

**DETERMINANTS OF OPERATIONAL SUSTAINABILITY OF MICRO
FINANCE INSTITUTIONS IN KENYA**

BY

GIBSON, ALBERT BERNARD

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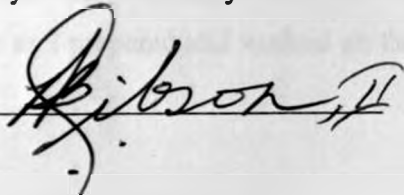
NOVEMBER, 2012

DECLARATION

Student's Declaration

I declare that this project is my original work and has not been submitted for an award of a degree in any other University.

Signature: _____



Date: _____

8th Nov. 2012

GIBSON, ALBERT BERNARD

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This research project report has been submitted for examination with my approval as the University Supervisor.

Signature: _____



Date: _____

9.11.2012

MR.HERICK ONDIGO

LECTURER

DEPARTMENT OF FINANCE AND ACCOUNTING

SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI

DEDICATION

I dedicate this study to my lovely wife, Agnes Sherman Gibson (aka Honey) and to my children; Ebenezer, Zelyn, Comfort, Naomi, Joshua and Victoria Happy Gibson and to my dear family members, my mom Larwuo Mama Gibson for all their endless support they gave me as I prepared and worked on this project.

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ABSTRACT

Many people in developing countries have been given access to formal financial services through microfinance programs. Nevertheless, millions of potential clients still remain un-served and the demand for financial services far exceeds the currently available supply. Given significant capital constraints, expansion of microfinance programs remains a formidable challenge facing the microfinance industry. Moreover, it is observed that microfinance organizations have had various degrees of sustainability. One such sustainability is the financial sustainability. Financial sustainability has been defined by various researchers differently. As such there is no clear cut definition of the word financial sustainability. Therefore this paper attempts to find out the factors which affect the operations self- sufficiency and financial sustainability and thereafter propose a more comprehensive and representative model for financial sustainability and create an index to observe the financial performance of microfinance sector. The financial data of microfinance institutions from Kenya suggests that the capital / asset ratio, operating expenses / loan portfolio and portfolio at risk > 30 days are the main factors which affect the sustainability of microfinance institutions.

The study was guided by the main objective which was to establish the factors that determines the operational sustainability of micro finance institutions in Kenya. The study utilized a descriptive research design and it targeted 30 microfinance institutions (MFIs) listed from the Association of Microfinance Institutions (AMFI) in Kenya, which provided financial services to low income people in Kenya. The data for the study was drawn from a database of audited financial statements of MFIs in Kenya. The data collected from the financial statements included capital structure variables which include debt, equity, total assets, etc. A multiple regression model was used to analyze data collected.

It can be observed that the factors that affect the operations and financial sustainability are Capital/ asset ratio and Operating expenses/Loan Portfolio. Therefore these indicators have been included along with Operational Self Sufficiency to create Sustainability index.

This model of operational self-sufficiency and financial sustainability Index for microfinance institutions is more comprehensive. With the help of this model, the MFIs in Kenya can quantify the level of operations and financial sustainability. This model can also be used to create a sustainability index for various countries and help the regulator identifying the strong and weak areas of the sector. In addition, the existence of new model is also expected to facilitate MFIs to access to capital markets. Having access to sustainability information may reduce some of the transaction uncertainty. This model may be considered as one more step in the process of the emergence of the microfinance standards.

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ABBREVIATIONS

AMFI	Association of Microfinance institutions
BBK	Barclays Bank of Kenya
BIMAS	Business Initiative and Management Assistance Services
CBK	Co-operative Bank of Kenya
CGAPA	Consultative Group to Assist the poor
CIC	Co-operative Insurance Company
CRCL	Canyon Rural Credit Limited
ECLF	Ecumenical Church Loan Fund of Kenya
FSAs	Financial Services Associations
FSS	Financial Self Sufficiency
KADET	Kenya Agency for the Development of Enterprise and Technology
KCB	Kenya Commercial Bank
KDA	K-rep Development Agency
KPOSB	Kenya Post Office Saving Bank
K-REPB	Kenya Rural Enterprise Programme Bank
KWFT	Kenya Women Finance Trust
MAL	Micro Africa Limited
ME	Microcredit Enterprises
MFIs	Microfinance Institutions
MSE's	Micro and Small Enterprises
NGOs	Non-Governmental Organizations

OSS	Operational Self Sufficiency
PAWDEP	Pamoja Women Development Programme
ROSCAs	Rotating Savings and Credit Associations
SACCOs	Savings and Credit Co-operative Societies
SISDO	Small holder Irrigation Scheme Development Organization
SMEA	Stromme Microfinance East Africa Limited
SMEP	Small Micro Enterprise Program
USAID	United States Agency for international Development

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Sustainability refers to the long-term continuation of the Microfinance programme after the project activities have been discontinued (Ahlin and Lin, 2006). It entails that appropriate systems and processes have been put in place that will enable the Microfinance services to be available on a continuous basis and the clients continue to benefit from these services in a routine manner. This also would mean that the programme would meet the needs of the members through resources raised on their own strength, either from among themselves or from external sources. Though sustainability does get understood immediately in the financial terms or the resource terms, it actually has broader dimensions, of which financial sustainability is only one major dimension (Ahlin and Lin, 2006). The different dimensions of operational sustainability are: institutional sustainability (mission sustainability, programme sustainability, human resource sustainability, financial sustainability, and market sustainability), legal policy environment sustainability, and impact sustainability.

The factors that generally influence sustainability of microfinance institutions include the capital/ asset ratio, operating expenses/loan portfolio and portfolio at risk > 30 days (repayment schedule), others are loans disbursed, donor involvement, the lending model, savings mobilized, per capita income, level of support as well as form of incorporation,. Given that there has been a growth in the MFI industry in Kenya, it is also important to establish what factors have influenced the sustainability of such institutions. This is the gap that the present study seeks to bridge. The present study differs from the previous ones since it is based on the Kenyan context.

Millions of people in developing countries have been given access to formal financial services through microfinance programs. Nevertheless, millions of potential clients still remain unserved and the demand for financial services far exceeds the currently available supply. Given significant capital constraints, expansion of microfinance programs remains a formidable

challenge facing the microfinance industry. Moreover, it is observed that microfinance organizations have had various degrees of sustainability. One such sustainability is the financial sustainability. Financial sustainability has been defined by various researchers differently. As such there is no clear cut definition of the word financial sustainability. The Financial Self Sufficiency is an approximate indicator of the impact of subsidies on an organization's sustainability. In an environment where grants represent less than 1% of the sources of funds of MFIs (Microfinance Institutions) the FSS calculation is no longer relevant. Since profit rates are also running at quite high levels and very few MFIs are now making losses, the Operational Self Sufficiency too is not a very interesting indicator. Therefore this paper attempts to propose a more comprehensive and representative model for financial sustainability and create an index to observe the financial performance of microfinance sector in Kenya.

In a stable political environment and enabling macro economy, evidence arising over several decades has supported the view that the provision of microfinance is an important component of any effort to improve the livelihoods of the poor in any society. In recent years in Kenya, there has been renewed interest in microfinance by both policymakers and practitioners. This interest is based on its valued contribution to efforts aimed at improving the livelihoods of the rural population in Kenya through policies and programs geared towards addressing inequalities arising from the country's socio-political history.

The lack of oversight, however, has enabled them to innovate and develop different techniques of providing microfinance services. Therefore to stimulate development of the sector, appropriate laws, regulations and supervision framework need to be in place. Omino (2005), noted that regulation and supervision will lead to quality growth, broaden the funding base for MFIs eligible to mobilize and administer deposits and initiate the process of integrating these institutions into the formal financial system. The regulation of the sector will enable authorities to define procedures for their operations, entrance, and exit and ultimately create an environment for fair competition and efficiency in the sector (Omino 2005).

Microfinance institution has come to refer to a wide range of organizations dedicated to providing these services: NGOs, credit unions, cooperatives, private commercial banks and non-bank financial institutions (some that have transformed from NGOs into regulated institutions) and parts of state-owned banks. Microfinance refers to all types of financial intermediation services; savings, credit funds transfer, insurance, pension remittances, provided to low-income households and enterprises in both urban and rural areas, including employees in the public and private sectors and the self-employed (Robinson, 2003).

1.1.1 Operational Sustainability of MFI in Kenya

A microfinance institution is said to have reached sustainability when the operating income from the loan is sufficient to cover all the operating costs (Sharma and Nepal, 1997). This definition adopts the bankers' perspective and sticks to 'accounting approach' of sustainability. Shah (1999) adopts for an 'integrated approach' in defining the term sustainability as the 'accounting approach' to sustainability that takes into account the financial aspect of the institution is too narrow for him.

A growing number of writers over the last quarter of a century have recognized that the activities of an organization impact upon the external environment and have suggested that such an organization should therefore be accountable to a wider audience than simply its shareholders. This concern was stated by Ackerman (1975) who argued that big business was recognizing the need to adapt to a new social climate of community accountability, but that the orientation of business to financial results was inhibiting social responsiveness. McDonald and Puxty (1979). This influence is so significant that it can be argued that the power and influence of these stakeholders is such that it amounts to quasi-ownership of the organization. Indeed Gray et al. (1987) challenge the traditional role of accounting in reporting results and consider that, rather than an ownership approach to accountability, a stakeholder approach, recognizing the wide stakeholder community, is needed. Moreover Rubenstein (1992) goes further and argues that there is a need for a new social contract between a business and its stakeholders.

For Shah, the concept of sustainability includes, amongst other criteria, - obtaining funds at market rate and mobilization of local resources. Therefore, his performance assessment

criteria for the financial viability of any microfinance related financial institution are: repayment rate, operating cost ratio, market interest rates, portfolio quality, and 'demand driven' rural credit system in which farmers themselves demand the loans for their proposal.

Various researchers have argued that in democratic societies, small scale entrepreneurs have a right to a participatory role and full ownership of microfinance organizations including planning, management, and decision-making (Weitz,1982; Wehnert and Shakya, 2003).The basis of the argument is that the entrepreneurs have access to local knowledge, which is unknown to official experts. The supporters of this school of thought have argued that microfinance institutions should not be run by public sector organizations; it should rather be handed over to small farmers in order to generate a sense of ownership among small farmers (Sharma and Nepal, 1997) and to attain institutional sustainability of microfinance institutions (MFIs). According to microfinance gateway (2007) microfinance means providing very poor families with very small loans (micro credit) to help them engage in productive activities or grow their tiny businesses. Over time, microfinance has come to include a broader range of services (credit, savings, insurance, etc.) as we have come to realize that the poor and the very poor that lack access to traditional formal financial institutions require a variety of financial products.

1.1.2 The Profile of MFIs in Kenya

Micro finance organizations came to prominence in Kenya in the 1980s, although early experiments date back 30 years in Bangladesh, Brazil and a few other countries. The important difference of micro finance was that it avoided the pitfalls of an earlier generation of targeted development lending, by insisting on repayment, by charging interest rates that could cover the costs of credit delivery, and by focusing on client groups whose alternative source of credit was the informal sector. Emphasis shifted from rapid disbursement of subsidized loans to prop up targeted sectors towards the building up of local, sustainable institutions to serve the poor.

Micro finance has largely been a private (non-profit) sector initiative that avoided becoming overtly political, and as a consequence, has outperformed virtually all other forms of development lending. Kenya's Micro finance industry focuses on delivering financial services

to low-income individuals and Micro and Small Enterprises (MSE's) engaged in non-farm productive activities. Over time MFIs have introduced significant innovations in products and services, which are patronized by MSE's. The following key service providers characterize the industry: -

The Kenya Microfinance sector consists of a large number of competing institutions which vary in formality, commercial orientation, professionalism, visibility, size and geographical coverage. These institutions range from informal organizations e.g. rotating savings and credit associations (ROSCAs), financial services associations (FSAs), Savings and credit co-operative societies (SACCOs), NGOs, to commercial banks that are down scaling (Dondo 2003)

The goal of MFI organizations in Kenya is to raise the levels of income and welfare of people. They support the poor and unemployed by giving them loans often without collateral to establish small businesses. Kenyans today are faced by increased poverty, unemployment and insecurity of the AIDS pandemic, scarcity of food and rural urban migration among others. MFIs address the above problems by accessing small loans at affordable repayment rates, and other financial services for Micro and Small Enterprises (MSE). These take the form of self-help proposals and individual enterprises. Most MFIs lend up to a maximum of Shs. 500,000 and a minimum of Shs. 5,000 per applicant.

The 1999 MSE base line survey found that micro-financing, a core source of funding for micro and small enterprises contributes about 18% of the country's GDP and employs 2.3 million people (The Financial Standard, March 19, 2002).

Most MFIs started as NGOs whose funding is from foreign donors and agencies. Wainana (2002), NGO's in Kenya have been accused of misappropriation of donor funds and questions have been raised as to whether the funds they receive are used for the designated purposes. The issue of ownership of NGOs has raised fundamental concerns for their governance. For instance, if there are no owners or shareholders, then who hold and exercises the supreme authority of the institution to appoint Directors or change the composition of the Board, appoint auditors and satisfy themselves that an appropriate governance structure is in place? (Mwaura, and Gatamah 2000). Secondly if the Board and Management are part owners of the

institution, and have to balance the interests of all stakeholders including their own, what would prevent them from maximizing their “joint” interests through empire building, perks, and special benefits at the expense of other stakeholders – given that they are responsible for determining and implementing organization purpose and implied accountable to themselves? (Mwaura, and Gatamah 2000).

The growth of Kenya’s MFI industry has witnessed at least 100 non-governmental organizations (NGOs) offering services to clients. However, only 15 organizations can be classified as significant players. It has however been recognized widely in Kenya that promotion of the micro and small enterprise sector is a viable and dynamic strategy for achieving national goals, including employment creation, poverty alleviation and balanced development between sectors and sub sectors. All these together are essential for the achievement of the government vision of industrialization by the year 2020 (Mullei and Bokea, 1999).

There has been no specific legislation to govern the MFIs in Kenya until Parliament passed MFI Bill 2006. The MFI Bill 2006 seeks to regulate all deposit taking organizations. In order to promote investor confidence and to assist companies meet stakeholders expectations MFI Bill 2006 has developed a set of guidelines and principles of corporate governance as key to maintaining the trust of the investors (Central bank newsletter 2006).

1.2 Research Problem

The growth of MFIs can be attributed to factors such as changes in social welfare policies and a focus on economic development and job creation at the macro level. Focus inducing employment, including self-employment, as a strategy for improving the lives of the poor (Servon 1999; Gonzalez-Vega 1998).

These factors have created particular incentives and generated public and private subsidies for micro lending activity in the developing countries where most MFIs are structured as non-profit organizations (Servon 1997). However, despite the interest in the sector and the subsidies that have flowed into mission-oriented MFIs, it appears challenging to make an MFI viable over the long term. One survey found that 30 percent of domestic microfinance

programs operating in 1996 were either no longer in operation or were no longer lending capital two years later (Bhatt, Painter, and Tang 2002). Furthermore most microfinance programs report difficulty in covering expenses without continued reliance on grants, external fundraising, or other subsidies.

Despite the many determinants of operational sustainability of micro finance institutions in Kenya, there is limited research in the area. Given the inability of most Microfinance institutions in Kenya to rise up to the sustainable levels, this research seeks to investigate and provide an answer to what are the determinants of operational and financial sustainability of micro finance institutions in Kenya?

1.3 Objective

To establish the factors that determines the operational sustainability of micro finance institutions in Kenya.

1.4 Value of the Study

First, by focusing on achieving institutional, financial sustainability; regulators and practitioners of microfinance in Kenya, the study will contribute towards domestic institution building for financial capacity widening and deepening in locally constituted organizations and funds.

Secondly, the owners of the enterprises will be able to know their contribution towards the success and sustainability of the microfinance institutions, which are important to their operations. Eventually, they will take up their ultimate role in supporting the performance of the institutions. This study would help micro financial organization to focus their attention on development of risk management tools that will enhance setting up of new offices in rural areas where financial services demand is high and un met. Hence benefit of profit and high income as a result of Lower management borrowing credit facilities.

Thirdly the study will provide a source of reference for future studies on microfinance institutions. It will also act as a source of literature for academics in the field of entrepreneurship.

Lastly, the investors would also benefit from the study by accessing how improved risk management will assist in the distribution system of the microfinance organizations. They come to contrary do business and would like to know which MFIs is available in particular area in the business environment such research would enable the investor to determine the MFIs products and services available for their use e.g. credit facilities when transacting business within and outside the country.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents review of literature on various factors that influence the sustainability of microfinance institutions. The literature explored discusses various factors that can influence the sustainability of these institutions. This was done with a view of collecting views, prospective and opinions and understanding the factors affecting distribution systems of MFIs in Kenya. The review depends on theoretical literature that include; books, research papers, magazines and information from the internet.

2.2 Theoretical Review

2.2.1 Theory of Creative Destruction

Schumpeter's theory of creative destruction posits that in a capitalist economy, the collapse and renewal of firms and industries is necessary to sustain the vitality of the larger economic system (Schumpeter, 1961). However, if the capitalist economic system relies on endless growth, then sustaining it for too long will inevitably borrow from the sustainability of the global ecosystem. In economic analysis, inter-temporal discount rates essentially tell us how long we should care about sustaining any given system. Economists distinguish between discount rates for individuals based on personal time preference; lower discount rates for firms based on the opportunity cost of capital, and even lower discount rates for society. For issues affecting even higher-level systems, such as global climate change, many economists question the suitability of discounting future values at all (Richard Timberlake, 2005).

This is a theory of “how” one thinks an initiative can be sustained, diversified, changed, or modified from not only its current origin but where it is needs to be currently positioned (John Bellamy Foster, 2008). The theory helps to strengthen the ability to make choices or redirection efforts with other groups, organizations, or partners based upon growth and evolution of the initiative.

2.2.2 Modern Economics Theory

Modern economics has gone far in discovering the various pathways through which millions of expectations of, and decisions by, individuals can give rise to emergent features of communities and societies (e.g., rate of inflation, productivity gains, level of national income, prices, stocks of various types of capital, cultural values, and social norms). Two factors make economic theory particularly difficult (Hannagan Tim, 1998). First, individual decisions at any moment are themselves influenced by these emergent features, by past decisions (e.g., learning, practice, and habit), and by future expectations. Second, the emergent features that can be well handled by existing economic theory and policy concern only fast-moving variables. The more slowly emergent properties that affect attitudes, culture, and institutional arrangements are recognized, but are poorly incorporated.

2.2.3 Institutional Theory

Institutional theory and analysis does consider such features, but in a largely static sense. Hence, it also stops just short of the confluence point among the three fields that could provide the integration needed. Institutional theory currently provides an understanding of the variety of arrangements and rules that have evolved in different societies to harmonize the relationship between people and nature. Social scientists have gone far in describing the way people store, maintain, and use knowledge in stable circumstances. But an integrative approach requires attention to the very same dynamic dimensions that economics and ecology, each in their own way, have developed. Scott, W. R. (2004).

2.2.4 Evolutionary Theory

The emergence of novelty that creates unpredictable opportunity is at the heart of development. It is biological evolutionary theory, expanded to include cultural evolution that does deal with just those issues. The recent invention of complex systems studies explicitly sees ecological, economic, and social systems each as specialized representations of a complex adaptive system. There have been wonderful advances achieved by borrowing those mechanisms that generate variability from known biological processes and exposing the emergent patterns that result. But, as for each of the other fields, the representations are

partial. They are detached from efforts to represent the necessary and just sufficient complexity in natural and human processes, and to test the adequacy and credibility of the results. Darwin, C. (1859).

2.3 Dimensions of Operational Sustainability of MFIs

2.3.1 Institutional Sustainability

Institutional sustainability looks at those dimensions of the organization, which deals with the internal organizational environment (Ruben and Schers, 2007). These are the dimensions that make the organization a wholesome, vibrant and a going concern.

2.3.2 Mission Sustainability

Sustainability of its mission is what will keep the organization in its chosen path in the long term. Activities that the organization is engaged in have to be constantly evaluated for its compatibility with the defined mission of the organization. If changes are brought about in the mission, it would be through a well articulated and participatory process in the organization (Ruben and Schers, 2007).

2.3.3 Programme Sustainability

Programme Sustainability occurs when stakeholders (clients) perceive that the services that they are receiving are of sufficient importance and value and are willing to assume responsibility and ownership for them. When this occurs the MFI can develop a phasing out strategy because the programme remains client supported and no external subsidized support is sought (Bret, 2006).

2.3.4 Human Resource Sustainability

It means that the MFI is able to recruit, train maintain well qualified staff that are capable of delivering services as required. Also the staffs are able to monitor and maintain the organization on the right track, keeping in minds all other parameters of sustainability (Ruben and Schers, 2007).

2.3.5 Financial Sustainability

Financial sustainability means that the MFI is able to cover all its present costs and incurred in the growth, if its expands operations (Johnson et al, 2006). It would mean that the MFI is able to meet its operations costs, its financial costs adjusted for inflation and costs incurred in growth. Financial sustainability is a tangible parameter and can be measured and monitored continually through a set of indicators.

Otero and Rhyne classified financial sustainability into four levels, starting from the stage when the MFI is totally dependent on subsidies and grants for running its operations to the final stage when the programme is fully financed from resources mobilized from the clients and on funds raised from financial institutions on commercial rates of interest.

To summarize, the financial sustainability is to charge an interest rate that is high enough to cover operating costs, loan losses and interest and adjustment expenses. However, MFIs must operate efficiently enough that reasonable, affordable and competitive interest rates can be charged to cover these costs. Therefore, long term sustainability requires MFIs to manage delinquency, keep their cost of capital low (by mobilizing savings), rotate their portfolio efficiently, keep operating costs to the minimum and most importantly, set interest rates to cover all these costs (Rutherford, 2000).

2.3.6 Market Sustainability

This deals with the whole gamut of issues that deal with demand and supply of microfinance. It deals with issues relating to the different types of the clientele, their differing types of needs, and designing products that suit the needs of this clientele. Servicing these needs in the most client friendly manner will lead to the sustainability of the demand. A sustainable supply of resources will need that the MFI is financially self sufficient and meets all its costs from operations and has access to resources raised from the clients and from external sources at commercially viable rates of interest (Johnson et al, 2006).

Market sustainability is also about availability of a large number of choices to the clientele. The MFIs sustain purely on the effectiveness and efficiency of its services and not due to artificially created imperfections (Rosenberg, 2003).

2.3.7 Legal and Policy Environment Sustainability

Market sustainability as described above assumes the existence of a stable and friendly legal and policy environment that will enable the proliferation of a large number of organizations involved in the delivery of microfinance services (Onyuma and Shem, 2005). It would deal with issues relating to legal forms of organization, interest rates, savings mobilization, and resource mobilization from capital markets, from overseas commercial sources, etc.

2.3.8 Impact Sustainability

Microfinance has emerged as an effective methodology for alleviating poverty among the disadvantage sectors. Thus it is necessary that services delivered by the different organizations have a positive impact on poverty. The positive changes that occur in the life of the poor family have to be sustained over the long term for the family to gradually emerge out of the state of poverty (Onyuma and Shem, 2005).

2.4 Empirical Review

2.4.1 Factors that Influencing Operational Sustainability of MFIs; An Empirical Review

2.4.2 Form of Incorporation

In financial literature, the principal- agent theory argues that the form of institutional incorporation should have an effect on the behavior of its managers and how they are influenced by external stakeholders (Myers & Majluf, 1984). The study by Adongo and Stork (2005) showed that the forms of incorporation common to micro lenders i.e. closed corporations, trusts and proprietary limited, are negatively (positively) related to financial unsustainability (sustainability).

2.4.3 Level of Support/ Subsidies

It is theoretically expected that microfinance institutions that are supported by other bodies will have a positive relationship to financial sustainability due to closer support they receive. Subsidies are common in microfinance, especially in the form of soft loans. In a study by Balkenhol (2007), all 45 MFIs reviewed in the survey were being subsidized in one way or the other, of which 34 were convinced that without subsidies, they would not be able to move up-scale by improving the use of human and financial resources. These results have implications for public policy, and especially subsidies. Subsidies should enhance and stimulate efficiency, rather than obliging an MFI to choose between its social objectives and financial performance.

2.4.4 Flexibility of Repayment Schedule

The flexibility of the repayment schedule is theoretically expected to influence financial sustainability to the extent that it affects the effective rate of interest, which in turn has an effect on the break-even interest rate. To the extent that a more frequent repayment schedule generates a higher effective interest rate, a weekly payment schedule should be negatively (positively) associate with financial un-sustainability (sustainability) (Adongo and Stork, 2005).

This theoretical expectation highlights the trade –off between aiming to provide more flexible microfinance credit products for customers' satisfaction while reducing cost of frequent collection and reducing risk when designing microfinance products from an institutional perspective. It is argued that in the pursuit of lower cost for microfinance through less frequent collection schedules and higher levels of customer satisfaction through more flexible repayment terms, microfinance institutions should not lose sight of the need for stronger loan delinquency control systems to prevent moral hazard from creeping in that may lead to the collapse of the microfinance institution.

In stark contrast to bank debt contracts, most microfinance contracts require that repayments start immediately after loan disbursement and occur weekly thereafter. Even though economic theory suggests that more flexible repayment schedules would benefit clients and potentially improve their repayment capability, microfinance practitioners argue that the fiscal discipline

imposed by frequent repayment is critical to preventing loan default. In a study by Field and Pande (2008) data from a field experiment which randomized client assignment to a weekly or monthly repayment schedule was used. The study found no significant effect of type of repayment schedule on client delinquency or default. The findings suggest that, among microfinance clients who are willing to borrow at either weekly or monthly repayment schedules, a more flexible schedule can significantly lower transaction costs without increasing client default.

Adongo and Stork (2005) in their study found that the coefficient of the variable capturing the weekly repayment schedule has a negative sign, while that of the monthly and term repayment schedules have positive sign.

2.4.5 Donor Involvement

Underlying the role of outside assistance in the success of MFIs, theory would suggest that, to a certain extent, some form of outside assistance, most often in form of financial aids, would be necessary in the early stages of MFI creation. Without help from donors and other outside aid organizations, it would be difficult for MFIs to build up a financial base from which to provide loans and other services to borrowers. However, noting that successful MFIs are defined in part by their ability to, eventually, provide sustainable financial services to the poor, their reliance upon donor organizations should be limited to the beginning stages of development. At some point, it can be assumed that successful MFIs develop sufficient profits from interest gained on loans, allowing them to provide loans and other services from such profits rather than relying upon donors for such funding. Successful MFIs must strike a balance between realizing the need for outside assistance in initial capacity building and overusing aid, in turn becoming reliant upon the help of outside donors.

Nearly all successful MFIs have benefited from some forms of outside funding or assistance during the course of their existence. The extent to which MFIs are reliant upon this outside assistance, however, varies greatly. According to Christen (2004) in his analysis of the role that the World Bank played in the success of the Credit Amigo program, "multilateral donors can play catalytic role in microfinance development" if they 1) adopt policies individualized for the needs of specific countries rather than creating a universal model, 2) encourage MFIs

to develop management capacity for growth before funding expansion, 3) encourage MFIs to take advantage of up to date technological advancements, and 4) ensure that workers on both the donating side and the receiving side are grounded in the basic elements of sustainable microfinance.” This framework for relationships between donors and MFIs is relatively constant across institutions and countries. Most importantly, the hope is that in receiving foreign aids MFIs will not suffer from mission drift, and will thus be able to use the donated funding top support the original mission of sustainable financial services for the poor.

Van de Ruit (2001), reports that donors were integral to the establishment of the micro-finance sector in South Africa and Mozambique. Donor such as DFID, USAID, FES were instrumental in promoting the practice of microfinance and supporting the policy environment. Overall, donors have had a limited influence on the development of SME policies but have had a direct role in the implementation of sector support strategies. At times however, donor policies and approaches have been contradictory.

The model implemented in the report by Adongo and Stork (2005) provided evidence that donor involvement in providing start- up funds for the loan portfolio is positively associated with financial sustainability. However, this report strongly qualifies this statement by reiterating that the definition of financial sustainability is the ability cover costs independent of external subsidies from donors or government. The formula promoted to calculate financial sustainability in this report does not focus on the sources of funds used to cover costs and does not differentiate between donor and government funds or self- generated funds.

The study by Chua (1998) reveals that donor support plays a critical role in contributing to the two NGOs’ outreach and movement towards sustainability. A review of AusAID’s involvement in microcredit in the Philippines highlighted the important contribution of various AusAID microcredit support projects to Philippine microcredit NGOs particular, and to the development of the Philippines microfinance sector in general. AusAID support was instrumental in the development and adaptation of models in start- up program and in the growth and expansion of tested models (Chua, 1998)

The key contributing factor was AusAID’s continuing support to selected NGOs for over a decade which no doubt help moved those NGOs from start- up to stabilization, and to

expansion. This support has also facilitated the NGOs' progress towards increased self sustainability. The level of AusAID funding was significant in comparison to the NGOs' scale of operations (Chua, 1998).

2.4.6 Group Lending

The model of lending employed by MFIs has proven to be a very important determinant of success and sustainability over time. Most importantly, the lending model established tends to have a large effect on loan repayment rates. MFI lending can be broken down into three common models: The village Banking Model, the solidarity Group Model, and the Individual Model. Under the framework of the Village Banking Model, loans are made to entire villages for projects such as community gardens and water systems. Villages as whole are then expected to repay the loan over time, from community funds rather than the pockets of individuals.

The Solidarity Group Model is similar to the Village Banking Model in the cooperative sense, yet on a smaller scale. Under the Solidarity Group Model loans are given to groups of five or six community members, chosen on the basis of societal reputation, and often composed only of women. In this scenario each member backs the loans of the other members of the group, thus if one member of the group fails to repay their portion of the loan the remaining members are held responsible. While solidarity groups most often do not all use the funding for a common project, but rather individual business endeavors, they meet as a whole to provide support and guidance for one another. Finally, under the Individual Model, as the name implies, loans are given to individuals for personal business endeavors. The individual alone is held responsible for repayment of the loan: however they do still maintain some level of group support in the form of business development classes and guidance provided by lending institutions (Armendariz and Murdoch, 2004).

The Solidarity Group Model is the most common framework for lending, attributed to its ability to reduce a number of the information asymmetries that are present in other models. Group members are chosen and approved by their peers, thus people would likely to default on loans are less likely to be involved in the system. The K- rep program in Nairobi is based in a group lending model that has evolved over time to fit the specific needs of the local

clientele. The Juhudi program, which operates under the umbrella of the K-rep program, is modeled after a similar group-based system employed by the Grameen Bank. Groups made of five to seven members, receive two months of training on group dynamics and the importance of savings and are then issued loans.

Group is expected to positively influence financial sustainability from microfinance institutions because the peer pressure that group members exert on each other should lead to lower default rates on the number of loans disbursed (Adongo and Stork, 2005). The study revealed that group lending positively (negatively) influences the financial un-sustainability (sustainability) of microfinance institutions. In addition, there is evidence that this relationship is robust because the coefficient of the variable that captures group lending is significant at the 10% level.

2.4.7 Savings Mobilized

While currently MFIs tend to focus outreach efforts on providing credit services to the poor, the hope is that eventually efforts will enable borrowers to start saving. It is thought that achieving long-term financial sustainability in developing areas is not only dependent upon access to capital, but also the ability to save a portion of funds generated through the use of given capital. Solimano et al (1994) ensuring an adequate savings level is crucial for development in its ability to finance capital accumulation over time. A consultative Group to Assist the poor (CGAP) study, aimed at developing deposit services for the poor, found that access to such services allowed the poor to better manage emergencies, smooth consumption, meet demands for larger amounts of cash, such as school fees, and take advantage of future investment opportunities.

In providing savings services to the poor MFIs are not only increasing the welfare of those served but also reducing the risk of involuntary default on the parts of borrowers. In making borrowers better prepared to deal with adverse shocks, such as sickness or drought, such shocks are less likely to make an individual unable to repay existing loans. If faced with severe drought, farmers who have been given access to, and taken advantage of, savings institutions will still have the funds to repay at least a portion of loans, as compared to a farmer with no savings who would be forced to default. Once MFIs have successfully developed the

institutional capacity to become independent of donor and government subsidies, savings generation theory would suggest that adding savings institutions to the already existing MFI framework will benefit both lenders and borrowers, leaving both parties better off than in the absence of these institutions.

2.4.8 Loans Disbursed

The amount of loans disbursed is theoretically expected to be negatively (positively) related to financial un-sustainability (sustainability) because it reduces per unit cost of the lending. The findings of Adongo and Stark (2005) revealed that the coefficient of the variable that captures the amount of loans disbursed confirmed the expected theoretical relationship. However, based on the model adopted in this report there is no evidence to suggest that this relationship is robust because this variable is not significant at the 5% or 10% level.

2.4.9 Per Capital Income

Per capital income of a location reflects the welfare and socio-economic profile of its residents. The more income the microfinance clientele has, the higher the probability that the microfinance institution serving this target group will be financially sustainable. According to this theoretical perspective per capita income is expected to be negatively related to the financial un-sustainability of microfinance institutions in Kenya.

Based on the model in the report by Adongo and Stork (2005) the coefficient of the variable that captures the per capita income of the microfinance target group has the expected negative sign. However, based on the model there is no evidence to suggest that this relationship is robust because the per capita income variable is not significant at the 5% or 10% level. Thus the model adopted in the report does not find evidence that a lower per capita income in the microfinance target group will hinder financial sustainability of the selected microfinance institutions in this report.

2.4.10 Other Empirical Studies

Matu (2008) in his research paper entitled "Attracting microfinance investment funds promoting microfinance Growth through increased investments in Kenya" has studied

microfinance capital structure in order to find out best policy decisions to enhance efficiency in MFI in Kenya. According to his study Kenya still faces major challenges with efficiently and effectively delivering microfinance services in the country. He analyzed three policy alternatives i.e. maintaining status quo, the government regulation of all MFIs and voluntarily for closing the microfinance gap in the supply of microfinance services. All these three alternatives were evaluated against the following criteria: efficiency, financial and political feasibility, and accessibility to determine the best policy option.

His paper explored the feasibility of microfinance investment funds (MFI) as key drivers for channeling alternative sources of funding to microfinance institutions (MFIs). The growing competition to access funding sources had led to a financial gap in supplying microfinance services, which is jeopardizing MFI sustainability in the country. In 2006, the microfinance Act was passed to enhance the regulating and legal framework for microfinance and to support the growth and development of microfinance in Kenya. This had greatly helped boost the sector resulting in increase in microfinance loans volumes, especially the deposit-taking MFIs such as Equity Bank, K-rep Bank and Jamii Bora. The ability of MFIS to collect deposits has some advantages, especially as the pool for alternative funding shrinks. A vast majority of MFIs in Kenya are informal and unregulated, which has limited their funding sources further weakening their institutional capacity to supply microfinance services and limits their ability to grow (Matu, 2008).

In 1999, the Association of Microfinance institutions (AMFI) was registered under the societies Act as an umbrella organization to represent the microfinance institutions operating in Kenya. The AMFI's activities were initially funded through a 3 year grant from the United States Agency for international Development (USAID) which aimed to support the growth and development of MFIs, by promoting sustainable, efficient and effective delivery of microfinance services. Further, AMFI aimed to organize a network of MFIs in the country who were committed to developing and making available a wide array of microfinance services to those who needed it, especially those whose needs were unmet by the formal financial sector (Matu,2008).

His data for the study included MFIs in Kenya especially those affiliated to AMFI. They included Jamii Bora, Equity Bank, Faulu Kenya, SISDO, Jitegemee Credit Scheme, Micro Kenya Limited, Kenya Women Finance Trust Co-operative bank, CIC insurance, K-rep bank Limited, Aga khan Foundation among others. While Kenya has 250 organizations that practice some form of microfinance business, only 20 practice pure Microfinance, of which 4 are deposit taking and 16 are credit only. The remaining 230 MFIs in Kenya are classified into three different tiers, with the first tier being deposit-taking institutions such as bank, the second tier being credit only facilities and the third tier being informal organization supervised by an external agency other than the government. These distinct classifications have led to some of the MFIs specializing in certain niche markets, which have contributed to their growth and sustainability in delivering microfinance. For example, the ability to collect deposits has enabled Equity Bank to appeal to those excluded by the high costs of accessing traditional banks, while Jamii Bora has identified itself as the financial provider to former thieves and beggars (Matu, 2008).

Despite the enactment of the microfinance Act, AMFI still faces challenges in building the capacity of the Microfinance sectors and reducing the inefficient delivery of microfinance products and services. Furthermore the continued success and rapid growth of microfinance has led to a financial gap in the funding needed to meet the growing demand. This could serious impact the ability of Kenyans to access the financial resources needed to obtain basic socio-economic benefits such as education, health care services, land ownership, income generating activities and credit facilities. A study on the financial sector found that 35.2% who are entirely excluded from accessing any financial services. This has greatly undermined the overall wellbeing of the poor people by limiting their opportunities to improve their socio-economic status (Matu, 2008).

There are a range of Microfinance investment fund (MIF) investors. According to presentations at the 2004 Financial sector Development Symposium Berlin, the main types of MFIs investors fall under four categories; private donors, development agencies , private individuals and institutional investors. These investors use a variety of lending instruments such as grants, subsidized loans, and loans at or close to market rates, equity participation.

guarantees, and technical assistance (TA) as a means of supporting the microfinance sector (Matu,2008).

After conducting his study Matu (2008) analyzed his data. In 2007, there were more than 45 microfinance investment funds (MIFs) that either allocated their investments directly or indirectly to MFIs in Africa. These MFIs ranged in their total assets where a majority (89.8%) operated above the conventionally accepted sustainable size of having microfinance portfolio of at least \$ 20 Million. According to the Mix market, of the 45 MIFs that reported in investing in Africa, only 38 MIFs reported their total asset and share of fund allocation. The total assets of the 38 MIFs were approximately 1.7 Billion and they were invested in 150% MFIs (Matu, 2008).

The major findings of the case analysis of MIFs investing in Africa found that; a country's risk rating, the corporate governance systems that protect investments the administrative and economic environments that businesses operate under and the ease of accessing domestic capital markets play an integral role in determining where investors choose to place their investments. Found out that there is an inverse relationship between the government's involvement in the economy and levels of investment. The share of government activity in the economy as a share of GDP may crowd-out private investments activity. According to the crowding out theory, government spending that competes with the private sector inherently causes the cost of private investment to increase. As consequence, the policy implication for a country trying to attract MIF investments is to ensure that they have a favorable business environment, where the government does not crowd out investors and corporate governance systems are in place to mitigate potential investments in the country (Matu, 2009).

After analyzing various policy alternatives to enhance efficiency, financial feasibility, political feasibility and accessibility the best policy alternative was selected. The preferred policy alternative should consist of rules and frame work for provision and delivery of microfinance in Kenya and it should apply to all rules to guide MFIs operation, in addition to providing the information, performance criteria and governance structure. Based on the evaluation criteria, a combination of policy alternatives 2 and 3 (government regulations and self-regulation

policies) is the best policy option for closing the financial gap facing MFIs in the country and for providing the greatest opportunity for the growth and development of microfinance in Kenya (Matu,2008).

Mwangi and Brown (2005) on their study entitled “Overview of the outreach and financial performance of MFIs in Africa”, MFIs still face many challenges. Operating and financial expenses are very high, and on average, revenues remain lower than in other global. Efficiency in terms of cost per borrower is lowest for African MFIs. The MFIs for the study were grouped according to regions. Kenyan MFIs were categorized under East African which among other countries included Ethiopia, Tanzania and Uganda. This formed 42% of the MFIs for the study. The main questions were how performances of African MFIs sector compare with global peers and how performance varies among African MFIs. The African MFIs were examined through the lens of standard performance metrics over a series of variables: outreach (breadth and depth), financial structure, financial performance, efficiency and portfolio at risk.

Efforts to extend microfinance services to the people who are underserved by financial institutions are classified as outreach. This can be measured in terms of breadth-number of clients served and volume of services or depth-the socio-economic levels of clients that MFIs serve. Outreach in East Africa varies by regions. East Africa region dominates outreach results with 52% of all savers and 45% of all borrowers in Africa. This dominance is explained by the presence of two large borrowing institutions in Kenya i.e. Postbank and Amhara saving institution in Ethiopia. Kenya has 65% of borrowers. MFIs in Africa which includes Kenya tend to report lower levels of profitability as measured by return of assets than MFIs in other global regions. Among the African MFIs that provided information for the study, 47% post positive unadjusted returns. Regulated MFIs report the highest return on assets of all MFI types averaging around 2.6% as compared to unregulated MFIs. The findings also show that African MFIs fund only 25% of assets with equity. MFIs finance their activities with funds from various sources both debt and equity (Mwangi and Brown 2005).

George Omino (2005) on His study entitled "Regulation and supervision of MFIs in Kenya" MFIs have faced a number of constraints that need to be addressed to improve outreach and sustainability. The major impediment to the development and performance is lack of specific legislation and set of regulations to guide the operations of the microfinance sub sector. MFIs have operated without an appropriate policy and legal framework. This has contributed to a large extent to the poor performance and eventual demise of many MFIs. This has had a bearing on a number of other constraints faced by the industry namely; diversity in institutional form, inadequate governance and management capacity, limited outreach, limited access to funds and lack of performance standards.

Yaron (1992), discussed that the two most important objectives for a rural financial institutions to be successful are financial self-sustainability and more outreach to the target rural population. Financial self-sustainability is said to be achieved when the return on equity, net of any subsidy received, equals or exceeds the opportunity cost of funds.

Khandker et al. (1995), the concept of sustainability of microfinance can be divided into four interrelated ideas; namely, financial viability, economic viability, institutional viability and borrower viability.

Financial viability relates to the fact that a lending institution should at least equate the cost per each unit of currency lent to the price it charges its borrowers (i.e. the interest rate). Economic viability relates to meeting the economic cost of funds (opportunity cost) used for credit and other operations with the income it generates from its lending activities. Regarding indicator of financial sustainability, they pointed out that loan repayment (measured by default rate) could be another indicator for financial sustainability of MFIs; because, low default rate would help to realize future lending.

Meyer (2002) noted that the poor needed to have access to financial service on long-term basis rather than just a onetime financial support. Short-term loan would worsen the welfare of the poor (Navajas et al., 2000). He also stated that the financial un-sustainability in the MFI arises due to low repayment rate or un-materialization of funds promised by donors or

governments. He further indicated, "Measuring financial sustainability requires that MFIs maintain good financial accounts and follow recognized accounting practices that provide full transparency for income, expenses, loan recovery, and potential losses."

2.5 Summary

The chapter has presented a review of literature regarding sustainability of microfinance institutions. The empirical review has provided the factors that generally influence sustainability of microfinance institutions. The main factors which affect the sustainability of microfinance institutions are capital/ asset ratio, operating expenses/loan portfolio and portfolio at risk > 30 days. The review also shows mixed results on the determinants of operations and financial sustainability of microfinance institutions. Such include the form of incorporation, level of support, repayment schedule, donor involvement, the lending model, savings mobilized, per capita income as well as the amount of loans disbursed. Given that there has been a growth in the MFI industry in Kenya, it is also important to establish what factors have influenced the sustainability of such institutions. This is the gap that the present study seeks to bridge. The present study differs from the previous ones since it is based on the Kenyan context.

The lack of oversight, however, has enabled them to innovate and develop different techniques of providing microfinance services. Therefore to stimulate development of the sector, appropriate laws, regulations and supervision framework need to be in place. According to Him regulation and supervision will lead to quality growth, broaden the funding base for MFIs eligible to mobilize and administer deposits and initiate the process of integrating these institutions into the formal financial system. The regulation of the sector will enable authorities to define procedures for their operations, entrance, and exit and ultimately create an environment for fair competition and efficiency in the sector (Omino 2005).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is a blueprint of the methodology that was used by the researcher to find answers to the research question. This chapter explains research design, target population, sampling procedures, data collection instruments, data collection and analysis.

3.2 Research Design

Donald (2006) notes that a research design is the structure of the research; it is the “glue that holds all the elements in a research together. Further, Orodho (2003) defines a research design as the scheme, outline or plan that is used to generate answers to research problems. The type of research design used was descriptive. This design describes the relationships that exist between the independent and dependent variables, (Kothari, 2003).

3.3 Target Population

The research population was 30 microfinance institutions (MFIs) listed from the Association of Microfinance Institutions (AMFI) in Kenya, which provide financial services to low income people in Kenya. The respondents were employees of various financial institutions especially the finance managers and chief executive officers of the institutions concerned. The study analyzes financial statements of these MFIs to find out the relationship between capital structure variables and MFI performance variable which is Operational Self Sufficiency (OSS).

3.4 Data Collection

The data for the study was drawn from a database of audited financial statements of MFIs in Kenya. The data collected from the financial statements include capital structure variables which include debt, equity, total assets, etc. The data was captured by reviewing financial statements of listed MFIs from the Central Bank of Kenya (CBK). The data covered the years of 2007 to 2011.

3.5 Data Analysis and Presentation

A multiple regression model was used to analyze the data collected from MFIs. The data mainly focused on capital structure in MFIs in order to come up with an appropriate analysis. Statistical Package for Social Sciences (SPSS) software was used to analyze the data. Capital structure was measured using Capital/Assets ratio, Number of active borrowers, Operating expense/loan portfolio, Portfolio at risk > 30 days, debt-equity ratio, inception etc, and these represent independent variables. Operational Self-Sufficiency (OSS) was the dependent variable for the study. Operational self-sufficiency (OSS) was measured as total financial revenue divided by the total of financial expense, operating expense and loan provision expense.

The basis of this model is to establish the factors that determine the operational sustainability of micro finance institutions in Kenya. These indicators have been chosen based on literature review and the results of regression analysis of factors affecting operations and financial sustainability of Kenya MFIs. The standards of each of the above parameters are taken from secondary source. An MFI is operationally self-sufficient if OSS is 100% and above. The model used to analyze these variables is as follows;

A multiple regression equation can be expressed as:

$$Y = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \beta_8 X_{8it} + \epsilon_i \dots$$

Where:

Y = dependent variable {(Operational Self Sufficiency (OSS) in percentage for firm 'i' during time period 't')}

α_i = Constant

β_1 = Regression coefficient of Capital/Assets ratio

X_{1it} = Independent variable Capital/Assets ratio for firm 'i' during time period 't'

β_2 = Regression coefficient of Number of active borrowers

X_{2it} = Independent variable Number of active borrowers for firm 'i' during time period 't'

β_3 = Regression coefficient of Yield

X_{3it} = Independent variable Yield firm 'i' during time period 't'

β_4 = Regression coefficient of Operating expense/loan portfolio

X_{5it} = Independent variable Operating expense/loan portfolio for firm 'i' during time period't'

β_5 = Regression coefficient of Portfolio at risk > 30 days

X_{6it} = Independent variable Portfolio at risk > 30 days for firm 'i' during time period't'

β_6 = Regression coefficient of Women borrowers

X_{7it} = Independent variable Women borrowers for firm 'i' during time period't'

β_7 = Regression coefficient of Debt Equity ratio

X_{8it} = Independent variable Debt Equity ratio for firm 'i' during time period't'

β_8 = Regression coefficient of Inception

X_{9it} = Independent variable Inception for firm 'i' during time period't'

ϵ_i = Error term

In order to develop the operations and financial sustainability index model, the outcome of multiple linear regressions is used along with scaling and weighted average.

Further to do a regression analysis, the data on 30 microfinance institutions (MFIs) of Kenya are collected from the Central Bank of Kenya (CBK), and the Association of Microfinance Institutions (AMFI) in Kenya, a not-for-profit private organization that aims to promote information exchange in the microfinance industry. The database contains observation per institution from the Year 2007 to the Year 2011.

The institutions selected, are based in large part on the quality and extent of their data. The quality of the MFIs have been seen and judged on the basis of their legal form, their age and the frequencies with which these MFIs are reporting data to CBK and AMFI. Some of the MFIs belong to NGO category. Similarly, MFIs can also be categorized as Young, Mature and Old. Simple random sampling is chosen for analyzing the performance of MFIs of Kenya. In order to choose 30 out of 47 MFIs in Kenya, MFIs that reported their data from 2007 to 2011 to CBK were listed down. Each of these 47 MFIs were then given a unique number. Thirty MFIs were then chosen by simple random sampling method.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

In this section a brief overview of various dimensions of the research, tools and techniques and methods used to achieve two research objectives has been discussed. The research is analytical and empirical in nature and makes use of secondary data. The population for the study is 30 MFIs of Kenya. The data has been sourced from Central Bank of Kenya, (Researchstat@centralbank.go.ke). The sample period undertaken for the first objective is from the year 2007 to 2011. For the second objective, the data is taken for the year 2011. The sample frame is the list of target population. The sample frame in this study is all those MFIs which are reporting their performance data to Central Bank of Kenya (CBK).

4.2 Scales of Financial Indicators

These indicators in (Table 4.1) have been chosen based on literature review and the results of regression analysis of factors affecting sustainability of Kenya MFIs. The standards of each of the above parameters are taken from secondary source. (Sa- Dhan).

Table 4.1: Scales of Financial Indicators

Indicators	Range
PAR> 30 days	0 90..... 100
Capital to Assets Ratio	0.....15.....100
Operating expense/loan portfolio	0.....80.....100
Operational Self Sufficiency	0.....50.....100

Source: (Research Findings)

The study utilized the model of operations and financial sustainability Index for microfinance institutions is more comprehensive. With the help of this model and scale, the MFIs quantified the level of financial sustainability. This created a sustainability index for various countries and helped the regulator identifying the strong and weak areas of the sector. In addition, the existence of new model was also expected to facilitate MFIs to access to capital markets.

4.3 Summary of Linear Regression for Sustainability of Kenya MFIs

The Linear Regression analysis predicts the value of the independent variables: (Constant), Debt/Equity, PAR, BPSM, ACTB, WB, CA, YIELD, ROE, OELP and the Dependent Variable: OSS.

Table 4.2: Model Summary of Linear Regression for Sustainability of Kenya MFIs

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1.	.729a	.531	.502	21.80319	2.113

Source: (Research Findings)

a. Predictors: (Constant), Debt/Equity, PAR, BPSM, ACTB, WB, CA, YIELD, ROE, OELP

b. Dependent Variable: OSS

Table 4.3: ANOVA (b)

1.	Model	Sum of Squares	df	Mean Square	F	Sig
	Regression	76518.310	9	8502.034	17.885	.000a
	Residual	67503.808	142	475.379		
	Total	144022.119	151			

Source: (Research Findings)

a. Predictors: (Constant), Debt/Equity, PAR, BPSM, ACTB, WB, CA, YIELD, ROE, OELP

b. Dependent variable: OSS

The value of adjusted R square explains that 50.2 percent of the variation in dependent variable i.e. Operational Self Sufficiency (proxy for sustainability) is due to variations in independent variables taken together namely Number of Active Borrowers, Percent of Women Borrowers, Age of MFIs, Debt/Equity ratio, Capital/Assets ratio, PAR>30 days, Borrower per Staff Member, ROE and Yield (Table-4.2), this leaves 49.8 percent unexplained. The value of R square is significant, indicated by p value (0.000) of F statistics as given in ANOVA Table-4.3. This informs that the independent variables, taken together as a set, are significantly related to dependent variable. The multiple correlations are therefore highly significant.

4.4 Coefficients of Financial Factors affecting Sustainability of Kenya MFIs

The Coefficients explained the financial factors affecting operational self- sufficiency and financial sustainability include; Number of Active Borrowers, Percent of Women Borrowers, Age of MFIs, Debt/Equity ratio, Capital/Assets ratio, PAR>30 days, Borrower per Staff Member, ROE and Yield.

Table 4.4: Coefficients (a) of Financial Factors affecting Sustainability of Kenya MFIs

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	106.797	13.341		8.005	.000		
ACTB	6.743E-6	.000	.160	2.710	.008	.945	1.058
WB	-.086	.132	-.039	-.647	.519	.886	1.129
PAR	-.486	.485	-.059	-1.002	.318	.958	1.043
ROE	.034	.018	.139	1.915	.058	.624	1.603
BPSM	-.011	.009	-.080	-1.254	.212	.808	1.238
CA	.705	.175	.275	4.026	.000	.705	1.419
YIELD	1.914	.276	.470	6.926	.000	.718	1.393
OELP	-2.789	.268	-.787	-10.417	.000	.578	1.731
Debt/Equity	.032	.043	.057	.740	.460	.564	1.773

Source: (Research Findings)

Dependent Variable: OSS

The values of p are 0.008, 0.000, 0.000 and 0.000 for the indicators: Number of Active Borrowers, Capital/Assets ratio, Yield and Operating Expense/Loan Portfolio respectively. These values are less than the level of significance (0.05). Therefore, the null hypotheses are rejected and, it can be concluded that these indicators influence the dependent variable OSS. Other independent variables are not significant thereby not making a significant contribution to the prediction.

The coefficient of Operating Expenses/Loan Portfolio is -2.78. The sign of the coefficient explains that the Operating Expenses/Loan Portfolio is negatively correlated with Sustainability (OSS). The magnitude explains that for one unit increase in the Operating Expenses/Loan Portfolio, the OSS will decrease by 2.78 units. The coefficient of Yield is 1.91, which indicates that the Yield is positively correlated with Sustainability (OSS). The magnitude explains that for one unit increase in the Yield, the OSS will increase by 1.91 units.

The coefficient of Capital/Asset ratio is 0.705, which indicates that the Capital/Asset ratio is positively correlated with Sustainability (OSS). The magnitude explains that for one percent increase in Capital/Asset ratio, the OSS will increase by 0.70 percent. The coefficient of Number of Active borrowers (ACTB) is 0.00000674, which indicates that ACTB is positively correlated with Sustainability (OSS). The magnitude explains that for one percent increase in ACTB, the OSS will increase by 0.0000067 percent. The VIF data suggest that collinearity is no problem as the figures are well below 10% for each indicator and the error term is also normally distributed as shown in (Table 4.4) above.

4.5 Weight for the Indicators

A weight is assigned to each of these financial indicators. The weight has been assigned analyzing the importance of indicators used by different microfinance research agencies worldwide.

Table 4.5: Weight for the Indicators

S. No.	Indicators	No. of agencies using Indicators	Final weight
1	PAR>30 days past due	6	0.32
2	Capital to Assets ratio	4	0.21
3	Operational Self Sufficiency	4	0.21
4	Operating expense/loan portfolio	5	0.26

Source: (Research Findings)

It has been found, as shown in Table-4.5 that the indicator PAR> 30 days is most important. Similarly, the other indicators like Capital/ Assets ratio and Operational Self Sufficiency have got the least importance as four out of six agencies are using them for the performance evaluation. Table-4.5 shows the weight of each indicator.

4.6 Range of Indicators and the Score of Standards for MFIs

Each indicator has been given a range. These indicators have to be converted into same scale so that a common measurable score, based on the financial performance of an MFI may be given to each of these indicators for a particular year. The score of standard of each indicator has also been calculated based on the scale.

Table 4.6: Indicators Range and standard

Indicators Range	Standards	Score of Standards
PAR>30 days 0 – 100%	Less than or equal to 10%	90
Capital to Assets ratio 0 – 100%	More than or equal to 15%	15
Operational self- sufficiency 0 – 200%	Above 100%	50
Operating expense/loan portfolio 0 – 100%	Less than or equal to 20%	80

Source: (Research Findings)

This Table-4.6, shows the range of indicators and the score of standards. One year data on four indicators for the MFI have been collected and then converted into a common measurable scale. This is necessary to give a score to an MFI on these indicators. A score to the standards of these financial Indicators will also be set.

Scaling for PAR: Since the standard is less than 10% and trend is decreasing therefore (100 – PAR) will be considered for converting the data from 0 to 100 scales. The same procedure will be applicable for Operating Expense to Loan Portfolio. For other two indicators the scaling will be used as per normal standard as has been shown in Table 4.1.

The total score of the standards is calculated by multiplying indicator's weight with score of indicator's standard and adding it. The total score of the standards is considered as sustainability index for the base year.

Total score of the standards = $90*W$ (PAR) + $15* W$ (C/A ratio) + $80*W$ (Operating Expenses/Loan Portfolio) + $50* W$ (OSS)
 $= 90*0.32+15*0.21+80*0.26+50*0.21 = 63.25$ (score for the sustainability index for the base year 2010); Where W is weight.

4.7 Financial Sustainability Index for Kenya Microfinance Institutions

The used of financial sustainability index model, analyzed the sustainability score for Kenya MFIs for the year 2011.

Table 4.7: Financial Sustainability Index for Kenya Microfinance Institutions

S N	MFIs	CA	CA Score	OEL P	OEL P Score	PAR	PAR Score	OS S	OSS Score	GLP Million Ksh.	Weight	Weighted Score
1	REMU	23.7	23.7	10.1	89.9	0.22	99.78	150	75	960	0.28	76.03
2	Barclay Bank	16.7	16.7	5.4	94.6	0.13	99.87	180	90	787	0.23	78.96
3	Co-operative Bank	11.3	11.3	8.2	91.8	0.16	99.84	154	77	376	0.11	74.36
4	RAFIKI	10.45	10.45	5.43	94.57	0.13	99.87	158	79	332	0.10	75.33
5	Faulu Kenya	11.1	11.1	6.34	93.66	0.77	99.23	146	73	315	0.09	73.77
6	Jamii Bora	14.1	14.1	15.9	84.1	2.5	97.5	114	57	172	0.05	68.00
7	KWFT	4.8	4.8	4.8	95.2	0.31	99.69	112	56	136	0.04	69.42
8	UWEZO	36.5	36.5	8.1	91.9	0.11	99.89	145	72.5	134	0.04	78.75
9	(K-Rep) Bank	12	12	11.8	88.2	0	100	125	62.5	134	0.04	70.58
10	SMEP	25.9	25.9	19	81	0.46	99.54	116	58	82	0.02	70.53
	Total									3,428	1.00	
											S. Index (2010):	75.34

Source: (Research Findings)

The sustainability score for Kenya MFIs for the year 2011, using the sustainability index model, is calculated. Top 10 MFIs of Kenya, which contributes 80% of the total loan portfolio, have been taken for the calculation of sustainability index (refer Table-4.7). The weight has been assigned to each of these companies, based on their Gross Loan Portfolio. The weighted averaged sustainability index comes out to be 75.34 for the year 2011. It can also be used on single MFI to check whether, the MFI is financially sustainable or not.

4.8 Methodology to Develop the Operations and Financial Sustainability Index:

In order to develop a model for operations and financial sustainability index, following steps are involved.

Step-1: The model for financial sustainability will be developed by using four financial indicators. These are;

Indicator-1 Portfolio at risk > 30 days Past Due

Formula: $\frac{\text{Unpaid principal balance of past due loans (with overdue > 30 days)}}{\text{Total Gross outstanding portfolio}}$

Standard: PAR > 30 days at less than 10%

Indicator-2 Capital to Asset Ratio

Formula: $\frac{\text{Capital}}{\text{Total Assets}}$

Standard: Capital Adequacy at more than 15%

Indicator-3 Operating expense/loan portfolio

Formula: $\frac{\text{Total Operating Cost}}{\text{Average outstanding Portfolio}}$

Standard: Operating cost ratio at less than 20%

Indicator-4 Operational Self sufficiency

Formula: $\frac{\text{Operating income (Loans + Investment)}}{\text{Operating Cost + Loan Loss Provisions + Financing Cost}}$

Standard: Operating Self- sufficiency at 100%

These indicators have been chosen based on literature review and the results of regression analysis of factors affecting sustainability of Kenya MFIs. The standards of each of the above parameters are taken from secondary source.

Step-2: In the second step, a weight is assigned to each of these financial indicators. The weight has been assigned analyzing the importance of indicators used by different microfinance research agencies worldwide.

It has been found, as shown in Table-4.5 that the indicator PAR > 30 days is most important. Similarly, the other indicators like Capital/ Assets ratio and Operational Self Sufficiency have got the least importance as four out of six agencies are using them for the performance evaluation. Table-4.5 shows the weight of each indicator.

Step-3: In the third step, each indicator has been given a range. These indicators have to be converted into same scale so that a common measurable score, based on the financial performance of an MFI may be given to each of these indicators for a particular year. The score of standard of each indicator has also been calculated based on the scale.

Table-4.5 shows the range of indicators and the score of standards.

One year data on four indicators for the MFI have been collected and then converted into a common measurable scale. This is necessary to give a score to an MFI on these indicators. A score to the standards of these financial

Indicators will also be set.

Scaling for PAR: Since the standard is less than 10% and trend is decreasing therefore $(100 - \text{PAR})$ will be considered for converting the data from 0 to 100 scales. The same procedure will be applicable for Operating Expense to Loan Portfolio. For other two indicators the scaling will be used as per normal standard as has been shown in Table 4.1.

Step-4: In the fourth step, the total score of the standards is calculated by multiplying indicator's weight with score of indicator's standard and adding it. The total score of the standards is considered as sustainability index for the base year.

Total score of the standards = $90*W$ (PAR) + $15* W$ (C/A ratio) + $80*W$ (Operating Expenses/Loan Portfolio) + $50* W$ (OSS)
 $= 90*0.32+15*0.21+80*0.26+50*0.21 = 63.25$ (score for the sustainability index for the base year 2010); Where W is weight.

Step-5: In the final step, the sustainability score for Kenya MFIs for the year 2011, using the sustainability index model, is calculated. Top 10 MFIs of Kenya, which contributes 80% of the total loan portfolio, have been taken for the calculation of sustainability index (refer Table-4.7). The weight has been assigned to each of these companies, based on their Gross Loan Portfolio. The weighted averaged sustainability index comes out to be 75.34 for the year 2011. It can also be used on single MFI to check whether, the MFI is financially sustainable or not.

4.9 Descriptive Statistics

The study sought to determine the distribution of the dataset used for the Consequent, year-on-year averages are indicative of a positive relationship between outreach and performance, size and opportunity upon regression analysis.

Table 4.8: Annual averages of key MFIs statistics

Year-on-year averages	Profit Before Tax	Gross Assets	Return on Assets (%)	Average Loan size	Return on Equity (%)	Deposits
2007	1,179	46,026	2.27%	4,037	23.50%	31,296
2008	1,455	58,087	2.30%	5,044	25.20%	34,833
2009	1,970	66,585	2.82%	5,867	31.35%	39,882
2010	2,623	69,064	3.64%	8,453	29.93%	48,327
2011	3,372	87,624	3.86%	11,488	28.04%	62,009

Source: (Research Findings)

From the data sample of the MFIs adopted in the study, the average outreach was generally on the rise for the five year period 2007 to 2011 accompanied by a similar rise in outreach volatility as reflected by the increasing standard deviation. The same can be said of the explanatory variables with the exception of core capital to deposits which witnessed a three year dip before leveling out at generally higher levels in 2011.

From table 4.9 below it can generally be deduced that outreach rose in tandem with a rising deposit base and increasing performance as measured by return on assets.

Table 4.9: Descriptive statistics of key variables for the entire sector

	Outreach		Size (Deposit)		ROA		Outreach to Deposits	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
2007	1,684,600	2,308,207	1,296	1,015	0.0227	0.0126	0.0572	0.0528
2008	3,435,800	6,100,607	4,833	2,925	0.0230	0.0114	0.0489	0.0273
2009	5,131,800	7,764,245	9,182	8,024	0.0282	0.0115	0.0488	0.0171
2010	5,305,900	9,984,492	9,327	9,157	0.0364	0.0082	0.0910	0.0949
2011	7,201,700	99,597,258	9,409	8,863	0.0386	0.0124	0.0791	0.0529
PERF*	14.54%		18.64%		14.16%		8.43%	

*PERF- Compounded annual Performance

Source: (Research Findings)

The mean outreach for the top-tier MFIs with the largest deposit base, witnessed a gradual incline over the five year period to 2011 along with the marked increase in deposit base, asset returns and deposit base. Mean outreach only grew by 8.66% while mean deposit base grew by 14.2% on a compounded annual growth basis as shown in table 4.10 below.

Table 4.10: Descriptive Statistics of Key Variables for the Top-tier MFIs

	CLIENT outreach		Size (Deposit base)		ROA		Core Capital to Deposits	
	Mean	Std D	Mean	Std D	Mean	Std D	Mean	Std Dev
2007	2,308,207	1,684,600	51,814	21,371	0.0233	0.0180	0.0242	0.0302
2008	6,100,607	3,435,800	55,303	21,313	0.0234	0.0137	0.0436	0.0317
2009	7,764,245	5,131,800	61,410	24,565	0.0264	0.0127	0.0394	0.0171
2010	9,984,492	5,305,900	71,615	28,510	0.0374	0.0100	0.0460	0.0183
2011	99,597,258	7,201,700	88,110	28,575	0.0352	0.0134	0.0630	0.0361
PERF*	8.66%		14.19%		10.91%		27.03%	

*PERF- Compounded annual Performance

Source: (Research Findings)

The mean outreach for the bottom-tier MFIs rose considerably over the five year period to 2008 with an equally considerable increase in deposit base and asset returns. The outreach grew at a much faster rate compared to top-tier MFIs of 23.37% while the growth in deposits was also high at 35.1% as indicated in table 4.11.

Table 4.11: Descriptive statistics of key variables for the bottom-tier MFIs

	Client outreach		Size (Deposit base)		ROA		Core Capital to Deposits	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
2007	985,800	136,625	10,777	3,687	0.0222	0.0053	0.0902	0.0513
2008	1,613,400	1,288,128	14,364	3,233	0.0225	0.0103	0.0543	0.0246
2009	2,625,600	1,348,251	18,354	2,230	0.0300	0.0113	0.0583	0.0120
2010	5,984,400	4,127,819	25,039	3,952	0.0354	0.0071	0.1360	0.1218
2011	7,790,400	6,595,579	35,907	7,767	0.0420	0.0118	0.0952	0.0660
PERF*	23.37%		35.10%		17.28%		1.34%	

*PERF- Compounded annual Performance

Source: (Research Findings)

From the above descriptive statistics it can generally be deduced that the for the bigger MFIs outreach appears to have grown in tandem with returns and future opportunity, as measured by deposits, whereas for the relatively smaller MFIs growth outpaced growth in MFIs returns and future growth prospects.

4.10 Correlation Analysis

The Pearson's coefficient was used to verify the existence or non-existence of linear correlation between and among the quantitative variables as indicated above. Emolument and size do exhibit a somewhat strong link. However, there is little evidence of multicollinearity among the explanatory variables since the correlations among them are not very strong hence all the variables can be incorporated into the subsequent regression analysis.

Table 4.12: Pearson Correlation Matrix

Variables	Outreach	Average loan size	Equity/ Assets	Profitability
Outreach	1.000			
Average loan size	0.117	1.000		
Equity to total assets	0.265	0.214	1.000	
Profitability	0.537	0.406	-0.222	1.000

Source: (Research Findings)

The study sought to establish the relationship between profitability, debt to equity ratio, Outreach, average loan size, debt to asset ratio and equity to asset ratio. The findings revealed that apart from debt to equity ratio, all the other independent variables were negatively correlated with profitability. On average, a moderate relationship was established given a Pearson correlation coefficient of between -0.222 and 0.537. However, a stronger relationship was established between customer outreach and profitability given a coefficient of 0.537; this was followed by Average loan size at 0.406. This depicts that the more customers an MFI get the more profitable they become as they make much more profits per each shilling spent on assets.

Table 4.13: Pearson Correlation Matrix

Variables	Outreach	Average loan size	Equity/ Assets	Profitability
Outreach	1.000			
Average loan size	0.878	1.000		
Equity to total assets	-0.102	-0.178	1.000	
Profitability	0.424	0.345	0.389	1.000

Source: (Research Findings)

Pearson correlation test was also run on the 2011 dataset so as to establish the relationship between independent and dependent variable. The results shows that outreach (0.424) and average loan size (0.345) had a positive relationship with profitability. Equity to asset ratio (0.389) were positively related with profitability. This further reinforce the fact that outreach and average loan size are positively associated with profitability meaning that through increasing an MFI's market share and giving out more loans do they get more profitable.

4.11 Regression Analyses

Table 4.14: Goodness of Fit Statistics

Observations	42.000
DF	36.000
R ²	0.412
Adjusted R ²	0.330
DW	2.114

Source: (Research Findings)

Determination coefficients (R²) were also carried out to determine the strength of the relationship between independent and dependent variables. The study established an adjusted

R² of 0.330. This illustrates a moderate relationship between the two. Durbin Watson test was also run to establish if the model would be affected by autocorrelation. Since the DW value of 2.114 was close to 2, then it can be concluded that there was no autocorrelation among the model residual.

Table 4.15: Analysis of Variance (ANOVA)

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	5	17421.092	3484.218	5.043	0.001
Error	36	24873.945	690.943		
Corrected Total	41	42295.037			

Source: (Research Findings)

The study used ANOVA statistics to establish the significance of the relationship between performance and MFI's capital structure discussed above. The regression model is significant given an f-significance of 0.001. This point to prediction made from the regression coefficient being liable to 0.1% error (99.9% confidence level).

Table 4.16: Regression Coefficients

Source	Value	Standard error	t	Pr > t
Intercept	1.484	48.553	4.067	0.000
Outreach	41.580	8.555	4.860	< 0.0001
Average loan size	19.010	7.459	2.549	0.015
Equity to total assets	0.005	0.005	1.006	0.021

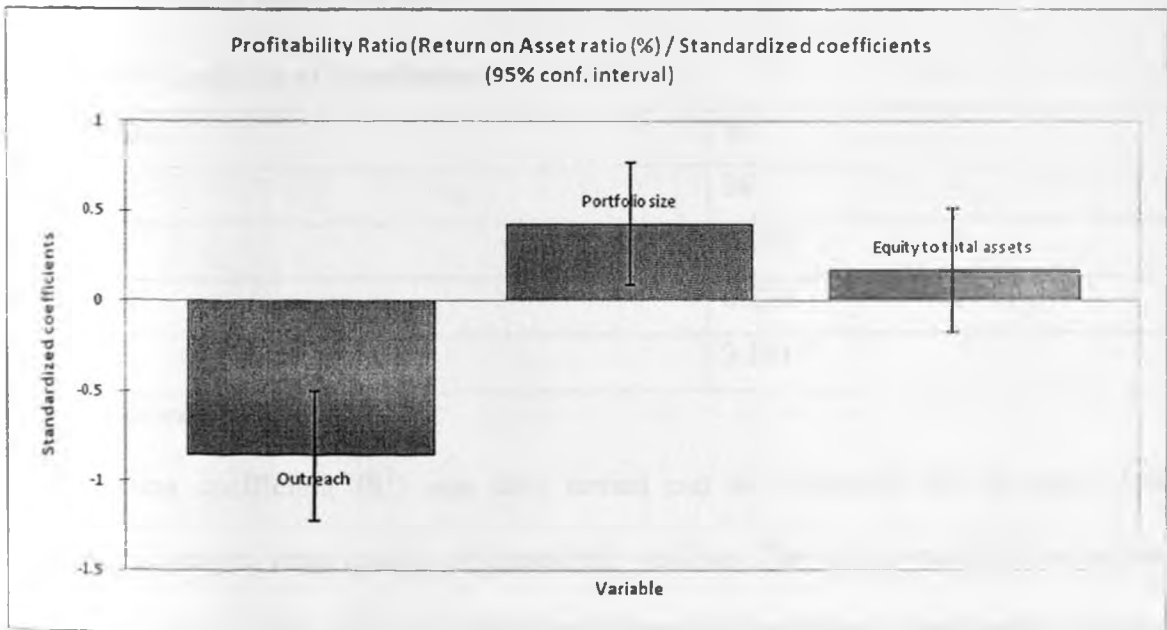
Source: (Research Findings)

From the regression analysis, the following model was established:

$$\text{Profitability (ROA)} = 1.484 + 41.580 \cdot \text{Outreach} + 19.010 \cdot \text{Average loan size} + 0.005 \cdot \text{Equity/Total Assets}$$

The findings, thus, indicates that taking all the independent variables (Outreach, average loan size and equity to asset ratio) at null value, the profitability would be 1.484. This means that the MFIs would incur perform poorly without outreach. The regression model further shows that, holding other factors constant, a unit increase in the logarithm of the average loan size would lead to a 19.010 increase in profitability, a unit increase in Debt/Total Assets would lead to a 0.070 increase in profitability and a unit increase in the logarithm of Outreach would lead to a 41.580 increase in profitability. This depicts that of the three independent variables, outreach would have the most adverse impact of MFI's performance. Figure 4.1 below presents a diagrammatical presentation of these coefficients.

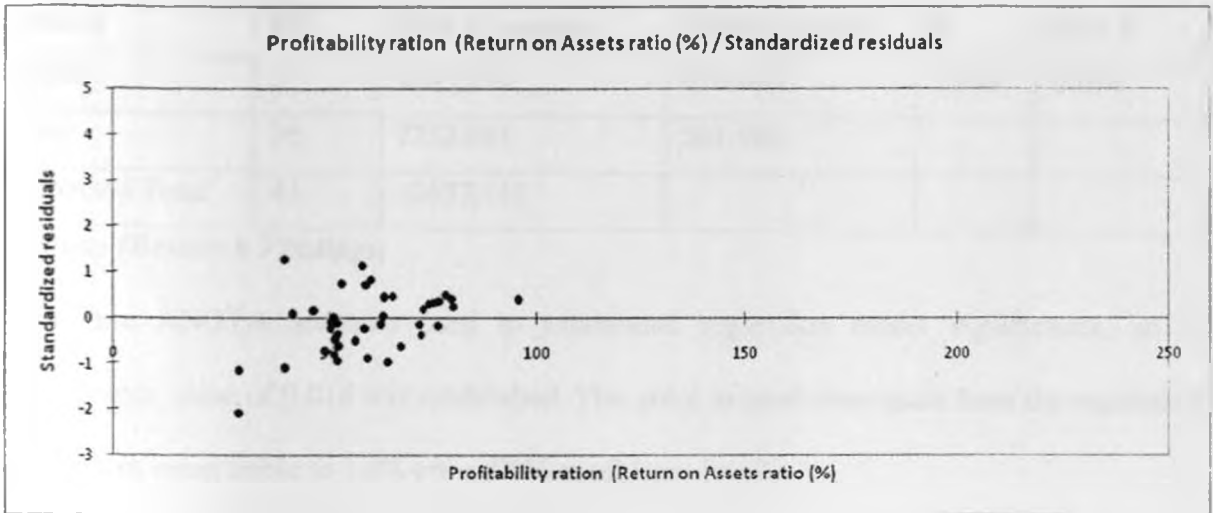
Figure 4.1: Profitability/Standardized Coefficients



Source: (Research Findings)

The study checked for any outlier that might have affected the regression model in Figure 4.2. Being that there were no divergent scatter points, then the data exhibited homoscedasticity depicting that the variables had constant variance.

Figure 4.2: Profitability/Standardized Residuals



Source: (Research Findings)

4.11.1 Regression Model for 2011

Table 4.17: Goodness of fit statistics

Observations	42
DF	36
R ²	0.318
Adjusted R ²	0.223
DW	2.114

Source: (Research Findings)

Determination coefficient (R²) was also carried out to determine the strength of the relationship between independent and dependent variables. The study established an adjusted R² of 0.223. This illustrates a weak relationship between performance and capital structure. ROE The Durbin Watson value was 2.114 depicting that there was no autocorrelation among the model residual.

Table 4.18: Analysis of Variance (ANOVA)

Source	DF	Sum of squares	Mean Squares	F	Pr > F
Model	5	3383.298	676.660	3.358	0.014
Error	36	7253.843	201.496		
Corrected Total	41	10637.141			

Source: (Research Findings)

From the ANOVA statistics used to established regression model significance, an f-significance value of 0.014 was established. This point to prediction made from the regression coefficient being liable to 1.4% error (95% confidence level).

Table 4.19: Regression Model Coefficient

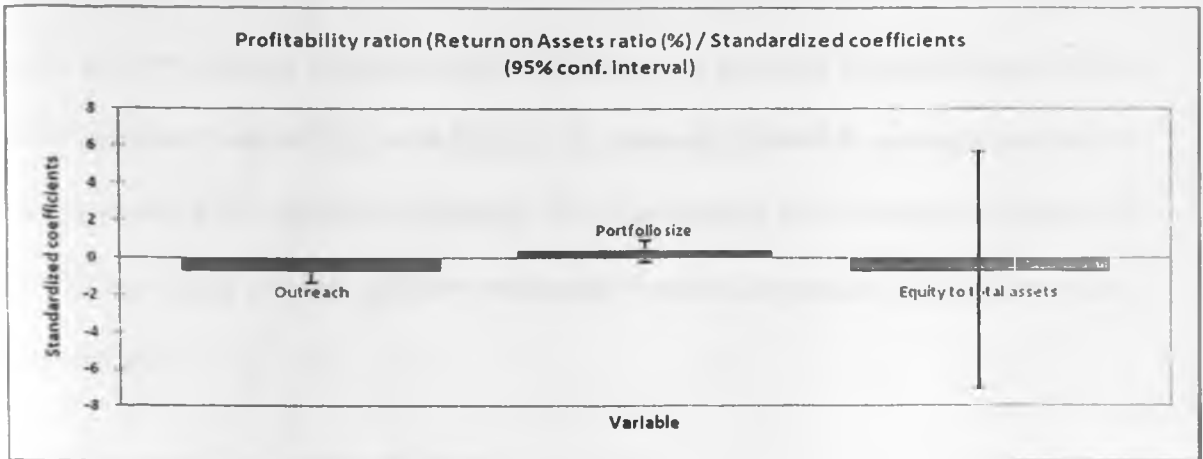
Source	Value	Standard Error	t	Pr > t
Intercept	2.507	666.490	1.093	0.001
Outreach	53.764	154.032	0.349	0.029
Average loan size	15.506	149.752	0.104	0.018
Equity to total assets	2.504	5.256	0.476	0.037

Source: (Research Findings)

From the regression analysis, the following model was established:

Profitability = 2.507 + 53.764*Outreach + 15.506*Average loan size + 2.504*Equity/Total Assets. This illustrates that when all the independent variables values are null, then the profitability becomes 2.507. Holding other variables constant, a unit increase in the logarithm of Outreach would lead to a 53.764 increase in profitability, a unit increase in the logarithm of Average loan size would lead to a 15.506 increase in profitability, a unit increase in Equity/Total Assets would lead to a 2.504 increase in profitability. This depicts that all there independent variables would lead to a higher performance given the increase in ROA. This is illustrated in the figures below:

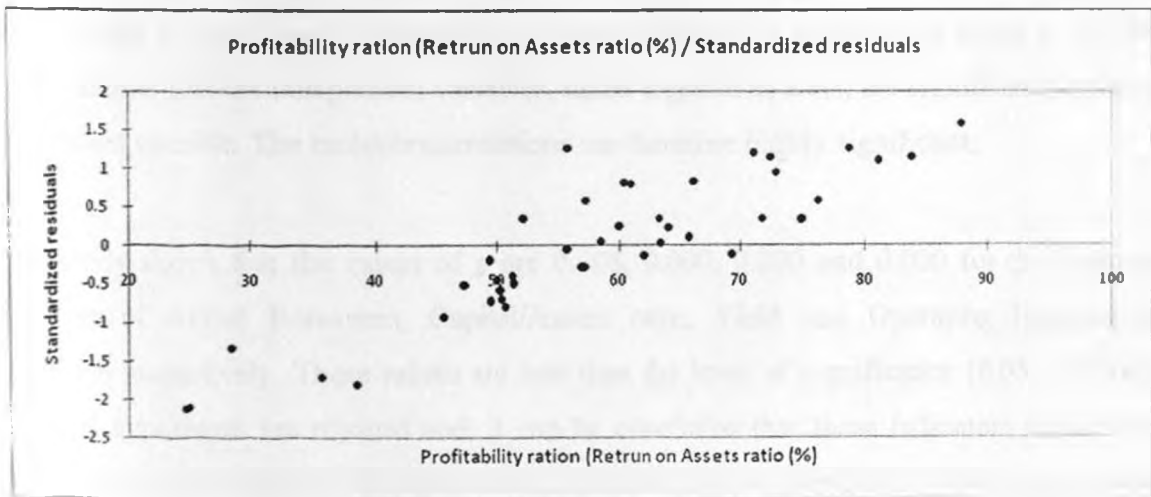
Figure 4.3 :Profitability / Standardized Coefficients



Source: (Research Findings)

The study checked for any outlier that might have affected the regression model in Figure 4.4 below. Being that there were no divergent scatter points, then the data exhibited homoscedasticity depicting that the variables had constant variance.

Figure 4.4: Profitability / Standardized Residuals



Source: (Research Findings)

The study finding established that the regression results for all the 10 MFIs constituting the sample, i.e. total sector, reveal that Size is negatively and significantly related to the determination of outreach. The study regard to firm performance two explanatory

variables were tested namely return on assets (ROA) and relative performance to industry ROE which was essentially used to identify the firms that were able to register above industry average returns on equity. In both cases although the coefficients did not yield significant results they were found to be inversely related to outreach contrary to the expectations of a positive relationship. This was contrary to the findings of Main et al (1996) who found a strong positive relationship between increasing shareholder wealth and outreach.

4.11.2 Interpretation of the Findings

The value of adjusted R square explains that 50.2 percent of the variation in dependent variable i.e. Operational Self Sufficiency (proxy for sustainability) is due to variations in independent variables taken together namely Number of Active Borrowers, Percent of Women Borrowers, Age of MFIs, Debt/Equity ratio, Capital/Assets ratio, PAR>30 days, Borrower per Staff Member, ROE and Yield, this leaves 49.8 percent unexplained. The value of R square is significant, indicated by p value (0.000) of F statistics as given in ANOVA. This informs that the independent variables, taken together as a set, are significantly related to dependent variable. The multiple correlations are therefore highly significant.

The study shows that the values of p are 0.008, 0.000, 0.000 and 0.000 for the indicators: Number of Active Borrowers, Capital/Assets ratio, Yield and Operating Expense/Loan Portfolio respectively. These values are less than the level of significance (0.05). Therefore, the null hypotheses are rejected and, it can be concluded that these indicators influence the dependent variable OSS. Other independent variables are not significant thereby not making a significant contribution to the prediction.

The coefficient of Operating Expenses/Loan Portfolio is -2.78. The sign of the coefficient explains that the Operating Expenses/Loan Portfolio is negatively correlated with Sustainability (OSS). The magnitude explains that for one unit increase in the Operating

Expenses/Loan Portfolio, the OSS will decrease by 2.78 units. The coefficient of Yield is 1.91, which indicates that the Yield is positively correlated with Sustainability (OSS). The magnitude explains that for one unit increase in the Yield, the OSS will increase by 1.91 units.

The coefficient of Capital/Asset ratio is 0.705, which indicates that the Capital/Asset ratio is positively correlated with Sustainability (OSS). The magnitude explains that for one percent increase in Capital/Asset ratio, the OSS will increase by 0.70 percent. The coefficient of Number of Active borrowers (ACTB) is 0.00000674, which indicates that ACTB is positively correlated with Sustainability (OSS). The magnitude explains that for one percent increase in ACTB, the OSS will increase by 0.0000067 percent. The VIF data suggest that collinearity is no problem as the figures are well below 10% for each indicator and the error term is also normally distributed.

Hence, it can be observed that the factors that affect the operations and financial sustainability are Capital/ asset ratio and Operating expenses/Loan Portfolio. Therefore these indicators have been included along with Operational Self Sufficiency to create Sustainability index. Many researchers have suggested including repayment rate for checking the sustainability of MFIs. Therefore Portfolio at Risk is taken as proxy for repayment rate and included in creation of sustainability index.

This model of financial sustainability Index for microfinance institutions is more comprehensive. With the help of this model, the MFIs can quantify the level of financial sustainability. This will also be used to create a sustainability index for various countries and help the regulator identifying the strong and weak areas of the sector. In addition, the existence of new model is also expected to facilitate MFIs to access to capital markets. Having access to sustainability information may reduce some of the transaction uncertainty. This model may be considered as one more step in the process of the emergence of the microfinance standards.

The study summarizes that on measuring factors that determine the operational sustainability of micro finance institutions in Kenya with respect to performance and out reach, average

loan size, net deposits, yielded a positive non-significant relationship to sustainability. The weak relationship between performance and outreach generally points at the possibility of prevalent negativity in the whole business objective.

The study also broke down the MFIs sample into two segments based on their size to assess whether there were any differences in the response of outreach to the explanatory variables between the largest MFIs (Top-tier) and their relatively smaller counter parts (bottom-tier) in terms of customer deposit base. In the case of the top-tier MFIs, relative performance to industry ROE and net core capital to deposits were found to be negatively and significantly related to outreach. This implies that performance and opportunity are key variables in explaining outreach thus for very large MFIs outreach is negatively linked to performance and opportunity though the exhibited trends similar to for the entire sector with performance being negatively and significantly related to outreach. Given that there is a weak link, as indicated by higher p-values, between performance and outreach the results appear to suggest that for the totally poorly performing MFIs are susceptible to low deposits. For the bigger MFIs, size has been growing much faster than outreach whereas for the smaller MFIs sustainability is growing at a much faster pace, consequently the inverse relationship between size and sustainability.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions of the key findings presented in chapter four, conclusions drawn based on such findings and recommendations for policy and practice. This section also presents the suggestions for further research.

5.2 Summary

The sustainability score for Kenya MFIs for the year 2011, using the sustainability index model, is calculated. Top 10 MFIs of Kenya, which contributes 80% of the total loan portfolio, have been taken for the calculation of sustainability index. The weight has been assigned to each of these companies, based on their Gross Loan Portfolio. The weighted averaged sustainability index comes out to be 75.34 for the year 2011. It can also be used on single MFI to check whether, the MFI is financially sustainable or not.

The total score of the standards is calculated by multiplying indicator's weight with score of indicator's standard and adding it. The total score of the standards is considered as sustainability index for the base year.

The value of adjusted R square explains that 50.2 percent of the variation in dependent variable i.e. Operational Self Sufficiency (proxy for sustainability) is due to variations in independent variables taken together namely Number of Active Borrowers, Percent of Women Borrowers, Age of MFIs, Debt/Equity ratio, Capital/Assets ratio, PAR>30 days, Borrower per Staff Member, ROE and Yield, this leaves 49.8 percent unexplained. The value of R square is significant, indicated by p value (0.000) of F statistics as given in ANOVA, this informs that the independent variables, taken together as a set, are significantly related to dependent variable. The multiple correlations are therefore highly significant.

The study shows that the values of p are 0.008, 0.000, 0.000 and 0.000 for the indicators: Number of Active Borrowers, Capital/Assets ratio, Yield and Operating Expense/Loan Portfolio respectively. These values are less than the level of significance (0.05). Therefore, the null hypotheses are rejected and, it can be concluded that these indicators influence the dependent variable OSS. Other independent variables are not significant thereby not making a significant contribution to the prediction.

The coefficient of Operating Expenses/Loan Portfolio is -2.78. The sign of the coefficient explains that the Operating Expenses/Loan Portfolio is negatively correlated with Sustainability (OSS). The magnitude explains that for one unit increase in the Operating Expenses/Loan Portfolio, the OSS will decrease by 2.78 units. The coefficient of Yield is 1.91, which indicates that the Yield is positively correlated with Sustainability (OSS). The magnitude explains that for one unit increase in the Yield, the OSS will increase by 1.91 units.

The coefficient of Capital/Asset ratio is 0.705, which indicates that the Capital/Asset ratio is positively correlated with Sustainability (OSS). The magnitude explains that for one percent increase in Capital/Asset ratio, the OSS will increase by 0.70 percent. The coefficient of Number of Active borrowers (ACTB) is 0.00000674, which indicates that ACTB is positively correlated with Sustainability (OSS). The magnitude explains that for one percent increase in ACTB, the OSS will increase by 0.0000067 percent. The VIF data suggest that collinearity is no problem as the figures are well below 10% for each indicator and the error term is also normally distributed.

Observing the mean rank from pair-wise comparison using Mann-Whitney U test, it can be concluded that the Young MFIs are doing better as compared to the Mature and Old MFIs on Number of Active Borrowers. In case of Yield on Gross Portfolio indicator, both Young and Old MFIs are performing better than Mature MFIs but no difference found between Young and Old MFIs. Similarly, in Operating Expense/Loan Portfolio indicator, both Mature and Old MFIs are doing better as compared to than Young MFIs but no difference found between Mature and Old MFIs. In case of Women Borrowers, both Old MFIs are performing better as compared to Mature MFIs but no difference found between Old and Young MFIs.

The study also summarizes that on measuring factors that determine the operational sustainability of micro finance institutions in Kenya with respect to performance and profitability, average loan size, net deposits, yielded a positive non-significant relationship to sustainability. The weak relationship between performance and outreach generally points at the possibility of prevalent negativity in the whole business objective.

The study also broke down the MFIs sample into two segments based on their size to assess whether there were any differences in the response of outreach to the explanatory variables between the largest MFIs (Top-tier) and their relatively smaller counter parts (bottom-tier) in terms of customer deposit base. In the case of the top-tier MFIs, relative performance to industry ROE and net core capital to deposits were found to be negatively and significantly related to outreach. This implies that performance and opportunity are key variables in explaining outreach thus for very large MFIs outreach is negatively linked to performance and opportunity though the exhibited trends similar to for the entire sector with performance being negatively and significantly related to outreach. Given that there is a weak link, as indicated by higher p-values, between performance and outreach the results appear to suggest that for the totally poorly performing MFIs are susceptible to low deposits. For the bigger MFIs, size has been growing much faster than outreach whereas for the smaller MFIs sustainability is growing at a much faster pace, consequently the inverse relationship between size and sustainability.

5.3 Conclusion

It can be observed that the factors that affect the operations and financial sustainability are Capital/ asset ratio and Operating expenses/Loan Portfolio. Therefore these indicators have been included along with Operational Self Sufficiency to create Sustainability index. Many researchers have suggested including repayment rate for checking the sustainability of MFIs.

Therefore Portfolio at Risk is taken as proxy for repayment rate and included in creation of sustainability index.

There are differences found between the performance and sustainability on other financial indicators namely Return on Equity, Return on Assets, OSS, and PAR>30 days. The SPSS output of One Way ANOVA shows that the Kruskal-Wallis statistics (chi square) is equal to 15.52 with significance equal to 0.000. Therefore, the null hypothesis, that there is no significant difference in Number of Active Borrowers indicator among different age groups of MFIs, is rejected.

Hence, it can be concluded that the difference in Number of Active Borrowers indicator could be attributed to the age of the MFIs. Now, using Man-Whitney U test with pair-wise comparison it can be concluded that the young MFIs are the best performer in the given category. Similarly, it can be observed that the significance values of Percent of Women Borrowers, PAR>30 days, Operating Expense/ Loan Portfolio, and Yield on Gross Portfolio are less than 0.05, the assumed level of significance. Therefore, the null hypotheses are rejected. Hence, it can be concluded that the difference in Percent of Women Borrowers, PAR>30 days, Operating Expense/Loan Portfolio, and Yield on Gross Portfolio indicators could be attributed to the age of the MFIs. No significant difference is found on other indicators namely OSS, ROA and ROE, Borrower per Staff Member and Capital/Assets ratio.

5.4 Recommendations for Policy

This model of operational self-sufficiency and financial sustainability Index for microfinance institutions is more comprehensive. With the help of this model, the MFIs in Kenya can quantify the level of operations and financial sustainability. This model can also be used to create a sustainability index for various countries and help the regulator identifying the strong and weak areas of the sector. In addition, the existence of new model is also expected to facilitate MFIs to access to capital markets. Having access to sustainability information may

reduce some of the transaction uncertainty. This model may be considered as one more step in the process of the emergence of the microfinance standards.

Kenyan microfinance has shown resiliency despite local droughts and high inflation rates that afflicted the nation in 2008 and 2009. With the Kenyan government and the Central Bank of Kenya emphasizing financial access as a key to modernizing the economy, the sector has been strengthened by progressive policies and innovative approaches to delivering financial services. A large deposit base, along with the existence of well-developed MFIs, have allowed financial and operational expenses to remain relatively low and have led to some of the highest profitability measures in the SSA region. A detailed explanation of growth trends as well as relevant policy measures taken by the government can be found throughout the Kenya Country Briefing:

Innovative forms of microfinance and progressive government policies have helped to make Kenya's microfinance sector one of the most developed in Sub-Saharan Africa. Leading contributors to this dynamic are (M-Pesa's) success in mobile banking, the passing of the Finance Act of 2010 allowing for agent banking, and the development of effective credit bureaus throughout the country.

A strong culture of savings has meant that MFI outreach to depositors has far outweighed outreach to borrowers, although overall loan portfolio and total deposits have both increased steadily since 2008. High product-line diversification has allowed MFIs to evolve to meet customer needs, although growth has primarily targeted an urban clientele.

Deposits account for nearly 70% of the funding base for the sector, with the savings of micro-depositors contributing the majority of these funds. Kenyan microfinance also benefits from the confidence of many international lenders, although the largest national source of microfinance credit is Kenya itself.

The ability to maintain low financial and operational expense ratios has made Kenyan microfinance fairly profitable with an ROA of over 5% in 2010. High PAR levels do however

raise concerns about the riskiness of the overall portfolio, and whether profitability can be sustained over time.

5.5 Limitations of the Study

The first limitation of the study was the fact that it was a sample study. Samples do not completely represent the characteristics of the population.

Secondly, the secondary data of some of the MFIs was not available and this might have reduced the accuracy of research findings.

Lastly, some respondents did not provide all the information thus depriving the study of some required data.

5.6 Suggestions for Further Studies

There is need for further studies to carry out similar tests for a longer time period. A similar study should also be carried out on MFIs with total income (interest and non-interest income) as the proxy for size to try and assess whether the relationship between outreach and performance is drastically altered by the change of variables. Given that a good chunk of the studies touched on sustainability of MFIs in Kenya, there is need to ascertain the relationship between the firm values of all firms in Kenya.

The study primarily utilized secondary data and to this extent, the study suggests that in future studies dealing with the same, primary data should be utilized to enhance the quality and the reliability of the findings. The same study should also be used in other MFIs which are situated in the rural areas as this study concentrated within and around Nairobi.

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APPENDICES

Appendix i: MFIs Operating in Nairobi

1. AAR Credit Services
2. Barclays Bank of Kenya
3. Blue Limited
4. Business Initiative and Management Assistance Services (BIMAS)
5. Canyon Rural Credit Limited
6. Chartis Insurance
7. Co-operative Bank of Kenya
8. Co-operative Insurance Company (CIC)
9. Ecumenical Church Loan Fund (ECLOF) Kenya
10. Elite microfinance
11. Family Bank
12. Faulu Kenya
13. Fusion capital
14. Fusion Capital Limited
15. Greenland Fedha Limited
16. Housing finance
17. Jamii Bora

18. Jitegemea Credit Scheme
19. Juhudi Kilimo Company Limited
20. Kenya Agency for the Development of Enterprise and Technology (KADET)
21. Kenya Commercial Bank
22. Kenya Entrepreneur Empowerment Foundation
23. Kenya Post Office Saving Bank (Post bank)
24. Kenya Rural Enterprise Programme (K-Rep) Bank
25. Kenya Women Finance Trust (KWFT)
26. K-rep Development Agency
27. Rafiki Deposit Taking Microfinance Ltd
28. Remu DTM Limited
29. SMEP DTM Limited
30. UWEZO DTM Ltd

Source: Association of Microfinance Institutions (AMFI) Directory (2008)