the self-regulated MFIs and 68 percent for all MFIs. Table 5.7 also shows the average default rate for the BoG regulated and self-regulated MFIs. The default rates for the group loans in both BoG regulated MFIs of 25 percent and self-regulated MFIs of 26 percent were higher than the default rates for individual loans which were 20 percent for the BoG regulated MFIs and 13 percent for the self- regulated MFIs.

Table 5.7 Average Default Rate for Different Types of Lending

MFI Type	Lending type	Default rate (in percentage)
BoG Regulated	Individual loan	20
	Group loan	25
Self- Regulated	Individual loan	13
	Group loan	26
Total	Individual loan	16.5
	Group loan	25.5

The average default rate for individual loans for all the MFIs was 16.5 percent while that of the group loans was 25.5 percent. The high default rate experienced with the group loans have compelled some of the MFIs to reduce their group lending activities since a high default rate

has a negative effect on financial sustainability of the MFIs. Some of the reasons provided for the high default rate with the group loans include: use of loans for unintended purposes, failure of some group members to repay their share of the loans, inadequate monitoring of group loans, inefficient management of business, and poor timing of loan disbursements.

5.2.1 Reliability Assessment

As stated in section 4.4.7.1, Cronbach alpha was used to assess reliability of the variables in the model. The overall Cronbach alpha values (test scale) for the three components of the performance measures of outreach, financial sustainability and impact were 0.62, 0.68 and 0.66 respectively. Although the values are below the recommended value of 0.7, they are within the minimum limit of 0.60 (Robinson et al, 1991).

Table 5.8 Reliability Test Results

Variable	Cronbach's Alpha
Outreach	0.62
Financial Sustainability	0.68
Impact	0.66

5.3 RESULTS OF ANALYTICAL TECHNIQUES USED

This study aims at investigating empirically the relationships among the performance variables and the effect of regulation on the performance measures of outreach, financial sustainability and impact. This section reports the process followed to investigate the relationships among the above variables using Pearson correlation and hierarchical regression analyses.

Data were collected for three years; 2009, 2010 and 2011. However, many MFIs, especially the self-regulated MFIs did not have data for all the three years. There were several missing values for 2009 and 2010. Only data for 2011, which had no missing values, were used limiting the study to a cross-sectional rather than longitudinal study. Assessment of the impact of MFIs' products on clients' businesses was based on a maximum of 4 clients from each MFI. Average change in the clients' profits, stock of goods, business assets and employment were examined.

5.3.2 Hypothesis Testing Results

Hierarchical regression analyses were used to test the relationships among the performance measures and between regulation and the performance measures of outreach, financial sustainability and impact. Where the hierarchical regression was not significant in explaining

the dependent variables, it was complemented for by correlation analyses (Pearson correlation coefficient and its significant tests) and t-tests. The results for the ten hypotheses tested are presented in Tables 5.9 to 5.29.

5.3.2.1 Breadth of Outreach and Financial Sustainability of MFIs

Hypothesis 1a: Breadth of outreach is unrelated to the financial sustainability of MFIs in Ghana

This section investigated the association between the number of active clients (NOAC) and the financial sustainability of MFIs. Financial sustainability was measured by Return on Asset (ROA), Financial Self-Sufficiency (FSS) and Operational Self-Sufficiency (OSS). Due to the small sample size the study used the Pearson's correlation analysis to complement results from the hierarchical regression reported in Appendix J.

Table 5.9 Test of Association between NOAC and Financial Sustainability Variables

	Correlation Coefficient	Test statistic	df	P-value	Confidence Interval	
ROA	-0.078004	-0.56962	53	0.571344	-0.33634	0.191251
FSS	-0.157632	-1.16211	53	0.250397	-0.40595	0.112364
OSS	-0.097946	-0.71651	53	0.476824	-0.35404	0.171815

The results show that, the correlation coefficient between ROA and NOAC was -0.078004, with a p-value of 0.571344, implying that there was no linear association between return on asset and number of active clients of the MFIs.

Similar result was found for the association between FSS and NOAC. The correlation coefficient was -0.157632 with a p-value of 0.250397 indicating that the correlation coefficient was not statistically different from zero. This therefore implies that, there was no linear association between the number of active clients (NOAC) and the financial self-sufficiency (FSS) of the MFIs.

From the results, the correlation coefficient between OSS and NOAC was -0.097946 and the p-value was 0.476824, suggesting that there was no linear association between OSS and NOAC. Hypothesis 1a which predicted that breadth of outreach is unrelated to financial sustainability of MFIs in Ghana is thus, supported. The results of the Pearson correlation

analyses are consistent with those for the hierachical regression analysis presented in Appendix J for the same hypothesis.

5.3.2.2 Depth of Outreach and Financial Sustainability of MFI

Hypothesis 1b: Depth of outreach is unrelated to the financial sustainability of MFIs in Ghana

Hypothesis 1b examined the linear relationship between financial sustainability and the depth of outreach of MFIs in Ghana. Average loan size (ALS) and percentage of women clients (PWC) were used as measures for depth of outreach.

Using the Pearson correlation coefficient, this section investigated the association between ALS and the financial sustainability variables – ROA, FSS and OSS. Table 5.10 presents the test results which indicate that, the coefficient between ROA and ALS was negative (-0.206225), but not statistically significant given the p-value of 0.130899. Thus, the study found no linear association between ROA and ALS. Similarly, the results found no linear association between FSS and ALS, given a correlation coefficient of 0.063133 and a p-value of 0.661806.

Table 5.10 Test of Association between ALS and Financial Sustainability Variables

	Correlation Coefficient	Test Statistic	df	P-value	Confidence Interval	
ROA	-0.206225	-1.53432	53	0.130899	-0.44706	0.062491
FSS	0.063133	0.439889	53	0.661806	-0.20832	0.320482
OSS	0.281355	2.1345	53	0.03744	0.017354	0.5086834

However, the correlation coefficient between OSS and ALS was 0.2813 and it was statistically significant at the 5 percent level of significance given the p-value of 0.0374. The result shows the presence of a linear relationship between average loan size and operational self-sufficiency. The evidence suggests that larger loan sizes (lower depth of outreach) correspond to higher operational self-sufficiency. The results are consistent with those for the hierachical regression analysis presented in Appendix J for the same hypothesis.

Table 5.11 Test of Association between PWC and Financial Sustainability Variables

	Correlation Coefficient	Test Statistic	df	P-value	Lower	Upper
ROA	0.027433	0.199788	53	0.842411	-0.23961	0.290615
FSS	0.017518	0.12755	53	0.898988	-0.24894	0.281507
OSS	0.160452	1.183445	53	0.241914	-0.10951	0.408366

Table 5.11 presents the correlation coefficients for the linear association between percentage of women clients and the financial sustainability variables. The coefficients for the correlations between ROA and PWC, FSS and PWC and OSS and PWC were 0.027433, 0.017518 and 0.160452 respectively. They were all not statistically significant with p-values of 0.842411, 0.898988 and 0.241914 respectively. The evidence shows no linear association between percentage of women clients and the financial sustainability variables. Hypothesis 1b which predicted that depth of outreach is unrelated to the financial sustainability of MFIs in Ghana, is rejected if ALS is used as the measure of depth of outreach and supported if PWC is used as the measure of depth of outreach.

5.3.2.3 Financial Sustainability of MFIs and Impact on Clients' Businesses

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses.

Hypothesis 1c predicted that financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses. The hypothesis sought to assess the impact of financial sustainability of the MFIs on the operations of their clients' businesses. It was based on the position that the more financially sustainable the MFI, the more likely it would be able to provide suitable products and services to its clients and therefore make an impact on clients' businesses. Hypothesis 1c therefore, examined the linear association between financial sustainability and operations of clients' businesses. Average change in profit (ACIP), average change in stock (ACIS), average change in business assets (ACIA) and employment (EMPL) were used as measures of impact while ROA, FSS and OSS were used as measures of financial sustainability.

A. Test of Association between ACIP and Financial Sustainability Variables

The Pearson correlation coefficient was used to investigate the presence of a linear association between return on asset (ROA) and average change in profit (ACIP) of the clients of the MFIs. The results showed negative but insignificant association. At the 5 percent level of significance,

the p-value of 0.94 indicates there was no linear association between ROA and ACIP. Similarly, at a p-value of 0.65, the null hypothesis of no linear association between FSS and ACIP could not be rejected. The case of OSS and ACIP was the same, at the 5 percent level of significance the results show no significant linear association between OSS and ACIP.

Table 5.12 Test of Association between ACIP and Financial Sustainability Variables

	Correlation Coefficient	Test Statistic	df	P-value	Lower	Upper
ROA	-0.0104205	0.074876	41	0.940677	-0.28967	0.310945
FSS	-0.0527768	-0.45583	41	0.650919	-0.3636	0.234333
OSS	-0.0534278	0.13919	41	0.889982	-0.28044	0.319988

B. Test of Association between ACIS and Financial Sustainability Variables

This section investigated the association between the average change in stock (ACIS) in clients' businesses and the financial sustainability of the MFIs. Using Pearson correlation coefficient, and the significance test of the coefficients, the study investigated the possibility of a linear association between ACIS and ROA, ACIS and FSS, and ACIS and OSS. The results showed that the correlation coefficients were positive but statistically insignificant, indicating no linear association between average change in stock (ACIS) and ROA, between ACIS and FSS or ACIS and OSS.

Table 5.13 Test of Association between ACIS and Financial Sustainability Variables

	Correlation Coefficient	Test Statistics	df	P-value	Confidence Interval	
ROA	0.0576429	-0.84331	41	0.40395	-0.41466	0.17669
FSS	0.1108638	-1.34092	41	0.18732	-0.47601	0.10163
OSS	0.0615998	-0.95967	41	0.34284	-0.42945	0.15921

C. Test of Association between ACIA and Financial Sustainability Variables

The study used the Pearson correlation coefficients to ascertain the linear relationship between the average change in clients' business assets and the financial sustainability of the MFIs. The correlation coefficient between ROA and ACIA was 0.0314 and it was not statistically significant with a p-value of 0.2336 (Table 5.14).

Table 5.14 Test of Association between ACIA and Financial Sustainability Variables

	Correlation Coefficient	Test Statistic	df	P-value	Confidence Interval	
ROA	0.0314157	-1.20894	41	0.233611	-0.46023	0.121592
FSS	0.1176549	-0.92889	41	0.358381	-0.42556	0.163843
OSS	0.0457926	-0.81725	41	0.418511	-0.41131	0.180606

This suggested that, ROA was not linearly related to ACIA. Similarly, the correlation coefficient between FSS and ACIA was 0.117654 and it was also not statistically significant given its p-value of 0.3583. Additionally, the study found no linear association between OSS and ACIA as the correlation coefficient was positive (0.0457) but not statistically different from zero (p-value = 0.4185).

D. Impact of Financial Sustainability on Clients' Employment

To examine if the financial sustainability of MFIs affect the employment decision of their clients, the study used the t-test since employment was a categorical variable. The contention was that, if there a relationship exists, then the average financial sustainability should differ statistically between those who employed more workers and those who did not. Table 5.15 presents the t-test results. From the results, the average financial sustainability did not differ between MFIs whose clients recruited more employees and those whose clients did not recruit more employees. The results show that, at the 5 percent level of significance, the average ROA, FSS, OSS did not differ between those who recruited more employees and those who did not given the respective p-values of 0.121, 0.277 and 0.171. Base on this, it can be concluded that there is no relationship between the financial sustainability of MFIs and the employment behaviour of their clients.

Table 5.15 Impact of Financial Sustainability on Clients' Employment

	Mean		T-statistic	df	P-value	Confidence Interval	
	Employed	Did not Employ				Lower	Upper
ROA	0.18968	0.0475	-1.58586	37.06228	0.121267	-0.32382	0.039467
FSS	1.25903	1.0591	-1.10046	40.99992	0.277552	-0.56666	0.166924
OSS	1.43903	1.2100	-1.39421	40.89094	0.170784	-0.56082	0.102752

The evidence therefore supports the prediction that financial sustainability is unrelated to the ability of MFIs to make an impact on their clients' businesses. Hypothesis 1c is therefore supported. The results are consistent with those for the hierachical regression analysis presented

in Appendix J for the same hypothesis. The next set of tests examines the effect of regulation on each of the performance variables.

5.3.2.4 Regulation and Breadth of Outreach for MFIs

Hypothesis 2a: Regulation has no effect on breadth of outreach for MFIs in Ghana

$$\ln(\text{NOAC}_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \quad (11)$$

This section examined the impact of regulation on outreach of MFIs in Ghana using hierarchical regression analysis. The control variables age and size were converted to logarithm values while the original values were used for the control variable product. The study estimated the variance inflating factor (VIF) for all independent variables using the Breuch-Pegan test for heteroscedasticity to assess multicollinearity. The results are shown in Table 5.16.

The maximum VIF recommendations in literature are 4 by Pan and Jackson (2008), 5 by Rogerson (2001) and 10 by Hair, Anderson, Tetham and Black (1995). The highest VIF was for regulation whose standard errors were larger by a factor of 3.51 than would otherwise be the case if there were no inter-correlations with the other independent variables. Based on this and given that the VIF were all less than 4 (Table 5.16), it was concluded that multicollinearity was minimal.

Table 5.16 Diagnostic Results for Multicollinearity and Heteroskedasticity Test.

	Multicollinearity Test		**Heteroskedasticity (Breuch-Pegan/Cook-Weisberg test)**	
Variable	VIF	1/VIF	Chi-square (1)	P-value
Regulation	3.51	0.284978	6.71	0.0096
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	**2.67**			

In testing for heteroskedasticity, the Breuch-Pegan test examined the null hypothesis that the variance of the error terms was constant against the alternative of unequal variance. From the results, the null hypothesis was rejected indicating heteroskedasticity. To correct for this, the White robust standard error was used in the hierarchical regression results presented in Table 5.17.

Independent variables in the hierarchical regression analyses were assessed only if the contribution of the entire set had been shown to be significant. Hypothesis 2a sought to assess the impact of regulation on breadth of outreach, where breadth of outreach was measured by the number of active clients (NOAC). The results as shown in Table 5.17 indicate a significant relationship between regulation and NOAC and therefore breadth of outreach. The R^2 of model 1 with the control variables alone was 56.6 percent with an F-statistic of 27.996. This was significant at $p<0.05$ for size and age of the MFI as control variables.

Table 5.17 Estimated Regression Results for the Relationship between Regulation and Breadth of Outreach (NOAC)

Variables	Coefficient	Robust Std. Error.	t	P-value
Model 1: Dependent Variable: lnNOAC				
Ln(Age)	0.5279337	0.2501654	2.11	0.040
Ln(Size)	0.364573	0.163386	2.23	0.030
Product	0.122945	0.354538	0.35	0.730
constant	2.307354	2.010316	1.15	0.256
Model 2: Dependent Variable: lnNOAC				
Ln(Age)	0.171163	0.224006	0.76	0.448
Ln(Size)	0.2269	0.1687	1.34	0.185
product	0.261247	0.32486	0.8	0.425
Regulation	1.631157	0.570329	2.86	0.006
Constant	4.189243	2.147931	1.95	0.057

Model	R^2	F(df) (P-value)	R^2 Change	F(df) Change (P-value)
1:	0.566	27.996 (3,51) (0.000)		
2:	0.631	24.665 (4,50)(0.000)	0.065	8.851(1, 50) (0.004)

The addition of the independent variable to the model (model 2) increased R^2 by close to 7 percent with a significant change in F-statistic of 8.85, suggesting that 7 percent of variation in NOAC was explained by regulation. The association between regulation and NOAC was confirmed by a coefficient of $\beta=1.631157$ (p-value of 0.006). The positive coefficient indicates that the number of active clients for BoG regulated MFIs was statistically higher than that for self-regulated MFIs in Ghana. This provides evidence that regulation is positively related to the breadth of outreach. Hypothesis 2a of the study which states that regulation has no effect on breadth of outreach for MFIs in Ghana is therefore rejected.

5.3.2.5 Regulation and Depth of Outreach for MFIs

Hypothesis 2b: Regulation has no effect on depth of outreach for MFIs in Ghana.

$$\ln(ALS_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 Regulation_i + \varepsilon_i \quad (12)$$

$$\ln(PWC_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 Regulation + \varepsilon_i \quad (13)$$

Using hierarchical regression, hypothesis 2b sought to assess the relationship between regulation and depth of outreach after controlling for age, size and products of the MFIs. Depth of outreach was measured by the average loan size (ALS) and percentage of women clients (PWC). To test this hypothesis, equations 12 and 13 were estimated. The results presented in Tables 5.19 and 5.21, show that regulation had no impact on ALS but had a negative effect on PWC at p-value of 0.042.

Table 5.18 presents the diagnostic results for multicollinearity and heterskedasticity tests of the model. The multicollinearity test results were identical to those reported in Table 5.16, since the independent variables were the same. Consequently, there were no multicollinearity problems. The heteroskedasticity test results did not lead to the rejection of the null hypothesis that the variance was constant, the model was therefore homoskedastic.

Table 5.18 Diagnostic Results for Multicollinearity and Heteroskedasticity Test of the Model

	Multicollinearity Test		**Heteroskedasticity (Breuch-Pegan/Cook-Weisberg test)**	
Variable	VIF	1/VIF	Chi-square (1)	P-value
Regulation	3.51	0.284978	2.01	0.1563
Ln(Age)	3.34	0.299561		
Ln(Size)	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	**2.67**			

The first model in the hierarchical regression (Table 5.19) comprising only the control variables and ALS showed that the control variables explained 22 percent of the variance in ALS and the F-statistic of 4.856 was significant (p-value of 0.005). The addition of the independent variable, regulation, to the model increased R^2 by 2.5 percent and the F-statistic change of 1.69 was not significant. Regulation therefore had no impact on ALS (β=-0.46; p-value = 0.199).

Table 5.19 Estimated Regression Results for the Relationship between Regulation and Average Loan Size

	Coefficient	Standard Error	t	P-value
Model 1: Dependent Variable: lnALS				
Ln(Age)	0.0739854	0.120321	0.61	0.541
Ln(Size)	0.1392811	0.0716011	1.95	0.057
Product	0.3760906	0.1943543	1.94	0.059
Constant	5.444619	0.8734626	6.23	0.000
Model 2: Dependent Variable: lnALS				
Ln(Age)	0.1748385	0.1424551	1.23	0.225
Ln(Size)	0.178199	0.0771558	2.31	0.025
Product	0.3369948	0.1953736	1.72	0.091
Regulation	-0.4611007	0.3544473	-1.30	0.199
Constant	4.912641	0.9591365	5.12	0.000
Model	R^2	F(df) (P-value)	R^2 Change	F(df) Change (P-value)
1:	0.222	4.856 (3, 51) (0.005)		
2:	0.248	4.115(4, 50) (0.006)	0.25	1.692(1,50)(0.199)

The results suggest that there were no differences in average loan size between BoG regulated and self-regulated MFIs. Size of the MFI *(β-0.*178, p-value of 0.025) and to a small extent types of products *(β*=0.337, p-value of 0.091) were positively related to ALS. These indicate that MFIs that provided larger sized loans were bigger in size and had more products than those with smaller-sized loans.

This section examined the impact of regulation on the percentage of women clients of MFIs (the second measure of the depth of outreach) using the hierarchical regression with age, size and product as control variables. Table 5.20 presents the diagnostic results for multicollinearity and heteroskedasticity test. The VIF values for all independent variables were too small to cause multicollinearity. Similarly, the Breuch-Pegan test for heteroskedasticity did not lead to rejection of the null hypothesis of a constant variance. The model was therefore free from multicollinearity and heteroskedasticity.

Equation 13 examined the association between regulation and percentage of women clients. The control variables explained 7 percent of the variance in PWC and the F-statistic of 1.307 was not significant. However, the addition of regulation to the model resulted in a 6.3 percent increase in variance explained. The change in F-statistic of 4.348 was significant (p-value = 0.042) resulting in a negative association between regulation and PWC *(β*= -0.0868777, p-value = 0.042) (Table 5.21).

Table 5.20 Diagnostic Results for Multicollinearity and Heteroskedasticity Test of the Model

	Multicollinearity Test		Heteroskedasticity (Breuch-Pegan/Cook-Weisberg test)	
Variable	VIF	1/VIF	Chi-square (1)	P-value
Regulation	3.51	0.284978	1.51	0.2195
Ln(Age)	3.34	0.299561		
Ln(Size)	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	**2.67**			

The results indicate that BoG regulated MFIs provided loans to fewer women than self-regulated MFIs. Hypothesis 2b was therefore partially supported since regulation was not associated with ALS. However, the hypothesis was rejected for PWC as measure of depth of outreach since the results show a significant association between regulation and PWC at p-value of 0.042.

Table 5.21 Estimated Regression Results for the Relationship between Regulation and Percentage of Women Clients

	Coefficient	Standard Error	t	P-value
Model 1: Dependent Variable: lnPWC				
Ln(Age)	-0.0141415	0.0145027	-0.98	0.334
Ln(Size)	-0.0032319	0.0086303	-0.37	0.710
Product	0.001538	0.0234262	0.07	0.948
Constant	4.221193	0.1052813	40.09	0.000
Model 2: Dependent Variable: lnPWC				
Ln(Age)	0.0048606	0.0167459	0.29	0.773
Ln(Size)	0.0041007	0.0090698	0.45	0.653
Product	-0.0058282	0.0229665	-0.25	0.801
Regulation	-0.0868777	0.041666	-2.09	0.042
Constant	4.120961	0.1127484	36.55	0.000
Model	R^2	F(df) (P-value)	R^2 Change	F(df) Change (P-value)
1:	0.071	1.307(3,51) (0.282)		
2:	0.146	2.131(4,50) (0.091)	0.063	4.348(1,50) (0.042)

5.3.2.6 Regulation and Financial Sustainability of MFIs

Hypothesis 2c: Regulation has no effect on financial sustainability of MFIs in Ghana.

Hypothesis 2c sought to examine the impact of regulation on the financial sustainability of MFIs in Ghana. Financial sustainability variables were return on asset (ROA), financial self-sufficiency (FSS) and operational self-sufficiency (OSS). The study used the t-test and compared the average financial sustainability of BoG regulated MFIs with that for the self-regulated MFIs. The results are presented in Table 5.22 and complement those for the regression analysis in Appendix J. If regulation significantly impacted financial sustainability, then the average sustainability of the BoG regulated and self-regulated MFIs should be statistically different. As a result, the test of the null hypothesis that there is no significant difference between the averages for BoG regulated and self-regulated MFIs was partially supported.

Table 5.22 T-Test Results on the Effect of Regulation on Financial Sustainability of MFIs

	Mean		t statistic	df	P-value	Lower	Upper
	BoG Regulated	Self-regulated					
ROA	0.077083	0.225806	1.385523	38.52104	0.173863	-0.06848	0.365927
FSS	0.98125	1.460323	2.205787	33.3818	0.034389	0.03739	0.920755
OSS	1.179583	1.617097	2.070168	34.86773	0.045907	0.008408	0.866619

From Table 5.22, the average ROA for BoG regulated MFIs was 0.077083 and that of the self-regulated MFIs was 0.225806. The test-statistic was 1.3855 with a p-value of 0.1738 which was higher than the 0.05 level of significance. The results indicate that, the average ROA for BoG regulated MFIs was not statistically different from that of the self-regulated MFIs. This implies that regulation does not significantly affect the ROA of MFIs in Ghana.

Conversely, the study computed the average FSS ratio for BoG regulated MFIs to be 0.98125 and that of the self-regulated MFIs was 1.460323 with a test-statistic of 2.205787 and a p-value of 0.034389. At 5 percent level of significance, the results show that the average FSS for self-regulated MFIs was statistically different (higher) from that of the BoG regulated MFIs. Regulation therefore impacts the FSS of MFIs in Ghana.

The study also compared the OSS ratio for BoG regulated and self-regulated MFIs using the t-test. From the results, the average OSS for BoG regulated MFIs was 1.179583 and that of self-regulated MFIs was 1.617097 with a test-statistic of 2.070168 and a p-value of 0.045907. The

results suggest that, at the 5 percent level of significance, the average OSS for self-regulated MFIs was statistically different (higher than) from the average OSS for BoG regulated MFIs.

Hypothesis 2c which predicted that regulation has no effect on financial sustainability is therefore supported for ROA but rejected for FSS and OSS which show significant negative associations at p-values of 0.034389 and 0.045907 respectively.

5.3.2.7 Regulation of MFIs and Impact on Clients' Businesses

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses.

Hypothesis 2d sought to examine the effect of regulation on the businesses of the clients of the MFIs. Impact variables of average change in profit (ACIP), average change in stock (ACIS), average change in asset (ACIA) and employment (EMPL) were used. The impact variables of ACIP, ACIS and ACIA were continuous variables while regulation was a binary variable. If regulation impacts these variables, then the average values of these variables should be statistically different for BoG regulated and self-regulated MFIs. T-tests were used to complement the results from the hierarchical regression analysis, the results of which are in Appendix J. The results of the t-tests are presented in Table 5.23.

Table 5.23 T-Test Results on the Effect of Regulation of MFIs on clients' Businesses

	Mean		t statistic	df	P-value	Lower	Upper
	BoG-Regulated	Self-regulated					
ACIP	614.5836	411.9048	-1.33255	35.17477	0.191247	-511.4	106.0423
ACIS	8131.769	15149.1	0.612186	21.25178	0.546909	-16803.6	30838.24
ACIA	3667.589	7833.824	0.696207	21.0868	0.493902	-8275.45	16607.92

It can be seen from Table 5.23 that the mean ACIP for BoG regulated MFIs was 614.5836 and that of self-regulated MFIs was 411.9048 with a test-statistic of -1.33255 and a p-value of 0.191247. The results imply that, there was no statistically significant difference between the mean ACIP for the clients of BoG regulated and self-regulated MFIs.

Similarly, the mean ACIS was 8131.769 for the clients of the BoG regulated MFIs and 15149.1 for the clients of the self-regulated MFIs. With a test-statistic of 0.61212 and a p-value of

0.5469, the results suggest that the mean ACIS was not statistically different for the clients of BoG regulated and self-regulated MFIs.

The mean for ACIA was 3667.589 for the clients of the BoG regulated MFIs and 7833.824 for the clients of the self-regulated MFIs. The results show that the mean ACIA was not statistically different for the clients of BoG regulated and self-regulated MFIs, given that the test-statistic was 0.696 and its p-value was 0.493.

Regulation and Employment are binary variables. In view of this, a Chi-Square Test of Association was used to examine the relationship between regulation and employment. The results are presented in Table 5.24.

Table 5.24 Contingency Table and Chi-Square Test Results

	Regulated	**Unregulated**
Employed	16	15
Did not Employ	5	7
Chi-square statistic = 0.0601	Df =1	P-value = 0.8063

The results showed a chi-square test-statistic of 0.0601 and a p-value of 0.8063, indicating that there was no association between regulation and employment of the clients of the MFIs. The available evidence therefore suggests that regulation does not affect business performance of clients of the MFIs. The results are consistent with those for the hierachical regression analysis presented in Appendix J for the same hypothesis.

The next two hypotheses examined the mediation effect of regulation on the relationships between breadth and depth of outreach and financial sustainability. That is, whether differences in breadth and depth of outreach between BoG regulated and self- regulated MFIs account for differences in their performance in terms of financial sustainability. The last hypothesis also examined the mediation effect of regulation on the relationship between financial sustainability and impact of the MFIs on their clients' businesses. First of all, the relationships were assessed against the mediation rules defined by Baron and Kenny's (1986) and the results of the mediation analysis presented to support outcomes from the conditions.

Baron and Kenny's (1986) criteria (see section 4.4.7.4) imply that a non-significant relationship between the independent and dependent variables (condition 1) prevents any subsequent

mediating relationship between the independent, mediator and dependent variables. Condition 1 of Baron and Kenny's (1986) criteria was not satisfied in each of the 3 hypotheses on mediation effects. For example, in the first hypothesis on mediation effect, breadth of outreach (NOAC) (independent variable) did not have a significant effect on any of the financial sustainability variables (ROA, FSS and OSS) (dependent variables) and so it is impossible for regulation to mediate the relationship between breadth of outreach and financial sustainability. This is demonstrated by the various mediation test results presented below.

5.3.2.8 Regulation, Breadth of Outreach and Financial Sustainability of MFIs

Hypothesis 3a: Regulation mediates the relationship between breadth of outreach and financial sustainability such that BoG regulated MFIs have greater breadth of outreach and are therefore likely to be more financially sustainable than self-regulated MFIs in Ghana.

Hypothesis 3a sought to investigate whether regulation mediates the relationship between breadth of outreach (NOAC) and financial sustainability. Since the mediator variable is a dummy variable, binary mediation analysis developed by Ender (2011) for the STATA statistical package was used. The various effects and respective 95 percentile confidence interval were computed. Given the small sample size bootstrapping was used to enhance the distribution of the variables.

Table 5.25 Mediation Effect of Regulation on the Relationship between Breadth of Outreach and Financial Sustainability

Independent Variable	Mediating Variable	Dependent Variable	Effects	Coefficients	Bootstrapping 95% CI	
					Lower	Upper
ln(NOAC)	Regulation	ln(ROA)	Indirect Effect	-0.057	-0.38	0.25
			Direct Effect	0.043	-0.34	0.47
			Total Effect	-0.014	-0.37	0.28
ln(NOAC)	Regulation	ln(FSS)	Indirect Effect	0.037	-0.39	0.43
			Direct Effect	-0.229	-0.63	0.25
			Total Effect	-0.192	-0.46	0.08
ln(NOAC)	Regulation	ln(OSS)	Indirect Effect	-0.109	-0.48	0.25
			Direct Effect	0.069	-0.34	0.47
			Total Effect	-0.040	-0.31	0.19

Table 5.25 presents the summary of the results for the mediation effect of regulations on the relationship between breadth of outreach and financial sustainability. As shown in Table 5.25, the indirect (mediating) effects of regulation on the relationship between number of active

borrowers and return on assets, financial self-sufficiency and operational self-sufficiency were β = -0.057, CI [-0.38 0.25], β = 0.037, CI [-0.39 0.43]and β = -0.109, CI [-0.48 0.25] respectively. The results were not statistically significant at the 5 or 10 percent level of significance. This means regulation did not mediate the relationship between number of active clients and the financial sustainability variables (ROA, FSS and OSS). The regression results in section 5.3.2.1 show no significant relationship between the number of active clients (breadth of outreach) and financial sustainability of the MFIs in Ghana, one of the conditions that must be satisfied for mediation to be established, hence the absence of any mediation effect. Since there was no evidence of mediation effect, hypothesis 3a is rejected.

5.3.2.9 Regulation, Depth of Outreach and Financial Sustainability of MFIs

Hypothesis 3b: Regulation mediates the relationship between depth of outreach and financial sustainability such that self- regulated MFIs in Ghana have greater depth of outreach and are therefore likely to be less financially sustainable than BoG regulated MFIs in Ghana.

Depth of outreach is proxied by average loan size and percentage of women clients. Table 5.26 presents the estimates of the indirect effect, direct effect and the total effect for the relationship between financial sustainability variables (dependent variables) and average loan size (independent variable), with regulation as the mediator.

Table 5.26 Mediation Effect of Regulation on the Relationship between Depth of Outreach (Average Loan Size) and Financial Sustainability

Independent Variable	Mediating Variable	Dependent Variable	Effects	Coefficients	Bootstrapping 95% CI	
					Lower	Upper
ln(ALS)	Regulation	ln(ROA)	Indirect Effect	-0.0090	-0.09	0.06
			Direct Effect	0.0384	-0.21	0.24
			Total Effect	-0.0294	-0.24	0.23
ln(ALS)	Regulation	ln(FSS)	Indirect Effect	-0.036	-0.18	0.05
			Direct Effect	0.386	-0.30	0.44
			Total Effect	0.002	-0.28	0.37
ln(ALS)	Regulation	ln(OSS)	Indirect Effect	-0.033	-0.13	0.06
			Direct Effect	0.310	-0.02	0.57
			Total Effect	0.277	-0.30	0.54

The effects of interest which were the indirect effects for return on asset, financial self-sufficiency and operational self-sufficiency with regulation as a mediator were β= -0.0090, CI [-0.09 0.06], β = -0.036, CI [-0.18 0.05] and β = -0.033, CI [-0.13 0.06] respectively. All the

indirect effects were not statistically significant, implying that regulation did not mediate the relationship between average loan size and financial sustainability. The evidence suggests the absence of any mediation effect.

Table 5.27 shows the mediation effect of regulation on the relationship between percentage of women clients and return on asset, financial self-sufficiency and operational self-sufficiency to be β = 0.027, CI [-0.14 0.16], β = 0.074, CI [-0.10 0.24] and β = -0.004, CI [-0.16 0.16] respectively.

Table 5.27 Mediation Effect of Regulation on the Relationship between Depth of Outreach (Percentage of Women Clients) and Financial Sustainability

Independent Variable	Mediating Variable	Dependent Variable	Effects	Coefficients	Bootstrapping 95% CI	
					Lower	Upper
ln(PWC)	Regulation	ln(ROA)	Indirect Effect	0.027	-0.14	0.16
			Direct Effect	-0.068	-0.28	0.14
			Total Effect	-0.041	-0.24	0.14
ln(PWC)	Regulation	ln(FSS)	Indirect Effect	0.074	-0.10	0.24
			Direct Effect	-0.015	-0.22	0.17
			Total Effect	0.058	-0.14	0.26
ln(PWC)	Regulation	ln(OSS)	Indirect Effect	-0.004	-0.16	0.16
			Direct Effect	0.187	-0.10	0.45
			Total Effect	0.183	-0.10	0.44

None of these indirect effects were statistically significant. The results suggest that regulation did not mediate the relationship between percentage of women clients and financial sustainability. Since there was no evidence of any mediation effect of regulation on the relationship between depth of outreach and financial sustainability, hypothesis 3b is rejected.

5.3.2.10 Regulation, Financial Sustainability and Impact of MFIs

Hypothesis 3c: Regulation mediates the relationship between financial sustainability and impact such that BoG regulated MFIs in Ghana have greater financial sustainability and are therefore more likely than self- regulated MFIs to make a positive impact on their clients' businesses

Hypothesis 3c predicted that regulation mediates the relationship between financial sustainability of the MFIs and the operations of their clients' businesses. Financial sustainability variables of return on assets, financial self-sufficiency and operational self-

sufficiency were the independent variables while impact variables of average change in profits, average change in assets, average change in stock and average change in employment were the dependent variables. The indirect effects, the direct effects and the total effects of all the relationships are presented in Tables 5.28- 5.30.

Table 5.28 Mediation Effect of Regulation on the Relationship between Financial Sustainability (Return on Assets) and Impact

Independent Variable	Mediating Variable	Dependent Variable	Effects	Coefficients	Bootstrapping 95% CI	
					Lower	Upper
ln(ROA)	Regulation	ln(ACIP)	Indirect Effect	0.0083	-0.07	0.08
			Direct Effect	0.045	-0.14	0.28
			Total Effect	0.045	-0.21	0.28
ln(ROA)	Regulation	ln(ACIA)	Indirect Effect	-0.002	-0.11	0.90
			Direct Effect	-0.139	-0.42	0.17
			Total Effect	-0.14	-0.42	0.15
ln(ROA)	Regulation	ln(ACIS)	Indirect Effect	-0.004	-0.21	0.13
			Direct Effect	0.16	-0.12	0.49
			Total Effect	0.16	-0.10	0.40
ln(ROA)	Regulation	EMPL	Indirect Effect	-0.0026	-0.11	0.12
			Direct Effect	0.0716	-0.44	0.53
			Total Effect	0.0689	-0.41	0.53

As indicated in Table 5.28 the mediating or indirect effect of regulation on the relationship between return on assets and impact variables (ACIP, ACIS, ACIA and EMPL) were β = 0.008, CI [-0.07, 0.08], β = -0.002, CI [-0.11, 0.90], β = -0.004, CI [-0.21, 0.13] and β = -0.0026, CI [-0.11, 0.12] respectively. However, none of these effects were statistically significant. The implication of these results is that regulation did not mediate the relationship between return on asset and the impact variables (ACIP, ACIS, ACIA and EMPL).

The results in Table 5.29 indicate that the mediating effect of regulation on the relationship between financial self-sufficiency and impact variables (ACIP, ACIS, ACIA and EMPL) were β = 0.013, CI [-0.23 0.11], β = -0.046, CI [-0.24 0.06], β = -0.101, CI [-0.37 0.01] and β = 0.0334, CI [-0.13 0.26] respectively. However, none of these effects were statistically significant. This implies that regulation did not mediate the relationship between financial self-sufficiency and the impact variables (ACIP, ACIS, ACIA and EMPL).

Table 5.29 Mediation Effect of Regulation on the Relationship between Financial Sustainability (Financial Self-sufficiency) and Impact

Independent Variable	Mediating Variable	Dependent Variable	Effects	Coefficients	Bootstrapping 95% CI	
					Lower	Upper
ln(FSS)	Regulation	ln(ACIP)	Indirect Effect	0.013	-0.23	0.11
			Direct Effect	0.058	-0.11	0.36
			Total Effect	-0.071	-0.16	0.26
ln(FSS)	Regulation	ln(ACIA)	Indirect Effect	-0.046	-0.24	0.06
			Direct Effect	-0.075	-0.32	0.22
			Total Effect	-0.121	-0.38	0.14
ln(FSS)	Regulation	ln(ACIS)	Indirect Effect	-0.101	-0.37	0.01
			Direct Effect	0.101	-0.17	0.41
			Total Effect	0.0012	-0.23	0.26
ln(FSS)	Regulation	EMPL	Indirect Effect	0.0334	-0.13	0.26
			Direct Effect	0.0281	-0.37	0.43
			Total Effect	0.0614	-0.31	0.46

Table 5.30 showed the mediation effect of regulation on the relationship between operational self-sufficiency and impact variables (ACIP, ACIS, ACIA and EMPL). The estimated indirect effects of β = 0.007, CI [-0.17 0.08], β = -0.018, CI [-0.16 0.057], β = -0.037, CI [-0.31 0.06] and β = 0.0076, CI [-0.09 0.20] respectively, show no significant effect that regulation mediates the relationship between operational self-sufficiency and impact.

Table 5.30 Mediation Effect of Regulation on the Relationship between Financial Sustainability (Operational Self-sufficiency) and Impact

Independent Variable	Mediating Variable	Dependent Variable	Effects	Coefficients	Bootstrapping 95% CI	
					Lower	Upper
ln(OSS)	Regulation	ln(ACIP)	Indirect Effect	0.007	-0.17	0.08
			Direct Effect	0.013	-0.14	0.29
			Total Effect	0.020	-0.17	0.23
ln(OSS)	Regulation	ln(ACIA)	Indirect Effect	-0.018	-0.16	0.06
			Direct Effect	-0.171	-0.38	0.07
			Total Effect	-0.189	-0.40	0.07
ln(OSS)	Regulation	ln(ACIS)	Indirect Effect	-0.037	-0.31	0.06
			Direct Effect	0.083	-0.19	0.36
			Total Effect	0.046	-0.21	0.28
ln(OSS)	Regulation	EMPL	Indirect Effect	0.0076	-0.09	0.20
			Direct Effect	0.0124	-0.36	0.37
			Total Effect	0.0201	-0.36	0.36

As explained earlier, a significant association between independent and dependent variables is expected for a mediating effect to occur. However, the results presented in section 5.3.2.3 show the absence of such a relationship. Since there was no evidence of regulation mediating the

relationship between financial sustainability of MFIs and their ability to impact the businesses of their clients, hypothesis 3c is rejected.

5.4 CONCLUSION

This chapter presented the results from analyses of the quantitative data. The descriptive and inferential statistics on various characteristics of the MFIs and the results of the reliability of the variable sets were presented. The results point to higher performance among the BoG regulated MFIs when compared with the self-regulated MFIs except that the self-regulated MFIs had higher depth of outreach. The results of the correlation analyses, hierarchical regression analyses, t-tests and the binary mediation tests were presented for ten hypotheses. Support was found for the relationship between breadth of outreach and financial sustainability, financial sustainability and impact as well as regulation and impact. However, the findings did not support the majority of the relationships predicted in the hypotheses. Significant relationships were found between average loan size and operational sufficiency and between regulation and number of active borrowers and also between regulation and percentage of women clients. These significant results imply that larger loan sizes (lower depth of outreach) enhance operational sufficiency. Furthermore, BoG regulated MFIs reached out to more clients (breadth of outreach) than the self-regulated MFIs. However, self-regulated MFIs reached out to more women clients (higher depth of outreach) than BoG regulated MFIs. The next chapter presents the findings of the qualitative data.

CHAPTER 6
FINDINGS OF THE QUALITATIVE DATA

6.1 INTRODUCTION

This chapter presents the findings of the qualitative analyses carried out to triangulate findings from the quantitative analyses presented in Chapter 5 to investigate the impact of regulation on performance of MFIs in Ghana. Deductive thematic analysis was used to establish three issues. First, whether MFI executives identify with the performance measures in the quantitative analysis (depth and breadth of outreach, financial sustainability and impact of their products on their clients' businesses); second, whether they use these measures for assessing performance of their MFIs: and third, whether they perceive differences in these performance variables between BoG regulated and self-regulated MFIs. The chapter consists of three sections. Section two describes the process followed to analyse the data. Section three reports findings from the data with respect to each of the research questions and the chapter concludes in section four.

6.2 STAGES INVOLVED IN DATA CODING AND ANALYSIS

As discussed in section 4.5.3 deductive thematic analysis involves six stages of coding and analysis. In the first stage of the analysis codebooks were created a-priori, based on the research questions and the theoretical framework. The codes relating to performance of MFIs are in Table 6.1 while the codes relating to the effects of regulation on the performance measures are in Tables 6.2 to 6.4.

Table 6.1 A-priori Codes Developed for Research Questions 1 and 2

Theory-driven codes	Explanation of the codes
1. Performance measures in terms of Outreach	
- Clients of the MFI	Loan outreach (number of currently active borrowers) and savings outreach (number of saving accounts)
- Estimated proportion of women clients	Percentage of women who are given loans and savings facilities
- Average loan size	Average amount of loans given to clients
2. Performance measures in terms of Financial Sustainability	
- Interest and other operating income	This includes interest earned on loans and advances and interest on investments, commission, fees and revenue from disposal of assets
- Profitability	The ability of the MFIs to earn profits from its operations
- Efficiency of operations	The ability of the MFIs to reduce cost of operations

- Portfolio quality	Refers to the quality of loans that are given out. It is generally reflected by the repayment rates and the portfolio at risk
- Management of assets (Return on assets)	Refers to how well assets are managed to generate income
3. Performance measures in terms of Impact	
- Increased stock of goods	Stock of goods acquired by clients of MFIs
- Acquisition of business assets	Business assets acquired by clients of MFIs
- Profit from small businesses	Business profits earned by clients of MFIs
- Employment	Employment generated by clients of MFIs

Table 6.2 A-priori Codes Developed for Research Questions 3 and 4 – Regulation and Outreach

Theory-driven codes	Explanation of codes
Effect of Regulation on Outreach	
- Positive effect	Increase in regulatory activities leads to an increase in outreach
- Negative effect	Increase in regulatory activities leads to a decrease in outreach
- No effect	Regulation has no effect on outreach

Table 6.3 A-priori Codes Developed for Research Questions 3 and 4 – Regulation and Financial Sustainability

Theory-driven codes	Explanation of codes
Effect of Regulation on Financial sustainability	
- Positive effect	Increase in regulatory activities leads to an increase in financial sustainability
- Negative effect	Increase in regulatory activities leads to a decrease in financial sustainability
- No effect	Regulation has no effect on financial sustainability

Table 6.4 A-priori Codes Developed for Research Questions 3 and 4- Regulation and Impact

Theory-driven codes	Explanation of codes
Effect of Regulation on Impact	
- Positive effect	Increase in regulatory activities improves the impact of MFIs' products on clients' businesses
- Negative effect	Increase in regulatory activities reduces the impact of MFIs' products on clients' businesses
- No effect	Regulation has no effect on the impact of MFIs' products on clients' businesses

The second phase of the analysis involves testing reliability of the codes. As explained in section 4.5.3 it is important to test the applicability of the code to the raw data at this stage. This was done by using a small portion of the transcribed raw data as a test piece. The predetermined codes were used to code the transcribed raw data. An academic staff member of the business school where I am employed as a lecturer was also invited to test the coding. The results were similar and so the a-priori codes were maintained. The applicability and reliability of the codes were assured through this process.

In the third stage, I familiarized myself with the raw data by listening to and noting down initial ideas and searching for meanings and patterns within the data. I then transcribed the data and read and re-read the transcripts for accuracy and completeness of the information. This process enhanced reliability as it enabled identification of inconsistencies in the data (Braun and Clarke, 2006; Miles and Huberman, 1994). The fourth stage required that I identify meaningful units of text that are consistent with the template of codes developed in the code manual (Fereday and Muir-cochrane, 2006). Through an interactive process the codes were matched with corresponding extracts from the data. While the analysis was generally guided by predetermined codes, one data-driven code was identified and matched with extracts from other transcripts (Boyatzis, 1998). The data driven code was liquidity - defined as the ability of the MFI to meet its debt obligations when they fall due. In the fifth stage, I connected the codes to identify themes and discover patterns in the data. I then organized (clustered) the themes according to the research questions (Braun and Clarke, 2006).

In the last stage of the analysis I corroborated and legitimated the coded themes. Corroborating describes the process of confirming the findings (Crabtree and Miller, 1999) and involves further clustering of the themes (if possible) identified previously. Through the interactions of the codes, categories and themes, I scrutinized the previous five stages to ensure the clustered themes are representative of the initial data and the assigned codes (Fereday and Muir-cochrane, 2006). The themes and sub-themes discovered are presented in Tables 6.5, 6.6 and 6.7.

6.3 FINDINGS FROM THE QUALITATIVE DATA

The findings are related to the research questions which revolve around the performance of MFIs in terms of outreach, financial sustainability and impact and how regulation affects MFI performance in these areas. The research questions are recapped below:

1. How do MFIs in Ghana perform in terms of outreach, financial sustainability and impact?
2. How are the performance measures of outreach, financial sustainability and impact interrelated?
3. What is the effect of regulation on outreach, financial sustainability and impact of MFIs in Ghana?

4. Does regulation mediate the relationships between outreach, financial sustainability and impact?
5. What are the barriers to performance of MFIs in Ghana?

Research question 4 was not directly addressed by the qualitative research method, but the findings for question 3 from the qualitative data shed light on the issues relevant to question 4. The next section discusses the findings based on each of the research questions.

6.3.1 Performance of the MFIs as Revealed by the Qualitative Data

This section presents the findings from the qualitative data with respect to the first research question. Thirty-three (33) managers made up of 13 from BoG regulated and 20 from self-regulated MFIs in Ashanti and Greater Accra regions of Ghana were interviewed (see Table 4.7). In order to ascertain performance of the MFIs it was necessary to investigate the determinants of each of the performance measures from the point of view of the managers and establish whether they identify with the performance measures in the quantitative analysis. The performance measures discussed below were motivated by the literature and confirmed by the interview data. The interview participants are quoted using identification numbers based on the regulatory status of the participant (that is whether the participant is from a BoG regulated or self- regulated MFI). This is to ensure anonymity and confidentiality of the information provided.

Table 6.5 presents a conceptually-clustered matrix display, adapted from Cooksey (2013), of the responses of BoG regulated MFIs and self-regulated MFIs' to the questions on performance measures of MFIs. The matrix is conceptually clustered for the rows at three levels: categories, themes and sub-themes with extracts from the responses of the managers from the BoG regulated and self-regulated MFIs. The total number and percentage of participants from the type of MFI who gave the response is shown in parentheses to convey a sense of prevalence. For example (20, 100%) means 20 managers of self-regulated MFI representing 100 percent of participants in this group provided that response. Highlighted cells reflect patterns/clusters of emerging emphases.

Table 6.5 Conceptually–clustered Matrix: BoG regulated and Self- regulated MFIs' Responses on Performance of MFIs.

Categories	Themes	Sub-themes	Self- regulated MFIs	BoG regulated MFIs
Outreach	Clientele base of the MFIs	Number of active clients	"Number of active clients from the basis of our outreach"(20, 100%)	"Our outreach is determined by the number of our active clients" (13, 100%)
		Average Loan Size	"Our average loan size ranges from 1000 to 1500 Ghana cedis" (8, 40%)	"the loan size mostly given to our clients is 2000 Ghana cedis" (2, 15.4%)
			"Our average loan size is 2000 Ghana cedis" (10, 50%)	"Our average loan size is about 3000 Ghana cedis" (5, 38.5%)
			"Our average loan size 4000 Ghana cedis" (1,5%)	"our average loan size is 4000 Ghana cedis" (4, 31%)
			"our average loan size is 5000 Ghana cedis" (1, 5%)	"our average loan size is 5000 Ghana cedis" (1, 7.7%)
		Percentage of Women clients	"Our women clients form about 40 percent of our clientele base" (3, 15%)	"The percentage of our women clients is about 60 percent" (7, 53.8%)
			"percentage of our women clients is 55 percent" (3, 15%)	"70 percent of our clients are women" (4, 30.8%)
			"our women client base is 60 percent" (9, 45%)	"We do group loans and so about 80 percent of our clients are women" (2, 15.4%)
			"Our women clients are about 70 percent" (1, 5%)	
			"80 percent of our clients are women" (3, 15%)	
		Number of staff serving the community	"Our outreach is also determined by the number of staff serving the community" (1, 5%)	
Financial Sustainability	Revenue generating factors that ensure financial sustainability	Income from interest on loans	"Our financial Sustainability depends on the interest income we earn on our loans" (20, 100%)	"Interest income plays a major role in our financial sustainability" (13, 100%)
		Income from investment in other assets	"we generate income from investing in other assets such as treasury bills which helps our sustainability" (15, 75%)	"We depend on the income we earn from our investments in other assets for our sustainability" (6, 46.15%)*
		Income from fees and commission	"We also earn some income from fees and commissions" (6, 30%)	"As a MFI we also earn income from the fees and commissions we charge our clients" (4, 30.8%)
		Profitability	"We determine our financial sustainability looking at our profitability" (10, 50%)	"Our profit level also determines our financial sustainability" (7, 53%)

		Portfolio quality	"The quality of our portfolio plays an important role in determining our financial sustainability" (12, 60%)	"We are concerned with the quality of our portfolio because it also determines our financial sustainability" (6, 46.15%)
	Factors that ensures efficiency in the operations of the MFIs	Reduction in cost of operations	"Cost control or reduction is very important in ensuring the efficient running of our MFIs" (5, 25%)	"We aim at reducing cost as much as possible to enhance our sustainability" (3, 23.08%)
		Prudent management of physical assets and shareholders' funds	"I look at how well our assets are being used to generate income" (7, 53%)	"Efficient management of our assets is necessary to ensure the financial sustainability of our bank" (4, 30.8%)
			"If shareholders' funds are managed well it will ensure our sustainability" (4, 20%)	
		Liquidity management	"What determines my financial sustainability is my liquidity-my ability to meet my withdrawals when they fall due." (14, 70%)	"Financial sustainability depends on how you manage your liquidity" (8, 61.5%).
Impact	Indications of MFIs product having an impact on small business of clients	Increase in stock of goods	"Increase in the stock of goods of our clients is an indication that our loan products are having an impact on their businesses" (20, 100%)	"When we visit our clients and we see an increase in their stock of goods it shows that our loans are helping to grow their business" (12, 92.3%)
		Asset acquisition	"Our clients also use the loan we give them to buy business assets" (15, 75%)	"We also see expansion of our clients' businesses in the form of acquiring business assets with the loans" (9, 69.2%)
		Profits earned by clients' businesses	"When we see that our clients are earning some profit from the loans they acquire from us, then we know their businesses are doing well" (10, 50%)	"Some clients are able to tell us their profit level as a result of loans they receive from us" (4, 30.8%)
		Ability to repay loans and make deposits	**"We look at the ability of our clients to make repayments of their loans and also make deposits" (16, 80%)**	**"When loans are given and the clients are able to make prompt repayment, it is an indication that their businesses are progressing" (6, 46.2%)**

*Number and percentage of participants mentioning the response are in parenthesis. Highlighted cells reflect patterns/clusters of emerging emphases.

It can be seen from Table 6.5 that the managers of both the BoG regulated and self- regulated MFIs identified with the performance measures of outreach, financial sustainability and impact. This is evidenced by the phrases in their responses that describe the various constructs of the performance measures. The themes that were captured from the deductive analysis and presented in Table 6.5 are explained in the next sub-sections.

6.3.1.1 Outreach

Outreach is one of the measures of performance of MFIs (Yaron, 1992; Manos and Yaron, 2009; Schreiner, 1997). The interview participants mentioned the number of their active clients (comprising borrowers and savers), the average size of loans provided and the proportion of women clients, as determinants of their outreach. These indicators are consistent with the literature on the performance of MFIs. This is reflected in the following quotes from two managers of the BoG regulated MFIs.

> *Our outreach is determined by the number of our active clients. We also have our women clients of about 80% because of our group loans and the loan size mostly given to our clients is 5000 Ghana cedis. RK#6*

> *When considering outreach we look at the number of active clients. We have a special department that works on our outreach – they go around to check on the clients and see how their businesses are faring and also give them professional advice. We also look at the percentage of our women clients and they are about 60%. Our average loan size is also about 3000 Ghana cedis. RK#7*

The indicators of outreach were the same for the self-regulated MFIs as the following quotes from two of their managers indicate:

> *We have sales officers who go out to market our products- they are able to mobilize funds for our company. Our active clients form the basis of our outreach. Our women clients form about 80% of the active clients and the average loan size is 2000 Ghana cedis. UA#26*

> *Let me start with the average loan size which ranges from 1000 to 1500 Ghana cedis, but the ratio of women clients to men is around 55 women and then 45 percent men. We have mobile bankers and marketing executives who reach out to our clients. These factors determine our outreach. UK#20*

While all the managers for both BoG regulated and self-regulated MFIs consider the number of active clients (borrowers and savers) as a determinant of their outreach, the average loan size given to clients (which is also an indicator of outreach) differ among the MFIs. As revealed in

the quotes and shown in Table 6.5, the average loan sizes for the BoG regulated MFIs appear higher than that of the self-regulated MFIs, indicating that the self-regulated MFIs are able to reach out to the poorer segments of society. Also while few of the MFIs (both BoG regulated and self-regulated) have percentage of women clients ranging from 70 to 80 percent, for the majority, women clients comprise about 60 percent of their total clientele (Table 6.5).

6.3.1.2 Financial Sustainability

Microfinance institutions are expected to be financially sustainable to be able to carry out their operations, hence the inclusion of financial sustainability in measuring the performance of MFIs (Yaron, 1992; 1994; Arsyad, 2005; Nanayakkara, 2012). The factors that determine financial sustainability of the MFIs from the interview data have been captured under two themes and explained below.

A. *Revenue Generating Factors that ensure Financial Sustainability of MFIs*

It became clear from the interviews that MFIs, both the BoG regulated and self- regulated, depend very much on the following for their sustainability: interest earned on loans, interest on investment in other assets (for example, treasury bills), and commissions and fees charged on their daily operations. This means the more loans they disburse, and the more investments they make, the more interest income they would receive. The following quotes from two managers of the BoG regulated MFIs illustrate this:

> *Our interest income plays a major role in our financial sustainability. Our interest income actually provides about 80% of our revenue. So far as our operating revenue and expense are concerned we are able to recover our operating expenses with the revenue generated. RK#2*

> *Our financial sustainability depends on the mobilization of funds. The more we mobilize funds the better it is for the institution. Secondly, we do investment- investing in other assets to generate income. Thirdly we sell loans to earn interest income. We also deal in money transfer and also earn commissions and charge fees on our operations. We try to work within limits so that our operating expenses would fall below our operating revenue in order to earn profit. RK#3*

Two managers from the self-regulated MFIs remarked that:

> *In relation with sustainability, previously we used to focus more on the interest income but then for some time we realized that the monies are not that forthcoming because of the economy – the bad state of the economy. So we diverted some of our funds to invest*

in fixed deposits, treasury bills and other stuff so that the company can get secured source of income no matter what happens when the time is up you get back your investment. We've channeled some of our funds to fixed deposits and other investment. UK#18

We determine our financial sustainability by looking at our investment and our interest income ……. UA#27

Another manager of the BoG regulated MFIs also had this to say:

Our financial sustainability is determined by our interest income. We normally work within a certain limit and so our operating revenue is often higher than operating costs and that improves our profitability. RK#5

All the managers emphasized the importance of interest income in determining their financial sustainability. As the quotes indicate, interest income comprises a large percentage of their revenue and financial sustainability is enhanced if they are able to increase interest income. The importance of investing in other assets to generate income was also highlighted by both the BoG regulated and self-regulated MFIs (Table 6.5). This is because such investments serve as secured sources of income and enhance their sustainability. The managers also identified savings as a source of revenue for their MFIs. Access to savings enables the MFIs to reach out to more clients with loan products, thereby increasing interest income.

The need to ensure that the loan portfolio of an MFI is of good quality was also emphasized by some of the participants. The largest asset of the majority of MFIs is the loans they make to clients. Protecting their loan portfolio is therefore, very crucial to their long-term survival. A loan portfolio is said to be of good quality when clients are able to make repayments of the loan and portfolio at risk is very low. A good loan portfolio would therefore generate income enabling financial sustainability of the MFI. Two managers from the BoG regulated MFIs remarked:

Our portfolio quality also determines our sustainability. Currently we are able to recover about 95 percent of our loans and that contributes significantly to our financial sustainability. RA#32

We are concerned with the quality of our portfolio because it also determines our financial sustainability. Our recovery rate is about 88 percent and I know that a high portfolio quality enhances our sustainability. RA#33

Another manager from the self-regulated MFIs also stated:

In considering financial sustainability I look at whether I am profitable and if I am profitable, it should be sustained. The next thing is to look at the quality of the portfolio

I manage, whether it is improving through the impairment loses that we make. If the provisions are declining, then it means we are doing something right. UA#21

MFIs attach much importance to the quality of their loan portfolio. The industry standard of recovery rate is 90 percent, so that a MFI with a recovery rate of 90 percent has good performance. With a high recovery rate which means portfolio at risk is low, the MFIs are likely to earn sufficient interest income and achieve financial sustainability.

B. ***Efficiency in the Operations of the MFIs***

Other factors affecting financial sustainability that emerged from the interview data are associated with operations efficiency. Lowering operating costs to reduce cost to borrowers is a big challenge for MFIs (Gonzalez, 2007). If operating costs are reduced, profits and financial sustainability should increase, all other things being equal. Strategies such as reduction in operating cost, prudent management of physical assets, and shareholders' funds and liquidity management should add to financial sustainability of MFIs. The following quotes by two managers of the self- regulated MFIs highlight the need to reduce cost in order to remain sustainable:

For financial sustainability, I look at how efficient our operation is in terms of expenditure, is it rising, so I look at efficiency, is our cost of doing business going up? I look at how I am able to control cost. I also look at generating enough revenue to pay for our expenses. Our operating self-sufficiency for instance should be up to 100 percent and have something beyond the 100 percent. Up to 100 percent you are not profitable. It is when you go beyond 100 percent that you are doing well. I am also looking at how much loans am making, if I make more loans/give out more loans then I will get more interest. will look at our PR (portfolio at risk). We have a rate of 10% - 10% is what is tolerable. Anything above 10% is not tolerable and so I look at my recovery rate. If I give out loans, and I recover them I know I am doing well. UA#23

Our financial sustainability depends on three factors – adequate capital, recovery rate and then cost of operation – that is excessive cost I mean expenditure. You need to have adequate capital. Our working capital is going to be involved with depositors' funds and obviously that is not sustainable. And also even if we have the capital that is adequate and we give bad loans the money will go out there and will not come back and it will not be sustainable. If you have good loans and you have capital and meanwhile your expenditure is very high obviously, that is also not sustainable. So in our case we have been very wary about these three factors. We've been fighting hard even to reduce cost while we are fighting hard to increase recovery and also to increase capital. UK#17

Loan recovery is critical to financial sustainability of MFIs. MFIs in Ghana (both BoG regulated and self- regulated) use mobile bankers who visit clients at regular intervals to collect

their repayments. This enables high loan recovery rates. The majority of MFI clients are small business operators who may be reluctant to visit the banks to make repayments. This makes mobile banking an effective strategy for collecting amounts due from clients. The following quotes from two managers of the self-regulated MFIs demonstrate that proper management of the assets of an institution and shareholders' fund are necessary for financial sustainability:

> *Referring to financial sustainability, I look at return on assets. How well are the assets used to generate income? To me this is important in determining sustainability of the institution. UA#24*

> *When we talk about financial sustainability of an institution we look at return on assets of the company. What returns are you making on the assets? We also look at whether shareholders' funds are being put to good use. We are all business people and so whenever money has been invested into the business we must get back an appreciable return. UA#25*

Similarly, a manager from the BoG regulated MFIs remarked:

> *The income we generate from the assets we have plays an important role in our sustainability. Efficient management of our assets is necessary to ensure the financial sustainability of our bank. RK#10*

Liquidity, which refers to the ability of an institution to meet its debt obligations when they fall due, was also mentioned by several participants of both BoG regulated and self-regulated MFIs as affecting financial sustainability (Table 6.5). A liquid MFI has sufficient cash and liquid assets to satisfy clients demand for loans and savings withdrawals as well as pay for the institution's expenses (Biety, 2003). Two managers from the BoG regulated MFIs commented:

> *Our financial sustainability depends on liquidity at all times and timely delivery of services, for example, loans… RK#6*

> *Financial sustainability depends on how you manage your liquidity- you have to know when withdrawals are going to be huge. You understudy the trend. Most often when school re-opens you have to anticipate heavy withdrawals and make provision for it. Our return on assets also determines our sustainability. RK#1*

Another manager from the self- regulated MFI remarked:

> *What determines my financial sustainability is my liquidity – my ability to meet my withdrawals when they fall due – my ability to meet them. And also how much that I gain from other products that I pursue – most of my products are loans, how much I gain from these and other fees that I earn from my clients determine my financial sustainability. UK#11*

6.3.1.3 Impact of the MFIs' Products on Small Businesses of Clients

The responses from both managers of BoG regulated and self-regulated MFIs and their clients helped analyze the impact of MFIs' products on clients' businesses. The products and services provided by MFIs are expected to have an impact on the small businesses of their clients. The impact of MFIs' products on the small businesses of their clients is therefore an important measure of MFI performance (Zeller and Meyer, 2002; Zaigham and Asghar, 2011; Mustafa and Saat, 2012). Factors such as increase in stock of goods sold, acquisition of business assets, profits earned, and ability of clients to make timely repayments of loans were mentioned as indicators of the impact of MFIs' products on the small businesses of their clients. The following comments from two managers of the BoG regulated MFIs illustrate this:

> *We do visit our clients a lot. Most of our clients started with small loans, finish paying them and ask for bigger loans. What we normally do is to visit them and see whether they have used the money for what it was intended. We go and we see increases in their stock of goods and we also observe the way they service the loans and their turnover rate. These are indications that the loan products are having a positive impact on their business. We also see expansion of their businesses in the form of acquiring business assets with the loan. For instance, the traders dealing in frozen goods you see them buying more freezers with the loans. RK#1*

> *Our products have positive impact on the small businesses of our clients. We have clients who started with very small loans and have progressed steadily to bigger loans and have been able to acquire business assets, also increase their stock. The evidence is seen when our loan officers visit these clients and check their invoices to confirm the testimonies that they give. Those clients who are able to prepare their income statement we use that to check their profit level – sometimes the increase in their daily deposits with the banks is also an indication that they are doing well. RK#7*

The interview data show that the indicators of impact are the same for both the BoG regulated and self-regulated MFIs. The following quotes are from managers of the self-regulated MFIs:

> *We don't only give out loans but we also provide business advisory service to our clients. And when a loan is given for a particular purpose we check to ensure that the loan is being used for its intended purpose. Prior to giving out the loans, we take stock of the client's business situation. Then we prepare profit and loss account and a balance sheet for the client before giving the loan. This is just to help the clients know the financial state of their business because most of them do not keep records of their business activities. After the loan is given we would want to ascertain the growth of the business and so we would watch your repayment pattern. After sometime we would prepare a second profit and loss account and a balance sheet for the client and so we will be able to compare the clients' financial position now and the situation before taking the loan. This would enable us to see a capitalization gap. If money has been diverted we would*

find out whether the client has another project elsewhere. The growth of the business normally comes with an increase in stock of goods, any assets purchased, sales turnover – we also take note of the repayment pattern of the clients. UA#30

We monitor the facility to ensure that our clients are performing. We look at the increase in your stock. We analyze the profitability of our clients' businesses to find out if there had been any increase in revenue, sales and profit. UA#29

Another manager stated:

We do not give out loans for start-up capital. A client should be in business before requesting for a loan for business expansion. When we give out the loans, we normally follow up to see whether the clients have used the money for what he said he/she would use it for. For instance we find out whether the clients stock of goods has increased. Two weeks from that date we expect the clients to start making repayment of the loans. These signs convince us that the clients have made good use of the loans. If we realize that some of the clients are unable to make the loan repayment, we normally call them and find out the reason for their inability to make the repayment at the scheduled time. They may give a number of reasons. We then encourage them to try and fulfill their obligation so they could come for another loan. UA#27

Likewise, this manager posited:

What we normally do is after giving the loan we do field management – we monitor them to know whether the purpose of the loan has not been defeated and through that at the end we see that there have been an improvement in their work. Maybe the purpose is to expand my business and before you give out the loan you go and inspect the business the size and whatever goes with that and then after the disbursement you keep on going for monitoring to see that there has been a change – because the purpose of the loan was not defeated he used the money or he pump the money into the business and there has been a change a little bit of expansion or whatever and through that you see that he or she will be able to repay the loan as expected. UK#19

It is clear from the comments on indicators of impact that a lot of monitoring takes place after loans are disbursed to ensure that they are used for their intended purposes to enable repayment.

Focus group discussions with clients assessed whether the products of the MFIs had improved performance of their businesses as indicated by the managers of the MFIs. The following comments attest that the loans have aided growth of their businesses:

I used the loans to do pure water business. I also bought a freezer to store the water. Yes I was able to make some profit from the sale of the pure water. If it had not been for the loans I would not have been able to buy the freezer and stock it with water so the loans really helped my business. CA#17

I used the loan to open a chemical shop. The loan helped to increase the stock of drugs for the shop. The business is doing well and we are earning some profit as well. So I can say the loans have helped the chemical business a great deal. CA#20

I am a beautician. I used the loans to acquire the shop I am using at the moment and also bought hair products for the shop. The loans have contributed greatly to the success of my business because the loans helped me to acquire my shop and also purchased items for the shop. CA#21

Comments from numerous clients indicate that they had benefited from the loans but their businesses were affected by poor economic conditions. The following quotes illustrate this:

I often go for loans to buy more fruits for my business. These days the costs of fruits have gone up so you need loans to enable you buy same quantities of the fruits. When sales are good, the profit level is also good. But with poor sales, you are compelled to use the little sales you have made to make your repayments and that affects your ability to buy more fruits since your sales are low and so affects your revenue. CA#24

The loans helped me to buy more goods for sale. Without the loan, it will be difficult for me to continue with my business. The loans have contributed to the success of my business. But sales have gone down. I know the situation would have been good if the economic condition had been favourable. CK#2

Another client also commented:

I was able to increase my stock of goods with the help of the loan. The loans have actually contributed to the stability of my business. Although sales have fallen drastically the loan has helped to sustain my business. In view of this I will always go for loans. CK#9

Microfinance institutions with their modest requirements for loans have enabled several clients operating small businesses to have access to loans either to start or expand their businesses. This notwithstanding, many of the clients bemoaned the high interest rates they pay on loans which they suggested had eroded their profit margins. This is highlighted in the following quotes:

I used the loans acquired to buy bags and hair products for my shop. The loans increased my stock of goods. I was able to earn some profits, but at the end of the day, you pay so much by way of interest to the microfinance institution which reduces the level of profits earned. CA#22

Acquisition of loans helped to increase my stock of goods. I had some profits from the sales of my goods but not as I expected. Because I paid high interest on the loans, so I worked for the microfinance companies. CA#15

These two clients lamented that:

Loans helped to increase my stock of goods but because the interest on the loans was so much it eroded my profit. My profit margin went down. CA#13

The loan helped to increase my stock of goods but the high interest rate hindered the growth of my business. CK#5

Others also complained about the inflexible nature of loan repayment schedules adopted by some of the MFIs, which they expressed affects their ability to repay the loans. The following comments illustrate this:

The MFIs are doing well with their financial assistance to us. However, the terms of payment are not favourable. I pay my GH¢ 5 daily, whenever sales go down I have to pay double the amount the following day, and that drains my capital. Secondly, the institution also demands compulsory savings while you are paying the loan. The institution claims that savings would be given to you after paying your loan. And this is unbearable to me because sales are not good, sometimes it is too low to make repayment of loan and the compulsory saving. CK#2

Some of the financial institutions employ harsh mode of collection, threatening you, and sometimes insulting you when they realize you are not able to pay for that day. In case you miss a day or two as a result of low sales, you are made to pay penalty, which further worsens your indebtedness. CK#4

The mode of collecting the loan by some of the microfinance institutions is not favourable. Some of these companies would persuade you to make deposit with them for about 3 month before they will grant you a loan but they fail to honour such a promise. Sometimes by the time you finish making that and ready to go for such money, the company would be no more in the system and this is huge loss of our financial resources. CK#11

The views expressed by the clients indicate the extent to which the loans they received from the MFIs helped their businesses to grow. However, the negative factors presented above hindered the loan products from having an appreciable impact on their businesses.

The preceding section described the factors that determine each of the three measures of performance as revealed by the interview data. It is however, important to assess how the MFIs perform on the three measures of outreach, financial sustainability and impact. This is discussed next.

6.3.1.4 Managers' Perception of Overall Performance of their MFIs

Most of the managers interviewed expressed their desire to improve upon their current performance levels. The following quotes from two managers of the BoG regulated MFIs demonstrate how their MFIs perform on the measures:

> *So far as outreach is concerned, our MFI has not reached its target of outreach. We are doing our best to expand our outreach base. At the moment we are performing averagely so far as our outreach is concerned. Our profitability is increasing year by year and month by month. It is not bad even though it is not huge at least we are doing quite well. For example, we have some traders who buy local rice and process it. They started without a machine. They used to carry their rice to be processed by someone's machine we went to them and educated them and they agreed to come for loans to grow their business. They now own machines and they process the local rice themselves and they are doing well. RK#1*

> *Previously we were having some difficulty convincing our clients to keep doing business with us. But the situation has changed. We try to provide the products that they need and that have improved our outreach a lot. Currently, we are not doing well on our financial sustainability but we hope and pray that the situation will improve soon. What is happening is that our expenses are becoming more than the income we generate. And that is a cause for concern. On the impact side, I will say that there are a lot of clients we have helped by way of giving them loans to develop and sustain their businesses. So long as these clients come for higher loans and are able to pay for the loans, we know they are doing well. RK#4*

Another manager from a BoG regulated MFI commented:

> *In terms of outreach – we have expanded our outreach and our customer base* has *increased tremendously over the last five years. It has even compelled us to open new branches. In terms of financial sustainability – for the past 3 years, profits have increased by 26% on the average. Our return on assets has also improved over the years. We are very careful when it comes to operating expenses – because of shareholders interest we also want to convince them that their funds are being used judiciously and are being careful to work within certain limits so that our operating expenses will not exceed operating revenue. Evidence from our clients' business also shows that our bank is helping them to do business profitably. RK#7*

Two managers of the self-regulated MFIs also gave their views and experiences with respect to performance. They noted:

> *We could do much better – in terms of outreach I think we relaxed a bit – we were looking more at wholesale funds – (we go for excess funds from other financial institutions) not necessarily mobilizing funds from clients – so we could do better so far as outreach is concerned. For the past 2 years or so cost of funds have been very high as well as cost of operations and that have also affected us so our expenditure has gone up compared to*

the income that we generate. So we are trying to diversify our income sources to be able to bring in more income. UA#25

Those who were outside the financial system have now been brought into it by the microfinance institutions. My company alone has provided 5000 plus savings accounts, provided loans close to 1000 clients and have about 80% women clients. I have clients who have prospered in their business. For example I have clients who started with very small loan sizes, they were able to expand their businesses and can now take bigger loans and do business with it and pay. So at the micro level that is my company I can say we are reaching out to many people. The challenge is that data management in this country is a huge problem so it is difficult to provide figures on the number of jobs MFIs are providing people. UA#23

Another manager from the self-regulated MFI remarked:

Concerning our outreach, the company is able to reach out to more clients- the company is doing well in that direction. Our profitability level has not been so encouraging but it is picking up gradually. I must say that the businesses of our clients are progressing steadily. This is evidenced by the way they make their repayments of loans. UA26

One of the managers of the self-regulated MFI attributed his institution's poor financial sustainability to clients' inability to make timely repayments of loans. He noted:

Our outreach team is doing well to reach out to more clients every day. We are not performing so well so far as our financial sustainability is concerned. This is because we have issues with our customers. They are not paying their loans as they ought to. And so money is not forth coming and that is affecting our sustainability. The situation is not so bad though. Clients often complain of poor sale which are affecting their repayment. The loans we give out actually help our customers to grow their business but because of the poor economic conditions in the country, they are unable to make good sales and pay back the loans on time. UA#28

Most of the participants interviewed indicated improvements in their outreach levels. It was observed that the BoG regulated MFIs for instance, were able to establish new branches to reach out to more clients. This brings to the fore the high demand for microfinance in Ghana. While most of the managers admitted less than satisfactory outcomes with respect to financial sustainability of their MFIs, a few reported that they were satisfied with performance of their MFIs in this area. They also noted that their products were having an impact on their clients' businesses, as one manager opined:

We are making great impacts on the lives of our clients, even though they complain about our interest rates they still come to us because we are able to meet their financial needs.UA#22.

However, the full potential impact was not being felt by some of the clients because of the harsh economic conditions and other factors hindering the growth of their businesses.

6.3.2 Interrelationships among the Performance Measures.

To address the second research question, the study investigated the relationships among the performance measures, in particular how breadth and depth of outreach affects financial sustainability and the effect of financial sustainability on impact of their clients' businesses. These are discussed in the next sub-sections.

6.3.2.1 The Relationship between Outreach and Financial Sustainability

Interview participants gave their views on the relationship between performance measures of outreach and financial sustainability. Most of the managers of both BoG regulated and self-regulated MFIs argued in favour of a positive relationship between breadth of outreach and financial sustainability. However, many also saw a tradeoff between depth of outreach and financial sustainability (Table 6.6).

The interview participants explained that an increase in the number of customers (breadth of outreach) would reduce unit cost and increase their interest income which would ensure sustainability of their institutions. Two managers of the self-regulated MFIs expressed their views on the relationship between breadth of outreach and financial sustainability as follows:

Table 6.6 Conceptually–clustered Matrix: BoG regulated and Self- regulated MFIs Responses on the Interrelationships among the Performance Measures.

Categories	Themes	Sub-themes	Unregulated	Regulated
Outreach and Financial Sustainability	Relation between breadth of outreach and financial sustainability	Positive relationship	"There is a direct link between increase in breadth of outreach and reduction in cost" (2, 10%)	"The more we increase our outreach the more we benefit in terms of interest income" (11, 84.6%)
			"When you increase your outreach you are likely to get more interest income from loans given out" (18, 90%)	
		Negative relationship		
		No relation		
	Relation between depth of outreach and financial sustainability	Positive relationship	"It is easier to recover small loans than big loans and that can increase your profitability" (2, 10%)	"I prefer given out small loans because you can recover them quickly, which will increase your profitability" (2, 15.4%)
		Negative relationship	"You incur more costs in servicing small, small loans and that reduces our profitability" (18, 90%)	"The bigger the loan size the higher the income you earn from it – and the lesser the cost in administering them. (11, 84.6%)
		No relation		
Financial Sustainability and Impact	Relation between financial sustainability and impact	Positive relationship	"We can give out loans to our clients to grow their businesses when we are financially sound" (20, 100%)	"If an institution is very liquid (sustainable) and can give out loans, the loans will help to grow the businesses of our clients" (13, 100%)
		Negative relationship		
		No relation		

*Number and percentage of participants mentioning the response are in parenthesis.

As you increase outreach, there is a direct correlation between increase in breadth of outreach and reduction in cost. For instance, the cost incurred on one credit officer who handles a portfolio of 100,000 Ghana cedis with 10 clients may remain the same if you increase the outreach to 20 clients with a portfolio of 200,000 Ghana cedis. This means your unit cost may reduce meanwhile your profits may increase. In my opinion the greater your outreach the lesser your costs and the higher your returns. UA#21

When you reach out to more people with loans you get interest income from the loans and that helps to sustain the institution financially and when you are able to mobilize funds from many clients, again you have access to funds which also helps the institution to give out credits to others and earn interest out of it and so I see a clear link between our outreach and financial sustainability. UA#28

Two of the managers from the BoG regulated MFIs also commented on the relationship between outreach and financial sustainability as follows:

The more we are able to increase our customer base the more we benefit in terms of deposits and are able to use the deposit for new investment and also give some as loans and earn interest on them and that enhances our financial sustainability. RK#7

There is a relation between our outreach and our financial sustainability. This is because the more customers you have the more interest you earn which will reflect on your profitability. RK#6

Another manager indicated that although a link between outreach and financial sustainability is expected, this may not hold for some MFIs because they do not maximize the revenue they need to generate from outreach. He stated:

Outreach looks at the number of clients and sustainability is also dependent on how much funds you are able to mobilize and how much fees and commissions you are able to attract on your clients. This means if I have more clients and I am not spending too much on them, then I will become profitable. So there is a direct link but there could be a challenge where you have the outreach in terms of the volume but you are not maximizing the revenue you need to generate out of that outreach and that is what has happened to a lot of MFIs. Some are serving clients and they don't charge them anything. That affects their revenue generation. UA#23

The views of both BoG regulated and self-regulated MFI managers indicate a positive relationship between outreach and financial sustainability. It was noted, however, that while the BoG regulated MFIs were taking service charges from current accounts owners to increase their revenue, many of the self-regulated MFIs were not charging anything to their clients who operate *susu* accounts, thus limiting their revenue sources. It is expected that as MFIs increase their customer numbers and charge them appropriately, their revenues will also increase. The

qualitative findings on the relation between outreach and financial sustainability did not support the quantitative result of an absence of a relationship between the two variables. It was not possible to control for all the factors that affect revenue generation and this might have contributed to the different results from the quantitative analysis.

In considering the relationship between depth of outreach and financial sustainability, interview participants described the effect of the average loan size (depth of outreach) on their profitability (financial sustainability). They explained that administering small loans to a large number of clients is expensive, with potential negative impact on their profitability. They noted that less is spent on administering bigger loan sizes which earn them more income. Some of the managers of the self-regulated MFIs expressed the following views:

> *I will say if the number of loan clients you have are a lot and the loan figures are too small, that is micro loans, you incur more costs in servicing them now since you incur more in servicing them, your profitability will go down. UA#22*

> *I have worked with two different institutions – one was granting between 100 and maximum 1500 Ghana cedis and one was granting a minimum of 1000 Ghana cedis and maximum 100000 Ghana cedis. However, the cost involved in giving out the small, small loans is very high compared to the big loans. But the interests on the small loans are small. If I give 10000 Ghana cedis to one person I will get back my 5 percent or 4 percent and the work that I will put in to recover 100 Ghana cedis is the same work that I will use to recover 10000 Ghana cedis. So the bigger loan sizes lead to bigger profitability…. UK#16*

Similarly, two managers of the BoG regulated MFIs stated:

> *Each loan we give out counts, whether small loans or big loans. However, the big loans are able to earn higher revenue than the small loans. The small loans have shorter duration period, for example, six months and the interest margin is low. But with the big loans the interest margin is high and so interest income is high. RK#3*

> *If the loan size is big you know that you are earning more income from it. But if the loan size is small it means you are not earning anything significant and that can affect your profitability. The bigger the loan size the higher the income you earn from it and the smaller the loan size the smaller the income you earn from it. RK#4*

The need to ensure financial self-sufficiency of the MFIs as they disburse loans was evident in a statement by a manager of the self-regulated MFI who noted:

During the era of microcredits, FNGOs were supported under the United Nations Millennium Challenge goals with the aim of eradicating poverty through microfinance. That was where they were interested in reaching the depth of outreach (reaching the poor) so that with small average loan size one is able to reach the very poor in society. At that time financial self-sufficiency was not the focus. But now the emphasis is now becoming financially self-sufficient, focusing more on efficiency and return on investment. This led to a lot of big FNGOs transforming into commercial MFIs – so if you decide to stay down there and do small loans your costs of operations goes up and you will die. UA#23

Commenting on the need to disburse quality loans in order to increase income, another manager stated:

If a loan is big and its performing you would get a big interest income, on the other hand if a loan is small and it is equally performing you would get a smaller interest income. But if the small loan is not performing and you are even incurring more operating costs in getting that small thing it would seriously affect the interest income from that loan. But the performing loan that is big gives you the cushion and enables you to get a higher interest income. So it depends on the quality of the loans that we give out. UA#30

The views expressed by the managers on the relation between depth of outreach and financial sustainability show that an increase in the average loan size (given that it is a "good loan") enhances financial sustainability of the MFI. This confirms the results of the quantitative data which found evidence that average loan size is positively related to operational self-sufficiency, indicating that an increase in average loan size would lead to an increase in operational self-sufficiency (financial sustainability). In contrast, as average loan size increases, the depth of outreach is reduced and this points to the exclusion of poor borrowers, the majority women who would demand very small loans.

6.3.2.2 Financial Sustainability and Impact of MFIs' Products on Clients' Businesses

Financial sustainability is critical for MFIs to stay in business. As the managers of both BoG regulated and self-regulated MFIs reported, it would only take a financially sustainable institution to provide products that would help grow the businesses of its clients. As their businesses grow, the clients will be able to meet repayments of their loans, and this will in turn improve sustainability of the MFIs. These views were highlighted by one of the managers of the self-regulated MFI who remarked:

We can only help our customers with loans when we are performing well. That is when we are sustainable. When our customers' businesses are also progressing then they

would be able to repay their loans and that would help us to be sustainable. Their inability to repay the loans has a negative effect on our sustainability. UA#27

Similarly another manager of the self-regulated MFI noted:

The performance of your products also determines how sustainable you are. If the design of your products meets the needs of your clients and people are patronizing those products it would increase your interest income. That means if the product (loan products) you give out are performing well your portfolio at risk is very low, your recovery rate is very high, meaning automatically your provision is very less, and all these increase your profits, then you will be in the position to give more loans to help the growth of the businesses of clients. UA#30

A third manager also stated:

A financial institution can give out loans to its clients when it is financially sound. It would be very difficult to be in business when all is not well with the institution that is when the institution is not financially sustainable. Our institution may also be affected if our clients are not performing well in their businesses. For instance, when loans are given to them and their businesses are not performing well, recovering the loans would be very difficult and that could affect our sustainability and so there is a relationship between financial sustainability and the impact our products have on their businesses. UA#28

Two managers of the BoG regulated MFIs also commented:

A financially sustainable bank will be able to make timely delivery of its services to clients and that will have a positive impact on their business and the more their businesses thrive they will be able to bring in more deposits – there is that correlation between financial sustainability and impact. RK#6

If a financial institution is not financially sound, customers cannot come in to borrow. However, if an institution is very liquid – has a high liquidity ratio and can give out loans, then the loans would also enable the clients to grow their businesses and that means our products are impacting positively on their business. RK#3

The views expressed by all the managers indicate the need for an MFI to be financially sustainable in order to have an impact on its clients' businesses. This implies a positive relationship between financial sustainability of an MFI and the impact of its products on its clients' businesses. This finding however, does not reflect the results from the quantitative data which showed no evidence of a relationship between financial sustainability and impact. The different result revealed by the regression analysis could stem from client related factors that could not be controlled for. Factors such as the individual circumstances of the clients might have influenced the way they used the loans and the outcomes achieved.

6.3.3 Effect of Regulation on the Performance Measures

This section discusses the views of the interview participants on how regulation affects their performance.

Table 6.7 Conceptually–clustered matrix: BoG regulated and Self- regulated MFIs responses on the effect of regulation on performance

Categories	Themes	Sub-themes	Unregulated	Regulated
Outreach	Effect of regulation on breadth of outreach of MFIs	Positive effect	"Regulation helps us to increase our outreach – clients have confidence in us" (19, 95%)	"Regulation helps us to reach out to more people since we now have access to deposits" (13, 100%)
		Negative effect		
		No effect	"I don't think there is much relationship between regulation and outreach" (1, 5%)	
	Effect of regulation on depth of outreach	Positive effect		"We still engage in group loans so that percentage of our women clients is increased because of regulation" (2, 15.4%)
		Negative effect	"Regulatory activities could lead to a fall in the percentage of women borrowers" (17, 85%)	"Percentage of women borrowers may fall because of regulations" (10, 76.9%)
		No effect	"Not sure of the influence of regulation on our women clients" (3, 15%)	
Financial Sustainability	Effect of regulation on financial sustainability of MFIs	Positive effect	"Regulation is making people profitable because it brought you reputation and credibility" (4, 20%)	"Regulation helps us to reach out to more clients and earn more interest income" (2, 15.4%)
		Negative effects	"We incur a lot of costs as a result	"Increase in regulatory

			of regulation e.g. skilled labour, operating permits" (16, 80%)	activities leads to an increase in our operating costs" (11, 84.6%)
Impact	Effect of regulation on impact	Positive effect	"Regulation prevents us from engaging in any unethical activities with our clients' money" (3, 15%)	
		Negative effect	-	-
		No effect	"There is no influence of regulation on the impact of our products on our clients' business" (20, 100%)	"I do not see any influence of regulation on the way our products impact on our clients' businesses" (12, 92.3%)

*Number and percentage of participants mentioning the response are in parenthesis.

Table 6.7 presents the themes and sub-themes that emerged from the interviews on how regulation affects performance of the MFIs. These are discussed in detail below:

6.3.3.1 Effect of Regulation on Outreach

To address the third research question, participants of the qualitative study were asked whether regulation had any effect on their outreach (breadth and depth of outreach) and if it did, to explain the effect. The following quotes demonstrate responses from some of the managers of the BoG regulated MFIs:

> *Regulation gives you ability to mobilize funds. The non regulated MFIs came in to do business but because they were not regulated they were doing their own thing. Regulation helps us to reach out to more people since we now have access to deposits. Regulation is actually a booster. Regulation also helps us to remain in business. You don't just do what you want but you must work within the confines of regulation – that is, you must fulfil the requirements of the regulator. RK#1*

> *A client would not want to place his/her money at a place where he is not sure he would come back to find it. So when you are regulated clients have much confidence in you and would be ready to deposit their money with that MFI. As such we are able to mobilize more deposits and reach out to more clients. RK#8*

Still emphasizing the confidence reposed in MFIs as a result of regulation, another manager commented:

> *We are working within the regulations of Bank of Ghana. And regulation has helped us to increase our outreach. Because we are regulated, customers have confidence in us and feel more secured to deposit their funds with us. Because of that I will say regulation has helped us to reach out to more clients. RK#5*

With the proliferation of MFIs in Ghana, the need to ensure financial system stability and safeguard the deposits of customers of the MFIs (Christen, Lyman and Rosenberg, 2003; Arun, 2005) has become very pressing. This has prompted the Central Bank to initiate a process of regulating the activities of all MFIs. At the time of collecting the qualitative data, the Central Bank of Ghana had started licensing self-regulated MFIs that met the regulatory requirements. On the question of whether regulation would have an effect on their outreach, the self-regulated MFI managers whose activities are now being regulated had this to say:

> *When you are not regulated you do not have access to voluntary savings. Regulation would enable you to reach out to more clients because you have access to voluntary savings. Some of the people out there would want you to show them an evidence that you are a licensed institution before they would do business with you. If an institution is regulated, clients have much confidence in that MFI. UA#27*

> *I think there is an influence of regulation on outreach in the sense that the kind of business we do, that is, financial business, thrives on confidence and the regulator is there to make sure it protects the public's deposits. By so doing they instill confidence into the populace with regards to their dealings with the regulated MFIs. The MFIs are able to sell their products to the public because of the confidence the public have in them. So obviously there is an influence of regulation on outreach. UK#17*

Similarly, another manager from the self-regulated MFIs noted:

> *There is an influence of regulation on outreach. This is because when we were not under Bank of Ghana regulation it was difficult to sell your products to some people because they were not sure of who you are. With regulation you can confidently sell your products to prospective clients – Regulation helps to increase your outreach. UA#21*

The effect of regulation on the depth of outreach, especially percentage of women borrowers was explained by some of the managers. They noted:

> *When there is no regulation, there is not much competition – Regulation comes in with paid up capital. If you don't have it you cannot start the business of microfinance – so you need money and therefore it is those who are well to do who can now start. And so they will look at those who can easily pay, not necessarily those who need it. So the majority of women (the poor) who really need it but may not be able to pay for it may be dropped in preference to those who can pay for it. And so areas like your social*

performance - depth of outreach reaching the poor and the vulnerable – rather suffer. Secondly, at first the group lending methodology was very effective but now it is no more as effective as it was. And most of the group members were women. The high default rate of group members have led to the reduction in giving out group loans with the serious members opting for individual loans instead – Regulatory activities could therefore lead to a fall in the percentage of women borrowers. UA#22

When you look at outreach it includes the number of women borrowers, that is more of social responsibility – and so when institutions were not regularized those operating in the villages especially were concerned with serving more women to fulfill their social service to the community. But once regulation comes that meant serious business – I need to remain profitable, I need to stay in business and that means I must service those who can pay and not necessarily those who need money. UA#23

The comments from the interview participants indicate that regulatory activities lead to an increase in number of active clients (breadth of outreach). This is because clients have confidence in the regulated MFI and feel secured about depositing their monies with them. Access to deposits then enables the MFIs to reach out to more clients with their products and services. This position of the participants confirms the quantitative research findings that regulation is positively related to breadth of outreach.

In explaining how regulation affects depth of outreach, the interview participants noted that regulatory activities could reduce the percentage of women borrowers who form the majority of the poor. This is because the social responsibility factor (welfare factor) which used to drive most of the early MFIs to serving more women has given way to the need to be profitable or sustainable in order to remain in the business of microfinance. This view of the participants confirms the quantitative research findings which showed a negative association between regulation and the percentage of women borrowers.

6.3.3.2. Effect of Regulation on Financial Sustainability

The interview participants were asked whether regulation affects financial sustainability of their MFIs. They explained that regulation increases their operating costs which could affect their financial sustainability. The following comments from two managers of the BoG regulated MFIs illustrate this:

Regulatory activities involve a lot of costs which affect our operating costs. Increase in regulatory activities obviously leads to an increase in our operating costs. For example

the cost of our operating permit has been increased from 5,000 to 10,000 Ghana cedis by KMA and that is a huge cost to us. RK#2

Increase in regulatory activities increase our operating cost. A typical example is the operating permit given to us. The amount is too much and that has increased our operating cost significantly. Our legal expenses have also shot up because you can't manhandle a client who refuses to pay a loan. If you are regulated what we are expected to do is to send notices of reminder (about 3 of them) to a client who refuses to pay. If he still refuses to pay then he is taken to court. But that means spending a lot on legal expenses. All these expenses are incurred because we are regulated. Regulation therefore increases our cost of operations which could affect our financial sustainability. RK#8

Another manager of the self- regulated MFI noted:

Before regulation you didn't need a board of directors for your company, with regulation you will need a board – the board will meet and you have to pay them. Before regulation it wasn't compulsory to have an auditor, qualified accountant and other skilled staff for your company. You could control how you spent money on all these things, but regulation specifies the type of staff you must have. In a way to keep compliant you must incur cost. Before regulation we were engaged in certain practices that were giving us money but were unethical, now you want to be compliant and so you incur a lot of costs which increase your cost of operation. UA#22

While most of the managers associated regulation with increase in cost of operations (Table 6.7), some were of the view that the benefits of regulation could offset the associated cost and enhance the profitability of the MFI. The following comments indicate this:

Regulatory activities actually increase operating costs but the benefits derived from regulation may help balance or offset the cost. With good models in place an institution may benefit much from regulation. UA#29

I think regulation in a way is making institutions profitable because it brought you reputation and credibility. People have confidence to save with us – and so as your clients base increases you get more in terms of fees and commission – and so that is how your revenue will increase. The service that the regulator provides during on sight visitation also helps us – they provide free consultation services. All those services help us to be efficient and doing business efficiently enhances your profitability. UA#23

A study by Cull et al (2011) gave three reasons why costs associated with regulatory activities are likely to be higher for MFIs. First, the cost of regulation exhibits economies of scale and therefore, the smaller MFIs are confronted with higher average cost of complying with regulation than the bigger MFIs. Furthermore, regulation start-up costs show higher scale economies than ongoing costs as a result of the large indivisible component requiring the same amount of expense irrespective of the scale of lending activities. The second reason is the large

skilled labour costs required to comply with the regulations. A considerable share of these costs relate to managerial and legal expenses. Third, MFIs incur high administration costs in providing small loans to a large number of borrowers. The views expressed by the interview participants support those of Cull et al (2011). The views also confirm the quantitative research findings which provided evidence of a significant association between regulation and financial sustainability (financial self-sufficiency with a p-value of 0.034389 and operational self-sufficiency with a p-value of 0.045907). Thus, an increase in regulatory activities would reduce the financial self-sufficiency and the operational self-sufficiency of the MFIs. However, it could be inferred from the comments provided by participants in the qualitative study that with proper structures and models in place, the MFIs would benefit from regulatory activities.

6.3.3.3 Effect of Regulation on Impact

Views were sought from the managers of the MFIs on how regulation affects their clients' businesses through the products they provide. The majority of the managers interviewed (for both BoG regulated and self-regulated MFIs) were of the opinion that regulation has no effect on their clients' businesses (Table 6.7). They did not envisage any link between regulation and impact of their services on their clients' businesses as the following expressions illustrate:

> *In my opinion regulation does not affect the impact of our products and services on our clients' business. RK#1*

> *I do not see any influence of regulation on the way our products impact on our clients' businesses. I don't see any direct link at all. RK#5*

Likewise, another manager of the BoG regulated MFIs stated:

> *Regulatory costs are often borne by us and we don't necessarily translate it to our customers. And so to me there is no influence of regulation on the impact of our products on our clients' business. RK#4*

Although some of the managers did not see a direct link between regulation and the impact of their products on clients' businesses, they reported that regulation helped them to abide by certain ethical standards in dealing with clients. The following comments from two managers of the self-regulated MFIs (now going through regulation) demonstrate this:

> *Although I do not see an influence of regulation directly on the way our products impact our clients' businesses I think with regulation you are expected to conform to a certain standard and not do anything at all so far as your business with your clients is concerned.*

You cannot do any unethical thing with your clients' money as in the case when you are not regulated. UA#26
With regulation in place you can't give credit beyond a certain limit to a single client and also you can't behave in any unethical way. You must abide by the laws of the regulator. So that keeps us in check so far as our dealings with our clients are concerned. UA#28

Another manager remarked:

ACT 773 – (Borrowers and Lenders Act) helps us to make our analysis about our clients – it outlines the rights and responsibilities of the lender and the borrower. You don't go outside that. UA#29

The interview participants did not see a direct relationship between regulation and the impact of their products on the businesses of their clients (Table 6.7). However, they admitted that regulation helps to maintain integrity in handling clients' money. The opinions of the participants confirm the quantitative research result which found no evidence of a relationship between regulation and the impact of MFIs products on their clients' businesses.

6.3.4 Challenges Affecting the Performance of MFIs in Ghana

One of the major goals of MFIs is to achieve financial sustainability and further grow their operations (Guntz, 2011). However, MFIs are confronted with a myriad of challenges which adversely affect the smooth running of their institutions. Some of the challenges mentioned by the managers (both BoG regulated and self-regulated) are high cost of funding, inadequate access to capital, inadequate capacity building, weak corporate governance, and internal fraud. Two managers expressed their frustrations about the high cost of finance and access to funds in the following quotes:

As MFIs we face a serious problem with access to funds and high cost of borrowing from other financial institutions which can be as high as 48 percent. UA#30

Cost of funding is very expensive and that is affecting our business. If you want to make the day's return then you have to increase your loan interest. The economy is also unstable and this has affected all small businesses. Because of the difficult economic conditions in the country the small money that one has for business gets eroded. UA#22

Concerning the issue of weak corporate governance, another manager noted as follows:

Regulators are not doing much in regulating the corporate governance side of the MFIs. There is a problem there. The caliber of people selected directors must be looked into. If

you don't have very experienced people they would run the institution anyhow and that would affect the prospects of the MFI. RK#2

Two other managers complained about the problem of internal fraud as follows:

People are stealing internally. They've made up their mind to steal and you can see that when you are doing an investigation. It's a very coordinated thing especially this mobile bankers (susu collectors). They will go and collect the money from the clients and they have very sophisticated ways of putting the money in their pockets. You will not see them easily if you do not have experienced people to check it. This is affecting our operations.UK#17

Another problem too is with the agents that we get for our mobile bank. They collect money from the customers and do not record it but pocket it. When you don't have the structures in place and you discipline them for doing something wrong, they can go round and tell the customers that you are going down. So they themselves are making plots against you. UK#13

Touching on the problem of inexperienced staff, multiple identification of clients, and lack of credit reference in Ghana two other managers remarked:

We faced the problem of inexperienced staff, illiterate clients which makes it difficult for you to educate them. We also have clients with multiple identifications – one person may have voter's ID, national health, he has a driver's license and all IDs have different birthdays and we don't have any source to go and verify. No source to do verification. No credit reference. This is a big challenge facing our institutions. UA#23

The problems we have relate to credit reference in Ghana and the fact that our systems are not well organized. It is difficult to locate a client if he relocates – we always have issues with people defaulting and you looking for them. Because credit reference is not in Ghana – so it is difficult tracing our clients and that affects our loan recovery from clients. UA#21

With the right structures in place it is expected that regulation would enhance the performance of MFIs. However, factors such as inadequate access to capital, high cost of capital, inadequate capacity building, weak corporate governance, internal fraud, and multiple identifications of clients serve as barriers to the performance of these MFIs. These barriers prevent them from fully realizing their desired goal of reaching the poor with microfinance products and services.

6.4 CONCLUSION

The chapter sought to address the research questions from the perspectives of the managers of the MFIs and their clients. The findings of the qualitative data showed that interviewees (managers of both BoG regulated and self-regulated MFIs) identified with the performance measures applied in the quantitative analyses in terms of outreach, financial sustainability and

impact. While in general the MFI managers were satisfied with outreach of their institutions, especially the BoG regulated MFIs, some managers expressed dissatisfaction with their financial sustainability. The findings also showed that MFI managers were of the view that their products and services helped to grow the small businesses of their clients, a position confirmed by the clients. However, the full potential impact of the products and services of MFIs on clients' businesses was hampered by adverse factors such as high interest rates, inflexible repayments conditions and poor economic conditions, among others.

The findings also revealed a positive relationship between breadth of outreach and financial sustainability, while a negative effect of depth of outreach on financial sustainability was reported. The findings provided further insight into the results from the quantitative data on the relationship between financial sustainability and impact. Participants posited that an MFI can make an impact on the businesses of its clients if it is financially sustainable.

An investigation into the effect of regulation on the performance measures revealed a positive effect of regulation on the breadth of outreach of MFIs. In contrast, regulation was generally seen to have a negative effect on the depth of outreach. The findings also showed an increase in the cost of operations as a result of increase in regulatory activities. Sharing their opinions on how regulations affect the impact the MFIs have on their clients' businesses, the interview participants saw no link between regulation and impact. They admitted however, that regulation prevents them from indulging in any unethical activity with clients' money. Most of the qualitative findings confirmed the quantitative results. However, contrary to the quantitative results, the qualitative findings revealed a positive relationship between outreach and financial sustainability and financial sustainability and impact.

The managers of the MFIs also discussed the challenges they face in their institutions. Problems such as high cost of funding, inadequate access to funding, weak corporate governance, inexperienced staff and multiple identifications of clients were noted as having adverse effects on the performance of their MFIs. The major findings and their implications are discussed in the next chapter.

CHAPTER 7
DISCUSSION AND CONCLUSIONS

7.1 INTRODUCTION

Chapter 5 presented the results of the quantitative data analyses carried out to test the hypotheses developed in chapter 3. The need for an in-depth understanding of the performance of the MFIs led to the qualitative phase of the study which findings were presented in chapter 6 and confirmed some of the quantitative results. This chapter discusses the major findings of the study and delineates the implications of the findings for policy and practice.

The chapter is organized into six sections. The second discusses the results of the quantitative findings which are augmented with the qualitative findings. The implications of the findings for policy and practice are outlined in the third section. The fourth section presents the contributions of this research to knowledge. The limitations of the study and directions for future research are provided in the fifth and sixth sections respectively. The final section presents a summary and conclusion to the study.

7.2 DISCUSSION OF RESULTS

MFIs were originally established to provide financial services to the poor to help them fulfil their creative potential and eventually emerge out of their poverty (Afrane, 2002; Hossain and Knight, 2008). Accordingly, those eliminated from the traditional financial systems by reason of their poverty are now able to participate in the system through the MFIs. While performance of MFIs in Asia and East Africa is well documented, the same cannot be said about MFIs in Ghana. The Microfinance industry is still young in Ghana and empirical evidence on the performance of MFIs is limited. Existing assessments of the performance of MFIs in Ghana are of outreach and financial sustainability. Microfinance institutions however, exist to make an impact on the lives and small businesses of clients through the financial and non-financial services they provide. Microfinance institutions should therefore be assessed not only by institutional performance measures but also on the impact they are having on their clients. This is essential because the overall performance of MFIs is affected by all the three broad measures of outreach, financial sustainability and impact (Zeller and Meyer, 2002). In light of this, this research sought to determine the performance of MFIs in Ghana using performance measures of outreach, financial sustainability and impact and to assess the effect of regulation on these

performance measures. The assessment of regulation on performance was considered important as data available on the MFIs and reported in chapter 2 point to differences in performance among the various types of institutions associated with their regulatory status.

In order to achieve the above objectives and address the research questions defined in chapter 1 a mixed research design was adopted involving both quantitative and qualitative research approaches. For the quantitative research approach, hypotheses were developed for empirical testing using 55 (24 BoG regulated and 31 self- regulated) MFIs and 164 clients of the MFIs. They were surveyed by face-to-face interviews using structured and semi-structured questionnaires. The second phase of the study, involving a qualitative research approach, employed in-depth interviews and focus group discussions to investigate the performance of the MFIs and confirm the findings from the quantitative phase of the study. In all, there were 57 participants for the qualitative phase. Thirty-three (33) managers (13 from BoG regulated and 20 from self-regulated MFIs) were interviewed and 2 focus group discussions, comprising 12 participants each, were held with the clients of the MFIs.

Descriptive and inferential statistics were used to examine the performance of the MFIs. Hierarchical regression, correlation analysis, t-test and binary mediation tests were also employed to test the hypotheses on the relationships among the performance measures and the effect of regulation on the performance measures of outreach, financial sustainability and impact. Deductive thematic analysis was used to analyze the qualitative data.

The findings showed that the BoG regulated MFIs performed relatively better in terms of breadth of outreach by reaching out to more clients. However, the self- regulated MFIs had more depth of outreach than the BoG regulated MFIs by providing smaller average loans and reaching more women clients. The findings also revealed a direct relationship between breadth of outreach and financial sustainability, while a negative relationship between depth of outreach and financial sustainability was found.

The results further showed a direct positive relationship between regulation and outreach, and a negative relationship between regulation and financial sustainability. However, no relationship was found between regulation and impact. The findings are discussed in detail in the following sub-sections.

7.2.1 Performance of MFIs

The findings on the performance of MFIs are discussed based on the research questions developed in chapter 1. Performance measures of outreach, financial sustainability and impact were used to assess the performance of the MFIs. Number of active clients, average loan size and percentage of women clients were used to assess outreach of the MFIs. Number of active clients was used for breadth of outreach while average loan size and percentage of women clients were measures of depth of outreach.

From the descriptive statistics on the performance of the MFIs the mean number of active clients for all the MFIs, comprising both active borrowers and active savers was 24,172. The average number of active clients for the BoG regulated MFIs was 51,346 which was higher than that for the self- regulated MFIs of 3,135. With a mean age of 26 years and total assets of GH¢14,570,938.2 (US$4,225,910.15), the BoG regulated MFIs were able to reach out to more clients than the self- regulated MFIs. The latter had a mean age of 3.5 years and average total assets of GH¢2,676,632 (US$776,285.38). This finding is consistent with that of Kar (2011) and Hartarska and Nadolnyak (2007) who reported that MFIs that are matured and big in size enjoy economies of scale and possibly a reduction in their operational expenses. MFIs such as these tend to reach out to more clients as a result of access to commercial funding.

While loans advanced to clients ranged from a minimum of GH¢500 to a maximum of GH¢10,000, the mean average loan size for all the MFIs was GH¢2, 994.4 (US$868.38). The value for the BoG regulated MFIs was GH¢3,604 .17 (US$1,045.29) which was higher than that for the self-regulated MFIs whose average loan size was GH¢2,522.29 (US$731.52). As a measure of the depth of outreach, a smaller average loan size indicates more depth of outreach. The values for average loan sizes of the MFIs therefore indicate that the self- regulated MFIs achieved more depth of outreach than the BoG regulated MFIs and were therefore able to reach poor clients who demand smaller amounts of loans. On average, the percentage of women clients for the self-regulated MFIs was 65.2 percent which appeared slightly higher than that of the BoG regulated MFIs at 61.3 percent. The mean value of the percentage of women clients for all the MFIs was 64 percent. The figure is close to that for the African region as a whole of (65 percent) and all MFIs in Ghana (67 percent), pointing to a representative sample.

The average values of return on assets, financial self-sustainability and operational self-sustainability for all the MFIs studied were 0.16, 1.25 and 1.43 respectively. The values of the financial sustainability indicators however, appeared lower for the BoG regulated MFIs. These were 0.077, 0.98 and 1.179 for return on assets, financial self-sustainability and operational self-sustainability respectively. Comparatively, those of the self-regulated MFIs were 0.225 for return on assets, 1.46 for financial self-sufficiency and 1.62 for operational self-sufficiency. The differences in the financial sustainability variables of the BoG regulated and the self-regulated MFIs may be attributable to the higher cost of compliance for BoG regulated MFIs.

The mean operational self-sufficiency of 1.43 for all the MFIs, 1.179 for the BoG regulated and 1.62 for the self- regulated MFIs, were all higher than the mean operational self-sufficiency for the African benchmark of 1.07 and global peer benchmark of 1.11 (GHAMFIN, 2014) pointing to higher performing MFIs among the sample. The mean operational self-sufficiency for the MFIs showed that they were able to meet all their operating costs from their revenues and generate profits.

The impact indicators of average change in profits, average change in stock, average change in business assets and employment were used to assess the performance of the MFIs in terms of the impact of their products on clients' businesses. For the impact indicators the median rather than the mean values were found to be more representative of the sample. The median value for change in profits was GH¢312.50 (US$90.63) for the BoG regulated MFIs which was slightly lower than that for the self-regulated MFIs of GH¢325.00 (US$94.26). The median values of average change in business assets and average change in stock for clients of the BoG regulated MFIs were GH¢2,600 (US$754.06) and GH¢5,702.09 ($1,653.74) respectively. These were higher than those for clients of the self-regulated MFIs of GH¢500.00 (US$145) and GH¢3,055.00 (US$886.02) respectively. Seventy-one (71) percent and 78 percent of clients of BoG regulated and self-regulated MFIs respectively were able to employ workers, the majority on part-time basis or family members who assisted with operating their small businesses.

The qualitative phase of the study confirmed the results of the quantitative analyses and enabled deeper assessment of the performance of the MFIs. The descriptors of the three measures of performance (outreach, financial sustainability and impact) presented by the managers of both the BoG regulated and self-regulated MFIs were consistent with those used for the quantitative

analysis. Number of active clients, average loan size and percentage of women clients were presented as determining outreach of MFIs. Participants in the qualitative research also classified factors that determine financial sustainability of the MFIs into two groups: revenue generating factors that ensure financial sustainability of the MFIs and factors that ensure efficiency in their operations. It became clear from the participants that interest charged on loans, interest from investment in other assets (interest income), commissions and fees charged on their daily operations, and quality of their loan portfolio were important to generating revenue and ensuring financial sustainability. Factors such us reduction in cost of operations, prudent management of physical assets and shareholders' funds, as well as liquidity management were the efficiency indicators that enabled an MFI to remain sustainable.

The income or revenue generating factors and most of the efficiency indicators were considered when calculating the financial sustainability measures of return on assets, operational self–sufficiency and financial self-sufficiency. Accordingly, the indicators of financial sustainability as presented by the interview participants were consistent with the literature and the measures used in the quantitative analyses.

Concerning the performance measures of impact, the managers of the MFIs (both BoG regulated and self-regulated) revealed that their loan products had improved the businesses of their clients through increase in the stock of goods sold by their clients, acquisition of business assets, and growth in sales and profits of clients' businesses. Other indicators of impact were the ability of clients to make prompt repayment of their loans, borrow larger amounts, and/or increase their deposits.

The qualitative data also provided an indication of performance of the MFIs on the three measures of outreach, financial sustainability and impact. It was revealed that the majority of the MFIs had satisfactory performance with respect to reaching out to clients; with the BoG regulated MFIs having more clients than the self-regulated MFIs. This was evidenced by the new branches and service outlets opened by many of the BoG regulated MFIs in Ghana, an indication of the high demand for microfinance in the country. Many of the managers attributed their high outreach levels to the hard work of their sales executives and mobile bankers who go to the communities and markets to sell their products. It became evident that the average loan sizes provided by many of the self-regulated MFIs were smaller than that of the BoG regulated MFIs, indicating that the self-regulated MFIs were more able to reach the poorer segments of

society than the BoG regulated MFIs. There were no marked differences between the BoG regulated and the self-regulated MFIs on percentage of women clients. Both appeared to have more women clients (about 60 percent) than men clients.

Some of the managers admitted that their MFI were not performing to their satisfaction with respect to financial sustainability. They attributed their poor performance to high cost of capital and high default rate. In contrast, managers satisfied with financial sustainability of their MFIs attributed their performance to their ability to reduce operating costs and instill discipline in their spending. Others emphasised the mechanisms in place to ensure clients repaid their loans promptly. These factors enhanced their sustainability.

On the impact of their products on clients' businesses, all the managers claimed their products were improving their clients' businesses. This became evident when they visited the clients first hand after disbursing loans. They reported increased stock of goods sold, acquisition of business assets, and growth in sales volume and profits. Views expressed by clients of the MFIs from the focus group discussions confirmed what the managers of the MFIs revealed concerning the impact of their products on clients' businesses. The majority of the clients attributed the success and stability of their businesses to the loans they received from the MFIs. That notwithstanding, many of the clients complained about the high interest charges on their loans, which according to them have eroded their profit margins. Some clients also complained of the inflexible loan repayment schedules of some MFIs. The harsh economic conditions had a toll on their sales and were highlighted as having an adverse effect on their businesses. The adverse factors mentioned prevented the financial products of the MFIs from having an appreciable impact on their clients' businesses. Despite these setbacks, many of the clients perceived the MFIs as an answer to their problems with access to finance, given that MFIs provide more flexible loan terms than the traditional banks.

Ten hypotheses where tested in the quantitative analyses to address research questions 2 to 4. The findings are discussed in the next sub-sections.

7.2.2 Interrelationships among Performance Measures

Relationships among performance measures of outreach, financial sustainability and impact were investigated.

7.2.2.1 Breadth of Outreach and Financial Sustainability of MFIs

Hypothesis 1a examined whether breadth of outreach was related to financial sustainability. The results indicated no relationship between breadth of outreach and financial sustainability. In contrast, the findings of the qualitative study showed a direct positive relationship between breadth of outreach and financial sustainability. Views expressed by the managers of the MFIs in the qualitative study implied that some economies of scale were achieved with increases in the number of customers of an MFI (breadth of outreach) which led to a reduction in unit cost. Moreover, total interest income from clients would increase due to increase in the number of clients, enhancing sustainability of the institutions. The findings are in consonance with the views of researchers such as Otero (2000), Otero and Rhyne (1994) and Robinson (2001) who argued that outreach improves financial sustainability. The findings showed, however, that while MFIs may increase volume of outreach they may not be able to maximize revenue from the increase in outreach with a consequent negative impact on financial sustainability. Apart from the interest income, revenue could be generated from other services to clients. It was made clear that while the BoG regulated MFIs were taking service charges from current account holders to increase their revenue, the self-regulated MFIs were not charging anything to clients who operate "susu" accounts with them (see section 3.4.3.2). Therefore, the majority of the self-regulated MFIs were not taping into additional sources to maximize revenue from their clients.

7.2.2.2 Depth of Outreach and Financial Sustainability of MFIs

Hypothesis 1b posited that depth of outreach is unrelated to the financial sustainability of MFIs, with depth of outreach proxied by average loan size and percentage of women clients. Although in general, an increase in volume of loans should increase revenue and therefore financial sustainability, administration costs are high for small-sized loans and for group lending to women. Revenue from small loans may therefore not cover the associated costs. The results showed that percentage of women clients had no relationship with financial sustainability of the MFIs. Average loan size on the other hand, was found to be positively related to operational self-sufficiency. Average loan size was therefore, significantly predictive of the level of operational self-sufficiency of MFIs. The qualitative findings confirmed this result. The managers of the MFIs (both BoG regulated and self- regulated) attested to the fact that administering small loans to a larger number of clients increases cost which ultimately affects their profitability or sustainability. It is relatively less costly to administer bigger loans which

earn more income. The results supported the views expressed by researchers such as Gonzalez (2007) who noted that small loans have high costs.

The depth of outreach shows whether the MFI provides microfinance services to clients who fall within the lower segment of society. The main assumption is that the smaller the loan size the deeper the outreach. However, the need to remain profitable (sustainable) could result in the exclusion of some potential borrowers (the poor) who would demand very small loan sizes. The findings of the current study is consistent with a study by Perera (2010) who reported that MFIs maintain their sustainability by concentrating on large loans at the expense of providing small loans to the entrepreneurial poor. Still in line with the outcome of this study, other studies such as those by Paxton, Graham and Thraen (2000), Makame and Murinde (2006) have also reported that serving the poorest segment of society negatively affects sustainability of MFIs. A study by Hermes et al (2011) also found that MFIs with lower average loan sizes were less efficient. These studies noted a trade–off between depth of outreach and financial sustainability. In contrast, studies such as by Kereta (2007), and Gonzalez and Rosenberg (2006) suggested that there is no trade-off between serving the poor and remaining sustainable.

7.2.2.3 Financial Sustainability of MFIs and Impact on Clients' Businesses

Hypothesis 1c predicted that financial sustainability is unrelated to the ability of MFIs to make an impact on their clients' businesses. The results indicated that financial sustainability of MFIs did not predict the impact of MFIs' products on their clients' businesses. The result was not supported by the qualitative findings which demonstrated that a financially sustainable MFI would be able to have an impact on the businesses of its clients. Such an MFI could meet the financial needs of clients at all times and help grow their businesses. As clients' businesses thrive, they in turn would be able to make prompt repayment of their loans and enable sustainability of the MFIs. A direct link between financial sustainability and impact was therefore envisaged. The finding from the qualitative research is consistent with a study by Navajas et al (2000) which reported that financially sustainable institutions tend to improve their clients' lives. Another study by Mosley and Hulme (1998) showed a positive and high correlation between financial sustainability and impact generation. The difference in the quantitative and qualitative findings could stem from client related factors that could not be controlled for in the quantitative analysis. The individual circumstances of clients could affect the way their loans were used.

Four hypotheses investigated the effects of regulations on the performance measures. The results are discussed in the ensuring sub-sections.

7.2.3 Effect of Regulation on Performance of MFIs

Four hypotheses were formulated to examine the direct effects of regulation on each of the performance measures of outreach, financial sustainability and impact. Three hypotheses also investigated the indirect or mediating effects of regulations on the relationships between the performance measures. The results are discussed below.

7.2.3.1 Effect of Regulation on Breadth of Outreach of MFIs

Hypothesis 2a predicted that regulation has no effect on breadth of outreach. The results however, showed that regulations had significant positive effect on breadth of outreach. This was supported by the qualitative data which revealed that regulatory activities invariably enhanced confidence in the MFIs and enabled access to voluntary deposits for on-lending to clients. Regulations therefore, helped the MFIs to reach out to more clients. Those who were self-regulated admitted that many clients were hesitant about transacting with them. This was because some self-regulated MFIs had taken money from and promised large unsustainable loans to their clients but had eventually gone bankrupt, leaving their clients with significant losses. Confidence in the self-regulated MFIs had dwindled whilst customers felt more secured about depositing their funds with the BoG regulated MFIs.

The findings of this study are contrary to those of Hartarska and Nadolnyak (2007) who reported that regulatory involvement does not directly affect performance in terms of outreach. Nevertheless, they suggested an indirect benefit from regulations, explaining that it enables MFIs to collect savings from clients, thereby enhancing their ability to reach out to more clients.

7.2.3.2 Effect of Regulation on Depth of Outreach

Hypothesis 2b posited that regulation has no effect on the depth of outreach for MFIs in Ghana. The results showed no effect of regulation on average loan size, but that regulatory involvement could reduce the percentage of women clients. This result was confirmed by the findings from analysis of the qualitative data.

It was revealed that regulatory activities could reduce the percentage of women clients who form the majority of the poor. This is because **c**omplying with regulation entails increases in cost of operations and MFIs desiring to remain profitable would focus on clients who could pay for the cost of services provided. Women are among the poor who often demand small loans which are costly to administer. Loans to such clients may therefore be sacrificed for bigger loans. Additionally, most MFIs employ the group lending method which was reported as enhancing repayment rates. This is due to its associated features such as joint-liability of group borrowers, access to information about members for effective screening, monitoring of repayment by members, and imposition of social sanction on members who default **(**Remenyi, 2000; Bakshi, 2008; Giné and Karlan, 2011;. Ghatak, 1999; Satgar, 2003).

However, the findings of the study has shown that high default rate of the group lending programmes had resulted in most of the MFIs reducing drastically their group lending activities while others had stopped it completely. This situation had led to a reduction in the number of women clients since majority of the group lending programmes were patronized by women. Thus, the social responsibility factor (welfare factor) which drove a large number of MFIs to serving more women has given way to the need to be profitable in order to remain in the business of microfinance. This result is consistent with that of Cull et al. (2011) who reported that profit–oriented MFIs respond to supervision by maintaining profit rates but reduce outreach to women and customers who are costly to reach.

7.2.3.3 Effects of Regulation on Financial Sustainability

Hypothesis 2c predicted that regulation has no effect on financial sustainability of MFIs in Ghana. Measures of financial sustainability were return on assets, operational self-sufficiency, and financial self-sufficiency.

The results indicated that regulation had no effect on return on assets but has a significant association with financial self-sufficiency and operational self-sufficiency. Confirming the results, the qualitative findings revealed that regulation comes with an increase in operating costs. Some of the costs incurred in complying with regulation include cost of skilled labour, legal expenses, and cost involved in obtaining operating permits. The high costs of meeting these expenses can ultimately affect the financial sustainability of the MFIs. The views expressed by the participants in the qualitative research concur with that of Cull et al. (2011)

who attributed increased cost of complying with regulation to managerial and legal expenses and high administrative cost incurred in providing small loans to a large number of borrowers.

It was however, clear from the qualitative findings that with efficient systems for mobilizing funds, and cost control measures in place, MFIs could benefit from regulatory activities. A study by Hartarska and Nadolnyak (2007) found no relation between regulation and operational self-sufficiency.

7.2.3.4 Regulation and Impact of MFIs' Products on Clients' Businesses

Hypothesis 2d sought to test whether regulation has an effect on the impact of MFIs' products on clients' businesses. The results demonstrated that regulation has no effect on how the products of MFIs impact the businesses of their clients. The qualitative findings supported this result. Expressing their views on the issue, the managers of the MFIs contended that there is no direct relationship between regulation and the impact of their products on the businesses of their clients. They explained that regulation compels them to establish appropriate governance structures and prevents them from unethical use of their clients' money. It was revealed that self-regulated MFIs tended to use clients' money for unscrupulous activities because they were under no obligation to report their activities. Regulation therefore ensures that the MFIs operate ethically.

7.2.3.5 Mediation Effects

Hypotheses 3a to 3c were tested for mediation effects. Hypothesis 3a predicted that regulation mediates the relationship between breadth of outreach and financial sustainability. The results indicated the absence of any mediation or indirect effect of breadth of outreach on financial sustainability through regulation. Similar result was found for hypothesis 3b, which also predicted that regulation mediates the relationship between depth of outreach and financial sustainability. The results showed that regulation does not mediate the relationship between depth of outreach and financial sustainability. Results of hypothesis 3c also indicated the absence of any mediation effect of financial sustainability and impact through regulation.

7.2.4 Barriers to Performance of MFIs in Ghana

The qualitative study addressed research question 5. While MFIs in Ghana endeavour to reach out to the poor clients who often operate micro and small businesses, they are confronted with

many challenges which militate against their effective performance. It was evident from the qualitative study that many MFIs in Ghana access commercial funding at market rates for on-lending to clients. Interview participants especially the self-regulated MFIs complained strongly of high cost of funding in Ghana, which they noted negatively affects their performance. High cost of funding normally translates into high interest rates for clients which invariably affect clients' repayments of loans.

Access to funding was another barrier to performance. Commercial funding (debt capital) has become a popular source of funds for MFIs in Ghana. However, MFIs would need other sources of funding, especially savings or equity to be able to perform their critical role of reaching large numbers of the poor with the financial services they need.

Weak corporate governance was also mentioned as a problem inhibiting performance of MFIs. Good corporate governance is important for increasing investor confidence and market liquidity both of which invariably enhance the performance of the MFI (Donaldson, 2003). Participants however, reported that some of the MFIs were manned by directors who were inexperienced and therefore operated the institutions ineffectively, with negative implications for the prospects of the MFIs.

Many of the interview participants also cited internal fraud as a major problem experienced in the business of microfinancing. Some of the consequences of internal fraud were loss of revenue and loss of customer confidence in the financial institution (Akinyomi, 2012). Many participants reported that the mobile bankers used by the MFIs often pocket savings collected and falsify entries of clients' savings. The use of mobile bankers had contributed greatly to mobilizing savings from clients who found it difficult to visit the banking hall personally. Nonetheless, some of the mobile bankers engaged in fraudulent activities which adversely affected clients' savings and ultimately the sustainability of the MFIs.

The problem of inadequate capacity building of staff was emphasised by the participants. It was revealed that some of the MFIs were managed by inexperienced staff with little knowledge in microfinancing. This negatively impacted the efficient running of the MFIs.

MFIs in Ghana were also faced with the challenge of multiple identifications of clients. A client may have a driver's license, voter's identification card, and national health insurance, with

different birth dates on each identification card. With the absence of a credit reference bureau to verify the authenticity of the identifications, it becomes difficult to trace a client when he or she defaults or relocates. This affects loan recovery and ultimately the sustainability of the MFIs.

7.3 IMPLICATION OF FINDING FOR POLICY AND PRACTICE

The results of this research have certain implications for the performance of MFIs in Ghana. The study revealed the important role of MFIs in providing financial services to the cash trapped small businesses whose survival and growth depends on them. Essentially, small business access to productive capital has been made possible by MFIs. It is in light of this critical role of the MFIs that their performance should be of interest to policy makers.

7.3.1 Policy Implications

The study found that mature and big MFIs reached out to more clients than the small and young MFIs, the majority of which are self-regulated. Table 2.4 in section 2.8 showed that the Rural Community Banks (RCB) and Savings & Loans Companies (S&Ls) had bigger loan portfolios than the other (self-regulated) MFIs. Figure 2.1 also illustrated that the loan portfolios of the RCBs and S&Ls increased at a faster rate than those of the other MFIs. The implications are that the RCBs and S&Ls present the most effective vehicles for micro-finance in Ghana. They are able to consistently expand their operations to reach out to more clients, eventually improving small business in Ghana. The government of Ghana should encourage the establishment and expansion of more RCBs and the S&Ls.

The above position is explained by the finding that regulation enabled increase in outreach because it allowed MFIs access to voluntary savings. In view of this, the initiative by the Bank of Ghana to regulate the activities of the microfinance industry is a step in the right direction. Effective supervision should be carried out by the regulator to ensure that MFIs conduct their business on sound operating principles. This in turn would help improve their performance and consequently promote viable and sustainable systems of microfinance in Ghana.

In their quest to remain profitable (sustainable) the study revealed that BoG regulated MFIs could reduce outreach to women and the poor and underprivileged clients who are costly to reach. This is a deviation from the original objective of MFIs that sought to reach out to the

poor with financial services with the aim of helping them to become profitable and eventually emerge from poverty. The government could support the microfinance industry to continue to fulfil this objective by setting up a fund for the underprivileged and deprived in society that could be accessed by the well performing MFIs for their poor clients. Such a fund should be controlled by the Bank of Ghana with the mandate to make it available to well-structured and well-performing MFIs at competitive rates. The desire to access such a fund would compel non-performing MFIs to work hard and meet the standards for access.

Findings from the qualitative study showed that the products and services of MFIs, especially the BoG regulated and well-performing MFIs, have positive impact on their clients' businesses. Such positive impact can be enhanced if the MFIs are able to provide non-financial services, in particular training in enterprise management, to their clients. The MFIs constitute appropriate vehicles for delivering such training due to the existing relationships with their clients. However, such training; often delivered free or at subsidised rates, is costly to the MFIs and could undermine their financial sustainability. The government can assist by delivering enterprise training programmes on behalf of the MFIs and aligning such programmes with loans disbursed by the MFIs.

One area of much concern to MFIs in Ghana is their high cost of capital which negatively affects their performance. Most of the MFIs depend on commercial funds for their operations and the cost of funds from the traditional banks is influenced by the prime rate (monetary policy rate). Currently the prime rate in Ghana is 26 percent which is among the highest in the world (Central Bank Rates, 2015). By making the borrowing rate (example, high rate of treasury bills) attractive to the public, government crowds out funds available for investment. This has the effect of raising the cost of capital and MFIs could transfer the high cost of capital to their clients in the form of high interest rates. Some researchers have argued that returns to capital can be high for small businesses and so they should be able to meet the high interest rates (McKenzie and Woodruff, 2008; De Mel et al., 2008). Evidence has shown however, that high interest rates affect the repayment of loans and is detrimental to investment and growth (Hoque and Hossain, 2014). The Government of Ghana through the Central Bank should therefore take a second look at the high monetary rate and review it downwards. This would enable a reduction in the cost of capital to MFIs which would also help to reduce the interest on loans to clients of MFIs. Small businesses which are the backbone of many developing economies should be supported to grow and not collapse as a result of high interest rates (Quartey, 2015).

Access to funds remains a challenge to many microfinance institutions. Apart from very few NGOs in Ghana, the majority of the MFIs are for-profit institutions that do not depend on donor funds or grants for their operations but rather on commercial funds. Such funds are provided on short-term basis. Considering that MFIs deal with the poor and underprivileged, long-term funds would be needed to enable the MFIs to grow and continue to provide the critical services of meeting the finance needs of the poor. Additionally, a rating agency or overarching organization such as the Bank of Ghana should publish rankings of the various MFIs to motivate performance. Such rankings would serve as a wakeup call for the non-performing MFI to improve their image and protect the public from dealing with unscrupulous MFIs. The move would also enable MFIs to attract investment from investors seeking profitable opportunities.

One reason provided for the collapse of some of the self-regulated MFIs in recent times is inexperienced management. Unlike traditional banking, microfinancing requires specialized skills and experience. Capacity building of the managers of MFIs should be vigorously pursued. The Government should resource the associations of the microfinance institutions to enable adequate training to their members and improve their performance.

Operating sustainably also depends on factors such as good governance (Guntz, 2011). The importance of good governance on performance of MFIs cannot be underestimated. Bank of Ghana should ensure that people with the appropriate skills and experiences are selected as directors of the board of MFIs. Consequently, Bank of Ghana should ensure that MFIs are governed by appropriate governance structures with qualified management to manage their affairs. This would enhance the performance of MFIs in Ghana.

The problem with multiple identifications of clients reported by the interview participants could also be solved by the Bank of Ghana encouraging the establishment of a credit reference bureau to enable the verification of the authenticity of clients' identification cards. This should help trace clients who default and/or relocate. The rate at which clients default and disappear with funds from MFIs could be drastically reduced and loan recovery enhanced.

7.3.2 Implications for Managers of MFIs

Although the findings revealed that regulation increased cost of operations, it also showed that regulation helped the MFIs to increase outreach. MFIs would therefore benefit from regulation when the right structures and models are in place. In view of this, it is expedient for MFIs to identify efficiency drivers, that is, factors that reduce their operating costs to enhance their efficiency.

Ability to reduce operating costs could also help to manage the trade-offs between depth of outreach and financial sustainability evident in this study. Controlling cost, especially those that relate to human resources, is essential since salaries form a high percentage of the overall cost of MFIs (Morduch, 2005). Also MFIs in Ghana, especially the small MFIs, could reduce physical costs by limiting investment in physical assets, especially buildings. They do not have to be located in the most expensive buildings in town. Careful management of these operating costs could enhance the financial sustainability of the MFIs and enable them to extend their outreach to the disadvantaged in society.

Furthermore, MFIs should seek long-term capital from the Pension Funds, Insurance Companies and Asset Management Firms. This would help them to reach more people with financial services. The findings of the study indicated that breadth of outreach is closely linked with financial sustainability. Thus, as the scale of outreach increases due to access to more funding, unit cost of operation would decrease from scale of economies. Furthermore, as the number of loans per loan officer increases total interest income would increase enhancing financial sustainability.

The findings indicated that MFIs face inadequate capacity building of staff. Management of MFIs should build the capacity of their staff through continuous professional development so they are up-to-date with new trends in micro-financing, and can use these to improve performance of their MFIs.

Internal fraud was identified as a major challenge to many MFIs. Mobile bankers are used by several MFIs to collect repayment of loans and savings from clients. These transactions are normally recorded in the clients' books. However, some mobile bankers fail to record all such transactions in the books of the MFIs. Many MFIs experience financial loss as a result of these

fraudulent activities which ultimately affect their performance. MFIs should put in place effective internal control measures to uncover such fraudulent acts. The internal control systems should be cost effective to help mitigate fraud risk while maximizing efficiency of the MFIs.

The study has shown that MFIs face poor repayments of loans from clients operating small businesses because of high interest rates on loans. Poor repayments could affect loan recovery and consequently the financial sustainability of MFIs. The risk of poor repayment could however, be reduced if repayment amounts are matched with the repayment capacity of clients (Idolor and Imhanlahimi, 2011). This means MFIs should employ flexible loan repayment terms such that clients who have the ability to make frequent payment of smaller amounts over a longer period are allowed to do so in order to reduce the undue pressure often placed on small business clients (Quartey, 2015).

Furthermore, MFIs should design and deliver innovative products and services that meet the needs of small business operators to sustain and enhance the growth of their businesses while enabling the MFIs to expand their outreach.

7.4 CONTRIBUTION OF THE RESEARCH TO KNOWLEDGE

The contributions of this study to knowledge are discussed under two headings: empirical and methodological contributions.

7.4.1. Empirical Contribution

Previous studies have often examined performance of MFIs in terms of institutional factors of outreach and financial sustainability (de Crombrugghe et al. 2008; Kumar and Gupta, 2011; Ayayi and Sene, 2010; Hasan et al. 2009). This study however considered the performance of MFIs not only in terms of outreach and financial sustainability but also with respect to the impact MFIs make on their clients' lives and businesses. This is because the three measures of outreach, financial sustainability and impact are related and contribute to the ability of MFIs to meet their objective of helping to reduce poverty (Meyer, 2002). Furthermore, the interrelationships among these performance measures were assessed to enhance understanding of how they affect each other. For example the study revealed that while outreach in terms of number of active clients improves financial sustainability, depth of outreach in terms of small loans and group loans to women have adverse effect on financial sustainability. Therefore

pursuit of financial sustainability draws MFIs away from their original mandate of serving the poor.

Given that the study was conducted at a time when the microfinance industry in Ghana consisted of BoG regulated and self-regulated MFIs, the study further examined the effect of regulation on the three performance measures of outreach, financial sustainability and impact. Extant literature has examined the effect of regulation on outreach and financial sustainability (Hartarska and Nadolnyak, 2007; Cull et al. 2011). The current study has gone a step further to investigate the effect of regulation on all the three measures of outreach, financial sustainability and impact. The study showed the extent to which regulation directly affects the three measures of performance as well as its indirect effect on the relationships among the performance measures of outreach, financial sustainability and impact. Accordingly, the current study adds to previous research in that it examined holistically the performance of MFIs and the effect of regulation on the three performance measures.

7.4.2 Methodological Contributions

The majority of studies on performance of MFIs employed standard regression models i.e Ordinary Least Square with ANOVA and MANOVA to examine the factors that affect performance of MFIs. The use of hierarchical regression models have been recommended by researchers such as Richter (2006). Theoretically, hierarchical regression models produce appropriate error terms that control for potential dependency as a result of nesting effect (Newman, Newman and Salzman, 2010). Also hierarchical regression models enable several variances to be considered simultaneously (Richter, 2006). The current study used the hierarchical regression, correlation analysis and binary mediation test (Sobel's test) to determine the extent to which certain factors directly and indirectly affect performance of MFIs. The use of hierarchical and binary mediation to examine both direct and indirect effect of regulation on performance of MFIs is new in the microfinance literature. The current study therefore makes a methodological contribution in this direction. Another methodological contribution is the use of deductive thematic method to analyse the qualitative data on the performance of MFIs. The method analyses qualitative data efficiently because it draws from established theoretical framework and concepts (Yukhymenko et al, 2014).

Again, this study analysed performance of MFIs from three rather than the two perspectives (outreach and financial sustainability) mostly considered in studies on performance of MFIs. The current study therefore extends existing research to consider the impact of MFIs on their clients' businesses as a way of assessing the extent to which MFIs are achieving their mandate of reaching the poor in society and reducing poverty.

7.5 LIMITATIONS

The current study is subject to a number of limitations which should be considered when interpreting the results. The first limitation is the relatively small number of MFIs in the study. The study surveyed MFIs in the two most populated regions of Ghana, which represented the Northern and Southern sectors of the activities of microfinance institutions in Ghana. The BoG regulated MFIs surveyed were drawn from the small population of regulated MFIs in the two regions. The initial intention was to match the number of BoG-regulated and self-regulated MFIs for effective comparison, but this was not possible given the small number of the BoG regulated MFIs. The unbalanced numbers of BoG regulated and self-regulated MFIs as well as the relatively small number of BoG regulated MFIs may affect generalization of the results. Furthermore, although an attempt was made to collect performance data over a three year period from 2009 to 2011, some of the self-regulated MFIs were unable to provide financial data for all the three years, requiring the replacement of missing financial data with the average for the years available. This limitation notwithstanding, the qualitative phase of the study was carried out to augment findings from the quantitative study and provide in-depth explanation of the variables under investigation. This helped to eliminate some of the gaps in the quantitative study and enhance robustness of the study.

Determining the impact of MFI's products on clients' businesses also presented a limitation. Researchers like Banerjee et al (2008), Kondo (2007) and Coleman (2006) suggested the use of new entrants into a credit facility as a control group. It was however, very difficult to find new clients of an MFI who had not been regular clients of other MFIs. This made it difficult to identify a control group new to microfinance in Ghana. The study therefore, employed a 'before and after" method to assess the impact of loan products of the MFIs on their clients' businesses. The limitation posed is the inability to estimate the counterfactual situation of the clients who had benefitted from the loans. This is because there was no baseline study before the current

study for comparison. The assumption made was that respondents would be able to remember fairly accurately their business conditions before obtaining the loans.

It must be noted however, that the limitations mentioned above do not render the results and findings of this study less significant but are intended to acknowledge the shortcomings and provide grounds for future research in this area.

7.6 DIRECTIONS FOR FUTURE RESEARCH

The following avenues for future research are provided based on the findings of the current study. A bigger sample of MFIs would enrich the results and improve their generalisation. In addition, the use of longitudinal data to track performance of the MFIs over time will add to the current study. Analyzing performance of MFIs over a period of time would provide better insight into performance over time.

The current study was undertaken prior to regulating all MFIs in Ghana. With the new era of regulation, future research could consider analyzing the impact of regulation on the entire microfinance sector using a Regulatory Impact Assessment (RIA). The RIA should help assess the positive and negative impacts of existing or potential regulatory measures (Chiumya, 2006) on MFIs in Ghana. Future research may also focus on the governance structures of MFIs in Ghana to assess the extent to which appropriate governance plays a role in the performance of MFIs in Ghana.

In considering impact as a measure of the performance of MFIs, a longitudinal study can be carried out which may involve a baseline study of the situation of the clients' businesses before accessing the credit facility. The condition of the business after using the facility could also be assessed for a more insightful investigation of the impact of the products of the MFIs on the growth or otherwise of the businesses of their clients.

7.7 CONCLUSION

Researchers have often assessed performance of MFIs in terms of outreach and financial sustainability. The current study added a third component, impact to the well-known performance measures of outreach and financial sustainability in determining the performance of MFIs in Ghana. The study also investigated the effect of regulations on all the three

performance measures. The findings showed that outreach and financial sustainability are important predictors of performance of MFIs. While most MFIs were found to perform adequately in terms of outreach, the BoG regulated MFIs were able to reach out to more clients than the self-regulated MFIs. In terms of financial sustainability both BoG regulated and self-regulated MFIs were able to cover their operating costs with revenue generated.

For impact on their clients' businesses the study revealed that the products of MFIs are helping to grow the businesses of their clients. However, mitigating factors such as high interest rates, inflexible loan repayment terms and harsh economic conditions were preventing the products of the MFIs from having the desired impact on the small businesses of clients.

The study also showed that average loan size was predictive of the level of operational self-sufficiency, implying that as average loan size increases the level of operational self-sufficiency also rises. The need to remain profitable could therefore result in the exclusion of borrowers who demand small loan sizes.

The effect of regulation on the three measures of performance was investigated. The findings indicated that regulatory involvement could lead to an increase in breadth of outreach but a decrease in the percentage of women clients (depth of outreach) of MFIs. The study also found that regulatory activities could increase the cost of operations of MFIs and reduce their operational self-sufficiency. However, with efficient management of the MFI, the benefits of regulation could offset the costs in the long-run. Regulation was not found to affect the impact of MFIs' products on clients' businesses.

The microfinance industry is young in Ghana and MFIs could improve their performance with respect to meeting their mandate of reaching the poor with financial services when provided the necessary support from the government and relevant stakeholders. The government, through the Bank of Ghana, should consider reviewing downwards the relatively high monetary policy interest rate of 26 percent. This would help to reduce the cost of capital which is currently too high for the MFIs. Furthermore, the government should set up a fund for the underprivileged and deprived in society which could be accessed by well-structured and well-performing MFIs to provide services to the poor and remain financially sustainable. Other long-term funds from the Pension Funds, Insurance Companies and Asset Management funds could also be made accessible to the MFIs to allow them to increase their outreach and meet the high demand for

microfinance in Ghana. Non-financial services, especially enterprise training would augment ability of small business clients to make effective use of loans from the MFIs in growing their businesses. The government can assist MFIs in providing such services to their clients.

Additionally, Bank of Ghana should ensure that MFIs are governed by appropriate governance structures with well qualified management teams to manage their operations. This should enhance performance of MFIs in Ghana. The government should also resource the associations of MFIs to enable them to offer capacity building training programmes to their members. This will ensure that the MFI employees are constantly up-to-date with international trends in microfinancing, a critical factor to the smooth running of the MFIs. While it is evident from the study that regulation enables increase in outreach, the cost associated with regulations could cloud out the benefits, especially in the short-term. Microfinance institutions should be able to identify and address factors that push up cost of operations in order to control cost and enhance their financial sustainability.

The products of MFIs could have better impact on the small businesses of clients and the risk of poor repayment reduced if MFIs employ flexible loan repayment terms to reduce undue pressure on small businesses with respect to repayments. MFIs should also design and deliver innovative products and services that meet the needs of small business operators to sustain and enhance the growth of their businesses.

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APPENDICES

APPENDIX A: INFORMATION SHEET FOR INTERVIEW PARTICIPANTS

University of New England
Armiale NSW 2351
Australia
Phone 61 2 6773 2830
Fax 61 2 6773 3596
bkotey@une.edu.au
www.une.edu.au/business-school/

INFORMATION SHEET

for

INTERVIEW

February 19, 2015

Dear Sir/Madam,

I wish to invite you to participate in my research project, described below. My name is Joyce Ama Quartey and I am conducting this research as part of my PhD in the School of Business at the University of New England. My supervisors are Associate Professor Bernice Kotey and Dr. Bernard Bollen.

Research Project	**Performance and Sustainability of Microfinance Institutions (MFIs) in promoting SME growth in Ghana**
Aim of the research	The research seeks to investigate how regulation impacts on the three variables of outreach, financial sustainability and impact as measures of MFI performance.
Interview	I would like to ask for your permission to interview you as a manager of an MFI who has been purposively selected for the exercise. The exercise will take 40 minutes. With your permission, I will make an audio recording of the interview dialogue to ensure that I accurately recall the information you provide. Following the interview, a transcript will be provided to you if you wish to see one.
Confidentiality	Any information or personal details gathered in the course of the study will remain confidential. No individual will be identified by name in any publication of the results. All names will be replaced by pseudonyms; this will ensure that you are not identifiable.
Participation is Voluntary	Please understand that your involvement in this study is voluntary and I respect your right to withdraw from the study at any time. You may discontinue the exercise at any time without consequence and you do not need to provide any explanation if you decide not to participate or withdraw at any time.

Questions	The questions in the focus group guide are not sensitive in nature: rather they are general, aiming to enable me to enhance my knowledge of the extent to which microfinance institutions are meeting the objective of poverty reduction through the services they provide to small businesses.
Use of information	I will use information from the focus group discussions for my doctoral thesis, which I expect to complete in June 2015. Information from the discussions will also be used in journal articles and conference presentations before and after this date. At all times, I will safeguard your identity by presenting the information in way that will not identify you individually.
Upsetting issues	It is unlikely that this research will raise any personal or upsetting issues but if it does you may wish to contact the Local Community Health Centre, Phone No. 03220 23302.
Storage of information	I will keep the recordings and notes from the focus group discussions in a locked cabinet initially in my office and then in my Supervisor's office at the UNE Business School in Australia. Any electronic data will be kept on a password protected computer in the same School. Only the research team will have access to the data.
Disposal of information	All the data collected in this research will be kept for a minimum of five years after successful submission of my thesis, after which they will be disposed of by deleting relevant computer files and shredding hardcopy materials.
Approval	This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No HE15-077. Valid to 12/05/2016.
Contact details	Feel free to contact me with any questions about this research by email at jquartey@une.edu.au or by phone on 0244733807 You may also contact my supervisors. My Principal supervisor's name is Associate Professor Bernice Kotey and she can be contacted at bkotey@une.edu.au or 61 2 6773 2830. My second supervisor's name is Dr. Bernard Bollen and he can be contacted at bbollen@une.edu.au or 61 2 6773 2838.
Complaints	Should you have any complaints concerning the manner in which this research is conducted, please contact: Mrs Cecilia Boakye Botwe Assistant Registrar (School of Business) Christian Service University College PO Box 3110 Kumasi, Ghana Tel: +233 243 284 751 Email: cbotwe@csuc.edu.gh **Or** Mrs Jo-Ann Sozou Research Ethics Officer

Research Services
University of New England
Armidale, NSW 2351
Tel: 61 2 6773 3449 Fax: 61 2 6773 3543
Email: ethics@une.edu.au

Thank you for considering this request and I look forward to further contact with you.

Yours sincerely,

Joyce Ama Quartey

APPENDIX B: CONSENT FORM FOR PARTICIPANTS

Performance and Sustainability of MFIs in promoting SME growth in Ghana

I ..……..,…….. have read the information contained in the Information Sheet for Participants and any questions I have asked have been answered to my satisfaction.
Yes/No

I agree to participate in this activity, realising that I may withdraw at any time.
Yes/No

I agree that research data gathered for the study may be published using a pseudonym
Yes/No

I agree that I may be quoted using a pseudonym. Yes/No

I agree to the interview having my audio recorded and transcribed.
Yes/No

I would like to receive a copy of the transcription of the interview.
Yes/No

I am older than 18 years of age. Yes/No

…….. …….
Participant Date

…….. …….
Researcher Date

APPENDIX C: SURVEY LETTERS FOR THE GHANA ASSOCIATION OF MICROFINANCE COMPANIES (GAMC)

UNE Business School
University of New England
Armidale NSW 2351
Australia
Phone 61 2 6773 2830
Fax 61 2 6773 3596
bkotey@une.edu.au
www.une.edu.au/business-school/

18th February, 2013
The Chairman
GAMC
Kumasi

Dear Sir,

Collection of Data from Microfinance Institutions (MFIs)

My name is Joyce Ama Quartey and I am a doctorate student in the Business School at the University of New England in Armidale, Australia. As part of my doctorate studies, I am researching the extent to which regulation impacts the ability of microfinance institutions (MFIs) in Ghana to meet the objectives of financial sustainability, outreach and impact, especially as they relate to small businesses.

I will be grateful if you could grant me permission to interview the managers of MFIs in the Ashanti and Greater Accra regions on the activities and performance of their institutions.

All information gathered will be treated in strict confidence. Neither the interviewee nor their institution will be identified by name in any publication of the results. All names will be replaced by pseudonyms and only aggregate data from the questionnaire will be published.

I expect that the findings from the research will have implications for performance outcomes and regulation of MFIs in Ghana. I will be happy to provide you with a report on my findings on request.

Should you require more information on the research, you can contact me at the address below or my principal supervisor, Associate Professor Bernice Kotey, at the address below:

Associate Professor Bernice Kotey
Senior Lecturer
New England Business School
University of New England
Armidale, NSW 2351
Australia
Tel: 612 6773 2830
Fax: 612 6773 3148
Email:bkotey@une.edu.au

This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No. HE13-006, Valid to 26/02/2014.

Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Mrs Jo-Ann Sozou
Research Ethics Officer
Research Services
University of New England
Armidale, NSW 2351
Tel: 61 2 6773 3449 Fax: 61 2 6773 3543
Email: ethics@une.edu.au

Thank you for considering this request and I look forward to further contact with you.

Yours sincerely,

Mrs Joyce Ama Quartey
Christian Service University College
PO Box 3110
Kumasi, Ghana
Tel: +233 244 733 807

APPENDIX D: SURVEY LETTER FOR THE MANAGERS OF MFIs

UNE Business School
University of New England
Armidale NSW 2351
Australia
Phone 61 2 6773 2830
Fax 61 2 6773 3596
bkotey@une.edu.au
www.une.edu.au/business-school/

15 April, 2013

Dear Sir/Madam,

Collection of Data from your Institution

My name is Joyce Ama Quartey and I am a doctorate student in the Business School at the University of New England in Armidale, Australia. As part of my doctorate studies, I am researching the extent to which regulation impacts the ability of microfinance institutions (MFIs) in Ghana to meet the objectives of outreach, financial sustainability and impact, especially as they relate to small businesses. Your institution has been randomly selected to participate in this research.

I will be grateful if you could grant me permission to visit your institution and interview one of your managers on the activities and performance of your MFI. I will also seek the manager's assistance with completing a questionnaire. Both the questionnaire completion and interview will take about an hour. Following the interview, a transcript will be provided to the manager at his or her request. To enable assessment of impact, I will also seek your permission to interview four of your small business clients.

All information gathered will be treated in strict confidence. Neither the interviewee nor your institution will be identified by name in any publication of the results. All names will be replaced by pseudonyms and only aggregate data from the questionnaire will be published.

Participation in the research is voluntary and at any time, you may request that your institution be withdrawn or excluded from participation in the interview, completion of the questionnaire or both.

I expect that the findings from the research will have implications for performance outcomes and regulation of MFIs in Ghana. I will be happy to provide you with a report on my findings on request.

Should you require more information on the research, you can contact me at the address below or my principal supervisor, Associate Professor Bernice Kotey, at the address below:

Associate Professor Bernice Kotey
Senior Lecturer
New England Business School
University of New England
Armidale, NSW 2351
Australia
Tel: 612 6773 2830
Fax: 612 6773 3148
Email:bkotey@une.edu.au

This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No. HE13-006, Valid to 26/02/2014.

Thank you for considering this request and I look forward to further contact with you.

Yours sincerely,

Mrs Joyce Ama Quartey
Christian Service University College
PO Box 3110
Kumasi, Ghana
Tel: +233 244 733 807

APPENDIX E: QUESTIONNAIRE FOR MFIs

SECTION A: LOAN DISBURSEMENT

A1. What is the name of your MFI? ……

A2. What types of lending does your institution provide?

1. Individual lending [ ]
2. Group lending [ ]
3. Both individual and group lending [ ]

A3. If your answer to question A2 is 3, what percentage of your loan portfolio was allocated to the following in the current financial year?

1. Individual lending …….. percentage
2. Group lending ……percentage

A4. What are the requirements for obtaining loans from your institution? (Please, rank the following factors according to their level of importance eg. 1st, 2nd, 3rd etc)

1. Collateral [ ]
2. Trust [ ]
3. Guarantors [ ]
4. Feasibility of business [ ]
5. Others (specify) ……

A5. How many loan applications did your institution handle in the current financial year? Please state for each of the following categories:

1. Individual lending …….. number
2. Group lending ……number

A6. How many of the applicants were you able to provide loans to during the current financial year? Please state for each of the following categories

1. Individual lending …….. number
2. Group lending ……number

A7. What percentage of the successful applicants were micro and small-scale business operators? Please state for each of the following categories

1. Individual lending …….. percentage
2. Group lending ……percentage

A8. Who are the main clients of your institution? Please, provide the approximate percentage of clients in each group.

1. Farming and fishing (agricultural) operators [ ]
2. Non- agricultural micro and small – scale business operators [ ]
3. Employees [ ]
4. Family members [ ]

5. Other (specify) …….

A9. Please list in order of frequency the five major reasons why loan applications are rejected for each category of loan application.

Individual	Group

A10. How long do you take to process an application for loan? Eg 2 days, one, two, three or four weeks. Please, state for each of the following categories

1. Individual lending ……..
2. Group lending ……

A11. What major rules and regulations govern the allocation of loans to clients? Please state for each category of loan.

Individual	Group

A12. Please, provide in the table below, the lowest, highest and average values of loans provided to clients

1. The lowest ……. GHc
2. The highest …… GHc
3. Average …….. GHc

A13. Please, specify the range of interest that is, the minimum and maximum interest, charged to each of the following categories of borrowers

Type of Loan	Minimum Interest	Maximum interest
Individual lending		
Group lending		

A14. Please, indicate the average default rate for each category of loans over the last three years

Category	2009	2010	2011
Individual			
Group			

A15. Do clients have difficulty repaying loans?

Yes [ ]
No [ ]

A16. What are the problems faced by your clients in repaying their f loans? Please state for each category of loan.

Individual	Group

A17. What efforts have your institution made to improve the repayment rate for each category of loans?

Individual	Group

A18. What is the loan portfolio for each of the three years below and what percentage of it is in arrears?

Category	2009	2010	2011
Size of loan portfolio			
Percentage in arrears			

SECTION B: SAVINGS

B1. What type of saving facilities does your institution provide? Please, tick the appropriate boxes

1. Compulsory Savings [ ]
2. Voluntary savings [ ]
3. Other types (please specify) ……

B2. Please, provide the number and value of savings from each of the categories below.

Occupation	Number of savers	Value of savings (in GH¢)
Farming and fishing (agricutural) operators		
Non-agricultural micro and small businesses		
Employees		
Family members		
Others (specify)		
Total		

B3. Please, indicate the lowest, highest and average value of savings in your current savings portfolio. For the lowest and highest values please indicate the source using the categories in question B2

Category	Savings Value (GHc)	Source
Lowest		
Highest		
Average		

B4. Please provide the range of interest rates (from minimum to maximum) for each type of saving Category

Category	Minimum	Maximum
Compulsory		
Voluntary		
Other		

B5. Please provide the current total value of savings in each category for the last three financial years

Category	2009	2010	2011
Compulsory			
Voluntary			
Other			

B6. Are you able to meet the total demand for savings?

Yes [ ]
No [ ]

SECTION C: MICRO INSURANCE

C1. Do you provide micro insurance facilities to your clients?

Yes [ ]
No [ ]

C2. If your answer to the previous question is 'yes' what micro insurance products do you provide? (Please, rank according to the size of each of the following products in your insurance portfolio, eg. 1st, 2nd, 3rd)

1. Life [ ]
2. Funeral [ ]
3. Health [ ]
4. Property [ ]
5. Disability [ ]
6. Other (specify)…….

C3. Is your institution able to meet the demand for micro insurance products?

Yes [ ]
No [ ]

C4. If the answer to the above question is 'no', why is your institution unable to meet demand for micro- insurance? List five major reasons.

1. ……..
2. ……..
3. ……..
4. ……..
5. ……..

SECTION D: FINANCIAL PERFORMANCE

D1. What are the main sources of funding for your institution in the last three years? Please indicate for each source the percentage of total funding from the source?

Sources	**Percentage of funding (%)**
1. …….	……
2. …….	……
3. …….	……
4. …….	……

D2. Please, use the following table to provide a profile of **revenue items** of your institution for the last three financial years

Revenue Item	2009	2010	2011
Operating revenue			
Percentage in arrears			
Financial revenue from loan portfolio			
Financial revenue from investments			
Others, eg payment services or insurance, transfer fees etc.			
Total Revnue			

D3. Please, use the following table to provide a profile of the main **expense items** of your institution for the last three financial years

Expenses Item	2009	2010	2011
Financial expense			
Operating expense Personnel expense Administrative expense			
Loan – loss provision expense			
Taxes			
Other expenses			
Total expenses			

D4. Please, provide information on your total assets at the end of the last three financial years:

Assets	2009	2010	2011
Fixed assets			
Currents assets			

D5. Do you have a competitive advantage over other microfinance institutions (MFIs)?

Yes [ ]
No [ ]

D6. If your answer to the previous question is "yes", what is/are your competitive advantage(s)?
……
……
……

D7. What general problems do you encounter as you provide financial services to micro and small businesses?……..
……..……
……..

SECTION E: DONATION/SUBSIDY

E1. Does your institution benefit from any donation (or subsidy) from donors or the government that it would have paid for without the support?

E2. If the answer to the previous question is "yes" please indicate below the type of donations your institution have received over the last three years

Cash [ ]
Gifts in kind [ ]

E3. If you received cash donations please, indicate the amount received for each of the last three years

	2009	2010	2011
Donations in GH¢	….……	……	……..

E4. If your institution has also benefitted from gifts in kind, please, indicate the various gifts and their costs over the last three years (eg. Computers, equipments, technical assistance, consultant services, staff training, etc.)

2009		2010		2011	
Item	Cost (GH¢)	Item	Cost (GH¢)	Item	Cost (GH¢)

E5. Does your institution borrow at commercial rate?

Yes [ ]
No [ ]

E6. If the answer to the previous question is "yes" please indicate the commercial rate at which you borrow your funds

……
……

E7. If the answer to the previous question is "no" please indicate the rate of borrowing available to your institution

……
……

SECTION F: OUTREACH

F1. Please, provide information on the percentage of your active clients who are women

Active Clients	**Number of Active Clients**	**Percentage of Women**
Active borrowers		
Savers		
Micro insurance clients		
Other (specify)		
Total		

F2. Where is the location of your headquarters? …….....

F3. Your institution has how many branches? ……..

SECTION G: EFFECT OF MICROFINANCE INSTITUTIONS' PROGRAMMES ON MICRO AND SMALL BUSINESSES

G1. What kind of services do you provide to your clients?

1. Financial services only [ ] (Go to number F4)
2. Financial and non-financial services [ ] (Go to number F2)

G2. What non-financial services do you provide to your clients?

1. Training on simple book-keeping [ ]
2. Training on health and sanitation [ ]
3. Training on nutrition [ ]
4. Training on education and literacy [ ]
5. Business training [ ]
6. Other (specify) ……..

G3. Is participation in your training programmes a requirement for obtaining financial services?

Yes [ ]
No [ ]

G4. Do you have an on-going programme that monitors performance of your clients' businesses?

Yes [ ]
No [ ]

G5. If you answered "yes" to question G4 please, describe the program
……
……

G6. If the answer to the question in G4 is "no" how do you determine ongoing performance of your clients' businesses and their ability to repay their loans? Please explain.

……
……

G7. On the whole, do you think your institution has had a positive impact on the businesses of your clients?

Yes [ ]
No [ ]

G8. If previous answer is "yes" how will you describe the impact? (Please, tick as many as are applicable)

1. Clients working capital has increased [ ]
2. Clients stock of goods has increased [ ]
3. Clients' business assets have increased [ ]
4. Clients have employed more workers [ ]
5. Clients now keep books of accounts (keep records of their activities) [ ]
6. Clients are able to manage their businesses well [ ]
7. Other (please specify)

G9. Do you organize periodic training programmes for your staff to improve upon the performance of your institution?

Yes [ ]
No [ ]

G10. If previous answer is "yes", please, state some of the training programmes organized for your staff. ……..……
……..

SECTION H: DEMOGRAPHIC INFORMATION

Please, tick the appropriate box for each question

H1. Gender of the senior staff interviewed

Male [ ]
Female [ ]

H2. How many years of relevant working experience did you have before taking up your current position?

1. 0 – 2 [ ]
2. 3 – 4 [ ]
3. 5 – 6 [ ]
4. 7 – 9 [ ]
5. 10 and above [ ]

H3. Which of the following age group do you belong to?

1. Up to 25 years [ ]
2. 26 – 35 years [ ]
3. 36 – 45 years [ ]
4. 46 – 55 years [ ]
5. 56 – 65 years [ ]
6. 66 and above [ ]

H4. What is your educational qualification?

1. Middle school certificate [ ]
2. Ordinary level certificate (GCE, 'O level') [ ]
3. Advance level certificate (GCE 'A level') [ ]
4. Junior High School [ ]
5. Senior High School [ ]
6. Diploma Certificate [ ]
7. University Bachelor's Degree [ ]
8. Post graduate [ ]

H5. What is your current position?

……
……

H6. How long have you been working in your current position?

1. 0 – 2 years [ ]
2. 3 – 4 years [ ]
3. 5 – 6 years [ ]
4. 6 – 7 years [ ]
5. 8 years or more [ ]

H7. When was your institution established? …….

H8. Kindly fill the table below with the appropriate information concerning the respective positions and the number of employees in each category.

Position	Number
Managers	
Loan Officers	
Administrative staff	
Others (specify)	
Total number of employees	

Thank you very much for spending time to fill this questionnaire.

APPENDIX F: QUESTIONNAIRE FOR CLIENTS OF MFIs

SECTION A: BUSINESS TYPE, SOURCE, AND USE OF CAPITAL

A1. What type of business are you engaged in? (Please, tick the one applicable)

1. Trading [ ]
2. Cropfarming [ ]
3. Livestock rearing [ ]
4. Fishing [ ]
5. Services (eg restaurant, transport, hair dressing, tailoring, mechanic, etc) [ ]
6. Manufacturing (eg. soap production, batik, foot wear, etc) [ ]
7. Other (specify) …….

A2. How long have you operated your current business? (Please, tick where applicable)

1. 1 – 2 years [ ]
2. 3 – 4 years [ ]
3. 5 – 6 years [ ]
4. 7 – 8 years [ ]
5. 9 and above [ ]

A3. Where did you get money to start your business? Please the percentage of capital from each source, where there is more than one source

1. Personal savings [ ] ……..%
2. Money from relatives / friends [ ] ……..%
3. Sale of properties [ ] ……..%
4. Loan from a microfinance institution (MFI) [ ]. ……..…….%
5. Loan from a bank [ ] ……..…….%

A4. If you did not indicate microfinance as your source of start-up capital, when did you start taking loans from microfinance institutions? ……

A5. If you indicated Microfinance as a source of capital, kindly name the MFI(s) which gave you the loan. …….

A6. How long have you been with each MFI and how many times have you requested a loan from each

Name of MFI	Period of membership	Number of loan transactions

A7. For each loan obtained from an MFI please indicate if it was a group or individual loan

Name of MFI	Type of loan

A8. For each round of loans please indicate how much you applied for and how much was granted

Round	Amount requested	Amount granted	Initial Purpose of the loan

A9. For each round of loans please indicate the actual purposes for which the loan was used and if this is different from the intended purpose of the loan as stated on the application please explain the reason for the difference

Round	Actual use of the loan	Reason for the difference

A10. Do you receive other non-financial services from the MFI(s)?

Yes [ ]
No [ ]

A11. If previous answer is "yes", what non-financial services do you receive?

1. Training in book-keeping [ ]
2. Training in health and sanitation [ ]
3. Training in nutrition [ ]
4. Training in business development [ ]
5. Other (specify) ……..

A12. Has the training you receive helped the growth of your business?

Yes [ ]
No [ ] (Go to B1)

A13. In what ways has it helped the growth of your business?

1. I now keep proper accounts which prevents mismanagement of funds
2. Training in business development has enabled me to manage my business well
3. I am now abreast with health and sanitation issues. This has helped to improve the sanitation of my environment thereby improving my health status
4. Information on nutrition has helped me to be conscious of eating balanced diet
5. Other (specify) ……...

SECTION B: LOAN REPAYMENT

B1. How often do you repay your loan?

1. Weekly [ ]
2. Monthly [ ]
3. Other (specify) ……

B2. From what sources do you repay loan?

1. Proceeds from the business [ ]
2. Loan from family members [ ]
3. Loans from money lenders [ ]
4. Sale of properties [ ]
5. Other (specify) ……

B3. Did you encounter problems paying any of the loans?

Yes [ ]
No [ ]

B4. If previous answer is "yes', what were the problems?
……..…….
……

B5. What general problems do you encounter in the running of your business?
……
……
……

SECTION C: SAVINGS

C1. Do you save with any MFI from which you have borrowed money?

Yes [ ]
No [ ]

C2. If your previous answer is 'yes', what type of savings facility are you engaged in?

1. Compulsory savings [ ]
2. Voluntary savings [ ]

C3. Have you benefited from the savings facility?

Yes [ ]
No [ ]

C4. Please explain how you have benefited from the savings facility
……..……
…….

SECTION D: BUSINESS ASSETS INCLUDING STOCK

D1. Have you been able to expand your business from the loans obtained from the MFI
……

D2. In what way has the business expanded?

1. Purchased or rented the building for the business [ ]
2. Purchased new machinery for the business [ ]
3. Purchased other fixed assets for the business [ ]
4. Purchased more stock for the business [ ]

D3. Will you attribute the increase in the value of your business solely to the loan(s)?

Yes [ ]
No [ ]

D4. If the pervious answer is "no", please explain the other factors that contributed to the increase in the value of your business

……
……

D5. If your business assets were not acquired with a loan from a MFI, please, indicate how they were acquired

1. Savings [ ]
2. Sale of properties [ ]
3. Inheritance [ ]
4. Other (specify) ……..

D6_1. Do you agree that the acquisition of loan(s) from the MFI has increased the value of your business assets?

1. Strongly agree [ ]
2. Agree [ ]
3. Disagree [ ]
4. Strongly disagree [ ]

D6_2. Do you agree that the acquisition of loan(s) from the MFI has increased your stock of goods?

1. Strongly agree [ ]
2. Agree [ ]
3. Disagree [ ]
4. Strongly disagree [ ]

D7. Please provide the information below on your business assets and stock

Item	Current Value (GH₵)	Percentage bought with loan from MFI
Business Assets		
Business Stock		

SECTION E: EMPLOYMENT

E1. Please indicate the number of full time and part-time employees in your business.

1. Full time ……..
2. Part time ……..

E2. Does any of your children or family members provide unpaid services to your business?

Yes	[ ]
No	[ ]

E3. If "yes", how many of such persons work without pay in your business?

1.	1	[ ]
2.	2	[ ]
3.	3	[ ]
4.	4	[ ]

E4. How often do you pay your workers?

1.	Monthly	[ ]
2.	Fortnightly	[ ]
3.	Weekly	[ ]
4.	Daily	[ ]
5.	Hourly	[ ]

E5. Do you agree that the loan(s) you received from the MFI has helped to increase the number of people you have employed in your business?

a.	Strongly agree	[ ]
b.	Agree	[ ]
c.	Disagree	[ ]
d.	Strongly disagree	[ ]

E6. Please, kindly explain why you 'strongly agree", "Agree", Disagree" or "Strongly Disagree"
……
……

SECTION F: BUSINESS PROFIT

F1. What was the level of monthly profits in your business before you started receiving loans from the MFI? (Please tick the applicable box)

1.	Less than GH¢100.00	[ ]
2.	GH¢100.00 – GH¢200.00	[ ]
3.	GH¢300.00 – GH¢400.00	[ ]
4.	GH¢500.00 – GH¢700.00	[ ]
5.	GH¢800.00 – GH¢1,000.00	[ ]
6.	GH¢2,000.00 – GH¢4,000.00	[ ]
7.	GH¢5,000.00 and above	[ ]

F2. What is the current level of monthly profits in your business? (Please tick the applicable box)

1. Less than GH¢100.00 [ ]
2. GH¢100.00 – GH¢200.00 [ ]
3. GH¢300.00 – GH¢400.00 [ ]
4. GH¢500.00 – GH¢700.00 [ ]
5. GH¢800.00 – GH¢1,000.00 [ ]
6. GH¢2,000.00 – GH¢4,000.00 [ ]
7. GH¢5,000.00 and above [ ]

F3. Generally, would you say your business profits have improved as a result of acquiring loans from MFI(s)? (Please, tick where applicable)

1. Great improvement [ ]
2. Reasonable [ ]
3. A little improvement [ ]
4. No change [ ]
5. There has been a small deterioration [ ]
6. There has been a large deterioration in profits [ ]

F4. Please explain the answer given in F3. What are the major causes of the changes to your profit?
……
…….

F5. Has the improvement in your business trickled down to other areas of your life?

Yes [ ]
No [ ]

F6. If previous answer is 'yes', which areas of your life have improved? (Please, rank according to the areas of most benefits)

1. Household income [ ]
2. Children's education [ ]
3. Household assets [ ]
4. Improved health care [ ]
5. Other (specify) ……

SECTION G: DEMOGRAPHIC INFORMATION

Please, tick the appropriate box for each question.

G1. What is your gender?

Male [ ]
Female [ ]

G2. What is your marital status?

1. Single [ ]
2. Married [ ]
3. Divorced [ ]
4. Widowed [ ]

G3. Which of the following age group do you belong to?

1. Up to 25 years [ ]
2. 26 – 35 years [ ]
3. 36 – 45 years [ ]
4. 46 – 55 years [ ]
5. 56 – 65 years [ ]
6. 66 and above [ ]

G4. What is your educational qualification?

1. No school education [ ]
2. Informal education [ ]
3. Primary school [ ]
4. Middle school certificate [ ]
5. Ordinary level certificate (GCE, 'O level') [ ]
6. Advance level certificate (GCE 'A level') [ ]
7. Junior High School [ ]
8. Senior High School [ ]
9. Diploma Certificate [ ]
10. Degree Level [ ]
11. Post graduate level [ ]

Thank you very much for spending time to fill this questionnaire.

APPENDIX G: INTERVIEW QUESTION GUIDE

A. For Managers of BoG regulated MFIs

1. What determines the performance of your MFI?
2. What about your outreach, how do you determine your outreach?
3. How do you determine your financial sustainability?
4. How do you determine your impact?
5. How is your MFI performing in terms of
   -Outreach
   - Financial sustainability
   -Impact
6. Has regulation any influence on your outreach? If so how?
7. Has regulation any influence on your financial sustainability? If so how?
8. Has regulation any influence on your impact? If so how?
9. Is there any relationship between your outreach and financial sustainability? If yes how?
10. Is there any relationship between your financial sustainability and impact? If yes how?
11. What general problems do you encounter in running your MFI?

B. For Managers of self-regulated MFIs

1. What determines the performance of your MFI?
2. What about your outreach, how do you determine your outreach?
3. How do you determine your financial sustainability?
4. How do you determine your impact?
5. How is your MFI performing in terms of
   -Outreach
   - Financial sustainability
   -Impact
6. What benefits do you expect to have when your MFI is regulated?
7. Do you expect an influence of regulation on your Outreach? If yes how?
8. Do you expect an influence of regulation on your financial sustainability? If yes how?
9. Do you expect an influence of regulation on your impact? If yes how?
10. Is there any relationship between your outreach and financial sustainability? If yes how?
11. Is there any relationship between your financial sustainability and impact? If yes how?
12. What general problems do you encounter in running your MFI?

For Clients of MFIs

1. How is your business faring?

2. Are you satisfied with the performance of your business?

3. How has the acquisition of loans from MFIs benefited your business?

    - In terms of stock acquisition?
    - In terms of business asset acquisition
    - In terms of profits
    - In terms of being able to employ more people

4. What can you attribute the success of your business to?

5. Mention three problems that hinder the growth of your business.

6. Are you satisfied with the size of loans given you by the MFIs?

7. Mention three things you do not like about the MFIs you are dealing with.

8. What three things will you suggest should be done to improve the services given to you by the MFIs?

APPENDIX H: TRANSLATED VERSION OF THE QUESTIONNAIRE FOR CLIENTS OF MFIs

NSɛMMISA NE MMUAEɛ A ɛKɛMA WɛN A WɛBA ANKORANKORAN SIKA DWADIE ATENAEɛ (MICROFINANCE RECIPIENTS)

ɛFA A ɛDI KAN: SIKA DWUMA KORɔ, ɔKWAN A WɔFA SO NYA SIKA NE SɛDEɛ WɔSI TOTO WɔN SIKASɛM

A1. Sikadwuma bɛn na woyɔ? (Sane beaeɛ a ɛfata)

1. ɛdwadie [ ]
2. Wodua nnɔbaeɛ [ ]
3. Woyɛne mmoa [ ]
4. Woyɛne suomnam [ ]
5. ɔsom korɔ a wode som ɔmanfoɔ (nhwɛsoɔ: aduane noa, akwantuo mu mmoa, wosiesie tirinwii, wopam ntaadeɛ, wosiesie mfidie) [ ]
6. Woyɛ nnoɔma bi te sɛ nsamina, abibifoɔ ntaadeɛ, mpaboa n. a. [ ]
7. Wotumi kyerɛ biribi foforɔ bi a wɔantwerɛ no soro hɔ [kyerɛ] ……..……

A2. Berɛ tentene sɛn na wohyɛɛ aseɛ yɛɛ wo sikadwuma yi? (Sane beaeɛ a [fata)

1. Afe 1 – 2 [ ]
2. Afe 3 – 4 [ ]
3. Afe 5 – 6 [ ]
4. Afe 7 – 8 [ ]
5. Afe 9 anaasɛ deɛ ɛboro saa [ ]

A3. ɛhe na wonyaa sika hyɛɛ w'adwuma no ase? Kyerɛ ɔha nkyekyɛmu sɛdeɛ [fata 1….5 a [w] aseɛ ha yi.

1. Wo ara sika a wode sie [ ] ……..…….%
2. Abusuafoɔ anaa nnamfo. [ ] …….%
3. Wotɔnn agyapadeɛ [ ] …….%
4. Besea firi sika korabea nketewa no bi hɔ [ ] …….%
5. Besea firi sika korabea akɛseɛ no bi hɔ [ ] ..…… …… %

A4. Sɛɛyi sika korabea nketewa no bi a bɔ mmɔden twerɛ edin no wɔ beaeɛ a wɔagya ato hɔ no. ……..…….

A5. Berɛ tentene sɛn na wo ne saa sika korabea no adi dwuma? Berɛ dodoɔ sɛn na woakɔ wɔn nkyɛn akɔgye besea?

Sika korabea no din	Berɛ tentene sɛn na wo ne wɔn dii dwuma?	Besea a wogyeɛ no nnyinasoɔ

A6. Kyerɛ besea biara a wogye firii sikakorabea biara; sɛ wogyee no ankorankoran anaasɛ mogyee no akuokuo a.

Dwumadie Nyinasoɔ	Besea korɔ

A7. Besea biara a wogyeɛ no kyerɛ dodoɔ a na worehwehwɛ ne dodoɔ a wɔpenee so de maa woɔ.

Besea korɔ	Sika dodoɔ a na worehwehwɛ	Sika dodoɔ a wɔpenee so de maa woɔ	Botaeɛ pɔtee a wogyinaa so de bisaa besea no

A8. Kyerɛ besea biara botaeɛ ne sɛdeɛ wosi de dii dwuma. Sɛ ɛne wobotaeɛ no sesa deɛ a kyerɛkyerɛ mu ……

Besea korɔ	ɔkwan pɔtee a wode besea no dii dwuma	Deɛ nti a botaeɛ no tumi sesaeɛ

A9. Enti wotumi nya mmoa foforɔ bi a ɛnyɛ besea firi saa sika korabea no hɔ?

1. Aane [ ]
2. Daabi [ ]

A10. Sɛ wo mmuaeɛ wɔ 'A9' no yɛ aane deɛ a, kyerɛ mmoa korɔ a wɔde boa woɔ.

1. Wɔtetee wo wɔ ɔkwan a wɔfa so toto sikasɛm. [ ]
2. Wɔtetee wo wɔ apɔmuden anaa ahomidie mu. [ ]
3. Wɔkyerɛkyerɛɛ wo nnuane nnuro ho ntotoeɛ. [ ]
4. Wɔtetee wo wɔ edwadie ne mu mpuntuo mu. [ ]
5. Sɛ wɔboa wo kwan foforɔ bi so a wɔantwerɛ no wɔ ha a kyerɛ.
   ……..

ɔFA A ƐTɔ SO MMIENU: BESEA NO NTUAEɛ MU (REPAYMENT)

B1. Mprɛ dodoɔ sɛn na wotua wo besea?

1. Nnawɔtwe nnawɔtwe [ ]
2. Bosome bosome [ ]
3. ɔkwan foforɔ so (kyerɛ) ……

B2. Nnyinasoɔ bɛn na wode tua wo besea no? (source)

1. Deɛ wonya firi dwadie mu [ ]
2. Abusuafoɔ besea a w]de ma wo. [ ]
3. Besea a sikafɛmfoɔ de ma wo [ ]
4. Wotɔn agyapadeɛ [ ]
5. ɔkwan foforɔ (kyerɛ) ……..

B3. Wonyaa ɔhaw bi wɔ besea no ntuaeɛ mu?

1. Aane [ ]
2. Daabi [ ]

B4. Sɛ mmuaeɛ wɔ "B3" yɛ aane deɛ a kyerɛ ɔhaw korɔ.
……..
……..

B5. ɔhaw pɔtee bɛn na wohyiaeɛ? Kyerɛ
……
……..
……..

ƆFA A ƐTƆ SO MMIƐNSA: SIKA KORA (SAVINGS)

C1. Wokora sika wo sika korabea a wone wɔn di dwa no bi anaa?

1. Aane [ ]
2. Daabi [ ]

C2. Sɛ wo mmuaeɛ wɔ 'C1' yɛ aane deɛ a, kyerɛ sika kora no nyinasoɔ.

1. ɔhyɛ so [ ]
2. ɔpɛ mu [ ]

C3. Woanya mfasoɔ afiri sika a wode to sika korabea hɔ no pɛn?

1. Aane [ ]
2. Daabi [ ]

C4. Kyerɛ ɔkwan a besea no de mfasoɔ brɛɛ wo.
……
……

ƆFA A ƐTƆ SO NAN: AGYAPADEɛ A WOGYINA SO DI DWA (BUSINESS ASSET)

D1. Woatumi de besea no atrɛ wo dwadie no mu anaa?

1. Aane [ ]
2. Daabi [ ]

D2. ɔkwan bɛn so na besea no aboa atrɛ wo dwadie no mu?

1. Woatɔ dan a wodi dwa wɔ mu [ ]
2. Woatɔ mfidie a wode di dwuma. [ ]
3. Woatɔ nnoɔma ahodoɔ a ɛboa wo dwumadie no mu. [ ]
4. Woatotɔ nnoɔma a wotontɔn bebree. [ ]

D3. Wob[gye adi s[besea a wogye firi sika korabea no na ama wo dwadie no ak] so yie anaa?

1. Aane [ ]
2. Daabi [ ]

D4. Sɛ wo mmuaeɛ wɔ 'D3' yɛ daabi deɛ a, kyerɛ ɔkwan foforɔ a wotumi faa so trɛɛ wo dwadie no mu. …….
…….

D5. Sɛ w'agyapadeɛ a wogyina so gye besea no mfiri besea a wogye firi sika korabea hɔ no deɛ a, wonya firii he?

1. Sika a wokora [ ]
2. Wot]n agyapadeɛ [ ]
3. Wodii adeɛ [ ]
4. ɔkwan foforɔ so (kyerɛ)……..……..

D6. Wogye to mu sɛ besea a wogye firi sika korabea no na aboa atrɛ wo dwadie no mu ne w'agyapadeɛ mu?

1. Megye to mu yie [ ]
2. Megye to mu [ ]
3. Mennye nto mu [ ]
4. Mennye nto mu koraa [ ]

D7. Fa nsɛm a ɛfata hyehyɛ ɛpono a ɛwɔ aseɛ ha yi.

Nnoɔma (item)	Current Value (GH¢) ɛnnɛ boɔ	ɔha nkyekyɛmu %
Agyapadeɛ		
Nnoɔma a wɔtɔn		

ƆFA A ƐTƆ SO NUM: ADWUMA FA (EMPLOYMENT)

E1. Kyerɛ wo daadaa adwumayɛfoɔ ne adwumayɛfoɔ wofa wɔn berɛ a wohia wɔn dwumadie dodoɔ.

1. Daadaa adwumayɛfoɔ ……
2. Wɔn a wofa wɔn berɛ a wohia wɔn ……

E2. Wo ba anaa busuani bi yɛ w'adwuma berɛ a wontua no ka anaa?

1. Aane [ ]
2. Daabi [ ]

E3. Sɛ mmuaeɛ wɔ "E2" yɛ aane deɛ a kyerɛ nnipa dodoɔ a wɔdi dwuma a wontua wɔn ka.

1. 1 [ ]
2. 2 [ ]
3. 3 [ ]
4. 4 [ ]

E4. Mprɛ dodoɔ sɛn na wotua w'adwumayɛfoɔ ka?

1. Bosome bosome [ ]
2. Nnawɔtwe mmienu nnawɔtwe mmienu [ ]
3. Nnawɔtwe nnawɔtwe [ ]
4. Daadaa [ ]
5. Dɔnhwere dɔnhwere [ ]

E5. Wogye to mu sɛ besea a wogye firi sika korabea no aboa ama w'adwumayɛfoɔ no adɔɔso?

1. Megye to mu yie [ ]
2. Megye to mu [ ]
3. Mennye nto mu [ ]
4. Mennye nto mu koraa [ ]

E6. B] mm]den kyer[de[nti a wogye to mu anaas[wonnye nto mu (koraa)
……..……..
……

}FA A {T} SO NSIA: ADWUMA HO MFASO} (BUSINESS PROFIT)

F1. Mfaso] a wonya no bosome biara tumi gyina s[n? (kyer[)

1. GH¢ 200.00 – GH¢500.00 [ ]
2. GH¢600.00 – GH¢900.00 [ ]
3. GH¢1,000.00 – GH¢4,000.00 [ ]
4. GH¢5,000.00 anaa de[[boro saa [ ]

F2. Wobɛtumi asi agyinaeɛ sɛ besea a wonya firi sika korabea no de mfasoɔ aba w'adwuma no mu anaa? Kyerɛ

1. Mfasoɔ kɛseɛ [ ]
2. Mfasoɔ a ɛfata [ ]
3. Mfasoɔ kakra [ ]
4. Nsesaeɛ biara mmaee [ ]
5. Sintɔ kakra aba mu [ ]
6. Sintɔ kɛseɛ aba mu [ ]

F3. Bɔ mmɔden kyerɛ kyerɛ wo mmuaeɛ a wode maa wɔ 'F2' no mu. Kyerɛ deɛ ɛmaa saa nsesaeɛ no baaeɛ.
…….
…….

F4. W'adwuma no nkɔsoɔ no atrɛ kɔ w'abrabɔ mu anaa?

1. Aane [ ]
2. Daabi [ ]

F5. Sɛ wo mmuaeɛ wɔ 'F4' yɛ aane a, ɛneɛ kyerɛ mfasoɔ no nnyinasoɔ.
1. Abusua no fa mu [ ]
2. Mmɔfra sukuu korɔ mu [ ]
3. Abusua no agyapadeɛ [ ]
4. Apɔmuden nkɔsoɔ [ ]
5. Foforɔ (kyerɛ)……..

ɔFA A ɛTɔ SO NSON: WOHU WO HO SɛN? (DEMOGRAPHIC INFORMATION)

G1) Woyɛ ɔbarima anaa ɔbaa?

1. ɔbarima [ ]
2. ɔbaa [ ]

G2) Woaware anaa? Kyerɛ

1. Wonwaree [ ]
2. Woaware [ ]
3. Woaware agyae [ ]
4. Wo hokani awu [ ]

G3) Deɛ ɛdidi soɔ yi mu deɛ ɛwɔ he na wo mfie no wɔ mu?

1. Mfie 25 [ ]
2. Mfie 26 – mfie 35 [ ]
3. Mfie 36 – mfie 46 [ ]
4. Mfie 47 – mfie 55 [ ]
5. Mfie 56 – mfie 65 [ ]
6. Mfie 66 – deɛ ɛboro saa [ ]

G4) Wo nwomasua mu te sɛn?

1. Woansua nwoma koraa [ ]
2. Wokɔɔ mpaninfoɔ sukuu [ ]
3. Wokɔ duruu mmɔfra mu [ ]
4. Wowiee saa sɛben [ ]
5. Wowiee ntoasoɔ sukuu (O.L) [ ]
6. Wowie ntoasoɔ prenu (A.L) [ ]
7. Wowie ɛnnɛ saa sɛben (JSS/JHS) [ ]
8. Wowie ɛnnɛ ntoasoɔ sukuu (SSS/SHS) [ ]
9. Wowiee ntoasoɔ mu ntoasoɔ (Dip) [ ]
10. Wowiee sukuupɔn (Degree/P/graduate) [ ]

Meda wo ase sɛ[woanya adaagye ama me wo nsɛmmisa ne mmuaeɛ yi mu.]

APPENDIX I: CALCULATION OF FINANCIAL SUSTAINABILITY VARIABLES

To determine financial sustainability 3 indicators are calculated. These are operational self-sufficiency (OSS), financial self-sufficiency (FSS) and return on assets (ROA).

a. $$OSS = \frac{\text{Operating income}}{\text{Operating expenses + financing costs + provision for loan losses}}$$

b. $$FSS = \frac{\text{Operating income}}{\text{Operating expenses + financing costs + provision for loan losses + adjusted cost of capital}}$$

c. $$ROA = \frac{\text{Operating income – taxes}}{\text{Average assets}}$$

APPENDIX J: HIERARCHICAL REGRESSION RESULTS

The hierarchical regression results below which had small and/or negative adjusted R^2 were complemented by results from Pearson correlation analyses and t-tests reported in chapter 5 for hypotheses 1a, 1b and 1c; and hypotheses 2c and 2d.

Hypothesis 1a: Breadth of outreach is unrelated to the financial sustainability (ROA) of MFIs in Ghana

In testing this hypothesis separate regression analyses were carried out for the three variables that measure financial sustainability – ROA, FSS and OSS. The analyses were based on regression models 1, 2 and 3 below.

$$\ln(\mathrm{ROA}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{NOAC_i}) + \varepsilon_i \quad (1)$$

Table 1: Diagnostic Results for Multicollinearity and Heteroskedasticity Test.

Variable	VIF	1/VIF	Chi-square	P-value
ln(Size)	2.77	0.360420	2.87	0.09
ln(Age)	2.68	0.373811		
ln(NOAC)	2.30	0.433909		
Product	1.06	0.942724		
Mean VIF	2.20			

Table 2: Estimated Regression Results for the Relationship between Breadth of Outreach and Financial Sustainability (ROA)

ln(ROA)	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
					Lower	Upper
lnAge	0.00	0.02	-0.17	0.863	-0.036	0.030
lnSize	0.00	0.01	-0.11	0.913	-0.024	0.021
Product	-0.01	0.03	-0.25	0.806	-0.062	0.048
Constant	0.30	0.15	2.07	0.044	0.009	0.594
lnAge	-0.01	0.02	-0.32	0.752	-0.039	0.028
lnSize	0.00	0.01	-0.24	0.811	-0.028	0.022
Product	-0.01	0.03	-0.27	0.792	-0.063	0.048
lnNOAC	0.00	0.01	0.46	0.646	-0.016	0.025
Constant	0.29	0.15	1.91	0.061	-0.014	0.596
Model	R2	F(df)	P-value	R2 change	F(df) change	P-value
1	0.003	0.072(3,51)	0.975			
2	0.006	0.132(4,50)	0.97	0.003	0.141(1,50)	0.7

In section 5.3.2.4, a variance inflation factor (VIF) of 5 was taken as indicating multi-collinearity (Rogerson, 2001). VIF factors of less than 4 for all the independent factors were taken as indicating low levels of multicollinearity. As such all the independent variables were included in the analysis. The Breuch-Pegan test in Table 1 point to an unequal variance and therefore low of heteroscedasticity. There was therefore no need to account for multicollinearity and heteroscedasticity in the regression analysis.

The regression results in Table 2 indicate that neither the control variables nor the measure of breath of outreach had a significant impact on ROA.

Hypothesis 1a: Breadth of outreach is unrelated to the financial sustainability (FSS) of MFIs in Ghana

The equation below as used to test the hypothesis was

$$\ln(\mathrm{FSS}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{NOAC_i}) + \varepsilon_i \quad (2)$$

Table 3: Diagnostic Results for Multicollinearity and Heteroskedasticity Test.

Variable	VIF	1/VIF	Chi-square	P-value
ln(Size)	2.77	0.360420	4.26	0.56
ln(Age)	2.68	0.373811		
ln(NOAC)	2.30	0.433909		
Product	1.06	0.942724		
Mean VIF	2.20			

Table 3 shows the diagnostic results for multicollinearity and heterskedasticity tests of the model. The multicollinearity test results were identical to those reported in Table 1, since the independent variables were the same. Thus, there were no multicollinearity problems. The heteroskedasticity test results also indicate an unequal variance and therefore low of heteroscedasticity.

The results in Table 4 indicate that none of the control variables or the measure of breath of outreach was significantly related to FSS.

Table 4: Estimated Regression Results for the Relationship between Breadth of Outreach and Financial Sustainability (FSS)

lnFSS	Coef.	Robust Std. Err	t	P>t	[95% Conf.	Interval]
lnAge	0.03	0.11	0.28	0.781	-0.182	0.241
lnSize	-0.04	0.06	-0.66	0.515	-0.172	0.087
Product	0.00	0.12	0	0.997	-0.249	0.250
Constant	0.55	0.69	0.79	0.43	-0.843	1.947
lnAge	0.066463	0.111076	0.6	0.552	-0.15664	0.289565
lnSize	-0.01693	0.065332	-0.26	0.797	-0.14815	0.114297
Product	0.009026	0.123489	0.07	0.942	-0.23901	0.25706
lnNOAC	-0.07005	0.058782	-1.19	0.239	-0.18812	0.048018
Constant	0.713834	0.669446	1.07	0.291	-0.63079	2.058455
Model	R2	F(df)	P-value	R2 change	F(df) change	P-value
1	0.021	0.390(3,51)	0.761			
2	0.052	0.739(4,50)	0.57	0.031	1.658(1,50)	0.204

Hypothesis 1a: Breadth of outreach is unrelated to the financial sustainability (OSS) of MFIs in Ghana

This was tested using the equation below:

$$\ln(\mathrm{OSS}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{NOAC_i}) + \varepsilon_i \ldots\ldots (3)$$

Table 5: Diagnostic Results for Multicollinearity and Heteroskedasticity Test.

Variable	VIF	1/VIF	Chi-square	P-value
ln(Size)	2.77	0.360420	8.05	0.0046
ln(Age)	2.68	0.373811		
ln(NOAC)	2.30	0.433909		
Product	1.06	0.942724		
Mean VIF	2.20			

The multicollinearity test results showed in Table 5 were identical to those reported in Tables 1 and 3 because the independent variables remain the same. Consequently, there were no multicollinearity problems. The Breuch-Pegan test for heteroscedasticity did not indicate an unequal variance, implying the presence of heteroscedasticity. To correct for this, the white robust standard error was used in the hierarchical regression results presented in Table 6.

Table 6: Estimated Regression Results for the Relationship between Breadth of Outreach and Financial Sustainability (OSS)

lnOSS	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
					Lower	Upper
lnAge	0.02	0.07	0.28	0.783	-0.118	0.156
lnSize	0.00	0.04	0.07	0.945	-0.084	0.090
Product	-0.04	0.11	-0.32	0.752	-0.261	0.190
Constant	0.087209	0.515258	0.17	0.866	-0.94721	1.121632
lnAge	0.040464	0.077032	0.53	0.602	-0.11426	0.195186
lnSize	0.017875	0.047267	0.38	0.707	-0.07706	0.112813
Product	-0.03061	0.10993	-0.28	0.782	-0.25141	0.190193
lnNOAC	-0.04081	0.062506	-0.65	0.517	-0.16636	0.084734
Constant	0.181379	0.518383	0.35	0.728	-0.85982	1.222582
Model	R2	F(df)	P-value	R2 change	F(df) change	P-value
1:00	0.008	0.176(3,51)	0.912			
2:00	0.021	0.193(4,50)	0.941	0.013	0.661(1,50)	0.42

The results in Table 6 indicate that none of the control variables or the measure of breath of outreach was significantly related to OSS. The regression results therefore imply that number of active clients (NOAC) does not have an impact on the financial sustainability of MFIs in Ghana. The results are consistent with the correlation analyses results reported in chapter 5 for hypothesis 1a.

Hypothesis 1b: Depth of outreach is unrelated to the financial sustainability (ROA) of MFIs in Ghana

In testing this hypothesis separate regression analysis were carried out for the three variables that measure financial sustainability – ROA, FSS and OSS. The independent variables were the average loan size (ALS) and the percentage of women clients (PWC). The analyses were based on regression models 4, 5 and 6 below.

$$\ln(\mathrm{ROA_i}) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{ALS_i}) + \beta_5 \ln(\mathrm{PWC_i}) + \varepsilon_i \qquad (4)$$

Table 7: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
lnSize	2.52	0.397494	2.77	0.096
lnAge	2.41	0.415162		
lnALS	1.29	0.77661		
Product	1.14	0.880449		
lnPWC	1.08	0.927185		
Mean VIF	1.69			

The maximum VIF reported in Table 7 was 2.52 which is within the acceptable range. Multicollinearity was therefore not a problem with the model. The heteroskedasticity test results also indicate an unequal variance and therefore low of heteroscedasticity.

Table 8: Estimated Regression Results for the Relationship between Depth of Outreach and Financial Sustainability (ROA)

lnROA	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
					Lower	Upper
lnAge	0.00	0.02	-0.17	0.863	-0.036	0.030
lnSize	0.00	0.01	-0.11	0.913	-0.024	0.021
Product	-0.00677	0.027397	-0.25	0.806	-0.06177	0.048232
Constant	0.301613	0.145713	2.07	0.044	0.009082	0.594145
lnAge	-0.00456	0.017102	-0.27	0.791	-0.03893	0.029804
lnSize	-0.00275	0.011347	-0.24	0.81	-0.02555	0.020053
Product	-0.01008	0.030473	-0.33	0.742	-0.07132	0.051155
lnALS	0.009116	0.018515	0.49	0.625	-0.02809	0.046323
lnPWC	-0.07474	0.115846	-0.65	0.522	-0.30754	0.158063
Constant	0.56747	0.495563	1.15	0.258	-0.4284	1.56334

Model	R2	F(df)	p	R2 change	F(df) change	p
1	0.003	0.072(3,51)	0.975			
2	0.012	0.164(5,49)	0.975	0.008	0.200(2,49)	0.819

The results in Table 8 show that none of the control variables or the measures of depth of outreach (ALS and PWC) was significantly related to ROA.

Hypothesis 1b: Depth of outreach is unrelated to the financial sustainability (FSS) of MFIs in Ghana

This was tested using the equation below:

$$\ln(FSS_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 \ln(ALS_i) + \beta_5 \ln(PWC_i) + \varepsilon_i \quad (5)$$

Table 9: Diagnostic Results for Multicollinearity and Heteroskedasticity Test.

Variable	VIF	1/VIF	Chi-square	P-value
lnSize	2.52	0.397494	2.08	0.1497
lnAge	2.41	0.415162		
lnALS	1.29	0.77661		
Product	1.14	0.880449		
lnPWC	1.08	0.927185		
Mean VIF	1.69			

The diagnostic results for multicollinearity reported in Table 9 are identical with the results in Table 7 since the independent variables are the same. Multicollinearity was therefore not an issue with the model. The Breuch-Pegan test for heteroskedasticity indicates an unequal variance and therefore low of heteroscedasticity.

Table 10: Estimated Regression Results for the Relationship between Depth of Outreach and Financial Sustainability (FSS)

lnFSS	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.029482	0.077646	0.38	0.706	-0.1264	0.185362
lnSize	-0.04247	0.046206	-0.92	0.362	-0.13523	0.050297
Product	0.000414	0.125421	0	0.997	-0.25138	0.252207
Constant	0.552206	0.563664	0.98	0.332	-0.5794	1.683809
lnAge	0.027519	0.080018	0.34	0.732	-0.13328	0.188322
lnSize	-0.0482	0.048782	-0.99	0.328	-0.14623	0.049833
Product	-0.01596	0.132284	-0.12	0.904	-0.2818	0.249871
lnALS	0.04319	0.092044	0.47	0.641	-0.14178	0.228161
lnPWC	0.087202	0.763643	0.11	0.91	-1.4474	1.6218
Constant	-0.05104	3.331333	-0.02	0.988	-6.74561	6.643521
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.021	0.360(3,51)	0.782			
2:00	0.025	0.254(5,49)	0.936	0.005	0.115(2,49)	0.892

The regression results in Table 10 show that none of the control variables or the independent variables of ALS and PWC was related to FSS.

Hypothesis 1b: Depth of outreach is unrelated to the financial sustainability (OSS) of MFIs in Ghana

This was tested using the equation below:

$$\ln(OSS_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 \ln(ALS_i) + \beta_5 \ln(PWC_i) + \varepsilon_i \quad (6)$$

Table 11: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
lnSize	2.52	0.397494	5.81	0.0159
lnAge	2.41	0.415162		
lnALS	1.29	0.77661		
Product	1.14	0.880449		
lnPWC	1.08	0.927185		
Mean VIF	1.69			

The diagnostic results in Table 11 indicate no problem of multicollinearity. The Breuch-Pegan test however, showed the presence of heteroscedasticity which was corrected using the white robust standard error in the hierarchical regression results presented in Table 12.

Table 12: Estimated Regression Results for the Relationship between Depth of Outreach and Financial Sustainability (OSS)

lnOSS	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.018917	0.068301	0.28	0.783	-0.1182	0.156037
lnSize	0.002996	0.04314	0.07	0.945	-0.08361	0.089604
Product	-0.03562	0.112239	-0.32	0.752	-0.26095	0.189704
Constant	0.087209	0.515258	0.17	0.866	-0.94721	1.121632
lnAge	0.021178	0.069469	0.3	0.762	-0.11842	0.160781
lnSize	-0.01868	0.042608	-0.44	0.663	-0.1043	0.066943
Product	-0.10554	0.128579	-0.82	0.416	-0.36393	0.152853
lnALS	0.181357	0.096592	1.88	0.066	-0.01275	0.375466
lnPWC	1.108716	0.485724	2.28	0.027	0.132617	2.084816
Constant	-5.58031	2.2871	-2.44	0.018	-10.1764	-0.98422
Model	R2	F(df)	p-value	R2 change	F(df) change	p-value
1:00	0.008	0.176(3,51)	0.912			
2:00	0.147	1.552(5,49)	0.191	0.139	4.002(2,49)	0.024

The regression results show that none of the control variables was related to OSS. However, ALS and PWC (the measures of depth of outreach) were found to be statistically significant at 10 percent and 5 percent level of significance respectively. The results suggest that ALS and PWC are related to OSS. The results are consistent with the correlation analysis results explained in chapter 5.

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses (ACIP).

In testing this hypothesis separate regression analysis were carried out for the four variables that measure impact – ACIP, ACIS, ACIA and EMPL. The analyses were based on regression models 7, 8, 9 and 10 below.

$$\ln(ACIP_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 \ln(ROA_i) + \beta_5 \ln(FSS_i) + \beta_6 \ln(OSS_i) + \varepsilon_i \quad (7)$$

Table 13: Diagnostic Results for Multicollinearity and Heteroskedasticity Test (ACIP)

Variable	VIF	1/VIF	Chi-square	P-value
lnOSS	4.07	0.245934	25.87	0
lnFSS	3.75	0.266665		
lnAge	2.95	0.338463		
lnSize	2.78	0.359357		
lnROA	1.86	0.538993		
Product	1.08	0.927331		
Mean VIF	2.75			

Table 14: Estimated Regression Results for the Relationship between Financial Sustainability and Impact

lnACIP	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	-0.13894	0.14542	-0.96	0.345	-0.43308	0.155198
lnSize	0.032196	0.080431	0.4	0.691	-0.13049	0.194883
Product	-0.23488	0.470608	-0.5	0.621	-1.18677	0.717019
Constant	6.384792	1.314236	4.86	0	3.726498	9.043086
lnAge	-0.11634	0.144986	-0.8	0.428	-0.41038	0.177708
lnSize	0.031069	0.082306	0.38	0.708	-0.13586	0.197994
Product	-0.22325	0.488021	-0.46	0.65	-1.213	0.766505
lnROA	0.385288	0.95517	0.4	0.689	-1.55189	2.322463
lnFSS	0.334271	0.331517	1.01	0.32	-0.33808	1.006618
lnOSS	-0.2708	0.277647	-0.98	0.336	-0.83389	0.292297
Constant	6.2733	1.325961	4.73	0	3.584128	8.962473
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.019	0.484(3,39)	0.695			
2:00	0.024	0.452(6,36)	0.839	0.005	0.064(3,36)	0.978

Table 13 shows the diagnostic results for multicollinearity and heteroskedasticity test. The highest VIF reported is approximately 4. Rogerson (2001) recommends a maximum VIF of 5, indicating the presence of multicollinearity. Based on this and given that the maximum VIF reported was 4.07, it was concluded that multicollinearity was minimal. The presence of heteroscedasticity Table 13 was also corrected using the white robust standard error in the hierarchical regression results presented in Table 14.

The regression results in Table 14 show that none of the control variables or the measures of financial sustainability (ROA, FSS, OSS) was significantly related to average change in profit (ACIP).

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses (ACIS).

This was tested using the equation below

$$\ln(ACIS_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 \ln(ROA_i) + \beta_5 \ln(FSS_i) + \beta_6 \ln(OSS_i) + \varepsilon_i \quad (8)$$

Table 15: Diagnostic Results for Multicollinearity and Heteroskedasticity Test. ACIS

Variable	VIF	1/VIF	Chi-square	P-value
lnOSS	4.07	0.245934	1.83	0.1762
lnFSS	3.75	0.266665		
lnAge	2.95	0.338463		
lnSize	2.78	0.359357		
lnROA	1.86	0.538993		
Product	1.08	0.927331		
Mean VIF	2.75			

The multicollinearity test results reported in Table 15 were similar to that of Table 13, given that the independent variables were the same. It was therefore concluded that multicollinearity was minimal. The heteroskedasticity test results also indicate an unequal variance and therefore low heteroscedasticity.

Table 16: Estimated Regression Results for the Relationship between Financial Sustainability and Impact

lnACIS	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.058359	0.275231	0.21	0.833	-0.49835	0.615065
lnSize	0.118375	0.168796	0.7	0.487	-0.22305	0.459798
Product	-0.21515	0.420991	-0.51	0.612	-1.06669	0.636383
Constant	6.260479	2.03811	3.07	0.004	2.138012	10.38295
lnAge	0.074427	0.288623	0.26	0.798	-0.51093	0.65978
lnSize	0.117032	0.173234	0.68	0.504	-0.2343	0.468367
Product	-0.19769	0.431471	-0.46	0.65	-1.07276	0.677372
lnROA	3.230124	2.875339	1.12	0.269	-2.60133	9.061581
lnFSS	0.014366	1.063909	0.01	0.989	-2.14334	2.172073
lnOSS	-0.48606	1.05292	-0.46	0.647	-2.62148	1.649364
Constant	5.419397	2.218861	2.44	0.02	0.91934	9.919455
Model	R2	F(df)	P-value	R2 change	F(df) change	P-value
1:00	0.067	0.934(3,39)	0.433			
2:00	0.1	0.666(6,36)	0.678	0.033	0.438(3,36)	0.727

The regression results in Table 16 indicate that none of the control variables or the measures of financial sustainability (ROA, FSS, OSS) was significantly related to average change in stock (ACIS).

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses (ACIA).

This was tested using the equation below:

$$\ln(\text{ACIA}_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \ln(\text{ROA}_i) + \beta_5 \ln(\text{FSS}_i) + \beta_6 \ln(\text{OSS}_i) + \varepsilon_i \quad (9)$$

The diagnostic results in Table 17 showed minimal multicollinearity since the independent variables remain the same. The results of the Breuch-Pegan test for heteroskedasticity also indicate an unequal variance and therefore low of heteroscedasticity.

Table 17: Diagnostic Results for Multicollinearity and Heteroskedasticity Test (ACIA)

Variable	VIF	1/VIF	Chi-square	P-value
lnOSS	4.07	0.245934	0.66	0.4173
lnFSS	3.75	0.266665		
lnAge	2.95	0.338463		
lnSize	2.78	0.359357		
lnROA	1.86	0.538993		
Product	1.08	0.927331		
Mean VIF	2.75			

None of the control variables in the regression results reported in Table 18 was significantly related to average change in assets (ACIA). The measures of financial sustainability (ROA, FSS and OSS) as independent variables were also found not to be significantly related to ACIA.

Table 18: Estimated Regression Results for the Relationship between Financial Sustainability and Impact

lnACIA	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.483133	0.748962	0.65	0.523	-1.03179	1.998052
lnSize	-0.06915	0.459331	-0.15	0.881	-0.99824	0.859932
Product	1.231125	1.145606	1.07	0.289	-1.08608	3.548332
Constant	4.800933	5.546137	0.87	0.392	-6.41719	16.01905
lnAge	0.611959	0.776335	0.79	0.436	-0.96252	2.186439
lnSize	-0.01585	0.465964	-0.03	0.973	-0.96087	0.929165
Product	1.266375	1.160568	1.09	0.282	-1.08737	3.620117
lnROA	-1.50228	7.734067	-0.19	0.847	-17.1877	14.18314
lnFSS	2.427661	2.861696	0.85	0.402	-3.37613	8.231449
lnOSS	-3.42208	2.832138	-1.21	0.235	-9.16592	2.321765
Constant	4.612201	5.968276	0.77	0.445	-7.49202	16.71643
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.038	0.514(3,39)	0.675			
2:00	0.093	0.617(6,36)	0.715	0.055	0.730(3,36)	0.54

Hypothesis 1c: Financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses (EMPL).

This was tested using the equation below

$$\mathrm{EMPL_i} = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \ln(\mathrm{ROA_i}) + \beta_5 \ln(\mathrm{OSS_i}) + \varepsilon_i \qquad (10)$$

Table 19: Estimated Regression Results for the Relationship between Financial Sustainability and Impact (EMPL)

Employment	Coefficient	Standard Error	z	P-value
ln(Age)	-0.1686	0.318728	-0.53	0.597
ln(Size)	-0.0045	0.187362	-0.02	0.981
Product	0.102517	0.46328	0.22	0.825
Constant	1.080273	2.228022	0.48	0.628
ln(Age)	-0.19434	0.339224	-0.57	0.567
ln(Size)	-0.00766	0.189774	-0.04	0.968
Product	0.123194	0.468336	0.26	0.793
ln(ROA)	1.027691	3.267471	0.31	0.753
ln(FSS)	-0.29663	1.190723	-0.25	0.803
ln(OSS)	0.237225	1.228183	0.19	0.847
Constant	0.873397	2.425141	0.36	0.719
Model	Pseudo R2	Chi-square	P-value	Pseudo R2 change
1	0.0259	1.17	0.7612	
2	0.0311	1.4	0.9659	0.0052

The regression results in Table 19 show that none of the control variables or the three measures of financial sustainability was related to EMPL. The results therefore suggest that financial sustainability is unrelated to the ability of MFIs in Ghana to make an impact on their clients' businesses. This is consistent with the results of the correlation analyses reported in chapter 5.

Hypothesis 2c: Regulation has no effect on financial sustainability (ROA) of MFIs in Ghana.

To test this hypothesis separate regression analysis were carried out for the three variables that measure financial sustainability – ROA, FSS and OSS with regulation being the independent variable. The analyses were based on regression models 14, 15 and 16 below.

$$\ln(\mathrm{ROA}_i) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_{i\ldots} \quad (14)$$

The multicollinearity test results showed in Table 20 indicate low levels of multicollinearity given that the maximum VIF is 3.51.

Table 20: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
Regulation	3.51	0.284978	7.6	0.0058
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	2.67			

However, the Breuch-Pegan test indicates the presence of heteroscedasticity. This was corrected using the white robust standard error in the hierarchical regression results presented in Table 21.

Table 21: Estimated Regression Results for the Relationship between Regulation and Financial Sustainability

lnROA	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	-0.00283	0.016358	-0.17	0.863	-0.03567	0.030008
lnSize	-0.00124	0.011286	-0.11	0.913	-0.0239	0.021418
Product	-0.00677	0.027397	-0.25	0.806	-0.06177	0.048232
Constant	0.301613	0.145713	2.07	0.044	0.009082	0.594145
lnAge	-0.0045	0.020238	-0.22	0.825	-0.04515	0.036147
lnSize	-0.00188	0.01147	-0.16	0.87	-0.02492	0.021155
Product	-0.00612	0.028387	-0.22	0.83	-0.06314	0.050895
Regulation	0.007636	0.039182	0.19	0.846	-0.07106	0.086336
Constant	0.310423	0.148579	2.09	0.042	0.011994	0.608852
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.003	0.072(3,51)	0.975			
2:00	0.004	0.062(4,50)	0.993	0	0.021(1,50)	0.884

None of the control variables or the independent variable in the regression results in Table 21 was significantly related to ROA.

Hypothesis 2c: Regulation has no effect on financial sustainability (FSS) of MFIs in Ghana.

This was tested using the equation below:

$$\ln(\mathrm{FSS_i}) = \beta_0 + \beta_1 \ln(\mathrm{Age_i}) + \beta_2 \ln(\mathrm{Size_i}) + \beta_3 \mathrm{Product_i} + \beta_4 \mathrm{Regulation_i} + \varepsilon_{i\ldots} \quad (15)$$

Table 22: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
Regulation	3.51	0.284978	0.12	0.7334
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	2.67			

The diagnostic results in Table 22 show low levels of multicollinearity and heteroscedasticity, given that the maximum VIF was 3.51 and the heteroskedasticity test results also indicate an unequal variance.

Table 23: Estimated Regression Results for the Relationship between Regulation and Financial Sustainability

lnFSS	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.029482	0.077646	0.38	0.706	-0.1264	0.185362
lnSize	-0.04247	0.046206	-0.92	0.362	-0.13523	0.050297
Product	0.000414	0.125421	0	0.997	-0.25138	0.252207
Constant	0.552206	0.563664	0.98	0.332	-0.5794	1.683809
lnAge	0.064869	0.093019	0.7	0.489	-0.12196	0.251702
lnSize	-0.02881	0.05038	-0.57	0.57	-0.13	0.072382
Product	-0.0133	0.127573	-0.1	0.917	-0.26954	0.242933
Regulation	-0.16179	0.231443	-0.7	0.488	-0.62666	0.303076
Constant	0.365546	0.626286	0.58	0.562	-0.89239	1.623478
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.021	0.360(3,51)	0.782			
2:00	0.03	0.389(4,50)	0.815	0.009	0.489(1,50)	0.488

The regression results in Table 23 indicate that none of the control variables or the independent variable was significantly related to FSS.

Hypothesis 2c: Regulation has no effect on financial sustainability (OSS) of MFIs in Ghana.

This was tested using the equation below:

$$\ln(OSS_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 Regulation_i + \varepsilon_{i\ldots} \quad (16)$$

Table 24: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
Regulation	3.51	0.284978	3.99	0.0458
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	2.67			

With a maximum VIF of 3.51 reported in Table 24, indicate limited problem with multicollinearity. The Breuch-Pegan test however, indicates the presence of heteroscedasticity. This was corrected using the white robust standard error in the hierarchical regression results presented in Table 25.

Table 25: Estimated Regression Results for the Relationship between Regulation and Financial Sustainability

lnOSS	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.018917	0.068301	0.28	0.783	-0.1182	0.156037
lnSize	0.002996	0.04314	0.07	0.945	-0.08361	0.089604
Product	-0.03562	0.112239	-0.32	0.752	-0.26095	0.189704
Constant	0.087209	0.515258	0.17	0.866	-0.94721	1.121632
lnAge	0.10054	0.081689	1.23	0.224	-0.06354	0.264616
lnSize	0.034493	0.052165	0.66	0.512	-0.07028	0.13927
Product	-0.06727	0.122718	-0.55	0.586	-0.31375	0.17922
Regulation	-0.37318	0.278759	-1.34	0.187	-0.93308	0.186725
Constant	-0.34333	0.637225	-0.54	0.592	-1.62324	0.936571
Model	R2	F(df)	p-value	R2 change	F(df) change	p-value
1:00	0.008	0.176(3,51)	0.912			
2:00	0.069	0.576(4,50)	0.681	0.061	3.284(1,50)	0.076

The results in Table 25 show that none of the control variables or the independent variable was significantly related to OSS. Thus, the regression results indicate that regulation has no effect on the financial sustainability of MFIs in Ghana. However, the t-test results in chapter 5 show that regulation has an impact on financial sustainability (FSS and OSS). The differences may be due to the lower strength of the regression analysis arising from the small sample size.

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses (ACIP).

To test this hypothesis separate regression analysis were carried out for the four variables that measure impact – ACIP, ACIS, ACIA and EMPL with regulation being the independent variable. The analyses were based on regression models 17, 18, 19 and 20 below.

$$\ln(ACIP_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 Regulation_i + \varepsilon_i (17)$$

Table 26: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
Regulation	3.51	0.284978	32.42	0.000
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	2.67			

Table 27: Estimated Regression Results for the Relationship between Regulation and Impact

lnACIP	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	-0.13894	0.14542	-0.96	0.345	-0.43308	0.155198
lnSize	0.032196	0.080431	0.4	0.691	-0.13049	0.194883
Product	-0.23488	0.470608	-0.5	0.621	-1.18677	0.717019
Constant	6.384792	1.314236	4.86	0	3.726498	9.043086
lnAge	-0.117	0.133229	-0.88	0.385	-0.3867	0.152713
lnSize	0.054745	0.067335	0.81	0.421	-0.08157	0.191058
Product	-0.2593	0.507277	-0.51	0.612	-1.28623	0.76763
Regulation	-0.16899	0.318275	-0.53	0.599	-0.8133	0.475328
Constant	6.112446	1.075804	5.68	0	3.934594	8.290298
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.019	0.484(3,39)	0.695			
2:00	0.02	0.424(4,38)	0.79	0.002	0.059(1,38)	0.81

The multicollinearity test results were identical to those reported in Table 24, since the independent variables were the same. Consequently, there were no multicollinearity problems. The Breuch-Pegan test on the other hand, indicates the presence of heteroscedasticity. This was corrected using the white robust standard error in the hierarchical regression results presented in Table 27. The results in Table 27 show that none of the control variables or the independent variable was significantly related to ACIP.

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses (ACIS).

This was tested using the equation below:

$$\ln(ACIS_i) = \beta_0 + \beta_1 \ln(Age_i) + \beta_2 \ln(Size_i) + \beta_3 Product_i + \beta_4 Regulation_i + \varepsilon_i \quad (18)$$

Table 28: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
Regulation	3.51	0.284978	3.56	0.0591
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	2.67			

The multicollinearity test results were similar to those reported in Table 26, since the independent variables were the same. The heteroskedasticity test results also indicate an unequal variance and therefore low of heteroscedasticity.

The results in Table 29 indicate that none of the control variables or the independent variable was significantly related to ACIS.

Table 29: Estimated Regression Results for the Relationship between Regulation and Impact

lnACIS	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.058359	0.275231	0.21	0.833	-0.49835	0.615065
lnSize	0.118375	0.168796	0.7	0.487	-0.22305	0.459798
Product	-0.21515	0.420991	-0.51	0.612	-1.06669	0.636383
Constant	6.260479	2.03811	3.07	0.004	2.138012	10.38295
lnAge	-0.02891	0.295338	-0.1	0.923	-0.62679	0.568968
lnSize	0.028702	0.200513	0.14	0.887	-0.37722	0.43462
Product	-0.11802	0.438282	-0.27	0.789	-1.00528	0.769235
Regulation	0.672021	0.803386	0.84	0.408	-0.95435	2.29839
Constant	7.343547	2.421278	3.03	0.004	2.441926	12.24517
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.067	0.934(3,39)	0.433			
2:00	0.084	0.870(4,38)	0.491	0.017	0.700(1,38)	0.408

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses (ACIA).

This was tested using the equation below:

$$\ln(\text{ACIA}_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \quad (19)$$

Table 30: Diagnostic Results for Multicollinearity and Heteroskedasticity Test

Variable	VIF	1/VIF	Chi-square	P-value
Regulation	3.51	0.284978	1.37	0.2417
lnAge	3.34	0.299561		
lnSize	2.75	0.363383		
Product	1.08	0.923069		
Mean VIF	2.67			

The diagnostic results in Table 30 show low levels of multicollinearity and heteroscedasticity, given that the maximum VIF was 3.51 and the heteroskedasticity test results also indicate an unequal variance. There was therefore no need to account for multicollinearity and heteroscedasticity in the regression analysis.

None of the control variables or the independent variable was found to be significantly related to ACIA (Table 31).

Table 31: Estimated Regression Results for the Relationship between Regulation and Impact

lnACIA	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnAge	0.483133	0.748962	0.65	0.523	-1.03179	1.998052
lnSize	-0.06915	0.459331	-0.15	0.881	-0.99824	0.859932
Product	1.231125	1.145606	1.07	0.289	-1.08608	3.548332
Constant	4.800933	5.546137	0.87	0.392	-6.41719	16.01905
lnAge	0.045982	0.785808	0.06	0.954	-1.5448	1.636767
lnSize	-0.51834	0.533507	-0.97	0.337	-1.59836	0.561693
Product	1.717659	1.16614	1.47	0.149	-0.64307	4.078386
Regulation	3.366223	2.137572	1.57	0.124	-0.96107	7.693512
Constant	10.22613	6.442306	1.59	0.121	-2.81564	23.2679
Model	R2	F(df)	p	R2 change	F(df) change	p
1:00	0.038	0.514(3,39)	0.675			
2:00	0.097	1.020(4,38)	0.409	0.059	2.480(1,38)	0.123

Hypothesis 2d: Regulation of MFIs in Ghana has no effect on the impact of MFIs on their clients' businesses (EMPL).

This was tested using the equation below:

$$\text{EMPL}_i = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Size}_i) + \beta_3 \text{Product}_i + \beta_4 \text{Regulation}_i + \varepsilon_i \qquad (20)$$

Table 32: Estimated Regression Results for the Relationship between Regulation and Impact

Employment	**Coefficient**	**Standard Error**	**z**	**P-value**
lnAge	-0.1686	0.318728	-0.53	0.597
lnSize	-0.0045	0.187362	-0.02	0.981
Product	0.102517	0.46328	0.22	0.825
Constant	1.080273	2.228022	0.48	0.628
lnAge	-0.32375	0.358906	-0.9	0.367
lnSize	-0.13029	0.226089	-0.58	0.564
Product	0.205407	0.485683	0.42	0.672
Regulation	0.968125	1.109234	0.87	0.383
Constant	2.705519	2.809428	0.96	0.336
Model	Pseudo R^2	Chi-square (3)	P-value	Pseudo R^2 Change
1	0.0259	1.17	0.7612	
2	0.0437	1.97	0.7418	0.0178

The results in Table 32 show that neither the control variables nor the independent variable was significantly related to EMPL. The regression results therefore, suggest that regulation had no significant impact on business outcomes of the clients of MFIs in Ghana. This is consistent with the t-test results in chapter 5.