DETERMINANTS OF FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN TANZANIA

BY

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DECLARATION

This research is my own work, and has never been submitted by anyone to any institution for any award. Any other author's work has been clearly acknowledged.

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This research project has been submitted for examination with my approval as university supervisor.

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DEDICATION

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ABSTRACT

The aim of the study was to determine the relationship between selected factors and performance of Microfinance institutions in Tanzania by integrating financial performance measures. The study used the following variables: debt ratio, portfolio to assets ratio and operating expense ratio as key measures of performance. The study was analyzed using OLS regression model. The findings of the study show that the financial performance of the MFIs reviewed was low. This low financial performance was due to the low profit margin. In addition, the high amounts of operating expenses and liabilities drained down the amount of net income of the MFIs. Microfinance institutions need to balance the financial performance to ensure survival in a competitive market while meeting their social objective. Likewise, the study faced challenges in collecting data due to the fact that most MFIs were not regulated hence giving difficulties in getting their financial statements to measure their performance.

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ABBREVIATIONS

A.C.I.S.T	Arusha Community Initiative Support Trust
ATMs	Automated Teller Machines
BoT	Bank of Tanzania
CFS	Critical Success Factor
CRDB	Cooperative and Rural Development Bank
DCB	Dar es Salaam Community Bank
FIDRS	Facilitation for Integrated Development and Relief Services
FINCA	Foundation for International Community Assistance
FSS	Financial self sufficiency
GB	Grameen Bank
GLP	Gross Loan Portfolio
IDYDC	Iringa Development of Youth, Disabled and Children Care
ILO	International Labour Organization
MBF	Mama Bahati Foundation
MCB	Mbinga Community Bank
MCMCAR	Microfinance companies and Microcredit Activities Regulations
MFIs	Microfinance Institutions
NGO	Non Governmental Organization
NMB	National microfinance Bank
OLS	Ordinary Least Squares
PASADA	Pastoral Activities and Services for People with AIDS Dar Es Salaam
PRIDE	Promotion of Rural Initiative and Development Enterprises
PTF	Presidential Trust for Self-Reliance
SACAs	Savings and Credit Association
SACCOs	Savings and Credit Cooperatives
SCCULT	Saving and Credit Corporative Union League of Tanzania
SEDA	Small Enterprises Development Agency
SELFINA	SERO lease and finance ltd
SDI	Subsidy Dependence Index
SIDO	Small industries development foundation
TAMFI	Tanzania association of Microfinance Institutions

TWB	Tanzania women’s bank
TZS	Tanzania shilling
YOSEFO	Youth self employment foundation
WEDTF	Women Entrepreneurship Development Trust Fund

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Microfinance refers to the provision of financial services to small and micro clients. Like any other business, microfinance grows because the opportunity arises for it to fill the gap in the market. Poverty reduction has been the foremost target of MFI's, therefore an increase in number of micro-finance institutions is an indicator for the growth and success of micro-finance especially in the rural areas (Ullah and Routray, 2007). A key focus of microfinance is to respond to the demand for borrowing to support self-employment and small enterprise growth (Khandker, 2005). Microfinance as a new concept in finance and development has endeavored to develop sustainable enterprises since its birth in the 1970s the sector gained momentum only after 1980's when Grameen Bank Bangladesh and Bank Rakyat Indonesia bring to light that small loan and savings can be provided profitably and created widespread interest in the area.

The microfinance initiative started with two objectives: first to provide access to general financial services targeted to economically-active poor and other vulnerable groups in society, and secondly, to provide access to credit for social and economic empowerment. The best-known part of microfinance is the second objective, and in this study it is referred to as microfinance-credit (Elahi & Danopoulos, 2004). MFIs play an intermediary role in mobilizing scarce resources and disbursing microloans to micro-enterprises operated by the poor and thereby expand their choices, and reduce the risk they face.

Throughout the world, financial sustainability of microfinance institutions has been one of the issues that recently captured the attention of many researchers due to its importance in the livelihood of microfinance institutions. The financial sustainability of microfinance institutions is a necessary condition for institutional sustainability (Hollis & Sweetman, 1998).In other words, MFIs face a double challenge: not only do they have to provide financial services to the poor (outreach), but also have to cover their costs in order to avoid bankruptcy (sustainability) both dimensions must therefore be taken into account in order to assess their performance.

MFIs in developing countries have been recognized for their innovative means of delivering credit. Group lending is one way to ameliorate the problems arising from asymmetric information. Network theory recognizes that parties cooperate by virtue of the mutual benefits they will receive and reciprocate. Among networks there is a high commitment to cooperate among the interdependent parties (Scott, 2003). Under group lending, the borrowers monitor themselves, eliminating the need for providing risk information to the lender. There may be many causes for the reluctance of conventional financial institutions to serve the poor (Schmidt, 2009).

There may be socio-psychological reasons, such as social prejudice, stubbornness and ignorance. More likely it is because poor borrowers are not perceived as profitable. The risk of lending to them is too high. The costs of the lending transaction are too great. The borrowers often have no collateral and no credit history. The costs to enforce the loan agreement may even exceed the amount of the loan itself (Schmidt, 2009).

Most mainstream banks have considered the poor as high risk and hard to serve as they are often scattered across remote areas and the small loans they need are costly to make and maintain (Kota, 2007). Sharma (2001) claims that most financial service providers perceive this segment of population to be low profitability and high risk, and has ignored to serve this section. This is one of the reasons for the poor to lose the viable investment opportunities and living in poverty due to lack of access to financial services.

With the emergence and growth of MFIs, situation changed gradually on promoting access to finance to the poor and disadvantaged groups. In some areas, poor has access to a variety of financial services and are gradually moving ahead towards economic empowerment. MFIs provide services such as savings, credit and insurance and found that there is a large demand for safe and convenient savings by the poor and low income households and microenterprises (Sharma, 2001).

The high growth rate of the microfinance initiative, particularly in developing countries, has triggered such a high demand for finances that funding levels in the industry have not been able to match . Cull, Dermirguc-Kunt and Morduch, (2007) suggested that 40 to 80 per cent of the population in most developing economies lack access to formal banking services. This is particularly of concern when we consider the decreased availability of traditional donor sources of finance, and the uncertain capacity of MFIs to access alternative funds. This has resulted in the need for alternative funding for microfinance besides traditional donor sources. MFIs are currently faced with four sources of funds; own sources including internally generated income, Voluntary savings (group) mobilization, borrowed funds and Grant support from donors.

1.1.1 Financial Performance of Microfinance Institutions

Microfinance arose with the aim of alleviating poverty and improving the lives of underprivileged people. Impact studies were carried out to attest that microfinance is genuinely reaching its foremost goal, though the evidence was not strong enough to confirm this assumption (Morduch, 2002). Researchers were then involved in assessing the outreach and the social performance of microfinance institutions. Therefore, they identified and measured the SPIs, i.e., social performance indicators (Zeller et al., 2003).

Many MFIs were restructured in order to achieve financial sustainability and finance their growth. Sustainability is defined as the capacity of a program to stay financially viable even if subsidies and financial aids are cut off (Woolcock, 1999). It embraces generating sufficient profit to cover expenses while eliminating all subsidies, even those less-obvious subsidies, such as loans made in hard currency with repayment in local currency (Tucker & Miles, 2004).

The paradox of sustainable microfinance institutions, mentioned by Tucker &Miles (2004), features the trade-off between poverty alleviation and financial self sufficiency. The researchers point out that, with the purpose of attaining sustainability, MFIs try to gain economies of scale by concentrating their efforts in servicing better-off clients. This strategy results in reducing expenses per loan and increasing the probability of repayment.

Another way to attain sustainability, consistent with Tucker &Miles (2004), is to increase profits by raising interest rates, fees, or both. The risk of this option is that it expands the costs for clients and consequently raises default rates. In both cases, the very poor are marginalized and could not benefit from microfinance services MFIs are special financial institutions having a social nature along with a for profit nature.

Their performance measurement has to be different from the usual methods that are applied by other financial institutions like banks, because of the social aspect. During the 1990s, many researchers suggested a framework, based on the dual concepts of outreach and sustainability, for the assessment of MFIs performance (Kereta, 2007). Abate and Jonson (2002) defined a set of indicators using ratio analysis that helps to measure the financial condition, performance, and risk of MFIs. They considered four dimensions namely, portfolio quality, productivity, financial management, profitability.

1.1.2 Determinants of Financial Performance

MFIs need to meet growth and break-even/profit targets and social impact targets as well. To achieve these targets, the following must be put in place as determinants for the achievement of good performance of MFIs. The size of an MFI is measured by the value of its assets (Hermes et al., 2008). According to Cull et al (2007) the size of an MFI is significantly positively linked to its financial performance. Furthermore, the size of microfinance could also imply that large microfinance institutions have larger capital and, therefore, can reach a relatively bigger number of clients than small microfinance institutions. A study by Kyereboah-Coleman and Osei (2008) supports this.

The breadth of outreach refers to the number of poor served by microfinance Institution (Hishigsuren, 2004; Woller &Schreiner, 2002). Various studies have used either the number of borrowers or number of clients as measures of microfinance breadth of outreach. It is generally assumed that the larger the number of borrowers or clients the better the outreach. The best measurement of outreach is the number of clients or accounts that are active at a given point in time. Reporting of loan collection is a minefield. MFIs' self-reported collection performance often understates the extent of problems, usually because of information system weaknesses rather than intent to deceive. Collection reporting should be regarded as reliable only if it is verified by a competent independent party. This study will use portfolio at risk as a measure of collection performance of an MFI.

Financial sustainability (profitability) here refers to ability of an MFI to meet its financial obligation (including covering costs) and maintain an acceptable level of microfinance services through its economic life. Financial sustainability of financial institutions is commonly measured by Return on Equity (ROE), which measures the returns produced for the owners, and Return on Assets (ROA***)***, which reflects that organization's ability to use its assets productively. This study will use ROE as a measure of financial performance of MFIs (Woller & Schreiner, 2002)

State of information technology of MFI.IT systems has important contributions to the managerial control of MFIs as well as the efficiency of customer services. Porter and Millar (1985) argued that, investing in IT plays an important role in lowering the total costs of a firm and differentiates its products(giving a competitive advantage),which should be reflected in increased net profit. This is estimated by the number of ATMs, whether it has computerized management information systems.

1.1.3 Factors that Determine the Performance of MFIs

The long-term vision of MFIs is to provide sustainable financial services to the economically active poor who have lacked access to these services from the main stream of financial services. The factors that have been mentioned in some studies that determine the performance of MFIs include: return on asset; portfolio yield; financial self sufficiency; profit margin, operational self sufficiency, return on equity, operating expense ratio, write-off ratio and debt to equity ratio (Satta, 2002)

Many researchers has resounded the innovation as a critical success factor (CSF) in directing microfinance. (Gallardo, 2000; Hartungi, 2007). Microfinance has been an innovation and design of product which assists to provide new financial service to the poorest people. For example, group based lending; collateral free lending system and group monitoring system etc. are the innovation and designs of Grameen Bank. GB offers new information technology, a technological innovation, which has extended the effectiveness and feature of micro financial service. It has adopted Automated Tellers Machines (ATMs) and computerized administering system which make easy the transaction such as loan payment, money transfer, saving account controlling etc and help to obtain information quickly (Nugroho & Miles, 2009).

1.1.4 Microfinance Institutions in Tanzania

In Tanzania, the history of microfinance starts way back in 1985 when the Government promoted and established the Presidential Trust Fund in mid 1990's. Other MFIs emerged such as PRIDE, FINCA, and YOSEFO .Tanzania Association of Microfinance Institutions TAMFI is a national network for microfinance institutions and service providers providing services to the microfinance institutions and clients of microfinance services. Microfinance institutions can be categorized as nongovernmental organizations (NGOs), Cooperative based institutions namely SACCOS and SACCAs while the third category is banks. The major players in the NGOs category include PRIDE Tanzania, FINCA (Tanzania), Small Enterprise Development Agency (SEDA) and Presidential Trust for Self-Reliance (PTF). Others, which are relatively smaller in size, include Small Industries Development Organization (SIDO), YOSEFO, SELFINA, Tanzania Gatsby Trust, Poverty Africa and the Zanzibar based Women Development Trust Fund and Mfuko. The cooperative based MFIs consist mainly of SACCOs numbering about 800 in total and found all over the country. The SACCOS account for about 130,000 of the combined client population, most of whom being savers.

Microfinance institutions in Tanzania are mainly in three types: the nongovernmental Organization (NGO-MFIs); the member-based (mainly SACCOs and SACAs); and the formal financial institutions (mainstream banks engaging in Microfinance business). The nature of regulation depends on the type of microfinance institutions. The NGO-MFIs, for example, are not externally regulated and, therefore, they are not allowed by law to mobilize savings. They do, however, take a certain amount of customer savings that acts as security for the loans. Thus, the micro-credits (small scale loans) remain to be the main products offered by these types of microfinance institutions. Notwithstanding, however, these NGO-MFIs are required to be registered in order to be allowed to conduct the microfinance business. The member-based microfinance institutions (SACCOs and SACAs) are generally governed by the country’s Cooperative Societies Act 1991 as amended from time to time. The Cooperative Societies Act applies to all types of cooperatives in the country. Thus, all member-based MFIs are to be regulated and supervised by the ministry responsible for cooperatives.

The supervision and regulation of the member-based MFIs whose capital does not exceed TZS 800 million are normally done by the Registrar of Cooperatives under the Ministry of Cooperatives and Marketing. Additionally, the Savings and Credit Cooperative Union League of Tanzania (SCCULT) is undertaking the microfinance supervision role to its members. The SCCULT is the National Association of SACCOs in mainland Tanzania. Among the supervisory activities performed by the SCCULT is the auditing of these member-based MFI. Furthermore, from March 2005, the Savings and Credit Cooperative Societies Regulations and Financial Cooperative Societies Regulations of 2004 gives mandate to the central bank (BoT) to regulate and supervise all savings and credit associations whose capital exceed the TZS 800million.

The Tanzanian government, through its central bank (Bank of Tanzania – BoT) under the provisions of the Bank of Tanzania Act (2006) applies prudential regulation to all formal financial institutions (mainstream banks) regardless of whether they will engage in microfinance business or not. These institutions are governed by the Banking and Financial Institutions Act of 1991 as amended from time to time. In addition to the Banking and Financial Institutions Act 1991, the 2001National microfinance institutions policy guided the undertaking and legal framework of the microfinance activities in the country.

Based on the National microfinance institutions policy, the Microfinance Companies and Micro Credit Activities Regulations (MCMCAR) were passed in 2004. The MCMCAR 2004 governs all companies dealing with microfinance business in the country. It gives the central bank of Tanzania the Microfinance institutions‟ licensing authority. It also gives the mandate to regulate and supervise deposit-taking institutions. This includes those institutions that operate the microfinance business.

1.2 Research Problem

The introduction of MFIs is seen as the best alternative source of financial services for low income earners in rural areas as a means to raise their income, hence reducing their poverty level. However evidence has shown that these MFIs have limited coverage, poor organizational structures and some are donor driven leading them to poor performance.

An enduring problem facing microfinance institutions, however, is how to attain financial sustainability (Dunford, 2003; Schreiner, 2000; Woller 2000; Hollis & Sweetman, 1998; Christen et al, 1995). This problem has attracted attention of numerous researchers in recent decades and, as a result many strategies have been put in place to ensure that MFIs are sustainable (Randhawa & Gallardo, 2003; Schreiner, 2000; Yaron, 1992). Therefore financial sustainability was a critical problem addressed by this study.

Several studies have been conducted to determine the factors affecting financial sustainability of microfinance institutions using large and well developed MFIs in various countries (Cull et al., 2007; Woller & Schreiner, 2002; Christen, 2000; Woller, 2000; Christen et al., 1995). The level of significance of these factors in affecting the financial sustainability of MFI, however, varies with studies. While some of the determinants are found to be significant in one economy or applicable to a set of microfinance institutions, some are not significant.

Microfinance sector in Tanzania has recently experienced tremendous growth due to the increased number of firms engaging in microfinance services including commercial Banks and other profit oriented firms (Triodos Facet, 2011).Recent statistics shows that the need for financial services is still high as more than half of the country population is still excluded from financial services (FinScope, 2009). Although the number of Microfinance institutions has increased, the outreach to the poor as well as the social impact is still low (Marr & Tubaro, 2011; Triodos Facet, 2011). The extent to which Microfinance institutions balance between financial and nonfinancial focus has not yet been documented. Empirical studies in the country have mostly focused on financial performance of the institutions in terms of efficiency, sustainability and profitability (Nyamsogoro, 2010; Marr & Tubaro, 2011; Kipesha, 2013).

In a study conducted by Kessy & Urio (2006) on contribution of MFI on poverty reduction in Tanzania, the researchers covered four regions of Tanzania which are Dar es salaam, Zanzibar, Arusha and Mwanza. Both primary and secondary data were collected; primary data were collected from 352 MSE's through questionnaires, interviews were also conducted. PRIDE (T) Ltd which is a microfinance institutions were used as a case study so as to get the insight of MFI operations. The study findings pointed out that to large extent MFI operations in Tanzania has brought positive changes in the standard of living of people who access their services, clients of MFI complained about high interest rate charged, the weekly meeting was pointed out as barrier as the time spent in weekly meeting could be used to other productive activities. The study recommended MFI to lower its interest rate, increase grace period and provide proper training to MSEs.

Recent studies have shown that, there are over 40 registered MFIs in Tanzania but their overall performance has been poor. In her study Chijoriga (2000) evaluated the performance and financial sustainability of MFIs in Tanzania, in terms of the overall institutional and organizational strength, client outreach, and operational and financial performance. In the study, 28 MFIs and 194 MSEs were randomly selected and visited in Dar es Salaam, Arusha, Morogoro, Mbeya and Zanzibar regions.

Despite the success of Microfinance initiatives in numerous countries worldwide, a significant percentage of the micro-enterprise market has not been reached due to funding problems .An enduring problem facing microfinance institutions, however, is how to attain financial sustainability. To exploit this opportunity, as well as serve a large number of poor households, Microfinance institutions will need an alternative source of funding. This study will therefore link the financial sustainability and the performance of the microfinance institutions. This study is sought to find out the factors that lead to good performance of MFIs (Kessy & Urio, 2006).

1.3 Research Objective

The objective of this study was to determine the relationship between selected factors and financial performance of Microfinance Institutions in Tanzania.

1.4 Value of the Study

First, the study will benefit to MFIs, policy makers, Government, investors and the community at large. The study explores and recommends potential areas that MFIs need to put more efforts when delivering their services. On the other hand, policy makers will also benefit in the sense that, the findings provide informed suggestions on how policy can be improved. With improved and easy to implement policies, more investors and the community at large will be able to access and benefit from the services of MFI.

The study of this nature is also equally very important because it is going to enlighten the government and the public on the role and performance of MFI sector. Lastly the study findings were meant to act as a benchmark for future studies about similar topics of study by becoming a reference during future studies on financial performance of MFIs.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an over view of the Microfinance Institutions as studied by different researchers. How has Micro-finance been financially performing? Different types of theoretical literature are critically explained regarding the success of micro-finance. The evolution of MFIs, as financial intermediaries for the poor and their advocacy as a poverty reduction tool in the early 1990s around the globe, created a hope of having financial services in the rural areas of Tanzania. Inspired by microfinance success stories from other microfinance institutions like the Grameen Bank in Bangladesh, in 2000 the Tanzanian government in collaboration with the donor community started to implement a rural financial programme to reinstate the rural financial services. This gave rise to the current member-based microfinance institutions, now known as the Savings and Credit Cooperatives (SACCOs) and the Savings and Credit Associations (SACAs).

2.2 Theoretical Review

This sub topic will look into general theory relating to financial performance of microfinance institutions as well as the theories advanced on selected firm characteristics under study but shall only mention a few.

2.2.1 Micro Credit Theory

The psychological component of the micro credit theory - known as social consciousness-Driven capitalism - has been advanced by the most ardent promoter of micro finance (Yunus, 1998). His theory argues that a species of profit-making private venture that cares about the welfare of its customers can be conceived. In other words, it is possible to develop capitalist enterprises that maximize private profits subject to the fair interests of their customers **(**Elahi, 2004).

The rationale of the theory is straightforward. Although altruism is not totally absent, Capitalism is founded mainly on the premise that human beings are selfish by nature. Accordingly, individuals interested in businesses are naturally motivated by the principle of profit-maximization, with little consideration for the interests of their clients. This premise is too limited to be a general model for capitalism, however, because it excludes individuals who are concerned about the welfare of their fellow human beings. A more generalized principle would assume that an entrepreneur maximizes a bundle consisting of financial return or profit and social return. This assumption creates three groups of entrepreneurs (Elahi, 2002).

The first group consists of traditional capitalists who mainly maximize financial returns or profits. The second group consists of philanthropic organizations (like traditional micro credit NGOs) and public credit agencies that mainly maximize social returns. The third group consists of entrepreneurs who combine both rates in making their investment decisions under the additional constraint that financial return cannot be negative. This group includes the microfinance enterprisers who are to be treated as socially concerned people, and microfinance, which is to be treated as a social consciousness-driven capitalistic enterprise.

2.2.2 The Economic Theory

This theory treats microfinance institutions (MFIs) as infant industries. According to Remenyi (2000), the gist of the economic argument is that success in any business venture, including MFIs, is determined by the entrepreneurs' ability to deliver appropriate services and profitably. However, studies conducted in different parts of the world show that there are no successful MFIs by this definition. At best, some MFIs cover their operating costs while some of the better known among them are able to cover in part the subsidized cost of capital employed. This situation suggests that the MFIs will not become financially viable in the long run. One solution to this problem is to treat MFIs as infant industries, so that micro-lending businesses can be subsidized during their initial stages of operation. This subsidization would be beneficial to both the economy and society because this will help micro lenders realize economies of scale and the productivity fillip that comes with profitability.

The logic goes as follows: Over time, as clients of MFIs, micro entrepreneurs will establish their economic contracts with banks, retailers, government employees, and suppliers of production inputs, which will improve their skills dealing with money management, contractual obligations, and resource management. These skills should reduce the cost of transaction, disseminate information, and increase the micro entrepreneurs' ability to assess effectively available information to make sound business decisions. In this respect, society benefits from what is, in effect, a productive process leading to the creation of public goods as spin-offs from the growth of microfinance. To the extent that these public goods have value, they are a legitimate basis on which to provide subsidies to MFIs while the transition to widespread outreach to poor households is ongoing (Remenyi, 2000).

National development is the fundamental objective of trade policy and accordingly international trade theory and policy are basically founded on a normative criterion that seeks to improve the economic health of society. Trade policies either facilitate or impede the flows of voluntary exchanges of goods and services between nations undertaken by private nationals. Free trade policy is used to describe government measures that facilitate these exchanges and any government measure aiming to do the opposite are referred to as protectionism. It follows that international trade revolves around free trade and protectionism both of which seek the same objective, national development (Weinstein, 2001).

Historically protectionism is regarded as conservative economic idea that precedes the liberal economic idea of free trade (Ellsworth, 1950).The original protectionist argument is mercantilism and the infant industry argument was developed to accommodate mercantilist sentiments within the framework of smith's liberal economic theory. Since the infant industry argument has been invoked to justify the establishment of the micro finance industry in developing countries, it is in order to appreciate such features of mercantilism as regulation of foreign trade, promotion of domestic industries by inducing cheap raw materials imports, discouragement of imports through custom duties and encouragement of exports by exempting them from such duties.

2.2.3 The Psychological Theory

The psychological component of the micro finance theory known as social consciousness-driven capitalism has been advanced by the most ardent promoter of micro finance (Yunus, 1998).His theory argues that a species of profit making private ventures that cares about the welfare of its customers can be conceived. In other words, it is possible to develop capitalist enterprises that maximize private profits subject to the fair interests of their customers.

The psychological and economic arguments form theoretical premises of the micro finance theory and there has been a lot of controversy and academic skepticism about the theories. Since capitalism prime mover is human selfishness, then social consciousness cannot be a motivating factor for undertaking private business activities in capitalist economies. Micro finance is also motivated by similar factors (Mill, 1961).

The current micro finance revolution is founded on the promise that conventional banks in third world countries are prejudicial against the poor.(Yunus ,1996; Remenyi 2000) critics argue that the poor posses different kinds of skills that they can use for generating income through self employment. The ability to create self employment however depends upon their access to credit facilities. Unfortunately conventional banking policy severely restricts poor people's access to formal financial institutions. This banking policy deprives the poor of their right to make a living through self employment and forces them to borrow money from informal lenders at exorbitant rates of interest and the consequences are perpetuation of poverty in developing countries. This has led to the establishment of microfinance industry and the micro lenders seem to have a comparative advantage over the conventional banks in rendering their financial services to the poor (Mier, 1968; Myrdal, 1956).

2.2.4 The Theory of Mercantilism

Mercantilism is associated with five leading features (Alien, 1987; Blaug, 1978). First, bullion and treasure are the essence of wealth of nations. Second, foreign trade should be regulated to produce an inflow of specie. Third, domestic industries are to be promoted by inducing cheap raw-material imports. Fourth, the importation of manufactured goods is to be discouraged through custom duties, while the exportation of domestic manufactured goods is to be encouraged by exempting them from such duties. Finally, population growth is to be encouraged to keep wages low. These features suggest that the core doctrine of this trade theory is the favorable balance of trade as desirable and essential for national prosperity. This theory, however, clearly involves a dual policy regime of taking advantages from trading partners. This is the reason mercantilism is popularly described in economic literature as the "beggar thy neighbor’s" policy.

Mercantilism is without a doubt a very unfair trade policy regime; it might, and it did, trigger trade wars. In addition to its negative political implications, the theory is economically unsound as a policy for national development. Adam Smith was the first to expose this weakness. He argued that "mercantilism is nothing but a tissue of protectionist fallacies foisted upon a venal Parliament by our merchant and manufacturers, grounded upon the popular notion that wealth consists in money. Like an individual, a country must spend less than its income if its wealth is to increase. What tangible form does this surplus over consumption take? The mercantilist authors identified it with the acquisition of hard money or treasure. Money was falsely equated with capital and the favorable balance of trade with the annual balance of income over consumption (Blaug, 1978).

2.3 Empirical Review

Existing literature suggest that the environment in which financial institutions like any other firms, operate influences them. Therefore, the financial market structure, the economic condition of the country, legal and political environment all may influence the performance of MFIs (Mcdonald, 1999).

Bartual Sanfeliu et al. (2011) made an interesting statement about the fact that “there has been a lot of literature dealing with aspects like sustainability/profitability, asset/liability management, and/or portfolio quality, whereas there is little literature on the efficiency/productivity of these institutions.” Authors chose to measure the performance of MFIs that have a banking side and a social side, using a goal programming-based multicriterion methodology. This methodology consists of linear or non-linear functions and continuous or discrete variables in which all the functions have been transformed into objectives or goals. It defers from the normally used single-criterion performance rankings by delivering a global estimation of the performance of an MFI, combining the individual criteria in such a way as to include all the categories that affect its performance.

Bartual Sanfeliu et al. (2011) then used this same methodology to obtain a global business multicriterion performance ranking of a sample of Latin American MFIs for the year 2009, issued from the Mix Market. In this study, the authors used the Corielli and Marcellino algorithm so as to obtain the most important or most representative factors for each of the following business performance categories: institutional characteristics, financing structure, overall financial performance, expenses, efficiency and productivity, and risk and liquidity. The authors found that the two categories representative of the general performance tendency are overall financial performance and risk and liquidity, followed by IC, which represents the size of the company.

Bartual Sanfeliu et al. (2011) then completed their work by carrying out a Spearman correlation analysis in order to analyze the correlation between each of the single-criterion measurements and the final performance. They found only two variables that have highly significant correlations with multi-criterion performance: return on equity and portfolio to assets are the two key factors for improving MFIs' performance.

Tucker (2001) studies the importance of benchmarking and competition in improving MFIs' financial performance. He states the rise of competition and the emergence of the possibility of comparing the financial performance of MFIs with each other and to benchmarks. He used the results of a study carried out by Jansson and Taborga (2000) with a database composed of 17 MFIs, nine regulated and eight unregulated, including BancoSol Bolivia and FINCA Nicaragua. He selected three benchmark ratios and used their adjusted measures, obtained after adjusting the data by removing subsidies.

These ratios are gross financial margin (GFM), ROA, and ROE, and the target benchmark ratios were calculated based upon the measures of the better-performing MFIs. ROA and ROE are higher in unadjusted measures than in adjusted measures (AROA and AROE) due to the high level of subsidies disbursed in the MFIs. GFM-adjusted and unadjusted measures are high for MFIs and well above that obtained by the commercial banks. Commercial banks have lower GFM because they benefit from economies of scale and lower operating expenses to assets. Regulated MFIs achieve better economies of scale than unregulated MFIs, and have a better debt-to-equity (D/E) ratio than unregulated MFIs but still lower than commercial banks (Tucker, 2001).

Tucker (2001) concludes that using benchmark measures improves business practices. The author also stresses the importance of having benchmarks in order to be able to compare MFIs with each other, particularly on the basis of financial performance.

Hudon (2010) analyzes the relationship between financial performance of MFIs and their management mechanisms. 83 MFIs of four types (44 non-profit institutions and NGOs, 16 non-banking financial institutions, 12 for-profit institutions, and 11 cooperatives) constitute the dataset provided by PlaNet Rating. All these MFIs are evaluated based on three financial indicators (ROA, AROA, FSS) and four management dimensions (decision-making: board governance competencies; accounting and control: planning budgeting and reporting competences, competencies; top management: competencies of the top managers; human resources: competencies of HR management). PlaNet Rating measured the four management variables taking into account the specifications of the microfinance industry.

Hudon (2010) underlines that rating agencies in microfinance combine in their ratings fiduciary and credit risk with performance, they must make adjustments in the accounting methods used for loan loss provisions, loan write-offs, amortization/depreciation of fixed assets, inflation adjustments, and the accounting basis. This rating process differs from the one used in mainstream finance, which measures the credit risk corresponding to a probability of default over a specified time frame (Negre & Maguire, 2002).

The results of Hudon's analysis show that management ratings influence drastically MFI financial performance. However, except for cooperatives where the management variable (specifically human resources management) has a negative impact on the ROA, no organizational structure exhibits better results for the three financial indicators. The author underscores that regulated MFIs have significantly better management ratings than non-regulated ones. It is also the case for larger MFIs, in terms of loan portfolio, total assets, or borrowers (Hudon, 2010). Conversely, younger MFIs may be more financially profitable, as suggested by Stephens (2005), but not particularly better managed. According to this study, the top management is a key indicator of financial success among the four management dimensions, and seems to also have a positive influence on the amount of received subsidies.

Tchakoute-Tchuigoua (2010) studied the relationship between the performance of MFIs and their legal status. He compared the performance of 202 MFIs between 2001 and 2006. Three forms of ownership were analyzed (cooperatives, private microfinance cooperatives, and NGOs) by considering five types of performance (financial performance, social performance, organizational efficiency, quality of portfolio, and size and solvency). To assess financial performance of microfinance institutions, the author chose to measure the following ratios: ROA,operational self sufficiency(OSS), and profit margin (PM). Regarding sustainability, Tchakoute-Tchuigoua (2010) found no significant difference between NGOs and cooperatives, and that private microfinance corporations have better financial performance than NGOs and better portfolio quality than cooperatives and NGOs. This outcome is in contrast to the results of Mersland and Strom (2007) and Hartarska and Nadolnyak (2007), who found no relation between the sustainability of an MFI and its private company status.

Recent studies have shown that, there are over 40 registered MFIs in Tanzania but their overall performance has been poor. In her study Chijoriga (2000) evaluated the performance and financial sustainability of MFIs in Tanzania, in terms of the overall institutional and organizational strength, client outreach, and operational and financial performance. In the study, 28 MFIs and 194 MSEs were randomly selected and visited in Dar es Salaam, Arusha, Morogoro, Mbeya and Zanzibar regions.

The findings revealed that, the overall performance of MFIs in Tanzania is poor and only few of them have clear objectives, or a strong organizational structure. It was further observed that MFIs in Tanzania lack participatory ownership and many are donor driven. Although client outreach is increasing, with branches opening in almost all regions of the Tanzanian mainland, still MFIs activities remain in and around urban areas. Their operational performance demonstrates low loan repayment rates and their capital structures are dependent on donor or government funding.

In conclusion, the author pointed to low population density, poor infrastructures and low house hold income levels as constraints to the MFIs’ performance. Many of these MFIs have no clear mission and objectives. Also their employees lack capacity in credit management and business skills. Among the questions which arise out of these research findings is whether these MFIs whose performance is questionable will have any impact on poverty alleviation.

Other studies on microfinance services, in Tanzania were carried out by Kuzilwa (2002) and Rweyemamu et al., (2003). Kuzilwa examines the role of credit in generating entrepreneurial activities. He used qualitative case studies with a sample survey of businesses that gained access to credit from a Tanzanian government financial source. The findings reveal that the output of enterprises increased following the access to the credit. It was further observed that the enterprises whose owners received business training and advice, performed better than those who did not receive training. He recommended that an environment should be created where informal and quasi-informal financial institutions can continue to be easily accessed by micro and small businesses.

Rweyemamu et al (2003) evaluated the performance of, and constraints facing, semi-formal microfinance institutions currently providing credit in the Mbeya and Mwanza regions. The primary data, which were supplemented, by secondary data, were collected through a formal survey of 222 farmers participating in the Agricultural Development Programme in Mbozi and the Mwanza Women Development Association in Ukerewe. The analysis of this study revealed that the interest rates were a significant barrier to the borrowing decision. Borrowers also cited problems with lengthy credit procurement procedures and the amount disbursed being inadequate. On the side of institutions, the study observed that both credit programmes experienced poor repayment rates, especially in the early years of operation, with farmers citing poor crop yields, low producer prices and untimely acquisition of loans as reasons for non-payment.

2.4 Summary of Literature Review

The chapter has presented theoretical and empirical literature on financial performance of MFIs.The reviewed empirical literature has discussed factors for financial performance of the MFIs mentioned by different researchers to be, adjusted return on equity (AROE), operational self sufficient (OSS), financial self sufficiency (FSS), profit margin and portfolio yield.

Microfinance Institutions can ensure success if appropriate financial products for the poor are designed. The poor are not a homogeneous lot of people and hence there is a challenge of designing appropriate financial products that meet their diverse needs. Therefore, MFIs need to critically formulate credit management policies that will enable them achieve their duel mission of social welfare and profitability as a yard stick to measure the level of their performance. Besides the chapter has presented the theories that microfinance theoreticians have used to explain the concept of microfinance worldwide.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents research methodologies and design of the study. The research design is the framework or plan for a study used to collect and analyze data (Churchill & Iacobucci, 2005).Apart from research design this chapter will also cover population of the study, Sampling design, data collection methods, data analysis as well as the research model that will cover the study.

3.2 Research Design

Babbie (2002) defined research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to research purpose with economy in the procedure. It is the relationship that exists between the independent and dependent variables. The proposed study will adopt descriptive study aimed at investigating the relationship that exists among a number of variables. This will involve obtaining data from the participants and analyzing the information on financial statements of an MFI.

3.3 Population

The study targeted 42 microfinance institutions in Tanzania as registered by TAMFI. Census survey was carried out. Appendix: 1 shows the MFIs.

3.4 Data Collection

The study employed analysis of secondary data from financial statements of the MFIs which were Statement of financial position, Income statement and Cash flow statement. According to Ngechu (2006) there are many methods of data collection. The choice of tool and instrument depends mainly on the attributes of the subjects, research topic, problem question, objectives, design, expected data and results.

3.5 Data Analysis

Descriptive statistics such as means and standard deviations were used to summarize the data. Also percentages and frequencies, tables and other graphical presentations were used as appropriate. The study used OLS regression analysis to see the extent of performance of MFIs. Several significance tests were applied to the variables and model under study to see the significance of the variables and the fitness of the overall model.

3.6 Research Model

The Regression equation or function that included all the independent and dependent variables for this study was:

$Fin_p = \beta_o + \beta_1 X_1 + \beta X_{2+} \beta_3 X_{3\,+}\ \varepsilon$

Where:

Fin_p= Financial performance as measured by ROA

Return on Asset, this is measured as Net income/ Total assets

β_o= Intercept that is the value of R_t when all other variables take the value of zero, it also measure the partial effect of independent variable

ε =Random error term

X_1= Debt to equity ratio, measured as Total liabilities/Total assets

X_2=portfolio to assets ratio, measured as gross loan portfolio/total assets

X_3= Operating expense ratio, measured as Operating expense/Revenue

3.7 Statistical Test of Significance of the Variables

This test seeks to test the significance of each of the three explanatory variables (the debt ratio, portfolio to asset ratio and operating expense ratio) in affecting the dependent variable (financial performance).

There are tests for:

3.7.1 Significance of Individual Variables

To establish the significance of an individual variable the Z test has been used with the following aspects under consideration;

$$Z_{calculated} = \frac{\hat{\beta}_k}{se\left(\hat{\beta}_k\right)} \quad for\ k = \ 0,1,2,3$$

The hypotheses;

$H_0: \beta_i = 0$

$H_1: \beta_i \neq 0$

If $z_{calculated} > z_{tabulated}$ we reject the null hypothesis and conclude that that particular variable is significant in the model.

If $z_{calculated} < z_{tabulated}$ we fail to reject the null analysis and conclude that that particular variable is insignificant to the study.

3.7.2 Overall test of significance

This test aims at establishing the overall significance of the model. It entails the construction of the ANOVA table and use of the F-test.

The test statistic; $F_{calculated} = \frac{Mean\ square\ Regression(MSR)}{Mean\ square\ Errors(MSE)}$

The critical value of F;$F_{tabulated} = F_{(d.f\ of\ numerator, d.f\ of\ denominator, \alpha)}$

If $F_{calculated} > F_{tabulated}$ we reject the null hypothesis and conclude that the model is significant.

If $F_{calculated} < F_{tabulated}$ we fail to reject the null analysis and conclude that the model is significant.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Data Analysis and Findings

4.1.1 Introduction

This chapter presents the results of the study. The analysis is based on the 42 microfinance institutions in Tanzania. This chapter focused on data analysis, interpretation, presentation and the discussion of the research findings. The chapter is organized as follows: 4.1.2 presents the descriptive results, section 4.1.3 data analysis while 4.1.4 is the discussion of the findings.

4.1.2 Descriptive Analysis Results

Table 1 shows the results of description of microfinance institutions participated in the study. The results are also shown in Figure 1.

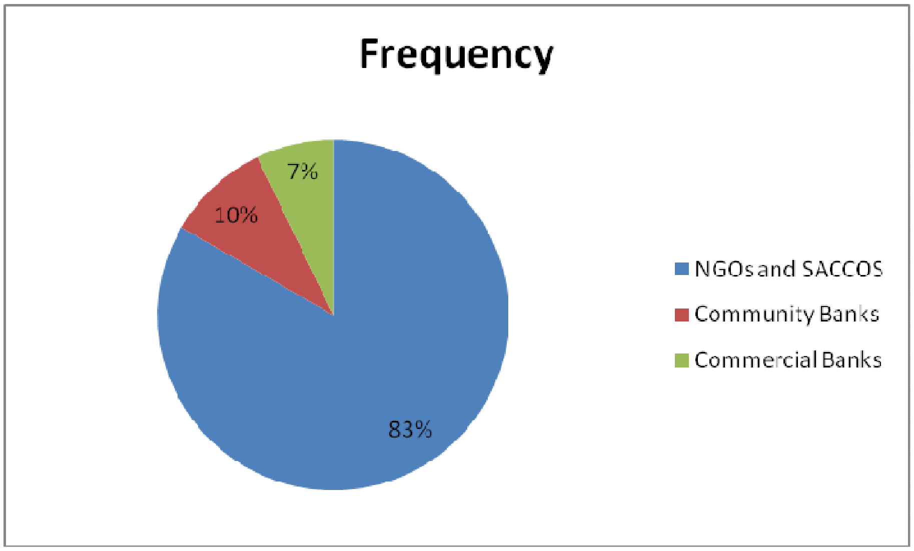
Table 1: Description of MFIs in Tanzania

	Frequency	Percent
NGOs and SACCOS	35	83.3
Community Banks	4	9.5
Commercial Banks	3	7.2
Total	42	100

Source: MFI *Transparency*, December 2011

The results show that 83.3% of the MFIs in Tanzania were NGOs and SACCOS, 9.5% were community Banks while the remaining 7.2% were the commercial Banks which offer microfinance services.

Figure 1: Description of MFIs in Tanzania



Types of Services Provided by MFIs and Conditions for Service Accessibility

The survey revealed that, MFIs provide two types of services: financial services and non-financial services. The financial services provided by MFIs are mainly in the form of loans and savings. MFIs offer short-term working capital loans, investment loan of more than one year's duration in addition to the working capital and different types of loans. None of the MFIs offered insurance services.

It was observed that most MFIs use solidarity groups as a methodology for issuing small loans while collateral is demanded for clients who seek big loans. The definition of small and big loans varies from one MFI to another, however, for many MFIs, loans start from TZS. 50,000 (about $50). Any amount greater than TZS. 500,000 (about $500), was regarded as a large loan. A new client is required to start with a small loan and after repayment of this loan the client graduates to receiving the next higher loan amount. This process has been observed to be a limiting factor, especially for new clients who seek large loans.

Another noteworthy group of Tanzanian microfinance service providers consists of non-institutional actors who generally operate in the informal sector. These include rotating savings and credit groups, rural savings and credit schemes, and moneylenders. Although there are numerous providers in this field, there are no reliable statistics on their lending patterns. These providers operate informally and offer valuable, but limited and often expensive microfinance services.

4.1.3 Summary of Descriptive Statistics

The mean shows the average value for each variable. The average value of financial performance (Y) is 0.1411019; the average value of debt ratio (X1) is 0.6714286, the average value of portfolio to asset ratio (X2) is 0.5132843 and the average value of operating expense ratio (X3) is 0.1569103.

The standard deviation is a measure of dispersion which indicates how spreads out the variable measures are. For instance, the standard deviation for the financial performance is 0.0761258, for the debt ratio is 0.2927701, for the portfolio to asset ratio is 0.2027729, for the operating expense ratio is 0.1651608. There is no significant variability in the variables since all the standard errors are within range.

4.1.4Test of significance of variables

The test of significance of the variables will show the strength of each of the variables in determining the financial performance of MFIs. The formulated hypotheses are;

$H_0: \beta_k = 0$

$H_1: \beta_k \neq 0$

Where k = 0, 1, 2 and 3

$\beta_k =$ Parameter coefficient

If a parameter has a P-value of 0.000, then it is a significant variable. If the P-value deviates from zero, then the parameter is not a significant variable.

The regression results show that the P>|t| values for all the variables are close to or 0.000 implying that the variables are statistically significant.

4.1.5Test of overall significance

The overall significance test is done using hypothesis testing. The hypotheses concerned are;

$$H_0 = regression\ fit\ is\ not\ significant.$$

$H_1 = regression\ fit\ is\ significant.$

The test statistic is; F= $\frac{SSR/3}{SSE/206}$

Where the degrees of freedom for the regression is 3 and for the error term is 206 while the critical F-statistic at 0.05 margin of error is F (3, 206 0.05) = 15.16

The test statistic is F (3, 206) = 15.16

Considering that $F_{calculated} > F_{tabulated}$ at 0.05 margin of error, the null hypothesis is rejected indicating that the regression fit is significant.

The p-value is 0.0000 indicating that the regression fit is significant.

The R-squared and adj R-squared statistic are 0.1809 and 0.1690 which are statistically different from 0.0000 indicating that the model is of good fit.

4.1.6 Regression results

$$\mathbf{Y = 0.084423 - 0.0466325X_1 + 0.1389001X_2 + 0.1063929X_3} + \varepsilon$$

The average value of financial performance is 0.084423 when the debt ratio is; the portfolio to asset ratio and the operating expense ratio are held constant.

For every 1% increase in debt ratio, the average value of financial performance reduces by 0.0466325 when the portfolio to asset ratio and the operating expense ratio are held constant.

For every 1% increase in portfolio to asset ratio, the average value of financial performance increases by 0.1389001 when the debt ratio and operating expense ratio are held constant.

For every 1% increase in operating expense ratio, the average value of financial performance increases by 0.1063929 when the debt ratio and the portfolio to asset ratio are held constant.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study in section 5.2, conclusion in 5.3, limitations of the study in 5.4, recommendations in 5.5, and suggestions for further research in 5.6.

5.2 Summary

The study intended determine the relationship between selected factors and financial performance of microfinance institutions in Tanzania. The population comprised of 42 MFIs with financial statements ranged from 2008-2012. The study used a regression analysis model with three dimensions which were debt ratio, portfolio to assets ratio and operating expense ratio as key measures of performance in this study.

The findings show that the financial performance of the MFIs reviewed was low. This low financial performance was due to the low profit margin. From the analysis the lowest financial performance was 0.0172 while the highest was 0.3224. This was due to the high amounts of operating expenses and liabilities which drained down the amount of net income of the MFIs.

5.3 Conclusion

The Objective of the study was to determine the relationship between selected factors and financial performance of microfinance institutions in Tanzania. The study concentrated on the ten largest microfinance institutions in terms of the number of active clients and gross loan portfolio. The sample size of the study was 10 MFIs with a span of five years from 2008-2012. The institutions included 2 community banks, 2 commercial banks and 6 NGOs.

The findings of the study show that the financial performance of the MFIs reviewed was low. This low financial performance was due to the low profit margin. From the analysis the lowest financial performance was 0.01 while the highest was 0.3604. This shows that the performance was less than 0.5. Therefore, the lowest MFI was operating at 10% while the highest was at around 36%. Hence the studied MFIs operated at less than 50%. This was due to the high amounts of operating expenses and liabilities which drained down the amount of net income of the MFIs.

The findings of the study show a negative correlation between the financial performance and the debt ratio. There is a positive correlation between the portfolio to asset ratio and the financial performance. There is also a positive correlation between operating expense ratio and the financial performance.

5.4 Limitations of the Study

The study intended to cover 42 microfinance institutions registered in Tanzania but only ten largest MFIs managed to get responses. The reason being most of the MFIs were not regulated hence they feared giving out their financial statements to avoid market competition. Likewise other MFIs were located to rural areas where the infrastructures could allow the research to easily reach them. However; the response from ten largest MFIs gives the overview picture of the MFI industry in Tanzania.

Secondly, the study focused on microfinance institutions in Tanzania. The results are therefore applicable only to microfinance institutions sector in Tanzania and any attempt to generalize findings to other firms outside this scope should be approached with care.

5.5 Recommendations for Policy

The main aim of MFIs is to provide access to financial empowerment to support self employment and small enterprises. Thus, the following recommendations are put forward in order to improve the performance of MFIs. The MFIs should lower their interest rate to a level that would cover its operating expenses and at the same time facilitate the growth of their clients' business.

MFIs should consider the provision of long term loans to their clients thus reducing the frequency of repayment. MFIs should consider setting up offices in the rural areas. The MFIs have not been able to access the rural areas due to poor infrastructure. Hence, efforts should be geared to the improvement of infrastructure by the government thus providing an enabling environment for MFIs to operate. MFIs should restructure their training contents to include improving their clients' business skills. They should organize regular business training for their clients and qualified training institutions should conduct this.

Finally most of the MFIs registered under Tanzania association of microfinance institution are not regulated which gave problems in determining their performance. Therefore, i recommend that TAMFI should make sure that all its members are regulated in order to be able to monitor their financial performances.

5.6 Suggestions for Further Research

As the interest rates have been observed to be a serious problem, there is a need to conduct a study to determine rates that would cater for the operating expenses of MFIs and at the same time facilitate the growth of their clients' business.

There is a need to conduct a comparative study between member based MFIs Savings and Credit Cooperative Societies (SACCOS) in rural areas and MFIs operating in urban areas. This would delineate the rural-urban structure of MFIs operations in terms of financial innovations.

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APPENDICES

Appendix 1: List of MFIs registered by TAMFI

1. Arusha Community Initiative Support Trust
2. African Microfinance
3. Akiba Commercial Bank Bank
4. Better Life for Tanzanians Trust Fund
5. CARITAS Dar es Salaam
6. CRDB Microfinance Services Company Ltd
7. Changamoto Life Preservation Fund
8. Dar es Salaam Community Bank
9. Ecumenical Church Loan Fund Tanzania
10. Facilitation for Integrated Development and Relief Services
11. Fanikiwa Microfinance Company
12. F & K
13. Foundation for International Community Assistance Tanzania
14. First Micro insurance Agency
15. Global Associates
16. Jiajiri Microfinance
17. K-FINANCE
18. Mama Bahati Foundation
19. Mbinga Community Bank
20. Mtoni Lutheran Church Saccos
21. Mufindi Community Bank
22. Mwanga Community Bank
23. Oiko Credit

24. Opportunity International Tanzania

25. Pastoral Activities and Services for people with AIDS Dar es Salaam Archdiocese

26. Presidential Trust Fund

27. Promotion of Rural Initiative and Development Enterprise

28. Rural Financial Services Program Service Providers

29. Same Kaya Saccos

30. Small Enterprise Development Agency

31. Small Entrepreneurs Loans Facility Project

32. Small Industries Development Organization

33. Tanzania Womens Bank

34. Tujijenge Afrika

35. Tujijenge Microfinance Limited

36. Tujijenge Tanzania Limited

37. Tunakopesha Limited

38. Umoja Saccos

39. Vicoba Microfinance Limited

40. Victoria Microfinance

41. Youth Self Employment Foundation

42. Women Entrepreneurship Development Trust Fund

Appendix 2: Data Collection

Table 1: Collected Data of MFIs with Duration Of Five Years Each

MFI	Year	Net Income	Asset	Liabilities	Gross Loan Portfolio	Operating Expense
CRDB	2008	249130070	1912132000	170125123	197625276	18990127
	2009	274259000	1950122000	172208012	205671220	21196954
	2010	341025000	2513561574	212226311	221234159	25406987
	2011	376990090	2824941105	237331020	316875121	40066751
	2012	498310500	3041121171	251186513	334328118	44738428
SELFINA	2008	1.346E+09	1.2575E+10	2199201901	3968971484	861199205
	2009	1.606E+09	1.3459E+10	3778114293	4000755675	890777853
	2010	1.857E+09	1.4214E+10	3978275895	4545660000	1.097E+09
	2011	2.057E+09	2.0565E+10	5014907841	4981789201	1.696E+09
	2012	2.318E+09	3.7049E+10	5599466713	5000000000	1.807E+09
PTF	2008	853523796	3101221551	790118281	1278448900	160908172
	2009	971004755	3234836644	820224489	1495613245	138877004
	2010	1.227E+09	3405795595	898431347	1667711887	197586824
	2011	171636031	4605146313	901812111	1814349376	220819297
	2012	1.301E+09	4798201841	940554690	1934424523	256686923
YOSEFO	2008	940224481	2849118294	1787288118	2900880787	880213581
	2009	968193567	3519281266	1990271867	3000155200	885964108
	2010	980418291	4004861988	2118219992	3302457675	918402215
	2011	1.195E+09	4622565871	2636727076	3481568791	940093208
	2012	1.979E+09	6302858243	3553375425	3516132881	1.451E+09
FINCA	2008	1.448E+09	1.3708E+10	2256888000	4012356367	874598800

	2009	1.768E+09	1.447E+10	3851650097	4168054078	902371100
	2010	1.856E+09	1.5101E+10	4056980905	4632167400	1.144E+09
	2011	2.167E+09	2.1444E+10	5132433340	5010055009	1.738E+09
	2012	2.455E+09	3.8412E+10	5642130079	5123500000	1.954E+09
Akiba	2008	1.191E+09	5.5446E+10	4.0189E+10	3.7708E+10	9293487
	2009	1.347E+09	6.1395E+10	4.4817E+10	4.0078E+10	9443779
	2010	1.051E+09	7.7343E+10	5.3422E+10	4.2889E+10	13252534
	2011	1.381E+09	8.0439E+10	6.1395E+10	4.5482E+10	16330826
	2012	1.804E+09	8.2672E+10	7.7343E+10	4.8101E+10	20646782
Pride	2008	41927294	165429314	17812240	158817826	5764698
	2009	45243557	199218781	20087014	161242949	6278952
	2010	48781800	226753276	23723645	182762249	8547047
	2011	50498201	277136419	28588778	204785824	12787992
	2012	54413241	307481625	31573840	229443890	14481243
MBF	2008	80941493	530304064	7688910	364678359	78981244
	2009	102929902	418467443	10181210	388451239	78574892
	2010	103246878	500541678	12781871	401092654	80914584
	2011	150499251	540888687	16558185	420179855	80460047
	2012	180584892	560112423	18642700	436681600	80678982
NMB	2008	1.556E+09	1.4201E+10	2343315441	4145076500	882383290
	2009	1.86E+09	1.5233E+10	3922037700	4259029420	911842850
	2010	1.921E+09	1.638E+10	4121176500	4710033700	1.211E+09
	2011	2.213E+09	2.2283E+10	5299618033	5139554350	1.858E+09
	2012	2.522E+09	3.9355E+10	5768996421	5269065400	2.002E+09
DCB	2008	42435300	175945096	16134200	164599000	5811260
	2009	46339600	202566890	21367689	173561090	6360035

	2010	49700445	233456977	24128600	193015569	8600000
	2011	51266110	284567000	29665811	210018800	13167900
	2012	55254700	313435690	32410680	232841900	15456487
Mbinga	2008	1.039E+09	9690453500	1867807800	3669023150	830094298
	2009	1.345E+09	1.0378E+10	3468080700	3712368070	862345900
	2010	1.546E+09	1.1567E+10	3669877590	4238978688	979465450
	2011	1.735E+09	1.6003E+10	4723476530	4623167070	1.36E+09
	2012	2.03E+09	3.4456E+10	5234580760	4755678900	1.557E+09
African Microfinance	2008	98645611	675764832	564978644	379300195	46419785
	2009	111658031	897219085	563876980	426932310	51532961
	2010	148843780	1034197460	864403745	556328700	61098450
	2011	173098392	1255307113	1089765512	728141510	68984270
	2012	273601124	1905163271	1695907900	1001870943	80045420
Better Life Trust Fund	2008	89414361	621447912	534868812	362753140	44071640
	2009	99026040	695135615	595020431	389188475	51703295
	2010	119793945	863807600	725115098	479838110	59316721
	2011	143189423	958636341	804768810	608861807	61787821
	2012	175542030	1100109911	915404867	662007910	69719643
Mwanga CB	2008	200141620	1836316800	1645081762	936412334	48523345
	2009	238457872	2169240786	1937411239	954311593	51423714
	2010	370631170	3231124874	2758081213	1383092512	55498401
	2011	409417390	3674401653	3176512920	1973713650	58302311
	2012	622016113	4617381231	4037912035	2299750646	79234418
Changamoto	2008	28802344	131432590	115202150	86245533	83471230
	2009	32007955	153258752	131115739	100731198	91206743

	2010	36493261	197109854	166189100	117302129	102721354
	2011	51764950	215618967	219323145	154272060	168312245
	2012	75884031	345903531	300351607	196148650	190682324
FIDRS	2008	67412846	465719834	381156472	363750211	55206129
	2009	79156290	689933109	597262340	453523870	69033614
	2010	103120045	1047937100	900262391	667406708	87416450
	2011	151072100	1531681052	1388317450	981256834	115912543
	2012	220941287	1800159230	1642719045	1063038755	117937715
Fanikiwa	2008	44172354	363721742	297326120	197483204	18900235
	2009	49532670	366571535	293756133	205643197	21930511
	2010	65026339	453042990	358399716	221275893	21930511
	2011	73617581	539403571	443663107	316881344	40012550
	2012	107048260	640700126	522954954	334385510	44790480
F & K	2008	143485012	1204901238	1035915961	454234705	22919602
	2009	175288456	1539527864	1332632011	563135255	25026575
	2010	204491128	1967112401	1699159646	601199982	27919014
	2011	234361140	2335280525	1997423102	733412411	29517141
	2012	302517813	2487719220	2081337453	1013221318	34024823
First Microfinance	2008	23914739	228921129	134544148	135550261	11628194
	2009	29153788	305269514	207072131	141383056	14862117
	2010	60291235	455811816	342027067	95348323	17114224
	2011	71843911	503017745	374022032	167544332	19125638
	2012	96174288	622052413	483516556	101948276	24023912
Global Associates	2008	16371478	81843395	65130575	69554361	3958472
	2009	14217412	79885321	67361582	12616370	5206617

	2010	18259374	80194170	70703041	16923256	8131821
	2011	22453660	93194639	82732997	21380009	8513456
	2012	27308674	95848143	84747813	24514343	7121339
Jiajiri Microfinance	2008	98125328	538183146	216409167	241308543	54222518
	2009	75904360	491128204	176417166	212184327	55782117
	2010	192106244	1726140111	703546138	395511146	22819130
	2011	152121371	2070337710	543119533	390511537	20311976
	2012	367236149	3483541165	1386192183	1431172694	25814139
K-Finance	2008	36922118	449117037	387352362	105815032	14719715
	2009	44626217	465259614	391225916	132191775	16429417
	2010	48515239	542615123	452948571	165042674	17119519
	2011	57274146	586128110	479815579	223092541	19126104
	2012	92510423	701182491	566664125	346120515	19571126
Mtoni Lutheran	2008	55429378	475352212	383451149	184587301	13313478
	2009	49781152	513724734	402957228	217365256	14308572
	2010	52562182	620702833	491871365	217002101	18439100
	2011	77651027	746461271	595341192	283233717	20012250
	2012	112255231	695801635	522332434	231831219	22681079
A.C.I.S.T	2008	44112912	363195073	297015157	197621324	18923877
	2009	49561723	366517789	293722232	205615518	21931124
	2010	65013491	453051866	358353408	221212812	21931124
	2011	73666220	539453421	443620534	316821550	40016021
	2012	107016065	640727043	522917413	334314415	44710173
Oiko credit	2008	45172294	366568090	314684562	262531156	11201010
	2009	53591281	440091723	365901315	250681302	13591285

	2010	70197171	625521096	495721210	364041474	16274187
	2011	91392106	766903111	630477689	475753867	19271699
	2012	131151483	915201095	749291790	559872291	24482069
Opportunity International	2008	61034919	655716471	578320821	224644848	24443717
	2009	69122747	733910624	638124236	227417717	24613974
	2010	66331104	812729519	700916171	233412260	26021512
	2011	74170942	872211703	744234408	276510405	29355106
	2012	117827363	970233920	817212132	242350128	30228350
Mufindi CB	2008	153321380	1424765005	1064294191	116902410	74310641
	2009	203117716	1823911207	1416618020	155561065	79813455
	2010	273106051	2932640130	2505685551	202279705	79813455
	2011	375314462	3197234273	2719033193	258431157	103099804
	2012	534911700	4011991300	3340216210	309107099	112315330
PASADA	2008	20005130	199451020	168695108	99362113	5871069
	2009	23731745	237002463	206351280	110896157	6631224
	2010	31131318	324441107	285461095	152812290	8821980
	2011	38837097	351851137	314421317	189481381	10091217
	2012	60001439	434632116	392881346	218114777	11801745
Promotion Of Rural Initiative	2008	11745118	99022139	87521424	44551253	5025936
	2009	14330140	123783833	109861010	57591143	5159404
	2010	15679211	142746197	122415127	61232548	6022119
	2011	18206729	164121514	143611774	96875357	7383995
	2012	26446635	195431820	164890145	113781121	8563015
Same Saccos	2008	17562157	143661099	125861033	93946856	9351146

	2009	23152110	183311511	164661292	98495104	11482939
	2010	31522139	209441406	189201376	107411787	14061033
	2011	20341478	146302139	130951561	77171099	8201182
	2012	26671222	171501190	146462254	91652635	8791355
SEDA	2008	7532776	55581608	47234451	42783355	2282614
	2009	8233246	67781751	59052726	46602615	2073178
	2010	9741285	55231144	70837327	48231144	2964017
	2011	11442874	88361115	77714066	66402776	3291608
	2012	17514020	117453458	105521014	77181219	3861775
SELF-Project	2008	2521852	50000000	37271015	18321766	6102483
	2009	6279447	77496103	65991752	49512512	7524409
	2010	8531109	95941482	83701152	62971615	7873727
	2011	12251153	129153613	115966388	74996425	8661613
	2012	17522089	135626124	120017382	95791178	10161919
SIDO	2008	5732809	43291227	39059163	28542749	2261055
	2009	6581210	54991663	50092177	33341088	2491266
	2010	11791419	82092491	74072032	45897204	1432195
	2011	14076428	107891789	97723919	66621185	4361303
	2012	19831647	117721007	105873164	69751789	4451175
CARITAS Dar	2008	7184309	59382551	53304241	36274127	2941423
	2009	8623181	69141273	60581822	37933761	3232457
	2010	14944230	102344511	88941494	50741825	3814511
	2011	13356712	118461740	102681160	64742797	3925230
	2012	18223724	122800218	105056136	56185205	4641802
Tujijenge Africa	2008	15452520	81842911	70553649	61811946	13151053

	2009	16371179	71364093	60301216	53661485	13626181
	2010	14311156	76701015	65131841	59763308	10851158
	2011	18252710	93191647	79885436	72322245	10691103
	2012	22451568	95461708	80192107	75531310	11101789
Umoja Saccos	2008	6441515	64944027	52621016	35521523	1863669
	2009	7672536	81099319	67411218	49221171	2971212
	2010	9561740	106451162	91525425	57105796	2471038
	2011	11514769	115233876	99611317	63581454	2661009
	2012	15371073	134171418	117831558	74281287	2562874
Tanzania Womens Bank	2008	59321015	561468660	491257324	346126528	18681015
	2009	80121239	666791214	585911108	428344882	27627925
	2010	102509453	836008451	733406747	526401336	36712360
	2011	89271542	774484696	670812577	516042374	26957226
	2012	145697633	945127704	796331109	608625932	30632124
Victoria Microfinance	2008	14000000	34149072	32211475	23601441	1651991
	2009	1426171	33645740	25441711	18681015	1981339
	2010	1651208	47621007	39681218	27627925	2302030
	2011	1661053	72871401	15882094	24626181	2071039
	2012	2201415	72878291	17461444	30851158	2581147
Tujijenge Microfinance	2008	5462163	44092903	37343316	23734670	2551147
	2009	5081884	44612991	37361823	28123345	2695182
	2010	10244117	103958925	94931586	53862563	5922700
	2011	14269488	129272305	117232065	69968281	6731426
	2012	20651015	141092400	133871022	80023423	10227166

Tujijenge Tanznaia ltd	2008	2811083	16391819	12281141	14852112	1536217
	2009	2721248	15964122	11341517	11951399	1615167
	2010	2711000	18745256	12781083	14267013	1861978
	2011	3601032	23162803	16041547	19212495	2151783
	2012	6732177	25845462	16681080	21771118	4043880
Tunakopesha	2008	2288330	31801295	24051379	8772814	3162581
	2009	3432438	44525940	37892348	23115611	4251094
	2010	5466344	63801961	58152319	29932467	6341460
	2011	9091718	87401147	79041008	42951198	6962286
	2012	12848511	99593162	88811916	55451082	7982311
WEDTF	2008	4841644	44601019	36972841	27853430	4410233
	2009	6131926	51301560	41961353	31741644	4410233
	2010	7372168	62151882	51122678	34851065	5582621
	2011	8712388	76452060	63931495	41101270	9317316
	2012	15024284	103231187	82874015	52911717	9841971

Appendix 3: Data Analysis

Table 2. Ratios Results

MFI	YEAR	Y	X1	X2	X3
CRDB	2008	0.1303	0.089	0.1033	0.0961
	2009	0.1406	0.0883	0.1055	0.1031
	2010	0.1357	0.0844	0.088	0.1148
	2011	0.1335	0.084	0.1122	0.1264
	2012	0.1639	0.0826	0.12	0.1338
SELFINA	2008	0.107	0.175	0.3156	0.217
	2009	0.1193	0.2807	0.2973	0.2226
	2010	0.1306	0.28	0.3198	0.2413
	2011	0.1	0.2439	0.2422	0.3405
	2012	0.0626	0.1511	0.135	0.3615
PTF	2008	0.2752	0.2548	0.4122	0.1259
	2009	0.3	0.2536	0.4623	0.0929
	2010	0.3604	0.2638	0.49	0.1185
	2011	0.0373	0.1958	0.394	0.1217
	2012	0.2711	0.196	0.4031	0.1327
YOSEFO	2008	0.2672	0.6273	1.0182	0.3034
	2009	0.2751	0.5655	0.8525	0.2953
	2010	0.2448	0.523	0.8246	0.2781
	2011	0.2585	0.57	0.7532	0.27
	2012	0.314	0.5638	0.5579	0.4126
FINCA	2008	0.1056	0.1646	0.2927	0.218
	2009	0.1221	0.2662	0.2881	0.2165
	2010	0.1229	0.2687	0.3068	0.247

	2011	0.1011	0.2393	0.2336	0.3469
	2012	0.0639	0.1469	0.1333	0.3814
Akiba	2008	0.0215	0.7248	0.68	0.00024
	2009	0.0219	0.73	0.6528	0.00023
	2010	0.0136	0.6907	0.5545	0.0003
	2011	0.0172	0.7632	0.5654	0.00036
	2012	0.0218	0.9356	0.5818	0.00043
Pride	2008	0.2534	0.1076	0.96	0.0362
	2009	0.2271	0.1008	0.8094	0.0389
	2010	0.2151	0.1046	0.806	0.0468
	2011	0.1822	0.1031	0.7389	0.0624
	2012	0.177	0.1026	0.7462	0.0631
MBF	2008	0.1526	0.0145	0.6877	0.2166
	2009	0.246	0.0243	0.9283	0.2023
	2010	0.2063	0.0255	0.8013	0.2017
	2011	0.2782	0.0306	0.7768	0.1914
	2012	0.3224	0.0333	0.7796	0.1848
NMB	2008	0.1016	0.165	0.292	0.2129
	2009	0.1221	0.2575	0.2796	0.2141
	2010	0.1173	0.2516	0.2875	0.2572
	2011	0.0993	0.2378	0.2306	0.3616
	2012	0.0641	0.1466	0.1339	0.38
DCB	2008	0.2412	0.0917	0.9355	0.0353
	2009	0.2288	0.1055	0.8568	0.0366
	2010	0.2129	0.1034	0.8268	0.0446
	2011	0.1802	0.1042	0.738	0.0627

	2012	0.1763	0.1034	0.7429	0.0664
Mbinga	2008	0.1072	0.1927	0.3786	0.2262
	2009	0.1296	0.2998	0.3577	0.2323
	2010	0.1336	0.3173	0.3665	0.2311
	2011	0.1084	0.2952	0.2889	0.2942
	2012	0.0589	0.1519	0.138	0.3273
African Microfinance	2008	0.146	0.8361	0.5613	0.1224
	2009	0.1244	0.6285	0.4783	0.1207
	2010	0.1439	0.8358	0.5379	0.1098
	2011	0.139	0.8681	0.5801	0.0947
	2012	0.1436	0.8902	0.5259	0.0799
Better Life Trust Fund	2008	0.1439	0.8607	0.5837	0.1215
	2009	0.1425	0.856	0.5599	0.1328
	2010	0.1387	0.8394	0.5555	0.1236
	2011	0.1494	0.8395	0.6351	0.1014
	2012	0.1596	0.8321	0.6018	0.1053
Mwanga CB	2008	0.109	0.8959	0.5099	0.0518
	2009	0.12	0.8931	0.4399	0.0539
	2010	0.1147	0.8536	0.4281	0.0401
	2011	0.1114	0.8645	0.5372	0.0295
	2012	0.1347	0.8745	0.4981	0.0345
Changamoto	2008	0.1347	0.8765	0.6562	0.9678
	2009	0.2088	0.8555	0.6572	0.9054
	2010	0.1851	0.8431	0.5951	0.8757
	2011	0.2401	1.0171	0.7155	1.091

	2012	0.2194	0.8683	0.5671	0.9721
FIDRS	2008	0.1447	0.8184	0.781	0.1518
	2009	0.1147	0.8657	0.6573	0.1522
	2010	0.0984	0.8591	0.6369	0.1301
	2011	0.0986	0.9064	0.6406	0.1181
	2012	0.1227	0.9125	0.5905	0.1109
Fanikiwa	2008	0.1214	0.8175	0.543	0.0957
	2009	0.1351	0.8014	0.561	0.1066
	2010	0.1435	0.7911	0.4884	0.0991
	2011	0.1365	0.8225	0.5875	0.1262
	2012	0.1671	0.8162	0.5219	0.1339
F & K	2008	0.1191	0.8598	0.377	0.0505
	2009	0.1139	0.8656	0.3658	0.0444
	2010	0.104	0.8638	0.3056	0.0464
	2011	0.1004	0.8553	0.3141	0.0402
	2012	0.1216	0.8366	0.4073	0.0336
First Microfinance	2008	0.1045	0.5877	0.5921	0.0858
	2009	0.0955	0.6783	0.4631	0.1051
	2010	0.1322	0.7504	0.2092	0.1795
	2011	0.1428	0.7436	0.331	0.1142
	2012	0.1546	0.7773	0.1639	0.2356
Global Associates	2008	0.2	0.7958	0.8498	0.0569
	2009	0.1992	0.8432	0.1579	0.4127
	2010	0.2381	0.8816	0.211	0.4805
	2011	0.2409	0.8877	0.2294	0.3982

	2012	0.2849	0.8842	0.2558	0.2905
Jiajiri Microfinance	2008	0.1823	0.4021	0.4484	0.2247
	2009	0.1546	0.3592	0.432	0.2629
	2010	0.1113	0.4076	0.2245	0.0577
	2011	0.0745	0.2623	0.1886	0.052
	2012	0.1054	0.3979	0.4108	0.018
K-Finance	2008	0.0822	0.8625	0.2356	0.1391
	2009	0.01	0.8409	0.2841	0.0125
	2010	0.0894	0.8347	0.3042	0.1037
	2011	0.0977	0.8186	0.3806	0.0857
	2012	0.1319	0.8081	0.4936	0.2765
Mtoni Lutheran	2008	0.1166	0.8067	0.3883	0.0072
	2009	0.0969	0.7844	0.4231	0.0658
	2010	0.0847	0.7924	0.3496	0.085
	2011	0.104	0.7976	0.3794	0.0707
	2012	0.1613	0.7569	0.3332	0.0978
A.C.I.S.T	2008	0.1215	0.8178	0.5441	0.0958
	2009	0.1352	0.8014	0.561	0.1067
	2010	0.1435	0.791	0.4883	0.0991
	2011	0.1366	0.8224	0.5873	0.1263
	2012	0.167	0.8161	0.5218	0.1337
Oiko credit	2008	0.1232	0.8585	0.7162	0.0427
	2009	0.1218	0.8314	0.57	0.0542
	2010	0.1122	0.7925	0.582	0.0447
	2011	0.1192	0.8221	0.6204	0.0405

	2012	0.1433	0.8187	0.6117	0.0437
Opportunity International	2008	0.0931	0.882	0.3426	0.1088
	2009	0.0942	0.8695	0.3099	0.1082
	2010	0.0816	0.8624	0.2872	0.1115
	2011	0.085	0.8533	0.317	0.1062
	2012	0.1214	0.8423	0.2498	0.1247
Mufindi CB	2008	0.1076	0.7469	0.082	0.6357
	2009	0.1114	0.7767	0.8529	0.5131
	2010	0.0931	0.8544	0.0689	0.3945
	2011	0.1174	0.8504	0.0808	0.3946
	2012	0.1333	0.8326	0.077	0.3634
PASADA	2008	0.1003	0.8458	0.4982	0.0591
	2009	0.1001	0.8707	0.4679	0.0598
	2010	0.096	0.8799	0.471	0.0577
	2011	0.1104	0.8936	0.5385	0.0533
	2012	0.1381	0.9039	0.5018	0.0541
Promotion Of Rural Initiative	2008	0.1186	0.8839	0.4499	0.1128
	2009	0.1158	0.8875	0.4652	0.0896
	2010	0.1098	0.8576	0.429	0.0983
	2011	0.1109	0.875	0.5903	0.0762
	2012	0.1353	0.8437	0.5822	0.0753
Same Saccos	2008	0.1222	0.8761	0.6539	0.0995
	2009	0.1263	0.8983	0.5373	0.1166
	2010	0.1505	0.9043	0.5128	0.1309

	2011	0.139	0.8951	0.5274	0.1063
	2012	0.1555	0.854	0.5344	0.0959
SEDA	2008	0.1355	0.8499	0.7697	0.0534
	2009	0.1215	0.8712	0.6875	0.0444
	2010	0.1213	0.882	0.8733	0.0615
	2011	0.1295	0.8795	0.7515	0.0496
	2012	0.1491	0.8984	0.6571	0.05
SELF-Project	2008	0.0504	0.7454	0.3664	0.3331
	2009	0.081	0.8515	0.6389	0.152
	2010	0.0889	0.8724	0.6564	0.125
	2011	0.0949	0.8979	0.5807	0.1155
	2012	0.1292	0.8849	0.7062	0.1061
SIDO	2008	0.1324	0.9022	0.6593	0.0792
	2009	0.1197	0.9109	0.6063	0.0747
	2010	0.1436	0.9023	0.5591	0.0312
	2011	0.1305	0.9058	0.6175	0.0655
	2012	0.1685	0.8994	0.5925	0.0638
CARITAS Dar	2008	0.121	0.8976	0.6109	0.0811
	2009	0.1247	0.8762	0.5486	0.0852
	2010	0.146	0.869	0.4958	0.0752
	2011	0.1128	0.8668	0.5465	0.0606
	2012	0.1484	0.8555	0.4575	0.0826
Tujijenge Africa	2008	0.1888	0.861	0.4575	0.2128
	2009	0.2294	0.845	0.7519	0.2539

	2010	0.1866	0.8492	0.7791	0.1815
	2011	0.1959	0.8572	0.7761	0.1478
	2012	0.2352	0.84	0.7912	0.147
Umoja Saccos	2008	0.0992	0.8103	0.547	0.0525
	2009	0.0946	0.8312	0.6069	0.0604
	2010	0.0898	0.8598	0.5365	0.0433
	2011	0.0999	0.8644	0.5518	0.0419
	2012	0.1146	0.8782	0.5536	0.0345
TWB	2008	0.1057	0.875	0.6165	0.054
	2009	0.1202	0.8787	0.6524	0.0645
	2010	0.1226	0.8773	0.6297	0.0697
	2011	0.1153	0.8661	0.6663	0.0522
	2012	0.1542	0.8426	0.644	0.0503
Victoria Microfinance	2008	0.42	0.9433	0.6911	0.07
	2009	0.0424	0.7561	0.5552	0.1061
	2010	0.0347	0.8333	0.5802	0.0833
	2011	0.0228	0.2179	0.3379	0.0841
	2012	0.0302	0.2396	0.4233	0.0837
Tujijenge Microfinance	2008	0.1239	0.8469	0.5383	0.1075
	2009	0.1139	0.8375	0.6304	0.0958
	2010	0.0985	0.9132	0.5181	0.1099
	2011	0.1103	0.9067	0.5968	0.0962
	2012	0.1464	0.9488	0.5672	0.1278
Tujijenge Tanznaia ltd	2008	0.1715	0.7492	0.9061	0.1034

	2009	0.1705	0.7104	0.7486	0.0953
	2010	0.1446	0.6818	0.7611	0.1305
	2011	0.1555	0.6925	0.8295	0.1119
	2012	0.2605	0.6454	0.8424	0.1857
Tunakopesha	2008	0.0719	0.7563	0.2758	0.3605
	2009	0.0771	0.851	0.5191	0.1839
	2010	0.0857	0.9114	0.4691	0.2118
	2011	0.104	0.9043	0.4914	0.1621
	2012	0.129	0.8917	0.5568	0.1439
WEDTF	2008	0.1086	0.829	0.6245	0.1583
	2009	0.1195	0.817	0.6187	0.1389
	2010	0.1186	0.8225	0.5607	0.1602
	2011	0.114	0.8362	0.5376	0.2267
	2012	0.1456	0.8362	0.5126	0.186

Appendix 4: Regression

Table 3.Summary Descriptive Statistics for the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Y	210	0.1411019	0.0761258	0.01	0.7709
X1	210	0.6714286	0.2927701	0.0145	1.0171
X2	210	0.5132843	0.2027729	0.0689	1.0182
X3	210	0.1569103	0.1651608	0.00023	1.091

Table 4.ANOVA

Source	**SS**	**df**	**MS**
Model	0.219099227	3	0.073033076
Residual	0.992083092	206	0.004815937
Total	1.21118232	209	0 .005795131

Number of obs	F(3, 201)	Prob > F	R-squared	Adj R-squared	Root MSE
210	15.16	0.0000	0.1809	0.1690	0.0694

Table 5.Regression Results

Y	**Coef.**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf. Interval]**	
X1	-0.0466325	0.016559	-2.82	0.005	-0.0792794	-0.0139857
X2	0.1389001	0.0241908	5.74	0.000	0.0912068	0.1865933
X3	0.1063929	0.029455	3.61	0.000	0.0483209	0.1644648
_cons	0.084423	0.0175083	4.82	0.000	0.0499045	0.1189415