



Strathmore
UNIVERSITY

**MICROFINANCE INSTITUTIONS IN KENYA: A mission
drift or progression?**

Kiarie Winfred Wanjiru, 077165

**Submitted in partial fulfillment of the requirements for the Degree of
Bachelor of Business Science in Finance at Strathmore University**

Strathmore Institute of Mathematical Sciences

**Strathmore University
Nairobi, Kenya**

November, 2016

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Project itself.

© No part of this Research Project may be reproduced without the permission of the author and Strathmore University

..... [*Name of Candidate*]

..... [*Signature*]

..... [*Date*]

This Research Project has been submitted for examination with my approval as the Supervisor.

..... [*Name of Supervisor*]

..... [*Signature*]

..... [*Date*]

Strathmore Institute of Mathematical Sciences

Strathmore University

Abstract

Microfinance serves low income earners by offering a variety of financial services. This study examines whether sustainability of the Microfinance institution leads to a mission drift or a progression. The study measures sustainability by using the standard profitability ratios. This study utilizes data from 14 Microfinance Institutions in Kenya -assessed from 2007 to 2013. The findings on outreach and percentage of women indicate that the financial performance of a microfinance institution does not indicate a mission drift. Furthermore, the financial performance measures explain very little about the profit status of an institution.

Table of Contents

CHAPTER 1.....	4
1.1 Background.....	4
1.2 History of Microfinance.....	4
1.3 Importance of MFIs.....	5
1.4 Trends of MFIs	6
1.4.1 MFIs in Kenya.....	7
1.4.2 The 2- lending views of MFIs	8
1.5 Problem Statement	10
1.6 Research Objectives	11
1.7 Significance of the Study	11
CHAPTER 2.....	12
2.0 LITERATURE REVIEW	12
2.1 Contribution of MFIs to the economy	13
2.2 Growth in MFIs.....	13
2.3 Revolution of MFIs	14
2.4 Arguments for emphasizing profitable and sustainability MFIs.....	16
2.4.1 Indicators of the sustainability of MFIs.....	17
Models used in lending.....	18
Group Lending Microfinance	18
Microfinance Models	19
2.6.1 Grameen Bank Model.....	19
2.6.2 MC2 Model	19
2.6.3 Village Banking Model	20
CHAPTER 3.....	21
METHODOLOGY	22
3.1 Introduction	22
3.2 Research design	22
3.3 Target Population and Sample.....	22
3.4 Source of Data and Methods of Data Collection	22
3.5 Variables definition	23
3.5.1 Profit Status.....	23

3.5.2 Operational Self Sufficiency (OSS)	23
3.5.3 Return on Assets	23
3.5.4 Return on Equity	24
3.5.5 Efficiency	24
3.5.6 Outreach.....	24
3.6 Regression Methodology	25
3.6.1 Probit and Logit Models	25
3.6.2 Panel data Model	26
CHAPTER 4.....	27
4.0 DATA ANALYSIS.....	27
4.1 Panel data Model.....	28
4.2 The Logit Model	29
5. Conclusion.....	31
Works Cited	32
6. Appendix Quantitative Findings	35
Table 5 Regress Profit status ROA ROE OSS.....	35
Table 6 Marginal Effect after Logit	36
Table 7 A sample of how the data was arranged for Analysis	37

CHAPTER 1

1.1 Background

There have been many researchers who have defined microfinance. Most of them note that microfinance targets low income earners. (Robinson, 2001) defined a microfinance as a small scale financial service-primarily credit and savings- provided to people who farm or herd or fish, who operate small enterprises or microenterprises where goods are produced, who work for wages or commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools. (Colombet, 2001) defined microfinance as access to small loans and small deposits by the poor who have been neglected by the banks. Others like (Novotel, 2009) defined microfinance as provision of financial services to the poor. These services include savings, transfers, insurance and credit.

1.2 History of Microfinance

Muhammed Yunus a Bangladesh is credited with being the pioneer of modern version of Microfinance. While working at Chittagong University in the 1970s, Yunus began offering small loans to destitute basket weavers. He would later form Grameen Bank in 1983 as a way to reach a much wider audience¹

According to (Guntz, 2011), In Europe, the Catholic Church founded pawn shops to protect people from money lenders who charged very high interest rates. This form of money lending spread to other continents. More formal ways of lending were already established in Ireland with the Irish Loan fund system as early as 1720 using peer monitoring to enhance weekly repayment.

In the 1980 and 1990s, MFIs developed in the United States to serve capital markets in low-income and predominantly ethnic minority communities (Outhwaite, 2007)

The history of MFIs in Africa dates back to the 16th Century where it was in the form of “esusu” or “susu”; a Rotating Savings and Credit Association (ROSCA) among the Yoruba. Its origin is found in the rotating work associations where labor as a scarce commodity was accumulated and

¹ What is Microfinance? Business Daily- 4th April 2013

allocated to one of the members at a time. With advent of money and commercialization, these transactions were replaced with money such as naira and pounds²

In the less developed countries, development of MFIs accelerated in the period of decolonization where many states originated. This is because there was a vacancy for the financial provision for the poor in these states (K. Srnec, 2009)

Over the period of 1980-1990s MFIs began to develop and found sustaining models of lending to the poor: non-governmental organization (NGOs), non-bank financial institutions (NBFI), rural banks of nationalized banks and village banks began to develop.(Elgar, 2008)

In Kenya, The Kenya Microfinance sector began in the late 1960s with NGOs setting up pilot programs providing donor funded credit services. Some of the organizations have evolved over time to become commercialized, self-sustaining and hugely profitable institutions with over 100,000 citizens (Njoroge, 2008). These MFIs are regulated by the Central Bank of Kenya. There are twelve licensed MFIs in Kenya. These include Choice Microfinance Bank, Faulu, Kenya Women Microfinance bank limited, SMEP, REMU, Rafiki, Uwezo, Century, Sumac, U&I, Daraja and Caritas ³

1.3 Importance of MFIs

The growing interest in commercial microfinance institutions (MFIs) is related to the recent recognition on the part of some policymakers that informal sector is very large and its performance can be improved with the removal of legal and financial constraint(Robinson, 2001). Low income earners in the informal sectors have been seen as those who need to be absorbed to the formal sector ignoring their contribution to the economy, yet microenterprises provide an income stream for poor entrepreneurs as well as create employment.

This study leans towards (Webster Leila, 1996) definition of informal sectors as the smallest enterprises typically those with ten or fewer employees, the vast majority of which are one-person businesses with few wage workers. These exclude small high-technology businesses.

² Microfinance: A Historical Perspective

³ CBK: Bank Supervision: Microfinance Institutions <https://www.centralbank.go.ke/index.php/bank-supervision/microfinance-institutions>

It is typical to ask why formal MFIs are important yet informal lenders already exist. While it is true that the informal commercial money lenders provide important financial services to the poor, they typically charge high interest rates to low-income borrowers in developing countries.(Robinson, 2001)

The government of Kenya recognizes that access to financial services is key to growth and development in any enterprise and more so Micro and Small enterprises (Munene, 2014). This is because MFIs have been seen as tools to eradicate poverty in the sub-Saharan Africa. As Microfinance becomes more widely accepted and moves into the main stream, the supply of services to the poor might increase, improving efficiency and outreach while lowering costs. The greatest contribution of MFIs is that it empowers people both financially and boosts their self-esteem as well as confidence ⁴

Furthermore, according to (A Comprehensive Literature on Impact of Microfinance, 2013), microfinance can be used as a tool for empowerment as well as for social protection (Savings, Insurance, remittance) .As (Munene, 2014) notes, the confidence of the people is boosted by the non-financial services that MFIs offer such as vocational skill training, consultancy, advisory services as well as social services. It is of importance because despite provision of financial services to Micro and Small enterprises, they are unlikely to grow significantly because of other constraints that could be addressed by the non-financial services(Munene, 2014, pp. 253-254) Hence the need to ensure that MFIs are sustainable.

1.4 Trends of MFIs

MFIs were restricted to loans and were funded by either governments or aid agencies and thus based on “soft capital” Later on; MFIs branched out and began offering other financial services such as loans, insurance to cover life, health, crop and properties. They also started raising capital by issuing equity or debt capital. Furthermore, they could securitize their loans of offering micro-credit backed securities.(Elgar, 2008)

⁴ Microfinance in Africa: Combining the Best practices of Traditional and Modern Microfinance Approaches towards Poverty eradication

MFIs are divided into Tier 1 and Tier 2. Tier 1 is institutions that serve a well diversified client base, generate sustainable returns and have an experienced management. Tiers 2 on the other hand are fairly younger MFIs with a viable business model and have implemented it to a significant level (ResponsAbility, 2014). In the upper tier of the microfinance, capital markets are actively helping microfinance institutions to tap debt and equity capital. New microfinance institutions have developed which are likely to improve the transparency and potentially reduce the cost of accessing financial services (Elgar, 2008)

In the paper (Network, 2011), it was found that many MFIs have failed to invest in better technology thus limiting their ability to grow. MFIs could consider the increased use of technology in order to increase their outreach. It is good to note that technology will not solve the deficiencies in the MFIs business strategy. It is up to the MFI to sort its mission, vision and have a clear goal before using the technology. However, (Elgar, 2008) notes that technology has played a part in MFIs through use of biometric technology to obtain loan approval and credit history

Between 1997 and 2005, the number of MFIs increased from 618 to 3144. The number of those who received credit from the institutions also rose from 13.5 million to 113 million. (Lensink, 2007)

The clientele of most MFIs show homogeneity in geographical or market segment (Victoria White, 2006). Majority of the customers have access to credit through joint liability lending groups. Group lending provides incentives to group members to screen and monitor each other and to enforce repayment so as to reduce the risk of having to contribute to the repayment of loans to others (Lensink, 2007)

1.4.1 MFIs in Kenya

There are twelve licensed MFIs in Kenya. These include Choice Microfinance Bank, Faulu, Kenya Women Microfinance bank limited, SMEP, REMU, Rafiki, Uwezo, Century, Sumac, U&I, Daraja and Caritas ⁵

⁵ CBK: Bank Supervision: Microfinance Institutions <https://www.centralbank.go.ke/index.php/bank-supervision/microfinance-institutions>

There are 5 wholesale MFIs, 9 deposit taking MFIs and around 36 Retail MFIs. The following figure lists some of the MFIs⁶

Table 1: Classification of MFIs in Kenya

Wholesale MFIs	Deposit Taking MFIs	Retail MFIs
Jitegemee Trust	Kenya Women Finance Trust	Blue Limited
Olkocredit	Rafiki Deposit Taking Microfinance Limited	Eclof Kenya
MESPT	Faulu Kenya DTM	KADET
Women Enterprise Fund	SMEP DTM	BIMAS
Stromme Microfinance East Africa Limited	Remu DTM Ltd	SISDO
	Uwezo DTM Ltd	Micro Africa
	Century DTM Ltd	Opportunity Kenya
	Sumac Credit DTM Ltd	Yehu Microfinance Trust
	U&I DTM Microfinance Ltd	Fusion Capital Ltd

Source: (2013 Microfinance Annual Report)

1.4.2 The 2- lending views of MFIs

(Rhyne, 1998) tackled the split between the poverty camp and the sustainability camp on MFIs lending view even though they all share a common goal that is to provide financial services to millions of poor people in a sustainable way. However, the means to achieving that goal differ

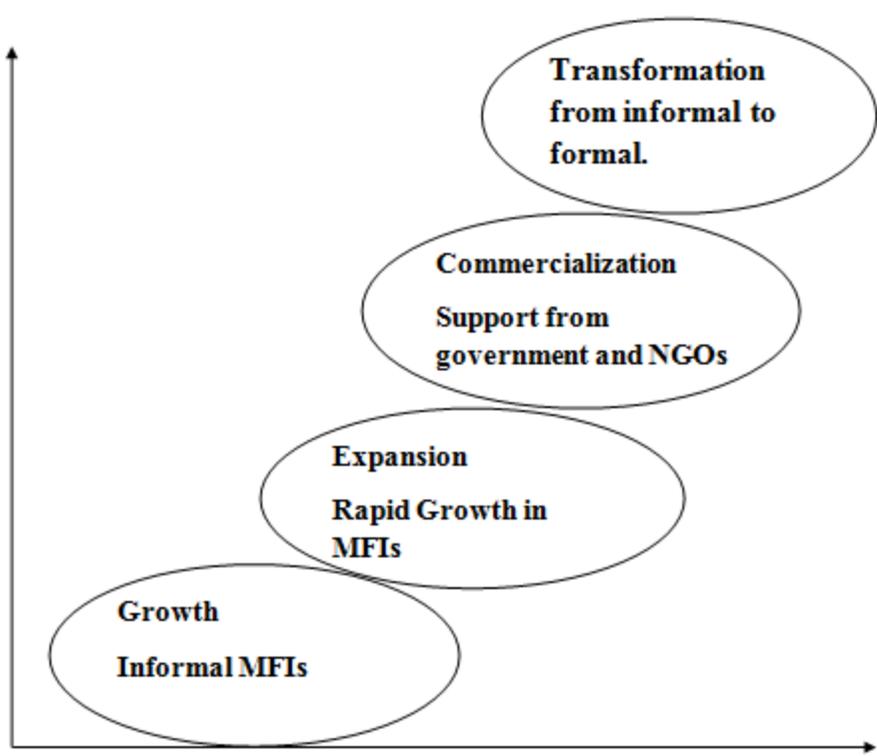
⁶ Association of Microfinance Institutions in Kenya (AMFIK) 2013 annual report

fundamentally. Furthermore (Robinson, 2001) looks into the two lending views i.e. the financial approach and the poverty lending approach. The financial system emphasizes on large-scale outreach to the economically active poor both to borrowers who can repay microloans from enterprise income stream. This approach focuses on the self-sustainability of the institution because it is the only way to reach the large scale demand of financial services globally.

On the other hand, poverty lending approach focuses on reducing poverty through credit accompanied by complementary services such as skills training and the teaching of literacy and numeracy, health and nutrition. Robinson noted that the tools used in this approach are poorly suited for building microfinance on a global scale. She concludes that sustainable microfinance is carried out by microfinance institutions that offer financial services to the economically active poor at interest rates which help cover the cost of the loans.

In agreement with Robinson's point of view, (Rhyne, 1998) emphasized the importance of looking at MFIs delivery methodologies and cost structures that help them in becoming fully sustainable by delivering services that are affordable to clients, concluding that the only way the poor can access financial services is if the private sector finds it profitable. However, quoting Muhammed Yunus speech to the microcredit Summit in February 1997, he observed that credit is not just business, it is a human right.

Figure 1: Growth of MFIs



Source: (K. Srnec, 2009)

1.5 Problem Statement

Over the years, there has been a number of MFIs converting into banks. This commercialization which is characterized by profitability, regulation and competition has stirred a debate on the mission drift of most MFIs. According to (D’Espallier, 2013), it was found that stiff competition between MFIs and well- developed Financial system would push the MFI down, making it hard for them to drift from their mission. Furthermore, if the financial system is less developed, then the MFIs have greater incentives to offer bank services to a huge number hence shifting from the very poor in the society.

The study examined the impact of the transformation process of most MFIs. The study originates from concerns that expansion of MFIs causes a mission drift. The analysis focuses on the financial

trends such as profitability, portfolio size and client size, average loan size and shareholding structure.

The study focuses on the mixed model which combines the different MFI models since most MFIs in Kenya seem to combine the different characteristics of the models. Furthermore, the study seeks to understand to what extent the Microfinance sector in Kenya has been able to balance their mission and attain sustainability.

1.6 Research Objectives

There are two main objectives of the study:

- a) To determine whether for profit MFIs are more sustainable than non profit MFIs
- b) To determine whether the commercialization of MFIs is a drift or a progression

1.7 Significance of the Study

As at 2014, Kenya's population stood at 45.5 million. The rural poor are estimated to be 16.7 million. 40% of this population lives below the poverty line meaning that access to basic commodities is a luxury. With the establishment of MFIs, the study seeks to understand how efficient they are as a tool for poverty alleviation and what they can do scale up their outreach in a significant way.⁷

Financial inclusion was among the millennial goals. Research on the field of MFIs helps one understand to what extent MFIs have contributed to financial access. This will be through MFIs contribution to the GDP. Furthermore, this information will be relevant to all researchers who have concentrated on MFIs as a field of study.

Furthermore, the study hopes to highlight the impact that expansion in MFIs have on participants and different sectors in the economy.

⁷www.ruralpovertyportal.org/country/statistics/tags/kenya

www.unicef.org/kenya/activities.htm

CHAPTER 2

2.0 LITERATURE REVIEW

There are a number of papers on MFIs. Some discuss the profitability of MFIs mostly focusing on Asia while others focus on the revolution of MFIs. Furthermore, many studies have been made on

the two approaches in Microfinance that is poverty lending approach and financial approach. Different regions give different results. (Robinson, 2001) in Indonesia found that MFIs can be profitable, sustainable, stable and widespread allowing millions of the world's poor to build their lives while Adongo and Stork (2005) in Namibia found that no MFI is independently financially sustainable. The problem of most research in MFIs is that they are anecdotal and case study driven (Lensink N. H., 2007)

2.1 Contribution of MFIs to the economy

According to, (Marino, 2005) MFIs are a tool of economic development after conflict. This is because according to the study, the poor are the most affected when there is violence as they barely have any safety net. Furthermore, MFIs have been used as a tool to eradicate poverty through lending to the low income earners. It is seen that MFIs are helping in a more modest way but critical that is it can expand household's abilities to cope with emergencies, manage cash flows and invest in the future basic financial capabilities (Robert Cull, 2009).

According to (Alimukhamedova, 2013), women's participation in the society has increased as well as enabling the poor to improve their housing, health and get alternative housing opportunities.

2.2 Growth in MFIs

(Zeller, 2002) noted that the growth of MFIs in relation to outreach in developing countries is still low having 1.5% MFI members. (Meyer, 2002) defined outreach as the effort of MFIs to extend microfinance services to the people who are underserved by financial institutions. It is measured by the number of persons served, number of women, depth of outreach and number of financial services provided. However there is a wide distribution of MFIs with at least 85 countries having MFIs. This distribution is particularly well served in Latin America and Asia including Thailand, Mexico and Sri Lanka. While in Eastern and West Africa, they have Kenya, Uganda, Zimbabwe etc (Zeller, 2002)

MFIs operate better in emerging markets than in developed markets. This is because the banking system in the emerging markets is strictly tiered with a large tier of informal lending (Outhwaite, 2007). However, MFI growth is limited in areas where they are involved in conflict for example Sudan and countries that receive less International support for political reasons e.g. Cuba

Some of the key processes that have fueled the growth in MFIs include: 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 and increase in the proportion of immigrants who come from societies where microenterprises are prevalent (Outhwaite, 2007)

With the rapid growth of Microfinance industry, there is an unmistakable trend towards transformation. Many MFIs could transform so as to be able to offer a broader range of services, particularly savings products. In addition, the institution hopes to benefit from increased access to funding from commercial sources compared to the donations and subsidies they had relied on.

2.3 Revolution of MFIs

Initially, MFIs mission was poverty alleviation. However over the years, the MFIs mission seems to have shifted with the argument that in order to serve millions of poor people, they need to be self-sustainable. The way to achieving this self-sustainability is through profitability. This led to two lending views that is Financial system approach and poverty lending approach.

However, (Rhyne, 1998) observes that the two sides at least agree on one thing which is provision of credit services to millions of poor people in a sustainable manner. For one to be able to answer the question of if it is possible to deliver microfinance services to clients at an affordable cost, it's important to look at the delivery methodologies of those institutions.

Poverty lending approach's primary goal is reaching to the poor especially the poorest of the poor, with credit while the financial system approach focuses on commercial intermediation among poor borrowers and savers: its emphasis is on self-sufficiency of institution (Robinson, 2001) He added that different levels of incomes call for different types of financing as shown in the figure below:

Figure 2: Levels of income for different types of Financing

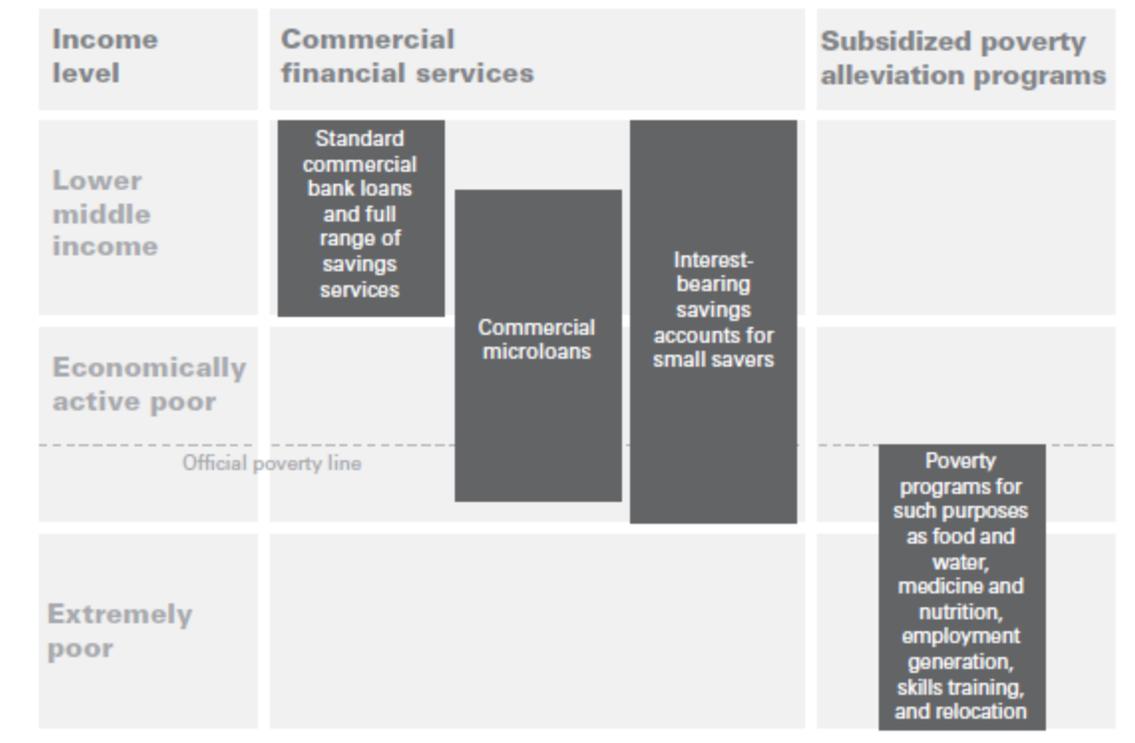


Figure 2 show that when dealing with extremely poor in the society, what they really need is basic needs such as water, shelter and food. For the economically active poor who are the low income earners, what they need is microloans and savings account because they have low paying jobs. Furthermore, they form groups for saving and getting loans. Finally as for the lower middle income level, they are able to afford services offered by commercial banks as they can afford it. They could be taking up a mortgage loan or even a car loan.

There has been no conclusion on this debate. However, (Lensink N. H., 2007) observed that the most recent microfinance paradigm seems to favor financial systems approach. Furthermore, (Lensink N. H., 2007) noted that empirical evidence had not shown that the poor could not afford higher interest rates nor did it show that a negative correlation exists between financial sustainability and poverty level of clients. As the two lending views continued being discussed, (Hishigsuren, 2007) explained that the mission drift was not necessarily a conscious effort. It could be as a result of challenges faced by the up-scaling.

In the 1980s and 1990s, policymakers took a leap, arguing that the new microfinance institution should be profitable or in the prevailing code language they should be “financially sustainable” (Robert Cull, 2009)

The two lending views are justifiable as they all look out for the financial inclusion of the unbanked. The problem with the debate is that majority of the study on the two lending views are either for or against.

2.4 Arguments for emphasizing profitable and sustainability MFIs

One of the arguments for profitability of MFIs was that they need to stay in the economy and put a long lasting positive impact because the poor need access to financial services on a long term basis (Meyer, 2002).

In addition, MFIs face double challenge where they need to provide MFI services to the poor and also cover their costs to avoid going bankrupt (Weber, 2006)

Some additional arguments for profitability include: Small loans are costly for banks to administer to poor households hence the poor can pay high interest rates. Meaning access to Finance is more important than price; Subsidies were the root of the problem in state banks. Hence ongoing subsidization weakens incentives to innovation; subsidies are not available in the quantities necessary to fuel the growing sector even though it is not obvious that subsidized loans will reduce incentives nor subsidized funds are sharply limited or will soon dry up (Robert Cull, 2009)

With this economic contribution of MFIs, there have been many debates that for the MFIs to be sustainable, they need to be profitable. With this profitability, others argue that it will cause a mission drift (Robert Cull, 2009). Furthermore, for microfinance to fulfill their promise on trimming down poverty, they need to be profitable since donor constancy is not given (Sene, 2010)

From the literature on profitability of MFIs, it could be true that MFIs need to be sustainable for them to be able to reach a greater number of poor people. There should be a balance on the amount of profitability that can sustain an MFI especially depending on the type of MFI so as to avoid exploitation of the poor.

To achieve sustainability, MFIs need to have a high quality credit portfolio coupled with application of sufficiently high interest rates and sound management. Furthermore, client outreach

and age of an MFI has a positive impact even though less on the sustainability (Sene, 2010). Sustainability of a program indicates the permanency of that program in realizing the intended goals (Borbora, 2011).

(Borbora, 2011) Provided some reasons for MFIs to be sustainable: An MFI needed to earn profits so that in case donors were to leave, it would still be able to provide its services to the poor in future.

As (Kimando, 2012) noted that financial regulations, the number of clients served, financial coverage and volume of credit transacted were the factors that highly affected the sustainability of microfinance institutions.

2.4.1 Indicators of the sustainability of MFIs

These indicators explain the financial health of the MFIs. They include:

Operational Self Sufficiency (OSS)

OSS indicates whether revenue has been earned to cover the MFI's direct costs excluding cost of capital but including any actual Financing costs. In this case, financial costs are excluded as institutions do not incur this cost equally (Borbora, 2011)

$$\text{Operational Self-Sufficiency (OSS) (\%)} = \frac{\text{Operating income}}{\text{Operating Expenses}} \quad (i)$$

The above formula indicates or measures the degree to which operating income covers operating expenses. If the calculated figure is greater than 100%, the organization under evaluation is considered to be operationally self-sufficient (Elia, 2006)

Financial Self Sufficiency (FSS)

FSS indicates the actual financial health of an MFI. It includes cost of capital adjusted from OSS. FSS is derived from operations divided by operating expenses incurred which excludes revenue from subsidies (Borbora, 2011)

$$\text{Financial self-sufficiency (FSS) \%} = \frac{\text{Adjusted operating income}}{\text{Adjusted Operating expenses}} \quad (ii)$$

FSS shows how an MFI would look if funds had been raised on a commercial basis and if services or equipment had been purchased at a market rate and were not received as a donation (Elia, 2006)

Subsidy Dependence Ratio (SDR)

Quantifies the rate of dependency on subsidies and also measures the extent to which the lending rate would have to be raised in order to cover all the operating costs. SDR suggests that subsidy be compared with revenue from loans and from investments. (Yaron, February 1999)

SDR is used to measure the financial sustainability. However SDR has a short coming where it assumes that increase in interest rates results in gain in profits (Lensink N. H., 2007)

$$\frac{\text{Subsidy}}{\text{Revenue from Subsidy}} \quad (iii)$$

Models used in lending

There are two main models that are discussed by (Borbora, 2011):

Group Lending Microfinance

i. Self-Help Group (SHG)

SHG comprises 10-20 members (all women). The group should have a leader and a treasurer. Savings is compulsory even before you start lending. (Borbora, 2011)

ii. Joint Liability Group (JLG)

This is a credit group hence credit begins immediately that is after the first phase which is six months.

iii. Entrepreneurship Development Loan (ELG)

It is an individual loan program and only SHG members, with good repayment record for the last three loans and JLG members with good repayment record for the last two loans are eligible. (Borbora, 2011)

Microfinance Models

2.6.1 Grameen Bank Model

This model involves formation of a voluntary group of 5 individuals who are morally binding group guarantors for collateral. Later on loans did not need collateral they just needed trust, accountability, participation and creativity. Professor Yunus', the founder of Grameen Bank, perspective of commercial banks was that they are anti-women, anti-poor and anti-illiterate because of their demand for collateral. (Guntz, 2011)

Methodologies of Grameen Bank Model

With the group lending, members are responsible in repaying each other's loans.

Limitations of Grameen Bank Model the poor being pushed to multiple borrowing through the rolling of cash hence making the poor keep borrowing to pay previous engagements; Grameen model is based on credit yet credit alone cannot alleviate poverty; Charges higher interest rates than conventional banks; there is too much external subsidy which is not replicable as the bank has not oriented itself towards mobilizing people's resources and the 50 weekly equal installment repayments is not practical because the poor don't have stable jobs. (Guntz, 2011)

2.6.2 MC2 Model

It is a rural micro-bank developed and managed by a community keeping to their local values and customs. Victory over poverty is possible if the Means (M) and the Competences (C) of the community (C) are combined. (Fotabong, 2011)

$$VP= M*C*C= MC^2 \quad (iv)$$

MC² is a micro banking approach where people in the rural areas endeavor to be self-reliant, create wealth with a view of improving living standards in a sustainable way. MC² has two versions:

- Rural version- MC2
- Urban version- MUFFA

MUFFA

MUFFA focuses on women because research found by the founder showed that the women are the most hit by poverty. It is supported by four pillars that is NGOs, Local population, Appropriate Development for Africa (ADAF) and Afriland First Bank Group. (Fotabong, 2011)

Some of the main objectives of MC2 are Economic and Financial Sustainability from the perspective of the micro bank, individuals and group members and social dimension that is targets the poor, micro and small scale activities and restoring dignity to target beneficiaries. (Fotabong, 2011)

Methodologies of MC2

Micro-bank is more developed and corrects the imperfections of micro-credit and micro-finance. Setting up MC2 micro-bank involves 5 stages that is: Sensitizing the poor and raising their awareness, mobilizing resources, financing individuals income generating activities and carrying out social development projects

However MC2 has several limitations that is it takes time for the MC2 to be financially sustainable, there is upward pressure on loan demand because of low interest and finally, it appears to be more of a distribution channel of a link bank hence collapse of MC2 can affect link bank.

2.6.3 Village Banking Model

Foundation for International Community Assistance (FINCA) implements a village banking model in its effort to create financially sustainable solidarity groups. (Fotabong, 2011) This model is over dependent on external funding furthermore, the high interest is not sensible considering the meager resources of the poor and the purpose put forth to defend the initiative. In addition, many village banks are not registered, neither are they covered by the law.

There has been claimed that these models are investors driven and market based but not so often on serving the poor (Fotabong, 2011). For the MFIs dealt with in this study, there has been no specification of which model they use as most of them has models concepts. These groups remain small by nature, not more than 30000 members (Zeller, 2002)

Individual Model

Most MFIs have fewer than 30000 members. However, individual lending is not suited for countries with low income (Zeller, 2002)

The study leaned towards a mixed model because most MFIs in Kenya do not lean towards one model.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter aims to put a quantitative framework around the debate issue on whether commercialization of MFIs is a mission drift or a progression. Furthermore, it provides a description of the method used when executing the study.

3.2 Research design

In the process of studying the key characteristics of financially sustainable MFIs a number of variables have been used. Those variables include ROA, ROE and OSS. Furthermore, to answer whether the financially sustainable MFIs have drifted from their mission, variables like average loan size, outreach and percentage of women have been used as measures of a mission drift.

3.3 Target Population and Sample

The target population for this particular study was all microfinance institutions currently operating in the country. However, the number was limited by the availability of data for all Microfinance institutions. Currently, there are 12 deposit taking Microfinance banks in Kenya⁸ the source of data provided information on 34 MFIs which constituting of 8 deposit taking MFIs and 26 credit taking MFIs. The limitation of using MIX Market was that there was so much missing data that the study had to narrow down to MFIs that had complete data on the variables used. These MFIs are 14 in total; 4 of them being NGOs, 8 NBFIs and 2 Banks.

The sample data presents a certain sample bias because on those MFIs that report to MIX Market has been considered. Furthermore, there are only 4 NGO MFIs compared to 8 NBFIs.

3.4 Source of Data and Methods of Data Collection

The data was collected from MIX Market which gave a total of 34 MFIs. However, most of these MFIs did not have sufficient information on the variables used in the study. In addition, the MFIs had different time periods which made it hard to do a panel data. However, data from 14 MFIs was collected and analyzed. The analysis is from 2007 to 2013. This gives 98 observations.

⁸ CBK: Bank Supervision: Microfinance Institutions <https://www.centralbank.go.ke/index.php/bank-supervision/microfinance-institutions>

3.5 Variables definition

In the process of studying the key characteristics of financially sustainable of MFIs, a number of variables have been used (MIX)

These variables are explained below:

3.5.1 Profit Status

In order to determine if there is any difference in terms of financial sustainability depending on profit status the MFIs are divided into two groups; non-profit and for-profit according to their registered profit status (MIX) . With this variable, the study is able to analyze the financial performance of the MFIs depending on their profit status. This variable is a categorical variable that the study used as the dependent variable.

3.5.2 Operational Self Sufficiency (OSS)

OSS indicates whether revenue has been earned to cover the MFI's direct costs excluding cost of capital but including any actual Financing costs. In this case, financial costs are excluded as institutions do not incur this cost equally (Borbora, 2011)

Operational Self-Sufficiency (OSS) (%)

$$\frac{\text{Operating income}}{\text{Operating Expenses}} \quad (iii)$$

3.5.3 Return on Assets

This is a measure of financial performance of MFIs which is an indicator of how efficient the MFIs are in using their assets to generate earnings. It is given by:

$$\frac{\text{Net Income}}{\text{Total assets}} \quad (iv)$$

3.5.4 Return on Equity

This measure reveals the amount of net income that shareholders money generates and is given by:

$$\frac{\text{Net Income}}{\text{Shareholders equity}} \quad (v)$$

3.5.5 Efficiency

Previous research indicates that the commercialization of microfinance should lead to more efficiency. To test whether this statement holds or not, the efficiency of the MFIs is measured by:

$$\frac{\text{Borrowers}}{\text{Loan officers}} \quad (vi)$$

3.5.6 Outreach

In order to determine whether or not the different kinds of MFIs are targeting the same type of clients or if a mission drift exists for financially sustainable MFIs, the institutions' outreach is measured. In this study outreach is determined by the average loan size given by:

- i. Average loan balance per borrower

$$\frac{\text{Gross loan Portfolio}}{\text{Number of active borrowers}} \quad (i)$$

- ii. Percentage of women

$$\frac{\text{Number of active female borrowers}}{\text{Number of active borrowers}} \quad (ii)$$

3.6 Regression Methodology

3.6.1 Probit and Logit Models

These are binary outcome models that are used in case one has their dependent variables being one or zero (Jeffrey, 2009). In this study, the dependent variable is profit status which could be 1 or 0. Normally, in OLS, the formula is:

$$Y = X'\beta + c$$

However in the case of Probit and Logit models,

$$Pr(y = 1|x) = F(X'\beta)$$

This means that instead of modeling y in itself, we are modeling the probability that y is equal to 1. F is a functional form that logit and probit uses in order to limit the predicted probability to 0 and 1.

Logit model is given as:

$$f(x'\beta) = \frac{\exp(X'\beta)}{1 + \exp(X'\beta)} = \Pr(y=1|x)$$

Probit model is given as:

$$f(x'\beta) = \Phi(x'\beta)$$

Using either of them gives almost similar results.

The Model coefficient

The Probit and Logit models are estimated using the Maximum likelihood model. Interpretation of this is that an increase in x increases or decreases the likelihood that $y=1$. The sign is what is interpreted but not the magnitude.

The Marginal effect

This is reported after the coefficient and it reflects the change of probability of $y=1$ given a unit change in an independent variable x . It is calculated as:

$$\frac{\partial y}{\partial x_j} = f'(x'\beta) \beta_j$$

The marginal effect is estimated as:

$$\frac{\partial y}{\partial x_j} = \frac{\sum f'(x'\beta)}{n} \beta_j$$

The marginal effect is interpreted as an increase in x increases or decreases the probability that y=1 by the marginal effect expressed as a percentage. For continuous independent variables, the marginal effect is expressed as one unit change in x.

Relative Risk of the logit Model

It measures the probability that y=1 relative to the probability that y=0.

3.6.2 Panel data Model

This model was used in the study so as to answer the second question whose dependent variable was not continuous. The two variables used to measure mission drift are outreach and percentage of women. Outreach is determined by Gross loan portfolio and number of active borrowers.

The section suggests that outreach is influenced by the sustainability of MFIs and the variables that affect this sustainability are ROA, ROE and OSS.

The study considers the following general panel data model:

$$Y_{it} = a + X'_{it}\beta + ROE\beta + OSS\beta + \mu_{it}$$

Y_{it} is outreach and percentage of women.

CHAPTER 4

4.0 DATA ANALYSIS

The findings that were presented in this section are based on 14 MFIS. The findings and analysis are described in this section with the forthcoming section providing conclusion based on the analysis.

Correlation Matrix

During the analysis, outreach is used as a measure of mission drift. Outreach is obtained by gross loan portfolio divided by the number of active borrowers. We get the correlation of outreach and gross loan portfolio. It gives us 0.0338 which is small indicating low correlation. (Kennedy, 2008) holds that correlations need to be in the area of 0.8 to 0.9 to detect collinearity among two variables. This is given in **Table 1**.

		Gross Loan Portfolio	Average deposit balance per depositor	Outreach	Percent of female borrowers	Number of loans outstanding	Loan officers
Gross Loan Portfolio	Pearson Correlation	1	.079	.338 ^{**}	-.115 [*]	.906 ^{**}	.786 ^{**}
	Sig. (1-tailed)		.096	.000	.028	.000	.000
	N	276	276	276	276	276	276
Average deposit balance per depositor	Pearson Correlation	.079	1	.146 ^{**}	-.348 ^{**}	.065	.071
	Sig. (1-tailed)	.096		.008	.000	.140	.119
	N	276	276	276	276	276	276
Outreach	Pearson Correlation	.338 ^{**}	.146 ^{**}	1	.143 ^{**}	.514 ^{**}	.550 ^{**}
	Sig. (1-tailed)	.000	.008		.009	.000	.000
	N	276	276	276	276	276	276
Percent of female borrowers	Pearson Correlation	-.115 [*]	-.348 ^{**}	.143 ^{**}	1	.030	.045
	Sig. (1-tailed)	.028	.000	.009		.311	.229
	N	276	276	276	276	276	276
Number of loans outstanding	Pearson Correlation	.906 ^{**}	.065	.514 ^{**}	.030	1	.919 ^{**}
	Sig. (1-tailed)	.000	.140	.000	.311		.000
	N	276	276	276	276	276	276

Furthermore, the study gets the correlation of the variables which are used in answering the second question on whether sustainability means mission drift or progression. The result is as shown in **Table 2**. The correlation is low which eliminates the possibility of multicollinearity.

Table 2

```

. cor roa roe oss
(obs=98)
-----+-----
      |      roa      roe      oss
-----+-----
roa   |      1.0000
roe   |      0.1898      1.0000
oss   |      0.0675      0.0907      1.0000

```

4.1 Panel data Model

The study performed regressions for each variable that measured mission drift and the variables that measured financial performance. The data is panel data since we have seven years of observations and 14 MFIs. The observation is very small due to the limited data that was available.

The first equation was on outreach and aims to find out if outreach depends on the financial performance of an institution. In our analysis given by **Table 3**, the coefficients are really low an indication that outreach is not affected by the financial performance of an institution. It could mean that sustainability does not necessarily mean mission drift it could mean progression that is expanding the services the Microfinance institution offers.

Table 3

```

-----+-----
outreach |      Coef.      Std. Err.      z      P>|z|      [95% Conf. Interval]
-----+-----
      roe |      .135995      .1084726      1.25      0.210      -.0766073      .3485974
      roa |      .0106164      .0425168      0.25      0.803      -.072715      .0939477
      oss |      -.121663      .0876727     -1.39      0.165      -.2934983      .0501722
      _cons |      .6438569      .0698804      9.21      0.000      .5068939      .78082
-----+-----
sigma_u |      .22674851
sigma_e |      .10018032
rho     |      .83668126      (fraction of variance due to u_i)

```

In **Table 4**, the percentage of women and the ratios that indicate the financial performance of MFIs are regressed. This fraction of female borrowers has been used as a measure of outreach in a number of studies because historically, women have been considered poorer and less powerful especially in developing countries. From **Table 4**, the coefficients are very low indicating that the relationship between Percentage of women borrowers and the financial performance of the institution is not correlated.

Table 4

```

corr(u_i, x) = 0 (assumed)          Prob > chi2 = 0.3943
-----
      women |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----+-----
      roe   |   .2783745   .1622526     1.72   0.086   -.0396348   .5963839
      roa   |  -.0043541   .0108675    -0.40   0.689   -.025654    .0169457
      oss   |   .0078223   .1278104     0.06   0.951   -.2426814   .258326
      _cons |   .358108    .0616163     5.81   0.000   .2373423   .4788738
-----+-----
      sigma_u |   .16681319
      sigma_e |   .20618775
      rho     |   .39560177   (fraction of variance due to u_i)
-----

```

4.2 The Logit Model

The model was used because of its avoidance of the unboundedness nature of the linear model. The limitation of using this model in our study is that it uses Maximum Likelihood which requires large samples. Given that our dependent variable was a dummy variable, we chose to work with logit.

The table below summarizes the findings

Dependent variable (Profit status)		Logit Model
ROE	Coefficient P-Value Slope	-0.1364 0.851 0.0007885
ROA	Coefficient P-Value Slope	-2.25 0.888 0.3588
OSS	Coefficient P-Value Slope	-1.906 0.875 -0.1534
Constant	Coefficient P-Value	11.72 0.002

Holding all factors constant, every unit change in an institution's ROE decreases the log of the odds ratio (logit) of it being a Bank or NBFi by -0.1364. Furthermore, if ROA increases by a unit from the mean of ROE, the probability of the MFI being a Bank or an NBFi increases by 0.07885%.

Holding all other factors constant, every unit change in an MFI's ROA decreases the logit of getting an MFI that is a bank or an NBFi by 2.25. Also, if ROE increases by a unit from the mean, their probability of getting an MFI that is a bank or an NBFi increases by 35.88%. This percentage is much higher than that of ROE.

Holding all other factors constant, every unit change in an MFI's OSS decreases the logit of getting an MFI that is a bank or an NBFi by 1.906. In addition, if OSS increases by one unit from its mean, the probability of getting an MFI that is a bank or an NBFi decreases by 15.34%.

Pseudo R- squared is not interpreted the same as in OLS. For this reason, the R squared in the study is very low. Clearly, the results are not what was expected. The reason could be because the study picked a dependent variable from the study whose criteria has not been clearly explained. From the analysis, the for profit MFIs are not sustainable as ROA, ROE and OSS barely explain the profit status of an MFI.

5. Conclusion

Over the years, the foundation of MFIs industry has been challenged. Muhammed Yunus ideologies have been put to task. His views have been contradicted by arguments that for profit MFIs to be seen as sustainable they must make profit. However, the problem comes in when these profits push MFIs away from their target group that the low income earners due to the interest rates charges and other service cost.

In this study, the signs of mission drift are not immense but still significant enough to encourage further investigations. As a complement of this study, an investigation on the impact of financial innovation on MFIs should be carried out. This is because from the study, there is general observation that for many, financial sustainability means cost. This does not have to be the case with financial innovation, at least in the long term. With Financial innovation, it could go a long way into increasing the financial inclusion. In addition, research should be carried out on how new Financial products can be used to address the needs of low income earners.

Finally, based on the previous studies in Bangladesh and case studies from other Asian Countries, it is my belief that microfinance industry, in order to survive in the long term must continue striving towards financial sustainability. However, this does not mean that they should move from their main target. It does not have to be a mission drift. It can be a progression, instead of targeting other clients, they can target the same clients but with a variety of products.

Further studies should be done on East Africa Microfinance industry performance.

Works Cited

- A Comprehensive Literature on Impact of Microfinance. (2013). *Online International Interdisciplinary Research Journal* , 346.
- Alimukhamedova, N. (2013). Contribution of microfinance to economic growth: Transmission channel and the ways to test it. *Business and Economic Horizons* , 27-43.
- Borbora, G. K. (2011). Is Microfinance Outreach Sustainable? A Case of Microfinance Institution Model in India. *Second European Research Conference on Microfinance*, (pp. 1-25). University of Groningen, The Netherlands.
- Brooks, C. (2013, April 4). What is Microfinance? *Business News Daily* .
- CBK. (n.d.). *Bank Supervision: Microfinance institutions*. Retrieved from Central Bank of Kenya: <https://www.centralbank.go.ke/index.php/bank-supervision/microfinance-institutions>
- Colombet, M. S. (2001). From Urban to Rural: Lessons for Microfinance from Argentina. *Development Policy Review* , 339.
- D'Espallier, A. V. (2013). Do microfinance institutions accomplish their mission? Evidence from the relationship between traditional financial sector development and microfinance institutions' outreach and performance. *Applied Economics* 45:15 , 1965-1982.
- Elgar, E. (2008). *Microfinance: Emerging Trends and challenges*. Cheltenham, UK: Edward Elgar Publishing Limited .
- Elia, M. (2006). Basics on micro finance cases studies from the Arab Region. *Texts and Cases* .
- Fotabong, L. A. (2011). Comparing Microfinance Models. 1-15.
- Guntz, S. (2011). Sustainability and profitability of microfinance institutions. *RESEARCH PAPERS IN INTERNATIONAL FINANCE AND ECONOMICS* , 1-53.
- Hishigsuren, G. (2007). Evaluating Mission Drift in Microfinance: Lessons for Programs With Social Mission. *Mennonite Economic Development Associates* , 203-260.
- Jeffrey, W. (2009). *Introductory Econometrics*. Mason, Ohio: Cengage Learning.
- K. Pal Narwal, 2. S. (2013). Performance Analysis of Banks and Microfinance Institutions in India. *Int. J. Manag. Bus. Res* .
- K. Srnc, E. S. (2009). Microfinance in less developed countries, Business or Charity? *Institute of Tropics and Subtropics, Czech University of Life Science, Prague, Czech Republic* , 467-474.
- Kennedy. (2008). *A guide on Econometrics, 6th edition*. Malden, Mass: Blackwell Publishing.
- Kenya, A. o. (2013). *2013 Microfinance Annual Report*. Microfinanza Report.

Kimando, M. G. (2012). Factors Influencing the Sustainability of Micro-Finance Institutions in Murang'a Municipality. *International Journal of Business and Commerce* , 1-25.

Lensink, N. H. (2007). The empirics of Microfinance: What do we know? *The economic Journal* .

Lensink, N. H. (2007). THE EMPIRICS OF MICROFINANCE: WHAT DO WE KNOW? *The Journal of Economics* .

MAHMOOD, S. A. (2009). GROWTH AND PERFORMANCE OF MICROFINANCE IN PAKISTAN. *JSTOR* , 99-122.

Marino, P. (2005). Beyond Economic Benefits: The contribution of microfinance to post conflict recovery in Asia and the Pacific. *The Foundation for Development Cooperation1* , 1-14.

Meyer. (2002). Track Record of Financial Institutions in Assisting the poor in Asia. *ADB Institute Research Paper Series* .

(2000). *Microfinance in Africa: Combining the Best Practices of Traditional and Modern Microfinance Approaches towards Poverty Eradication*. United Nations Economic commission for Africa.

MIX. (n.d.). Retrieved 2011 June, from Microfinance Information Exchange:
<http://www.mixmarket.org/data-difference>

Munene, P. (2014). The Role of Micro-Finance Institutions to the Growth of Micro and Small Enterprises (MSE) in Thika, Kenya (Empirical Review of Non-Financial Factors. *International Journal of Academic Research in Accounting, Finance and Management Sciences* , 252.

Network, E. M. (2011). *The use of Technology in Microfinance*. Retrieved May 20, 2016, from The use of Technology in Microfinance Fondazione Giordano Dell'amore: www.fgda.org/dati/.../files/The-use-of-technology-in-Microfinance.pdf

Njoroge, K. (2008). *THE PROSPECTS OF MICROFINANCE: THE POTENTIAL GROWTH OF KENYA'S MICROFINANCE INDUSTRY*.

Novotel, L. (2009). *Definition and evolution of Microfinance*. Fiji: Fiji National Microfinance Workshop.

Outhwaite, J. J. (2007). The Question of Sustainability for Microfinance institutions. *Journal of Small Business Management* , 23-41.

ResponsAbility. (2014). *Microfinance Market Outlook 2015 Growth driven by vast market potential*. ResponsAbility Investments.

Rhyne, E. (1998). The Yin and Yang of Microfinance: Reaching the Poor and Sustainability. *MICROBANKING BULLETIN* , 6-8.

Robert Cull, A. D.-K. (2009). Microfinance meets the market. *The Journal of Economic Perspectives* , pp. 167-192.

Robinson, M. S. (2001). *The Microfinance Revolution: Sustainable Finance for the poor*. Washington DC: International Bank for Reconstruction and Development/ THE WORLD BANK.

Sene, A. G. (2010). What Drives Microfinance Institutions Financial Sustainability. *The Journal of Developing areas* , 303-324.

Victoria White, J. L. (2006). *Transforming Microfinance Institutions: Providing full Financial services to the poor*. Washington, DC: The International Bank for Reconstruction and Development /World Bank.

Weber, G. F. (2006). Measuring Performance pf Microfinance Institutions . *Center Recherche Appliquee en Gestion* .

Webster Leila, P. F. (1996). The Informal sector and Microfinance Institutions in West Africa. Washington DC, USA: World Bank, Africa Industry and Energy Department and Private Sector Development Department.

Yaron, M. S. (February 1999). The Subsidy Dependence Index and Recent Attempts to Adjust It. *Savings and Development* , Pp. 375-405.

Zeller, C. L. (2002). Distribution, growth and performance of the Microfinance Institutions in Africa. *Savings and Development* , 87-111.

6. Appendix Quantitative Findings

Table 5 Regress Profit status ROA ROE OSS

Iteration 4:	log likelihood = -9.4663635	(not concave)				
Iteration 5:	log likelihood = -9.4362453					
Iteration 6:	log likelihood = -9.1878556	(not concave)				
Iteration 7:	log likelihood = -9.1878556	(not concave)				
Iteration 8:	log likelihood = -9.1822968	(not concave)				
Iteration 9:	log likelihood = -9.0159097					
Iteration 10:	log likelihood = -8.9674936					
Iteration 11:	log likelihood = -8.9622717					
Iteration 12:	log likelihood = -8.9622044					
Iteration 13:	log likelihood = -8.9622043					
Random-effects logistic regression						
Group variable: firm	Number of obs =	98				
	Number of groups =	14				
Random effects u_i ~ Gaussian						
	Obs per group: min =	7				
	avg =	7.0				
	max =	7				
Log likelihood = -8.9622043	wald chi2(3) =	0.08				
	Prob > chi2 =	0.9936				

profitstatus	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
roa	-2.250493	15.9109	-0.14	0.888	-33.43528	28.93429
roe	-.1364466	.7269474	-0.19	0.851	-1.561237	1.288344
oss	-1.906053	12.15327	-0.16	0.875	-25.72602	21.91392
_cons	11.71859	3.692522	3.17	0.002	4.481385	18.9558

/lnsig2u	6.590388	1.576613			3.500282	9.680493

sigma_u	26.98264	21.2706			5.755415	126.5005
rho	.9955017	.0070602			.9096554	.9997945

Likelihood-ratio test of rho=0: chibar2(01) =				97.69	Prob >= chibar2 = 0.000	

Table 6 Marginal Effect after Logit

```

-----
      name: <unnamed>
      log:  C:\Users\Jeanie\Desktop\wangechi\marginals.smcl
      log type: smcl
      opened on: 21 Nov 2016, 15:37:37

. use "C:\Users\Jeanie\Desktop\wangechi\profitstat.dta", clear

. logit profitstatus roa roe oss

Iteration 0:  log likelihood = -58.63042
Iteration 1:  log likelihood = -57.812384
Iteration 2:  log likelihood = -57.807132
Iteration 3:  log likelihood = -57.807128

Logistic regression                                Number of obs   =          98
                                                    LR chi2(3)      =           1.65
                                                    Prob > chi2     =          0.6489
Log likelihood = -57.807128                        Pseudo R2      =          0.0140

-----
profitstatus |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----+-----
      roa |    1.765599   1.691716     1.04   0.297    -1.550104   5.081302
      roe |    .0038797  .1123363     0.03   0.972    -.2162953   .2240547
      oss |   -.7550347   1.256111    -0.60   0.548    -3.216967   1.706897
      _cons |    1.133709   .3998282     2.84   0.005     .35006     1.917358
-----

.

. margins, dydx(*) atmeans

Conditional marginal effects                Number of obs   =          98
Model VCE      : OIM

Expression   : Pr(profitstatus), predict()
dy/dx w.r.t. : roa roe oss
-----

```

Table 7 A sample of how the data was arranged for Analysis

mfi	firm	profitstatus	year	roa	roe	oss
BIMAS	1	0	2007	-0.0345	-0.051	0.2134
BIMAS	1	0	2008	0.0156	0.029	0.1414
BIMAS	1	0	2009	0.0118	0.0239	0.1634
BIMAS	1	0	2010	0.0189	0.0429	0.1764
BIMAS	1	0	2011	-0.0264	0.0666	0.1563
BIMAS	1	0	2012	0.0308	0.0776	0.1883
BIMAS	1	0	2013	0.0304	0.0809	0.2558
Eclof	2	1	2007	0.0342	0.1177	0.2346
Eclof	2	1	2008	-0.0792	0.2442	0.198
Eclof	2	1	2009	0.0342	0.1177	0.2346
Eclof	2	1	2010	0.0138	0.0486	0.236
Eclof	2	1	2011	0.0133	0.0535	0.2504
Eclof	2	1	2012	0.0128	0.0583	0.2647
Eclof	2	1	2013	0.0123	0.0636	0.2799
FAULU	3	1	2007	0.0229	0.1204	0.2018
FAULU	3	1	2008	-0.0111	-0.0708	0.2128
FAULU	3	1	2009	-0.0176	-0.1202	0.238