THE RELATIONSHIP BETWEEN MFI OUTREACH SERVICES AND FINANCIAL SUSTAINABILITY IN KENYA

BY

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DECLARATION

This project is my own original work and to the best of my knowledge, it has not been presented for a degree award in any other University.

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DEDICATION

This project is dedicated to my wife (Getura) and my children (Frank and Chemosong) for their selfless love and patience; and to my brother George and family for their influence and support in learning.

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I am grateful to my supervisor Dr. Frederick Ogilo for his generous support and guidance throughout the duration of this report. Without his support I could not have been able to accomplish this task in time. I also appreciate assistance provided by the school of business' secretaries (Riziki and Mercy) and other university staff throughout the entire course period.

I thank my wife, Getura and my children, Frank and Chemosong for their continued encouragement and patience during the entire period of my studies. Last but not least, My God, for the good health that enabled me complete this project.

ABSTRACT

The overall objective of the study was to establish the relationship between microfinance outreach and financial sustainability in Kenya. The study specifically aimed at establishing the relationship between breadth of outreach, depth of outreach and portfolio at risk, and microfinance institutions' financial sustainability in Kenya. Achieving financial sustainability is critical for microfinance institutions self-sustaining programs independent of subsidies that facilitate expanded outreach and attraction of external funding. Most studies in Kenya had focused more on organizational sustainability and fewer attempts had been made to study factors affecting microfinance institutions financial sustainability in Kenya. It is from this perspective that this study was undertaken to statistically identify possible determinants of financial sustainability among microfinance institutions in Kenya. Descriptive design was employed and it was found suitable for the study since it aimed at establishing the relationship between microfinance outreach variables and financial sustainability. Similar studies had also used the same research design. The population for the study was composed of 46 retail and deposit taking microfinance institutions in Kenya. Secondary data was collected from 8 purposively selected microfinance institutions reporting voluntarily their financial information to the microfinance information exchange portal over the period 2007-2011. Multi-regression analysis was then carried out on a panel data collected in order to establish relationships between variables. The study employed ANOVA tool for inference. Significant relationship between depth of outreach measured as average loan sizes and financial sustainability was evident among microfinance institutions in Kenya. However, the microfinance institutions breadth of outreach and portfolio at risk were insignificantly associated with financial sustainability. From the econometric results, it was concluded that depth of outreach affect microfinance institutions financial performance in Kenya. The study therefore recommends that managers in the microfinance sector in Kenya can achieve greater financial sustainability with higher average loan sizes.

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AMFI   Association of Microfinance Institutions

BO   Breath of Outreach

BS   Borrowers per staff

CB   Cost per Borrower

CGAP Consultative Group to Assist the poor

DE   Debt equity ratio

DO   Depth of Outreach

DTM   Deposit taking Microfinance

FSS   Financial self-sufficiency

MFI   Microfinance Institution

MIX   Microfinance Information Exchange

MM   Modigliani and Miller theorem

NGO   Non-Governmental Organization

PAR   Portfolio at risk

UNDP United Nations Development Programme

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Microfinance institutions (MFIs) have enabled millions of people in developing countries access formal financial services through microfinance programs. However, 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 challenge facing the microfinance industry (Rai and Rai, 2012). Achieving financial sustainability is therefore critical for sustained programs independent of subsidies and for attraction of external funds.

The microfinance sector in Africa is quickly expanding, and institutions have increased their activities. African microfinance institutions (MFIs) are among the most productive globally, as measured by the number of borrowers and savers per staff, and demonstrate higher levels of portfolio quality, with an average portfolio at risk over 30 days of only 4 percent. Nevertheless, MFIs in Africa tend to report lower levels of profitability, as measured by return on assets, than MFIs globally. Operating and financial expenses are high and efficiency in terms of cost per borrower is the lowest globally. Overall, MFIs are important players in the financial sector and are well positioned to grow and reach the millions of potential clients who do not have access to mainstream financial services (Lafourcade et al., 2005).

Microfinance refers to all types of financial intermediation services that include savings, credit funds transfer, insurance and pension remittances provided to low-income

households and enterprises in both urban and rural areas including employees in the public and private sectors and self-employed (Robinson, 2003 as cited in Adongo and Stork, 2005). According to Basu et al. (2004), MFIs complement effectively the formal banking sector in providing financial services to the un-served. Microfinance is a concept that postulates the credit to micro and small business, savings, cash transfers and insurance to poor and low income people (Sa-Dhan 2003). It is a means by which fair financial services are made available to people who are prevented from participating in their country's formal financial sector (Orbuch, 2011).

Sustainability plays an integral part in the continued provision of financial products in the microfinance sector. Sustainability relates to organizational, managerial and financial aspects but the issue of financial sustainability of MFIs has attracted more attention in the mainstream analysis (Thapa, 2007). Financial sustainability has been defined by various researchers differently. Rosengard (2001) defined financial sustaibility as the development of products and delivery systems that meet client needs, at prices that cover all cost of providing these financial services. Kinde (2012) extended the meaning of financial sustainability to include the ability to keep on going towards microfinance objective without continued donor support. Several factors have been found to influence the financial sustainability of microfinance institutions (MFIs). These include financial structure, depth and breadth of outreach, and efficiency.

1.1.1 MFI outreach services

MFIS are thought to have a dual goal, that is, financial viability and outreach. Efforts to extend microfinance services to the people who are underserved by financial institutions are classified as outreach. Outreach can be measured in terms of breadth, number of clients served and volume of services (that is, total savings on deposit and total outstanding portfolio) or depth which represents the socioeconomic level of clients that MFIs reach (Lafourcade et al., 2005).

By definition, MFIs offer financial services to low-income clients. Some MFIs achieve deeper outreach by targeting the client groups that are most vulnerable such as women and or people with very low average loan and savings (Lafourcade et al., 2005). Therefore, microfinance programs have to be developed for the poor and, local communities. To do this, MFIs should have an outreach ability and mechanism to cover poor and remote areas in need to promote the unemployed people to establish and develop income generating projects (Malkawi and Atoom, 2011).

1.1.2 Financial sustainability

Sustainability plays an integral part in the continued provision of financial products in the microfinance sector. Sustainability relates to organizational, managerial and financial aspects but the issue of financial sustainability of MFIs has attracted more attention in the mainstream analysis (Thapa, 2007).

Rosengard (2001) defined financial sustaibility as the development of products and delivery systems that meet client needs, at prices that cover all cost of providing these financial services. Kinde (2012) extended the meaning of financial sustainability to include the ability to keep on going towards microfinance objective without continued donor support. Achieving financial viability is critical for MFIs since it facilitates self-sustaining programs independent of subsidies that enable them to reach more people permanently (Dunford, 2003). Financial sustainability is also said to be a pre-requisite of attracting commercial funding and thus achieving greater outreach and Ganka (2010) argued that it was better not to have MFIs than having unsustainable ones.

Meyer (2002) identified two kinds of financial sustainability measures that could be used in assessing MFIs performance, that is, operational self- sufficiency and financial self-sufficiency. Operational self-sufficiency is when the operating income is sufficient enough to cover operational costs like salaries, supplies, loan losses, and other administrative costs. On the other hand, financial self-sufficiency (referred to as a high standard measure) is when MFIs can also cover the costs of funds that are valued at market and other forms of subsidies received when they are valued at market prices (Kereta, 2007).

1.1.3 Outreach and financial sustainability

There exists conflicting views about the link between financial sustainability and outreach of MFIs. According to Meyer (2002) Outreach and financial sustainability are complementary because as the number of clients increases, MFIs enjoy economies of

scale and hence reduce costs which help them to become financially sustainable. On the contrary, Hulme and Mosely (1996) argued that there is inverse relationship between and financial sustainability. They argued that higher outreach means higher transaction cost in order to get information about creditworthiness of clients and hence make MFI financially unsustainable.

1.1.4 MFIs in Kenya

Microfinance sector in Kenya is organized into various categories which include regulated MFIs: commercial banks, non-bank financial institutions (Post Bank), and the to-be regulated, transforming MFIs under MFIs Act, non-regulated, credit only MFIs, financial wholesalers, micro-insurance providers and capacity providers/development institutions. A list of various categories of MFIs can be found from the Association of Microfinance Institutions (AMFI) database which has 59 member institutions serving more than 6,500,000 poor and middle class families with financial services throughout the country. Out of these, 8 are classified as deposit taking microfinances (DTMs) and 38 as retail MFIs ("Association of microfinance institutions in Kenya,"2013).

With the Kenyan government and the Central Bank of Kenya emphasizing financial access as a key to modernizing the economy, the microfinance 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 African region. 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. 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 percent of the funding base for the sector, with the savings of micro depositors contributing the majority of these funds ("Microfinance in Kenya: country profile," 2012).

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 a Return on asset of over 5 percent in 2010. High PAR (portfolio at risk) levels do however raise concerns about the riskiness of the overall portfolio, and whether profitability can be sustained over time ("Microfinance in Kenya: country profile," 2012).

1.2 Research Problem

Microfinance institutions play an important role in the financial system by providing financial services to those who cannot access the formal banking services. Nevertheless, millions of potential clients still remain un-served and the demand for financial services far exceeds the currently available supply (Bogan et al., 2007). Efforts to extend

microfinance services to the people who are underserved by financial institutions are classified as outreach. According to Meyer (2002) as the number of clients increase, MFIs enjoy economies of scale and hence reduce costs which help them to be financially sustainable. However, Hulme and Mosely (1996) argue that expanded MFI outreach increase transaction cost on seeking information about the clients' creditworthiness which makes MFIs financially unsustainable. The concept of social performance has seemed to overshadow the state of health of these institutions. However, the accepted criteria in a number of studies to study the performance of any MFI have been based on financial performance and outreach (Arsyad, 2005).

Microfinance industry plays an important role in the financial system in Kenya. Its growing importance undoubtedly requires prudent financial management for sustainability. MFIs in Kenya has continued to experience steady increase in both loan portfolio and total deposits since 2008 though MFI outreach to depositors has far outweighed outreach to borrowers . High product-line diversification has allowed MFIs to evolve to meet customer needs with growth bias towards urban clientele. 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. 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 has contributed to this development. 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 (Portfolio at risk) levels do however raise concerns about the riskiness of the overall

portfolio, and whether profitability can be sustained over time ("Microfinance in Kenya: country profile," 2012).

Several factors have been found to affect the financial sustaibility of MFIs in studies based on large and well developed MFIs in various countries. The relationship and the level of significance of these factors in affecting the financial sustainability of MFIs, however, did vary with studies and economies. This therefore calls for further research in different economies and geographical location of MFIs. Studies in Kenya have focused much on organizational sustainability dealing with issues such as factors inhibiting innovation and commercialization of MFIs (Kanyiri (2009) and Kiweu (2009). Moreover, few studies, if any, have been conducted in Kenya exclusively focusing on the relationship between MFI outreach and other related factors, and financial sustainability. It is from this perspective that the study sought to fill this knowledge gap statistically using MFIs financial data over the period 2007-2011 by addressing the following research question: does MFIs outreach affect financial sustainability in Kenya?

1.3 Research Objectives

This study was guided by the following research objectives:

i. To establish the relationship between MFI outreach and financial sustainability in Kenya.

ii. To establish the relationship between other MFI outreach related factors and financial sustainability in Kenya.

1.4 Value of the study

The study aimed at determining the factors affecting the financial sustainability of MFIs in Kenya with specific attention to outreach and related factors. The findings have the potential to contribute towards building theoretical perspective about significance of various factors affecting financial sustainability of MFIs. It also provides a framework under which further research can be undertaken.

The findings of this study will help managers in the microfinance sector understand outreach factors that influence MFIs' financial performance and exploit its competencies towards building financially sustainable MFIs. Potential investors will benefit from the knowledge about MFIs in Kenya and assist them develop selection criteria for their investments. To the regulators of microfinance in Kenya, study findings contributes towards setting financial performance standards for MFIs as well shaping the government focus on the outreach of these institutions.

Additionally, the study can be replicated in other economies and locations and further research directions from the study is useful for scholars and students as it provides invaluable insight into financial sustainability of MFIs in Kenya and act as a source of reference for future studies on microfinance institutions.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This study reviewed literature concerning the factors deemed to affect the financial sustainability of MFIs. The review of literature establishes framework for the study and highlights the previous studies.

2.2 Determinants of financial sustainability

Kinde (2012) and Ganka (2010) identified several possible determinants of financial sustainability of MFIs. These factors include: breadth of outreach, depth of outreach, cost per borrower, capital/financial structure and staff productivity.

Breadth of outreach measured by the number of borrowers indicates the extent of providing services to poor and underserved. According to Kinde (2012) breadth of outreach affects financial sustainability due to the fact that increasing number of borrowers will increase the volumes of sell, and increasing volume of sell is one means to maximize profitability, and then financial sustainability.

The average loan size which indicates the depth of outreach reveals the client's socioeconomic level. The loan size reflects the nature of clients and their poverty level (Woller, 2000). It is generally assumed that, the smaller the loan size, the more poor clients will be reached by microfinance. The loan amount can be increased by either, increasing the loan size or increasing the number of clients, or both (Ganka, 2010).

The cost per borrower is used to explain the contribution of efficiency in reducing administrative expenses and other expenses. It measures the MFI effectiveness in cost reduction given the number of borrowers they are serving implying the role of cost reduction in improving financial sustainability (Kinde, 2012). Productivity is a combination of outreach and efficiency and it is often measured in terms of borrowers per staff which is computed by dividing active borrowers by the number of loan officers (CGAP, 2003). All things held constant, the higher the number of borrowers per staff would indicate MFI efficiency in utilizing staff (Kinde, 2012).

2.3 Theoretical review

The theoretical framework applicable to the proposed study includes a review of outreach theories that are related to MFIs.

2.3.1 The theory of win-win outcome and mission drift

Mission drift is a phenomenon whereby the MFIs allegedly shift their focus away from the poorest borrowers towards relatively wealthier poor borrowers in the pursuit of profits (Cull et al., 2007).

It should also be noted that mission drift ought not to be confused with other similar phenomena. Microfinance institutions might experience a natural rise in loan sizes for two reasons: clients who have shown prudent repayment performance are able to reach larger loans because of progressive lending practices; and in successful microfinance programs the clients might have been able to develop and expand their businesses with earlier loans, which leads to increased income and also a need for larger loans (Cull et al.,

2007; Armendáriz and Szafarz 2009). These changes in the existing client base might drive the MFI to change its lending practices, as group lending, for example, is not necessarily suitable for individuals requiring larger loans but this behavior is not what is meant by mission drift. However, these similar occurrences can make it difficult to identify actual mission drift, and also accentuate the need to examine outreach more accurately than by using mere loan sizes (Tuuli, 2010).

The proponents of sustainability argue that microfinance institutions that follow the principles of good banking will also be those that alleviate the most poverty. This win-win proposition focuses on the importance of breadth of outreach rather than its depth. The sustainability ideology has been advocated especially by certain microfinance networks and big, influential donors such as ACCION International, the Consultative Group to Assist the Poor (CGAP), the US Agency for International Development (USAID) and the United Nations Development Programme (UNDP). They have advocated for subsidies to be limited to the start-up phase of microfinance institutions and pushing for a more commercial orientation once operational (Tuuli, 2010).

2.3.2 Welfarists' theory

Welfarists mainly focus on reaching the poor with credit. Their emphasis is on achieving greater depth of outreach rather than just reaching a large number of clients (Brau and Woller, 2004). Therefore, welfarists view microfinance as established for poverty reduction and depth of outreach should be given a higher priority. MFIs should be, as far as possible, able to serve as many poor clients regardless of their profitability (Ganka,

2010). The deficit in operations should be filled with donor and government support or social investors (Woller et al., 1999).

It is from the welfarists perspective that many groups especially non-governmental organizations (NGOs) argue about the existence of trade-off between sustainability (profitability) and outreach because the poorest are ineffective to reach when profitability is considered that calls for continued dependence on donations (Paxton, 2002). The proponents of poverty lending evaluate sustainability of MFIs based on MFIs contribution to social welfare of the poor. Morduch (2000) and Brau and Woller (2004) argued that MFIs can achieve sustainability and continued operations without achieving self-sufficiency regardless of donor support or not. They support their argument by considering any subsidy to or finance injected in MFIs as equity invested by social investors who may not necessarily mean to make profit but to have social impact.

Those who oppose commercialization of MFIs fear that along with the drive towards profitability, the poorest clients will not qualify for loans anymore. Muhammad Yunus, the founder of Grameen Bank in Bangladesh, has been one of the firmest advocates of the notion that wealthier clients will crowd out poorer clients. This poverty camp worries that this will lead to a major shift from the original mission of microfinance (Morduch 2000).

2.3.3 Financial sustainability

MFIs are becoming more concerned with financial sustainability. International foundations and donors have recognized that efficiently run MFIs can cover a large

portion of their costs, and demand an increasing level of self-sufficiency from them (Thapa et al., 1992). According to Woller and Schreiner (2002) financial self-sufficiency is a non-profit equivalent of profitability.

Meyer (2002) noted that the poor needed to have access to financial service on long-term basis rather than just a one-time financial support. Meyer also argued that financial unsustainability arises from low repayment rate or un-materialization of funds promised by donors.

According to Meyer (2002) as cited in Kereta (2007) there are two kinds of financial sustainability measures that could be used in assessing MFIs performance, that is, operational self- sufficiency and financial self-sufficiency. Operational self-sufficiency is when the operating income is sufficient enough to cover operational costs like salaries, supplies, loan losses, and other administrative costs. On the other hand, financial self-sufficiency (referred to as a high standard measure) is when MFIs can also cover the costs of funds that are valued at market and other forms of subsidies received when they are valued at market prices (Kereta, 2007).

2.4 Empirical literature review

Various studies have been undertaken in different countries and economies on performance of MFIs and factors affecting its financial sustainability. This section discusses a number of studies that have carried out on factors affecting financial sustainability of MFIs.

An analysis of outreach and financial performance of microfinance institutions in Ethiopia identified no evidence of trade-off between outreach and financial sustainability; rather it revealed positive correlation between them. However, the correlation test between loan size (which measure depth of outreach) and financial performance revealed imprecise result (Kereta, 2007).

Bogan et al. (2007) using data from more than three hundred MFIs reporting their financial data to the Microfinance Information Exchange (MIX) market, examines whether capital structure affect the financial sustainability of MFIs based on the life cycle stages. The results from the study reveal that various factors other than life cycle seem to be associated with sustainability. Notably, it found that an MFI's capital structure is associated with financial sustainability of MFIs. In addition, Bogan (2009) using panel data establishes a link between capital structure and key measures of MFI success. The study reveals causal evidence supporting the assertion that an increased use of grants by large MFIs decreases operational self-sufficiency.

Rai and Rai (2012) attempts to find out the factors which affect the 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 India and Bangladesh suggests that the capital/ asset ratio, operating expenses/loan portfolio and

portfolio at risk over 30 days are the main factors which affect the sustainability of microfinance institutions.

Kinde (2012) following a quantitative approach using a balanced panel data set of 126 observations from fourteen MFIs operating in Ethiopia over the period 2002-2010, reveals that microfinance breadth of outreach, depth of outreach, dependency ration and cost per borrower affect the financial sustainability of microfinance institutions in Ethiopia. However, the microfinance capital structure and staff productivity have insignificant impact on financial sustainability of MFIs in Ethiopia for the study periods.

A study by Ganka (2010) on Tanzanian rural microfinance found negative and strongly statistically significant relationship between the number of borrowers per staff and financial sustainability. Moreover, Ganka (2010) states that although financial structure affects the financial sustainability, having different sources of capital do not improve financial sustainability. Ganka also identified that equity is a relatively cheaper source of financing and, therefore, improves financial sustainability (Ganka, 2010).

For the Kenyan case, there are few studies undertaken in relation to MFIs. Most studies in Kenya have focused much on organizational sustainability dealing with issues such as factors inhibiting innovation and commercialization of MFIs (Kanyiri (2009) and Kiweu (2009). Therefore, the objectives of the proposed study are different from previous studies in Kenya, and this guarantees its value for study.

2.5 Summary of Literature review

From the literature review, the study found out that amongst other forms of sustainability, financial sustainability of MFIs is emphasized in previous studies as a requisite for survival and existence to continue offering financial products suitable to the poor. MFIs are usually faced with the challenge of reaching the poor while at the same time expected to be financial sustainable. However, with shrinking donations and grants from governments, MFIs are left with no choice but to pursue the dual objectives of outreach and financial sustaibility.

Several factors have been identified to affect financial sustainability. These factors include financial structure, breadth and depth of outreach, cost management and productivity. Results from empirical studies based on financial performance of MFIs have sometimes conflicted implying the inconclusiveness about these relationships. Therefore, this study has the potential to contribute towards reaching a generalized conclusion about these relationships.

The literature review revealed that few studies have carried out on financial sustainability of MFIs in Kenya and fewer attempts have been made to identify the factors affecting financial sustainability through statistical manipulation. The results from similar studies carried out on MFIs outside Kenya varied with studies and economies which insures the value added by the study. The researcher therefore sought to bridge the existing knowledge gap in microfinance literature on financial sustainability of microfinance institutions in as far as the retail MFIs in Kenya is concerned.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

 The methodology that was used in the study is presented in this section. It describes the research design, the target population, the sample and sampling procedure, data collection and analysis procedures that was used in this study.

3.2 Research design

The study adopted a descriptive research design. Kothari (2004) indicated that a descriptive research design enables the researcher to define clearly what he/she wants to measure and can also be used to establish the relationship between variables. This design was ideal for the study as it aimed at identifying possible determinants of financial sustainability by establishing the relationships between MFIs outreach services and financial sustainability in Kenya.

The study was necessitated by a cross-sectional time-series data set (or panel data) in which the behavior of entities is observed across time. In addition, similar past studies have been based on the same data set and attempts were made to establish the relationship between financial sustainability of MFIs and its possible determinants.

3.3 Population of the study

The population in the study comprised of all MFIs classified as retail and DTMs in Kenya who are members of the Association of Microfinance Institutions (AMFI). The total number of retail MFIs and DTMs registered with AMFI was 46 as at 30th August

2013. Out of 46 MFIs, only 18 MFIs registered with AMFI reported voluntarily their financial data to MIX Market. The web portal maintains financial and other reports voluntarily submitted by MFIs that are candidates for receiving donations from CGAP (Agarwal and Sen, 2009).

3.4 Sample design

In order to ensure homogeneity of subjects used in a sample and for easy matching of data, the researcher employed purposive sampling technique which is a non-probability approach (Rajendra, 1997). A sample study was applied because it is time consuming and expensive to collect data for each unit in the population. According to Collis and Hussey (2003) a sample can be reliably used to make inferences about the population. The sample units were selected based on their consistency in reporting the financial data to the MIX market over a period of five years (2007-2011) that the researcher sought to study. Further to do a regression analysis, the sample size for the study is 8 MFIs registered with AMFI who report voluntarily the financial data to the MIX market. The general rule of thumb is that for generalizability, a ratio of number of observations to number of variables should never fall below 5:1. That is, five observations are made for each independent variable in the variate (Hair et al., 2006).

3.5 Data collection

The data type collected and utilized in the study is purely secondary data based on the financial statements of purposively selected MFIs in Kenya that voluntarily disclose their financial information through MIX web portal. The data collected for both the dependent and independent variables was   adjusted ratios and averages derived from the MFIs

financial statements. There are 18 MFIs that the researcher could access its financial performance information through the MIX market website. However, only 8 MFIs reported consistently information that enabled a five year period study. The institutions selected were based in large part on the quality and extent of their data. The quality of data in the study was based on frequencies with which these MFIs report data to MIX.

3.5 Data analysis techniques

The dataset for the study involved the pooling of observations on a cross-section of units over several time periods, and this enables the observation of behavior of entities across time (Kinde, 2012). Ordinary least square method necessitated the analysis of the data in order to establish the association between independent and dependent variables based on the data set. The operational model for estimating the association between independent and dependent variables used in the study is given as below: This model is derived from the review of past studies on factors affecting financial sustainability of MFIs.

FSS $it = \beta0 + \beta1\ (BO\ it) + \beta2\ (DO\ it) + \beta3\ (PAR\ it) + \varepsilon$

Where: FSS it, is the financial self-sufficiency, which is the dependent variable calculated as a   ratio of total revenue to adjusted expenses for MFI i in period t, BO, independent variable breadth of outreach is the   number of borrowers for MFI i in period t; $DO\ it$, independent variable depth of outreach or average loan size for MFI i in period t, $PAR\ it$, independent variable Portfolio at risk over 30 days for MFI i in period t, and ε, error term. With the above multivariate regression equation, the effect of individual explanatory variables on the dependent variable is explained in terms of statistical significance of the coefficients *'βi'* based on correlation analysis.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.0 Introduction

The results and findings of the study were based on the research objectives. The section links the various variables included in the model and aims at establishing the relationship between MFI outreach and financial sustainability in Kenya. It also considers the relationship between portfolio at risk and financial sustainability of MFIs in Kenya. The study is based on secondary data collected from 8 MFIs that voluntarily reported its financial data to the MIX Market over period 2007-2011. The data has been analyzed and research findings presented below.

4.1 Trends of variables

Appendix 3 depicts the trends of MFI financial self-sufficiency (FSS), breadth of outreach (BO), depth of outreach (DO), and portfolio at risk over the period 2007-2011 in Kenya. Figure 1 in the appendix show that MFIs in Kenya have been unsustainable since 2009 as indicated by FSS values of less than 1. On the other hand, average number of borrowers has been declining while average loan sizes have been increasing since 2009 as shown in figure 2 and figure 3 respectively.

4.2 Descriptive statistics of variables

Table 1 reports the descriptive statistics of variables included in the analysis of the relationship between breadth of outreach, depth of outreach and portfolio at risk with financial sustainability. Financial self-sufficiency (FSS) is used as a measure of financial

sustainability. These statistics include mean, standard deviation, minimum and maximum values for the sample of 8 MFIs for the period 2007-2011.

Table 1: Descriptive statistics for variables

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
FSS	36	0	5	1.07	.754	.569
BO	38	1946	413040	62325.16	98460.491	9.694E9
DO	38	145	1046	390.59	160.851	25872.928
PAR	35	0	0	.09	.058	.003
Valid N (listwise)	33					

Source: SPSS output

4.2.1 Financial sustainability performance

Financial self-sufficiency (FSS), a measure of MFI financial sustainability, indicates the MFIs ability to cover the costs of funds that are valued at market and other forms of subsidies received when they are valued at market price. The mean of FSS as indicated in table 1 is 1.07 (107%) and it implies financial sustainability of MFIs in Kenya. However, the dispersion is evident from a relatively high standard deviation of .754 of MFIs under the study.

4.2.2 MFI outreach indicators

As indicated in table 1, the mean breadth of outreach (BO) measured as the number active borrowers is 62325 and this indicates the extent of providing financial services to the low income or underserved clients. The mean of 62325 denotes that MFIs in Kenya are large. The MIX bench mark methodology classifies the breadth of outreach as large (greater than 30,000 number of borrowers), medium (10,000-30,000 number of

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borrowers), and small as having less than 10,000 number of borrowers (Kinde, 2012).

The standard deviation of breadth of outreach (98460) which is larger than the mean

indicates Kenyan MFIs is also composed, to a larger extent, MFIs with smaller breadth of

outreach.

The depth of breadth (DO) measures the average balance of outstanding loans and it

indicates the client's socioeconomic level. The mean DO (USD390.59) in table 1, derived

from 38 observations of 8 sampled MFIs, outperformed both the East Africa average

loan balance of USD175 and Africa region average loan balance of USD307 according to

the MIX benchmark (Lafourcade et al., 2005). The maximum average value of USD1046

points towards lending to a relatively rich or high income clientele.

4.2.3 Portfolio at risk

Portfolio at risk (PAR) is a measure of the quality of loan portfolio which is the most

important asset of MFIs. PAR reflects the risk of loan delinquency and determines future

revenues and MFI's ability to increase outreach and serve the existing clients (Lafourcade

et al., 2005). For this study, portfolio quality is measured as portfolio at risk over 30 days.

With a mean of .09(9%) as indicated in table 1, the MFIs in Kenya experience relatively

lower loan portfolio quality as compared to their counterparts globally. The global PAR

over 30 days is 5.2% and Africa region's average is 4.0% (Lafourcade et al, 2005). In

addition, the maximum average of PAR of 24.02% signifies existence of greater risk of

loan delinquency in the industry.

4.3 Correlation results of MFI outreach indicators

In this section, the study presents the econometric results on the relationship between outreach indicators and financial sustainability of MFIs in Kenya. The value of adjusted R square as indicated in table 2 explains that 40.6 percent of the variation in dependent variable, FSS (a proxy for financial sustainability) is due to explanatory variables taken together. About 59.4 percent of variations in the dependent variable are not explained by the independent variables included in the model. The independent variables are breadth of outreach (BO), depth of outreach (DO) and portfolio at risk (PAR) over 30 days. The value of R square is significant as indicated by the P-value (0.000) of F statistics shown in ANOVA table 3. Cameron (2009) as cited by Ganka (2010) expresses that for panel data, R square above 0.2 is large enough for drawing reliable conclusions.

Table 2: Model Summary of regression for sustainability Of MFIs in Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.679[a]	.462	.406	.606

a. Predictors: (Constant), PAR, BO, DO

source: SPSS output

Table3: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.144	3	3.048	8.287	.000[a]
	Residual	10.666	29	.368		
	Total	19.811	32			

a. Predictors: (Constant), PAR, BO, DO

b. Dependent Variable: FSS

source: SPSS output

4.3.1 Breadth of outreach and financial sustainability

Breadth of breath (BO) in the study represents the number of active borrowers. The result from the econometric analysis in table 4 indicates that the variable has a positive and statistically insignificant relationship with financial sustainability. This implies that the number of borrowers of MFIs does not improve their financial sustainability. However, the positive coefficient indicates that MFIs with less number of active borrowers are more deficient in their sustainability. Greater outreach could bring along improved productivity associated with economies of scale.

4.3.3 Depth of outreach and financial sustainability

The depth of outreach (DO) is a measure of average loan size. The variable has a positive and statistically significant relationship at 1% significant level as indicated by its coefficient of .710 in table 6. This implies that microfinance financial sustainability is associated with higher loan sizes. It also demonstrates the existence of cost efficiency

benefits related to larger loans and hence signifying mission drift tendency on part of MFIs in Kenya.

4.3.4 Portfolio at Risk and financial sustainability

Portfolio at risk (PAR), a measure of loan portfolio quality, indicates how efficient an MFI manages its loan recoveries. The correlation analysis result in table 4 and table 5 shows evidence of negative, though insignificant relationship   between PAR over 30 days and financial sustainability and thus, implying that MFIs with higher PAR values are less efficient and financially unsustainable. Interest on loans is the major contributor of MFIs' revenue and should therefore be managed well for continued operations and sustainability.

Table 4: outreach and portfolio quality Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.440	.384		-1.145	.262
	BO	6.717E-7	.000	.089	.647	.522
	DO	.003	.001	.710	4.957	.000
	PAR	1.958	1.910	-.147	1.025	.314

a. Dependent Variable: FSS

Source: SPSS output

Table 5: outreach variables Pearson coefficients

		BO	DO	PAR
FSS	Pearson Correlation	.036	.659[**]	-.069
	Sig. (1-tailed)	.419	.000	.350
	N	35	35	34

**. Correlation is significant at the 0.01 level (1-tailed).

Source: SPSS output

4.4 Interpretation of results

From the econometric results, microfinance financial sustainability is associated with higher loan sizes as indicated by the positive and significant correlation between depth of outreach and financial sustainability. This could be because larger loans are associated with higher cost efficiency and hence, profitability. On the other hand, improved breadth of outreach may not guarantee sustainability of MFIs in Kenya. This implies that MFIs in Kenya, to a large extent, do not realize the benefits of economies of scale and reduced costs related with increased number of borrowers.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The objectives of the study were addressed using a multi-regression model on observations collected from 8 MFIs reporting financial data to the MIX market. The section covers the summary, conclusions and recommendations of the study.

5.2 Summary of findings

The research objectives in the study were to establish the relationship between MFI outreach and financial sustainability in Kenya, and to establish the relationship between MFI other related factors and financial sustainability in Kenya. Outreach indicators consisted of breadth of outreach measured as the number of active borrowers, depth of outreach and portfolio at risk over 30 days.

5.2.1 Relationship between microfinance outreach and financial sustainability.

Microfinance breadth of outreach was found to be insignificantly related with financial sustainability in Kenya as indicated in table 4. On the other hand, table 4 shows that depth of outreach was positively and significantly correlated with financial sustainability implying that MFIs with higher loan sizes are associated with sustainability.

5.2.2 Relationship between other outreach related factors and financial sustaibility

Portfolio at risk over 30 days, a measure of portfolio quality, was insignificantly and negatively correlated with financial sustainability as indicated in table 4.

5.3 Conclusion

The present study has revealed that among the outreach factors, depth of outreach measured as average loan size significantly affects financial sustainability of MFIs in Kenya. This could have resulted from higher cost efficiencies associated with larger loans. However, insignificant relationship between breadth of outreach and financial sustainability suggest that economies of scale and cost reduction tendencies of improved number of borrowers are not realized by microfinance institutions in Kenya. In addition, delinquency associated with portfolio at risk over 30 days was found not to be significant among MFIs in Kenya. The study largely reveals that average loan size is most important outreach factor for sustainability.

5.4 Recommendations from the study

The implication of the conclusions made under this study is that microfinance institutions in Kenya should increase their average loan sizes as this will improve financial sustainability. These institutions should attract high income bracket borrowers and managers need also to accompany improved loan averages with expanded services and effective follow-ups of loan recoveries as indicated by the existence of some relationship between sustainability with breadth of outreach and portfolio at risk. The challenges of adverse selection, however, need to be properly managed through stringent loan appraisal procedures and processes.

5.5 Suggestions for further research

Further study may also consider MFIs' financial structure and liquidity levels in relation to their financial sustainability. The effect of MFIs conversion to deposit taking institutions on its growth and financial sustainability can also be examined.

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Appendices

Appendix 1: MFIs in Kenya (AMFI**)**

AAR Credit Services

Adok Timo

Agakhan First Microfinance Agency

Biashara Factors

BIMAS

Blue Limited

Canyon Rural Credit Limited

Century DTM Ltd

Eclof-Kenya

Faulu Kenya DTM Limited

Fountain Credit services Ltd

Fusion Capital

Greenland Fedha Limited

IndoAfrica Finance

Jitegee credit Scheme

Juhudi kilimo Company Limited

KADET

KEEF

Kilimo Faida

K-rep Development Agency

KWFT-DTM

Micro Kenya

Mini savings & Loans Ltd

Molyn Credit Limited

Musoni

Ngao Credit Ltd

One Africa Capital Limited

Opportunity International

PAWDEP

Platinum credit

Rafiki Deposit Taking Microfinance Ltd

REMU DTM Limited

RETAP

Rupia Limited

Samchi Credit Limited

Select Management Services Limited

SISDO

SMEP DTM Limited

Springboard Capital

Sumac Credit DTM Ltd

Taifa Options Microfinance

U&I Microfinance Ltd

Uwezo DTM Ltd

Women finance solutions

Yehu Microfinance Trust

Youth Initiatives

Appendix2: 8 MFI panel data (2007 to 2011)-MIX Market portal

ID	TIME	OSS	BO	DO (IN USD)	PAR
1	2007	1.0064	23787	402.49	0.2402
1	2008	1.0259	36649	307.87	0.164
1	2009	1.06	85678	144.55	0.213
1	2010		37822	387.22	
1	2011	1.0516	52139	345.91	0.1413
2	2007	1.1155	10963	246.83	0.0789
2	2008	1.2874	12252	223.72	0.0914
2	2009	0.9116	10353	254.21	0.1201
2	2010	1.2479	9749	334.57	0.0459
2	2011	1.2361	10221	461.49	0.0623
3	2007	1.0488			0.0806
3	2008	0.7143	14343	220.72	0.1403
3	2009	1.1706	16902	257.55	0.12
3	2010	1.0623	15513	300.38	
3	2011		18947	280.37	
4	2007	1.1976	90339	303.38	0.02
4	2008	0.977	91105	413.04	0.0343
4	2009	0.9104	102371	387.25	0.086
4	2010	0.8613	85226	389.26	0.1082
4	2011	0.9922	82328	473.07	0.139
5	2007	0.4657	19421	318.13	0.1717
5	2008	0.6367	15135	339.3	0.0587
5	2009	0.7053	17358	362.26	0.0949
5	2010	0.7767	17559	360.23	
5	2011	0.6658	12420	301.51	0.0911
6	2007	1.2888	164568	365.39	0.0123
6	2008	1.3599	247532	346.3	0.0238
6	2009	1.2464	334188	401.69	0.0131
6	2010	1.1184	413040	368.33	0.1553
6	2011	1.0668	279850	481.91	0.0824
7	2007	1.038	2479	612.26	0.105
7	2008	5.2187	1946	1045.57	0.0985
7	2009	0.9025	3225	665.59	0.0982
7	2010	1.2113	5765	531.16	0.0445
7	2011		9540	544.5	0.0357
8	2007	0.5502	8137	226.6	0.0782
8	2008	0.4154	10332	253.26	0.2347

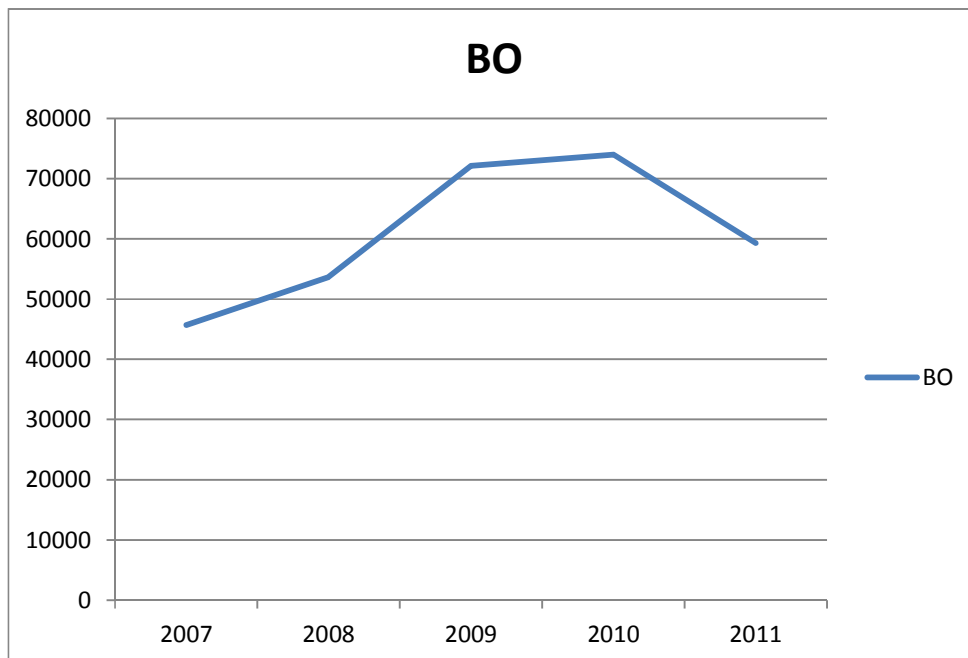| ID	TIME	OSS	BO	DO(IN USD)	PAR
8	2011	0.7611	8862	549.79	0.0085
8	2010	0.6548	7341	537.42	0.0037

Appendix 3: trends of variables

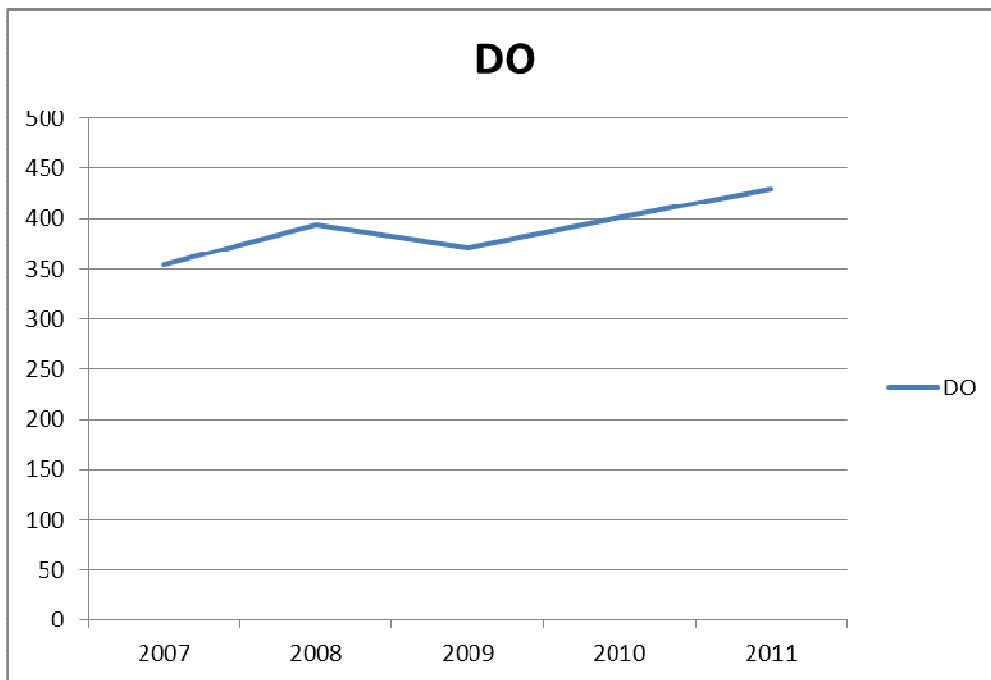**Figure1: Trend of MFIs financial self-sufficiency (FSS) in Kenya (2007-2011)**
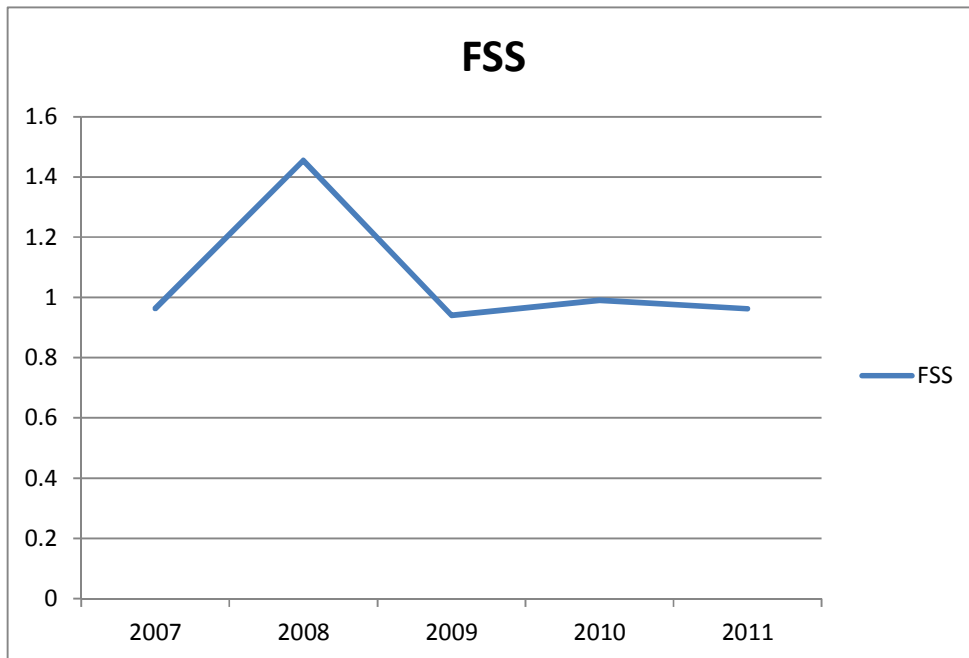
Source: author

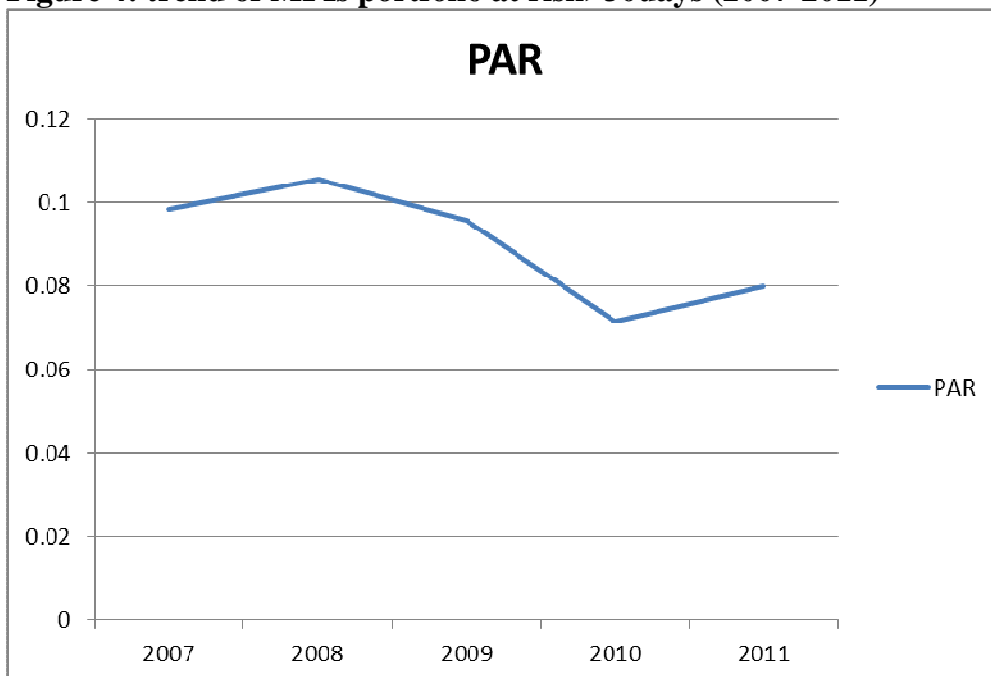**Figure 2: Trend of MFIs Breadth of outreach in Kenya (2007-2011)**

Source: author

Figure 3: trend of MFIs depth of outreach in Kenya (2007-2011)

Source: author

Figure 4: trend of MFIs portfolio at risk>30days (2007-2011)

Source: Author