

**THE EFFECT OF OUTREACH ON FINANCIAL PERFORMANCE OF
MICROFINANCE INSTITUTION IN ETHIOPIA**

**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF
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(MSc) DEGREE IN ACCOUNTING AND FINANCE**

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MAY, 2015**

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DECLARATION

First, I declare that this Thesis is my work and that all sources of materials used for this thesis have been fully acknowledged. This thesis has been submitted in partial fulfillment of the requirement for the Degree of Master of Science (MSc) in Accounting and Finance.

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Thesis Approval Sheet

The Thesis entitled, “THE EFFECT OF OUTREACH ON FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTION IN ETHIOPIA”

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ABSTRACT

Across African regions, MFIs in East Africa are the most profitable while those in West Africa generate positive returns. The question, however, remains as to whether this profitability is because of increased outreach or not. Such knowledge is vital in developing strategies that would enhance the expansion of outreach and hence alleviation of poverty. The study aimed to investigate the effect of outreach on financial performance of MFIs in Ethiopia.

This study examines the effect of outreach on financial performance of a total of twelve microfinance institutions in Ethiopia covering the period of 2005-2014 from total population of 33 MFIs. The sample was selected purposively to examine the effect of outreach on financial performance. The study was adopted explanatory research approach. The collected panel data was analyzed using descriptive statistics, correlation and multiple linear regression analysis. The finding of the study shows that number of active client, percentage of women client, average loan size and client saving have statistically significant and positive relationship with microfinance return on asset. Ages of institution insignificant factors and they do not have an impact on microfinance ROA. Based on the study findings, MFIs keen on enhancing their financial performance should therefore focus on increasing the number of active borrowers, percentage of women client, average loan size and total client saving. Number of active borrowers, percentage of women client, total client saving is the breadth of outreach for MFIs and average loan size is the depth of outreach for MFIs, therefore outreach is seen to affect financial performance of MFIs significantly. Although the other elements of outreach such as age of institution affect financial performance of MFIs, they are not significant.

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List of Acronyms

AEMFI	Association of Ethiopian Microfinance Institutions
AdCSI	Addis Credit and Saving Institution
ACSI	Amhara Credit and Saving Institution
AVFS	African Village Financial Service
ALS	Average Loan Size
AOI	Age of Institution
CLRM	Classical Linear Regression Model
DECSI	Dedebit Credit and Saving Institution
FSS	Financial Self-sufficiency
IFAD	International Fund for Agricultural Development
MFIs	Microfinance institutions
NBE	National Bank of Ethiopia
NAC	Number of Active Client
OCSSCO	Oromia Credit and Saving Share Company
OLS	Ordinary Least Square
OMO	Omo Microfinance Institution
OSS	Operational Self-sufficiency
PEACE	Poverty Eradication and Community Empowerment
PWC	Percentage of Women Client
SFPI	Specialized Financial and Promotional Institution
TCS	Total Client Saving

CHAPTER ONE

1. Background of the Study

Microfinance institutions (MFIs) focus on providing credit to the poor who have no access to commercial banks, in order to reduce poverty and to help the poor with setting up their own income generating businesses Hermes, Lensink, Meesters, (2008). Poverty pervasiveness which is worsening the access of the poor to the economic opportunities through which they could build up their assets and enhance income in order to come out of poverty cycle. The potential to avail such economic opportunities mainly depends on the degree of access to financial services. Baye(2012) states that the positive impact of socio economic welfare of the poor can only be achieved if the institutions can achieve a good financial and outreach performance. A way that microfinance institutions can attain growth and provide services on long term basis to increase viability by improving outreach. Ejigu (2009) noted that the performance of microfinance institutions measured on how much microfinance institutions reach to the poor (outreach) and impact (how far the live of those who get financial services) are changing as compared to those who do not get these services. Microfinance institutions focus on providing credit to the poor who have no access to commercial banks to help them with setting up their own income generating businesses. Microfinance is the provision of financial serves to the poor people with very small business or business projects. Only a small fraction of the world population has access to financial instruments, essentially because commercial banks consider the poor people as unbankable due to their lack of collateral and information asymmetries Ejigu (2009).

As stated by Alemayehu (2008), microfinance institutions are characterized with targeting the poor; promoting small business; building capacity of the poor; extending small loans without collateral; and combining credit with savings; and charging commercial interest rates. MFIs are often innovative and flexible in their design and implementation. In rural areas, they are usually small farmers and others who are engaged in small income generating activities such as food processing and petty trade. In urban areas, microfinance activities are more diverse and include shopkeepers, service providers, artisans, street vendors, etc. Micro-Finance clients are poor and vulnerable non poor who have a relatively stable source of income. As Osotimehin (2011) noted the goal of microfinance institutions as development organizations are to service the financial

needs of un-served as a means of meeting development objectives such as to create employment, reduce poverty, help existing businesses to grow or diversify their activities, empower poor people or low income people, and encourage development of new business. According to Alemayehu (2008), the formal financial institutions have played little role in financing development efforts in the rural area because they are clustered in urban conglomerations, concentrate on funding large enterprise, inaccessible to the rural poor especially in terms of distance. In addition to this, the rural poor cannot fulfill banking requirements to obtain banks loan/credit. Besides, banking requirements for collateral/material guarantee and intrinsic banking procedure which in most cases is very difficult for the poor to deal with, the volume loan demanded by small farmers/poor is not appealing to the bank. Microfinance institutions focus on providing credit to the poor who have no access to commercial banks to help the poor with setting up their own income generating businesses. Schreiner (2002) developed dimensions of outreach used to study the relationship between outreach and profitability.

These dimensions are; breadth of outreach (measured by number of clients reached), depth of outreach (measured by loan size); cost of outreach (interest rate and other transaction related costs); scope of outreach (types of products), and length of outreach (period within which a client enjoys the product or service). Copestake (2004) asserts that profitability is necessary to sustain both breadth and length of outreach in search of improving poor people's access to financial services. Meyer (2002) noted that the poor needed to have access to financial service on long-term basis rather than just a onetime financial support. Short-term loan would worsen the welfare of the poor Navajas. et al., (2000). Meyer (2002) also stated that MFI ends up being unprofitable due to low repayment rate or un-materialization of funds promised by donors or governments. Outreach is “a social benefit of microfinance” aiming at improving the well-being of the poor Schreiner, (2002). Conning (1999) defines outreach as the term ‘....typically used to refer to effort by MFIs to extend loans and financial services to the ever –wider audience (breadth of outreach) and especially towards the poorest of the poor (depth of outreach)’. In this definition, outreach is reflected as an effort made to provide loans and financial services to the poorest of the poor.

Outreach has two components, depth and breadth. Depth of outreach is the value that society attached to the net gain of a given client Schreiner (2002). The loan size is usually taken as a proxy for the depth of outreach Bhatt and Tang (2001); Cull et al. (2007); Schreiner (2002). The assumption is that the smaller the loan size, the deeper the outreach, or the poorer the client

the smaller the amounts or shorter times, indicate better depth. Accordingly, it is believed that poorest clients are served if the majorities are female and the average loan size is smaller Bhatt and Tang (2001). An alternative proxy to the depth of outreach of microfinance is the percentage of women borrowers. Women outreach is considered an important indicator in the various social performance measurement and assessment tools used. Breadth of outreach simply involves the number of poor people reached by an MFI and is measured as the total number of active borrowers. The ‘ultimate promise’ of microfinance is, however, to offer financial services to the poor in a profitable way Morduch, (1999). In the context of the above discussions, the purpose of this study is to assess the effect of outreach on financial performance of microfinance institutions in Ethiopia.

2. Statement of the Problem

As MFIs evolved and rapidly expanded both globally and in Ethiopia, questions regarding profitability and outreach have come to the fore. Morduch (1999) and Cull (2006), for example, ask whether microfinance can meet the full promise of reducing poverty without ongoing subsidies. They also observed that high repayment rates recorded by MFIs could not be translated easily into profitability. Buckley (1997) questions whether MFIs are any different from past smallholder rural and cooperative finance of the 1960’s and 1970’s, suggesting that they may not be sustainable without either substantial donor subsidies or a shift towards less poor clients.

The establishment of sustainable MFI that reach a large number of rural and urban poor who are not served by the conventional financial institutions, such as the commercial banks, has been a prime component of the new development Strategy of Ethiopia Wolday (2000). The Ethiopian microfinance sector is one of the fastest growing in the world today. As the end of year 2005 fiscal year, 26 operational MFIs serviced 127, 7939 borrowing clients with an aggregated portfolio of 1,622 billion birr. In terms of outreach these figures represent a nearly 300% increase from end of year 2001(Ethiopian Micro Finance Institutions Performance Report, 2007). The general objective of microfinance institution is to eradicate poverty by providing the poor with sustainable credit facility to start small business. Bayeh (2012), stated that microfinance is a means of poverty reduction strategy for developing countries. The objective of almost all of the

micro finance institutions in Ethiopia is poverty alleviation. To achieve this objective, micro finance institutions should be financially viable and sustainable. As stated by IFAD (2011) lack of access to financial services is a critical constraint to tap and unleash the productive potential of poor households for inclusive growth and equity. Across African regions, MFIs in East Africa are the most profitable and those in West Africa generate positive returns, whereas MFIs in the Central Africa, Southern Africa, and Indian Ocean regions generate negative returns Lafourcade et al (2005). Nevertheless, the question remains whether this profitability is because of increased outreach or not. Such knowledge will be vital in developing strategies that would enhance the expansion of outreach and hence alleviation of poverty on a large scale.

In Ethiopian context, as per the knowledge of the researcher, there is virtually little research effort conducted on the effect of outreach on financial performance of microfinance. Most studies conducted were mainly focused on financial sustainability of microfinance institutions (Asnake, 2012; Nugussie, 2012; Aemiro, 2013, Tilahun 2013); statistical analysis of performance of microfinance institutions Tsegaye (2010); and computation and performance of microfinance institutions Assefa (2010). In addition, many studies conducted on microfinance institutions have been on its effects on poverty alleviation, but a few studies Befekadu (2007) has been focused relationship aspects of both outreach and financial performance of microfinance especially in Ethiopia by using simple descriptive analysis and employing graphs and percentage growth rates. The study did not say anything about the effect of outreach on financial performance of MFIs. The study used number of active client, average loan size and share of women client as variable for outreach and return on asset and return on equity as variable for sustainability of financial performance measurement to examine the relationship of outreach and financial performance of MFIs.

In line with the above discussion, it seems evident that the few studies conducted so far on the performance of MFIs in Ethiopia points to the fact that it is worth researching to uncover and transcend the existing knowledge gap by conducting on in depth investigation at micro level on the effect of outreach on financial performance endeavors of MFIs in Ethiopia. Therefore, rethinking how to bridge the current knowledge gap via meticulous investigation on the effect of outreach on financial performance activities of MFIs in Ethiopia is the main trust of this study.

3. Objectives of the study

3.1 General Objective

The general objective of the study is to assess the effect of outreach on financial performance of micro finance institution.

3.2 The specific objectivities

Furthermore, the specific objectives that this study aims to find evidence for:

- To examine the effect of number of active client on financial performance of microfinance institutions in Ethiopia
- To identify and examine the effect of average loan size on financial performance of microfinance institutions in Ethiopia.
- To examine the effect of percentage of women client on financial performance of microfinance institutions in Ethiopia.
- To examine the effect of age of institution on financial performance of microfinance institutions in Ethiopia.
- To see the effect of total client savings on financial performance of microfinance institutions in Ethiopia.

4 Research hypotheses

Hypotheses of the study stands on the theories related to the effect of outreach on financial performance of microfinance that has been developed by microfinance area researcher's and past empirical studies related to a microfinance the effect of outreach on financial performance. Therefore, based on the existing theories that explains the effect of outreach on financial performance of the MFIs, Based on broad purpose statement the following hypotheses are developed for investigation.

Ho: There is significant positive relationship between a numbers of active client and financial performances.

Ha1: There is significant negative relationship between a number of active client and financial performances.

Ho: There is significant positive relationship between age of the institution and financial performance.

Ha1: There is significant negative relationship between age of the institution and financial performance.

Ho: There is significant positive relationship between percentage of women client and financial performance.

Ha1: There is significant negative relationship between percentage of women client and financial performance.

Ho: There is significant positive relationship between average loan size and financial performance.

Ha1: There is significant negative relationship between average loan size and financial performance.

Ho: There is significant positive relationship between a total client savings and financial performance.

Ha1: There is significant negative relationship between a total client savings and financial performance.

5. Significance of the study

As per the knowledge of the researcher, there is little research conducted in Ethiopia on the effect of outreach on financial performance of microfinance. Therefore, the result of this study will significantly contribute to the existing literature. The study has drawn some conclusions by assessing the effect of outreach on financial performance of microfinance. Hence, it gives a signal for management, and other user to take remedial action. And also help other researcher

who wants to make further study on this topic. The findings of the study benefits to donors, managers and others interested in the MFIs study for it will show the level of financial performance of the MFIs operating in the country have reached. This in turn helps them knowing factors affecting financial performance and thereby takes appropriate actions to increase financial performance of MFIs and the study can initiate other MFIs service providers to give due attention on the management of identified variables. It is hoped that the outcome of this study will also provide an insight of the MFIs industry to other researchers.

6. Scope of the study

The scope of the study is restricted to the effect of outreach on financial performance of microfinance institutions in Ethiopia registered by the NBE that have operated at least for ten years. The secondary data used were collected for the period of 2005-2014. The sample was selected based on the criteria of performing of their services more than ten years. On this study only of assess the effect of outreach on financial performance of selected microfinance institutions in Ethiopia. The financial performance measurements such as liquidity, profitability, asset management, debt management and leverage but to assess the effect of outreach on financial performance of microfinance institution the researcher considered only profitability as financial performance measurement. The outreach of any MFI are measured by the breadth and depth of MFI, to assess the effect of outreach on financial performance of selected microfinance institution this study, uses as a tools to measure the outreach of MFIs are only number of active clients, average loan size, percentage of women clients, age of institutions and total client savings.

7. Limitation of the study

This study aimed at using primary and secondary data but ended up with secondary data only. This was due to lack of time. This was a major challenge for the study and was solved by use of secondary data obtained from association of Ethiopian microfinance institution (AEMFs).

8. Structure of the paper

The study mainly focuses on the assessment of the effect of outreach on financial performance of microfinance institutions in Ethiopia. The paper has been organized in five chapters. Chapter one presents introduction of the study which includes statement of the problem, research objective and hypotheses of the study, methodology, scope, limitation, significance, and structure of the paper. The literature review part of the study is presented in chapter two. The review of literature includes the theoretical reviews in its first section which was be followed by the review of the previous studies related to the area going to be investigated. The methods used to analysed the collected data and research design is presented in chapter three. The results of the different methods used are analysed and presented in chapter four. Finally, chapter five was presented the conclusions and recommendations.

CHAPTER TWO

2. LITERATURE REVIEW

Under this chapter the theoretical and empirical evidences focusing on the effect of outreach on financial performance are presented. Accordingly, the first section, describes overall theoretical overview of micro finance concepts. The second section presents review of empirical studies on the positive and negative effect of outreach on the financial performance of MFIs.

2.1. Theoretical Overview of Microfinance

2.1.1 Definition of Microfinance

Outreach is the depth and width of the major services of microfinance institutions such as: credit provision, savings mobilization, micro insurance, money transfer, and payment services. It is a hybrid measure that assesses the extent to which a Rural Financial Institution (RFI) has succeeded in reaching its target clients and the degree to which the RFI has met the clients' demand for financial services Yaron (1997) cited in Tamrat (2014).

Different authors and organizations have defined Microfinance institutions in different ways. However the concept or the meaning of the definitions is usually the same in which microfinance refers to the provision of financial services; primarily savings and credit to the poor and low income households that don't have access to commercial banks service.

According to Robinson, (2001) definition: Microfinance refers to small-scale financial services- primarily credit and savings-given to people who involved in farm or fish or herd; who work in small enterprises or microenterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages or commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both rural and urban.

Tuuli (2010) defined microfinance as the provision of a variety of financial services to the poor in a way specifically designed to suit the needs of poor people and the challenging contexts of poor regions. These services include credit, savings facilities and insurance.

Robinson (2001) also states that microfinance refers to small-scale financial services primarily credit and savings provided to people who farm or fish or herd; who operate small enterprises or microenterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages or commissions; who gain income from renting at small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both rural and urban. Many such households have multiple sources of income.

Dokulilova et al. (2009) cited in Tilahun and Dereje (2012) stated that microfinance is an effective tool to fight poverty by providing financial services to those who do not have access to or are neglected by the commercial banks and other financial institutions. The poor, having no or very little income, cannot offer any collateral which banks require, have no credit history, banks are too far away to verify and observe their behavior (there is little information) and the loans are generally far too small compared to transaction costs. Ethiopian Proclamation No. 626/2009 defines micro financing business as "the provision of financial services like accepting savings extend credit, drawing and accepting drafts payable, providing money transfer services and others specified in the Article 3(2) of the proclamation.

2.1.2. Microfinance Institutions in Ethiopia

Initially, micro-credit started as a government and non-government organizations motivated plan. Following the 1984/85 severe drought and famine, many NGOs started to offer micro credit along with their relief activities although this was on a limited scale and not in a sustained manner (Alemayehu, 2008)

Wolday and Anteneh (2013) stated in Performance analysis report bulletin 9, institutionalized microfinance started in Ethiopia after the issuance of the microfinance law in 1996 focusing in the delivery of credit and saving services in rural areas. Cognizant of the role of microfinance in poverty reduction, improving food security on ensuring economic growth, the government of Ethiopia has been very active in supporting the development of sustainable microfinance institutions. Most MFIs take this poverty-targeting mandate very seriously. As a result, the Ethiopian microfinance sector is one of the world's fastest growing institutions. As stated in Wolday and Anteneh (2013), between 1997 and 2011 the total asset of the microfinance sector

changed substantially. The industry has grown in terms of the number of clients as well as the number and type of providers and products. The current focus of microfinance is no longer only on credit for investment in microenterprises but also on delivery of diverse types of financial products and services in the target market. There is broad awareness that poor people have different financial service needs, which are typically met by a variety of providers through multiple financial services. Over the years, the discourse has shifted from micro credit to microfinance and now to financial inclusive. Since 2011 31MFIs registered with the National Bank of Ethiopia, have been serve in 2.5 million borrowers with a portfolio of Birr 7.1 Billion (Wolday and Anteneh, 2013).

2.1.3 Theoretical framework for outreach

Yaron (1994) stated that judgments of the performance of microfinance organizations have been based on the concepts of outreach and sustainability. As expressed in Sergio et al. (2000), outreach and sustainability expressed in terms of the theory of social welfare. Outreach is the social value of the output of a microfinance organization in terms of depth, worth to users, cost to users, breadth, length, and scope. Outreach is commonly proxied by the sex or poverty of borrowers, the size or the terms of loan contracts, the price and transaction costs borne by users, the number of users, the financial and organizational strength of the lender, and the number of products offered, including deposits.

Rhyne (1998) stated that the social goal is not to have sustainable microfinance organizations but rather to maximize expected social value minus social cost discounted through time. In principle, sustainability is not necessary or sufficient for social optimality. In practice, however, sustainable organizations tend to improve welfare the most. Most unsustainable microfinance organizations inflict costs on the poor in the future in excess of the gains enjoyed by the poor now. Sustainability is not an end in itself but rather a means to the end of improved social welfare. Thus outreach stands for the social value of loans from a microfinance organization, and sustainability helps to maximize expected social value minus social cost discounted through time, including the net gain of users from loans and deposits, the profits or losses of the microfinance organization, and the social opportunity cost of the resources used.

Sergio et al. (2000), sustainability affects outreach because permanency tends to lead to structures of incentives and constraints that prompt all the groups of stakeholders in a lender to act in ways that increase the difference between social value and social cost. In principle, a complete evaluation would use cost-benefit analysis or cost effectiveness analysis to compare social value with social cost in general equilibrium. In practice, it is so expensive to measure social value and social cost that almost all talk proceeds in terms of outreach and sustainability in partial equilibrium.

2.1.4 Measurement and aspects of outreach

Microfinance institutions focus on providing credit to the poor who have no access to commercial banks, in order to reduce poverty and to help the poor with setting up their own income generating businesses. Niels et al. (2008) described this as outreach.

Outreach at glance means the number of clients served. But, Meyer (2002) cited in Befekadu (2007) noted that outreach is multidimensional concept. In order to measure outreach we need to look in to different dimensions. The first is simply the number of persons now served that were previously denied access to formal financial services. Usually these persons will be the poor because they cannot provide the collateral required for accessing formal loans, are perceived as being too risky to serve, and impose high transaction costs on financial institutions because of the small size of their financial activities and transactions. Women often face greater problems than men in accessing financial services so number of women served is often measured as another criterion. Although difficult to measure, depth of poverty is a concern because the poorest of the poor face the greatest access problem. Some measure of depth of outreach is needed to evaluate how well MFIs reach the very poor. Finally, the variety of financial services provided is the criterion because it has been shown that the poor demand and their welfare will be improved if efficient and secure savings, insurance, remittance transfer and other services are provided in addition to the loans that are the predominant concern of policy makers.

Wolday and Anteneh (2013) stated in the bulletin of Association of Ethiopian Microfinance Institutions (AEMFI) that the outreach of MFIs measured in terms of the number of active clients (with outstanding loan), loan size, number of saving clients, volume of savings, percentage of

loans to clients below poverty line, percentage of female clients, the level of transaction costs levied on the poor and the extent of client satisfaction with respect to financial services.

Navajas et al. (2000) and Schreiner (1999) stated six aspects of outreach.

ii. **Depth:** Depth of outreach is the value that society attaches to the net gain from the use of microcredit by a given borrower and poverty can be a good proxy for depth.

ii. **Worth to users:** Worth of outreach to users is how much a borrower is willing to pay for a loan. Worth depends on the loan contract and on the tastes, constraints, and opportunities of the user. With the cost to the user constant, more worth means more net gain.

iii. **Cost to users:** Cost of outreach to users is the cost of a loan to a borrower. Cost to users includes both price and transaction costs. Price includes interest and fees. Prices paid by the user are revenues for the lender. Transaction costs are non price costs that include both noncash opportunity costs such as the value of the time to get and to repay a loan and loan-related cash expenses such as transport, documents, food, and taxes. Transaction costs borne by the user are not revenues for the lender.

iv. **Breadth:** Breadth of outreach is the number of users. Breadth matters since the poor are many but the aid dollars are few.

v. **Length:** Length of outreach is the time frame in which a microfinance organization produces loans. Length matters since society cares about the welfare of the poor both now and in the future.

vi. **Scope:** Scope of outreach is the number of types of financial contracts offered by a microfinance organization. In practice, the microfinance organizations with the best outreach produce both small loans and small deposits.

2.1.5 Financial performance measurements

The financial performance of any MFI may be assessed considering performance measurement tools such as liquidity, profitability, asset management, debt management and leverage

2.1.6 Financial sustainability

The indicator of performance of a micro finance institution is its financial sustainability. Different literatures noted that financial sustainability is one of the areas that we need to look at to assess the performance of micro finance institutions. Meyer (2002) noted that the poor needed to have access to financial service on long-term basis rather than just a onetime financial support. Financial sustainability refers that the ability of a microfinance provider to cover all of its costs on an unsubsidized basis or without accepting donation. According to the United Nations sustainability is necessary to reach a larger number of people on an ongoing basis Elia. M.(2006). If MFIs remain dependent on limited donor funding they will be able to reach only a limited number of people. Financial sustainability is not an end in itself but is the only way to reach significant scale. To analyze the sustainability of an MFI the two known a set of ratios have been developed. These are widely accepted and they enable a comparison among MFIs all over the world. These two most important ratios are Operational Self Sufficiency (OSS) and Financial Self -Sufficiency (FSS).

Operational self-sustainability is when the operating income is sufficient enough to cover operational costs like salaries, supplies, loan losses, and other administrative costs. And financial self-sustainability is when MFIs can also cover the costs of funds and other forms of subsidies received when they are valued at market prices.

Operational Self-Sufficiency (OSS) (%) = Operating income/Operating expenses

The above formula indicates or measures the degree to which operating income covers operating expenses. In microfinance, operationally sustainable institutions are able to cover their costs through operating revenues.

Financial self-sufficiency (FSS) % = Adjusted operating income/Adjusted operating expenses

This also indicates the degree to which operating income covers adjusted operating expense. The adjustments try to show how the financial picture of the MFI would look on an unsubsidized basis or free from donation.

Operational self-sustainability (OSS) is when the operating income is sufficient enough to cover operational costs like salaries, supplies, loan losses, and other administrative costs. And financial self-sustainability (which he referred as high standard measure) is when MFIs can also cover the costs of funds and other forms of subsidies received when they are valued at market prices Meyer (2002). Financial self-sufficiency (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. M. (2006).

2.1.7 The concept of Profitability

In accounting, profitability is a state of an organizations financial performance where income exceeds total costs Elliots and Elliots, (2008); Wood and Sangster, (1999). Thus from the profitability theory, profit is a function of income and expenses and therefore, anything that affects income and expenses will eventually affect the resulting profit. Wood and Sangster (1999). Profit can be increased by either increasing income while holding expenses constant, or by holding income constant and reducing expenses or both. It comes, therefore that determinant of income and expenses are equally the determinant of profit Wood and Sangster, (1999). Profitability means ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. According to Harward & Upton, (1961) “profitability is the’ ability of a given investment to earn a return from its use.”

According Al-Shami, (2008) there are different ways to measure profitability such as: return on asset (ROA), return on equity (ROE). Return on Asset indicates of how profitable a company is relative to its total assets. It gives us an idea as to how efficient management is in using its assets

to generate earnings. On the other hand return on equity measures a company's profitability which shows how much profit a company generates with the money shareholders have invested.

2.6.1 Microfinance Income

Income of a microfinance institution is made up of all its own generated income including fees and charges, fines, and interest earned on loans Armendaritz and Morduch, (2007) and Shankar, (2007). The interest rate earned on loans is the key source of self-generated income to microfinance institutions Tellis and Seymour, (2002). The total amount of interest income to an MFI will depend on the rate of interest charged, the amount of loan and the loan repayment rates and the number of clients served. Because the interest income is the major source of income to microfinance institutions, the interest rate should be set at a level where an MFI will be able to cover all its costs (administrative and financing) and be able to earn a certain amount as target profit Shankar, (2007). Other sources of income for MFIs include the sale of passbooks, application forms, and return from other products or services offered by MFIs. The amount of other income to be collected by MFI will depend on its product diversity and return expected from these products Ganka, (2010)

2.6.2 Microfinance Expenses

Microfinance expenses are the second item used to determine profitability. MFIs expenses can be categorized into three main categories namely, operating expenses, administrative expenses and financing expenses. The operating expenses of MFI's include transactions costs and loan losses because of the bad debts. According to Shankar (2007), transaction costs are a function of a number of groups that an MFI serves and field workers compensations. The transaction costs are affected by the cost per transaction and the number of transactions .The number of transactions may depend on the number of clients and or the repayment frequencies all of which relate to microfinance outreach.

These expenses include staff salary, office running expenses, staff visit expenses, costs of running client training, transportation expenses and the costs incurred in setting –up and running a branch or collection centre. According to Woller and Schreiner (2002), salaries are the largest element of the administrative expenses. The Administrative expenses or cost can be categorized

as fixed and variable costs. Variable administrative costs are those varying in total with the number of clients Horngren, (2006); Drury, (2005). That is, their increase or decrease depends on increase or decrease in the number of clients respectively. For these kinds of costs, the total costs will increase with the increase in microfinance outreach as measured by the number of clients.

Microfinance institutions incur financing costs when sourcing their capital. The costs paid to providers of capital are known as costs of financing Brealey et al (2006); CGAP (2003). Sources of capital for MFI include owner's share (share capital), loans (both from capital market or concessions loans), donations, and client savings and deposits. All factors held constant, higher financing costs, lead to lower profitability of an MFI. A combination of cheap sources of capital will reduce the overall financing expenses and therefore, increase profitability.

2.2 Empirical Review

In a study by Balkenhol (2007), all 45 MFIs reviewed in the survey were being subsidized in one way or another of which 34 were convinced that without subsidies, they would not be able to move up-scale by improving their use of human and financial resources. With respect to outreach, a study by Seibel and Parhusip (1998) established that a group-lending methodology was a major factor in increasing the scale of outreach. The authors compared the before and after effect of employing the group based methodology and found that in one year the number of clients increased by 69% when the institution adopted a group lending methodology. Navajas (2000) found that group-lending technology had more potential for deeper outreach because of the joint liability (as security) that replaces physical collateral. The findings on the study based on five Bolivian lenders found that group lenders reached the poor better than individual lenders. However, even among the high overall level of cost coverage, some clear differences emerge between groups. Most importantly, group lenders are notably less frequently profitable than individual lenders and those employing both kinds of contracts, as well as NGOs compared to SACCOs or companies. Cull et al. (2009) reported similar findings in their analysis of 346 leading microfinance institutions: NGOs were less often profitable than other non-bank financial organizations and individual lenders more often than those employing other lending methodologies were. Even though Cull et al. define profitability at a higher level, financial self sufficiency rather than operating self-sufficiency, the pattern is similar, suggesting that the operating methods of the MFIs does play a role in determining the profitability of the

institutions. According to Society for Development Studies (2006), the number of borrowers is the biggest sustainability factor. Thus, larger numbers of clients would lead an MFI to become more sustainable. However, this argument may be strong if and only if all other things are held constant. Otherwise, the volume in itself may lend no big impact on sustainability. To substantiate this, one would need to consider the Grameen Bank with a very broad client base but it has not yet attained self-sufficiency Conning, (1999) although it remains to be among the best example in the microfinance industry.

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The other study which is undertaken by Lafourcade et al, (2006) Overview of the Outreach and Financial Performance of Microfinance Institutions in Africa by taking 163 MFIs from 25 countries show that MFIs around the world continue to demonstrate low PAR > 30 days, with a global average of 5.2 percent but African MFIs maintain relatively high portfolio quality, with an average PAR > 30 days of 4.0 percent, performing better than their counterparts in South Asia (5.1 percent), LAC (5.6 percent), and East Asia (5.9 percent). When MFIs are faced with poor portfolio quality, they may write off the loans from their books or refinance the loans by extending the term, changing the payment schedule, or both. The result shows that loan at risk is negatively correlated with MFIs financial performance. Osotimehin et al. (2011) investigated determinants of microfinance outreach in South Western Nigeria. The study especially examined determinants of microfinance institution outreach by employing secondary annual panel data purposively collected from 80 microfinance institutions in Lagos and Ondo states (Nigeria) over

a period of six years from 2005-2010. According to this study's finding, microfinance outreach is positively and significantly determined by average loan size, debt equity ratio, loan repayment rate and salaries. This study also found that real effective lending rate is negatively related with outreach. A survey by Robert Cull and others on the performance of leading MFIs in 49 countries finds interesting results. It founds over half of surveyed MFIs are profitable after making adjustment of subsidies. It also identified no evidence of trade off between being profitable and reaching the poor.

Olasuyo et al. (2014) examined outreach and financial sustainability of Microfinance Banks (MFBs) in South West Nigeria to ascertain how well they have contributed to the financial intermediation process. The study measured outreach through technical efficiency (input oriented measures) which was estimated using production approach as emphasis was on the bank as a productive unit using data envelopment analysis for the activities of 86 MFBs for years from 2006-2010 in South West Nigeria. Initially, the study expected the MFBs operational strategy (i.e., micro-credit only or microcredit and other services) to be a determinant of outreach. A variety of micro products and services was expected to provide a broad range of options and present the MFBs as a one-stop shop to both active and potential customers. The study was expected this to create a diverse client base and hence stimulate better outreach. However, the non significance of the variable could be due to the fact that most of the MFBs that claim to offer this other services have them only on their books as most of the services are not operationalized. Also the poor capacity of the MFBs operators to develop these other product and services into profit units has limited their appearance as more of marketing gimmicks than microfinance services.

The study was also expected the age of the MFBs to be significant as microfinance follows the learning curve concept of perfection through repeated practice. MFBs with longer years of experience were expected to have perfected their outreach strategy and have well structured growth pattern than their counter parts who are new in the system. However, considering the fact that the MFBs operations were pooled over the five years of the study period, the study revealed that the learning experience could have been smoothened out over the five years as most of the MFBs would have stabilized their operations and adopt preferred practices in reaching their potential clients.

Benson et al. (2013) examines the relationship between sources of funds and outreach of SACCOS in Tanzania with specific attentions on external sources of funds. The paper employed panel data obtained from Ministry of Agriculture Food and Cooperatives for the period 2005-2012 and analyzed based on panel data regression model. The results indicate that there is positive relationship between outreach and external sources of funds. This is the case because there is inelastic demand for credit which is due to low living standard among majority of people and also there is growing desires for development among Tanzanian. The paper stated that SACCOS sub-sector is still very young and also dealing with poor people whom their internal contribution alone might not be large enough to fulfill the demand for credits and as results when there is opportunity to get more credits there would be increase in members and average loan size. Furthermore the results depict that loan/credit has positive relation with liabilities/debt–equity ratio. Also findings demonstrate that liabilities/debt–equity ratio is linearly increasing with time and has serious impact on total loan portfolio/credits. These indicate that increase in flow external funds in SACCOS is growing faster than savings. But as unique type of microfinance, main objectives of cooperative based microfinance are savings which help members to be the owners, controllers and hence dependent. Therefore if growth of external liabilities exceeds that of internal sources, this has negative image on their structures and objectives, because this trend proves that SACCOS are turning to be the agents of commercial banks. If the trend continues the same way, practically, they will no longer be savings and credits cooperatives societies but credits cooperative societies.

According to Muriu, (2011) empirical study on determinants of profitability of African MFIs, under the study “what explains the low profitability of MFIs in Africa” tried to find the factors contributing to profitability of MFIs. He used Generalized Method of Moments (GMM) system using an unbalanced panel dataset comprising of 210 MFIs across 32 countries operating from 1997 to 2008. The proxies for profitability were both ROA and ROE. Credit risk measured by the sum of the level of loans past due 30 days or more (PAR>30) and still accruing interest is negatively and significantly related to MFI profitability. This study therefore finds evidence to support the conjecture that increased exposure to credit risk is normally associated with lower MFI profitability. According to the study Nimal Sanderatne, (2003) cited by Dissanayake, (2012) a study on determinants of financial viability, defined that the operational efficiency and low administration costs have an important bearing. Besides, a study on financial performances, the

study declared that, many MFIs are not considered sustainable. By stating the fact, the researcher confirmed that the operational efficiency is inevitable to attract funds. Dissanayake (2012), Operating efficiency is proxies by operating expense ratio which is adjusted operating expense divided by adjusted average gross loan portfolio and concludes that Operating Expense Ratio, are statistically significant predictor variables in determining Return on Assets Ratio. In line with this idea Muriu, (2011) conclude that inefficiency in the management of operating expenses to significantly decrease MFI profitability.

According to Nelson, (2011) study entitled that performance of assessment of micro finance institution in the Ashaiman municipality, its result show that the Rural Bank recorded debt/equity ratio of 50.89 in 2007 but increased to 54.05 in 2008. It increased further to 61.65 in 2009 and to 77.35 in 2010 showing an average of 60.99%;Depicting that most of its operations are financed by debt instruments and, should probably be regulated. The Savings and Loans recorded a rapid increase from 0.30 in 2007 to 0.8 in 2008. It again increased sharply to 2.97 in 2009 and to 4.89 in 2010 with an average of 2.24. The sharp increment may signify that Savings and Loans of approaching its borrowing limit which in turn will force it to curtail growth. The Credit Union's debt/equity decreased throughout the study period from 0.89 to 0.61 to 0.45 to 0.77 respectively. Implying that, more equity is used to finance business than debt.

Bereket and Lalitha (2012) examined a trade-off between outreach to the poor and financial sustainability on 85 Indian microfinance institutions using correlation matrix. The study stated that there has been argument in the literature that the more microfinance institutions aim for financial sustainability the less will be the impact on poverty reduction and hence there is trade-off between outreach and to the poor and financial sustainability. The paper also indicated that there are other researchers still argue that outreach to the poor and being financial sustainable are complementary rather in the sense that there are larger number of clients enable microfinance institutions to boost economies of scale and reduce cost. However, the finding of this study does not support the trade-off between outreach and financial sustainability more specifically, the correlation between average loan size (proxy to outreach) and operational sustainability is weak. In addition the correlation between number of women borrowers (alternative proxy to breadth of outreach) and operational sustainability is also weak. But the study revealed that there is strong positive correlation between number of active borrowers and operational sustainability. Simple

correlation between average loan size and number of women borrowers has shown strong negative correlation which may indicate that women are borrowing small loans.

Luka (2007) investigated and identified determinants of sustainability and outreach and the effects of financial regulation of MFIs on their sustainability and outreach with reference to Uganda. The paper used econometric approach on panel data collected from 53 MFIs in Uganda over a period of six years (2000-2005). It stated that outreach of studied microfinance institutions in Uganda is significantly driven by the ratio of gross loan portfolio to total asset, the level of effectiveness of governance, the average loan size relative to the national per capita income, the unit cost of loans disbursed, the average salary/wage paid to staff relative to the national per capita income, the age of the microfinance institution, and the microfinance institution being a saving and credit cooperatives.

Melkamu, (2012) Determinants of Operational and Financial Self-Sufficiency: he uses quantitative research approach using panel data regression as the main data analysis technique. The study was based on a six years secondary data obtained from the mix-market database for twelve selected MFI in Ethiopia. The study found that average loan balance per borrower, size of a MFI, cost per borrowers and yield on gross loan portfolio affects the operational sustainability of Ethiopian MFIs significantly. Whereas cost per borrower, number of active borrowers and yield on gross loan portfolio affect their financial sustainability. The Study also found that MFIs in Ethiopia are operationally self-sufficient while they are not financially self sufficient.

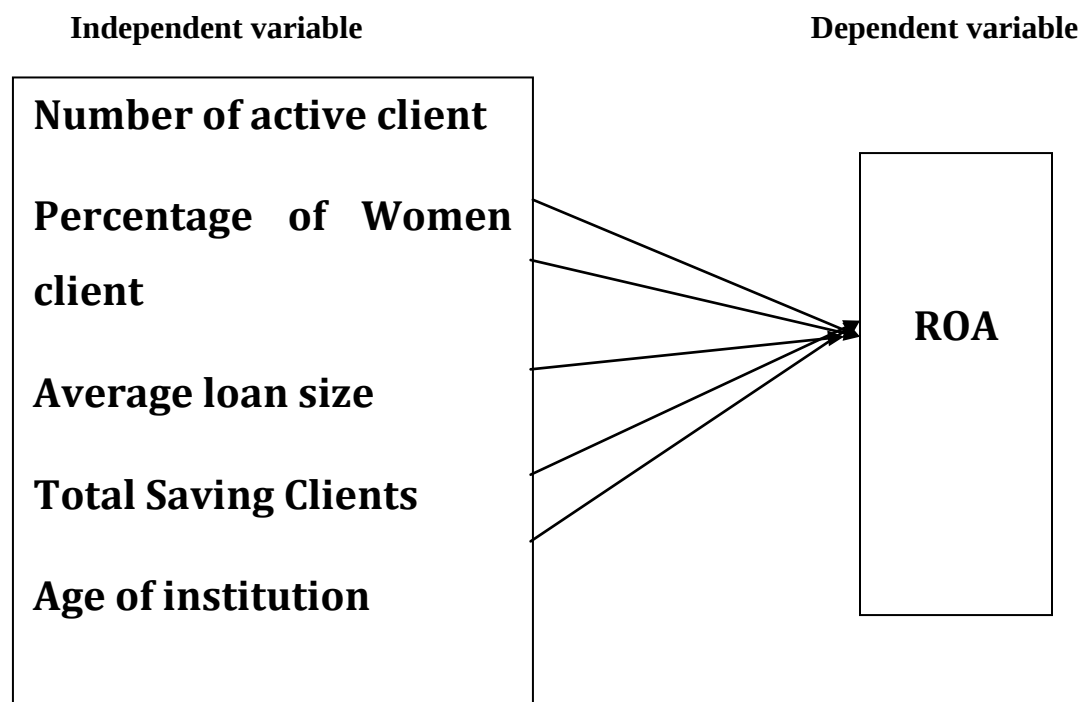
Yonas, (2012) on his study regarding determinants of financial sustainability of Ethiopian MFIs, using 6 years data for 12 MFIs from AEMFI; he concluded three things. First, a high quality credit portfolio, coupled with the application of sufficiently high interest rates that allow a reasonable profit and sound management are instrumental to the financial sustainability of MFIs. Second, the percentage of women among the clientele has a weak statistically non-significant negative effect on financial sustainability of MFIs and finally, client outreach of microfinance programs and the age of MFIs have a positive but lesser impact on attainment of financial sustainability.

Sima, (2013) on his study examined internal and external factors affecting profitability of microfinance institutions in Ethiopia by including a total of thirteen microfinance institutions

covering the period of 2003-2010. The researcher uses quantitative research mainly documentary analysis. The outcome of the study indicates that Age of microfinance institutions has a positive and statistically significant effect on their profitability. However, Operational efficiency and portfolio quality have a negative and statistically significant effect. However, capital adequacy, size and GDP are found to be statistically insignificant variables. The studies conducted in the areas of microfinance institutions in Ethiopia are few in number and did not give such an emphasis on the factors considered to be determinants of financial performance of microfinance institutions in Ethiopia. For example, Alemayehu, (2008) studied the financial and operational performance of micro finance institutions by using simple descriptive analysis and employing graphs and percentage growth rates by classifying small, medium and large. The study did not say anything about factors affecting financial performance of MFIs.

2.3 Conceptual Framework

Different empirical evidences suggested that financial performance of MFIs is affected by outreach factors. This study used both outreach factors includes number of active clients, number of women clients, outstanding loan size, total outstanding portfolio and age of institutions. The study will identify how these variables are affecting the financial performance of MFIs in Ethiopia.



CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

This chapter sets to explain the research design and methodology, target population, sampling technique and sample size, methods of data collection, data analysis and techniques and also operational definition and model specifications were presented.

3.1. Research Design

The studies with the aims of assess the effect of outreach on financial performance of MFIs in Ethiopia. The study was employed explanatory research approach by using panel research design to realize stated objectives. Accordingly, the quantitative method was mainly used to investigate the effect of outreach on financial performance in Ethiopia MFIs, and the financial data were collected through financial reports.

Therefore Ordinary least square (OLS) method particularly multiple regression models was use to assess the effect of outreach on financial performance of MFIs in Ethiopia. To measure the financial performance of MFIs in Ethiopia, ROA was used as the dependent variables because the Microfinance Financial Reporting Standards recommends the use of ROA and ROE as measures of profitability rather than financial self-sufficiency (FSS) and operational self-sufficiency (OSS) (Muriu, 2011).

3.2 Target population

Currently there are 33 microfinance institutions in Ethiopia, serving the poor who have no access to commercial banks. For the study the target population consist 33 Microfinance Institutions (MFIs) in Ethiopia registered by NBE.

3.3 Sampling and sample size

The study was purposively select 12 microfinance institutions (as sample respondents) which are under operation in the country at least for the last ten years. Consequently, the study were consists five regionally owned MFIs namely, Addis credit and saving institutions (AdCSI), Amhara credit and saving institutions (ACSI), Dede-bit credit and saving institutions (DECSI), Oromia credit and saving share company (OCSSCO), and Omo microfinance institution (OMO) and other seven MFIs namely, Bussa Gonofaa microfinance institution, Gasha microfinance institution, Wisdom microfinance institution, Wasasa microfinance institution, African village financial service (AVFS), Specialized financial and promotional Institution (SFPI), and Poverty eradication and community empowerment (PEACE).

3.4 Source of Data and Data Collection methods

In this study mainly secondary data were used as a data types. The secondary data were gathered from the financial statement or annual reports, (such as Income statement and balance sheet) of the selected MFIs and reports of AEMFI (Association of Ethiopian Micro Finance Institutions) and national bank of Ethiopia. The analysis was basically concentrated on the data available in financial statement of MFIs and AEMFI annual reports covering the period of 2005-2014.

3.5. Data Analysis and Technique

The collected data regressed by panel least square method and was interpreted with the help of descriptive statistics including standard deviation, mean, minimum, maximum and inferential statistics which is multiple regression analysis. To conduct this, the researcher use E-view 6 software (The E-views software were selected following its ability to help researchers to analyze research easily and efficiently Brooks, (2008)). Moreover, the E-views software has a range of advanced tool for panel analysis that a researcher needs to organize and manage their data and then obtain and analyze statistical results.

3.6. Variable definition

This section explains the variables used as dependent and independent (explanatory) variables in this study. The definitions/measurements used for these variables are described and summarized under the following section.

A. Dependent Variable

Return on Asset (ROA) measures how well the institution uses all its assets. It is also an overall measure of profitability which reflects both the profit margin and the efficiency of the institutions AEMFI, (2014). Return on Asset (ROA) was applied as the dependent variables because the Microfinance Financial Reporting Standards recommends the use of ROA and ROE as measures of profitability rather than financial self-sufficiency (FSS) and operational self-sufficiency (OSS) Muriu, (2011). ROA may be biased due to off balance-sheet items; It can however be argued that such activities may be negligible in MFIs. The ROA reflects the ability of MFI's management to generate profits from the MFI's assets. It shows the profits earned per birr of assets and indicates how effectively the MFIs assets are managed to generate revenues. In Banks and other commercial institutions, the most common measure of profitability is return on asset (ROA) for instance Abate, (2012), Sima, (2013) cited by Abebaw (2014). This study was used ROA as the proxy for financial performance.

$$\text{Return on Asset} = \frac{\text{Net Profit After tax}}{\text{Average Total Assets}}$$

B. Independent Variable

Wolday and Anteneh (2013) stated in the bulletin 9 of Association of Ethiopian Microfinance Institutions (AEMFI) that the outreach of MFIs can be measured in terms of the number of active clients (with outstanding loan), loan size, number of saving clients, volume of savings, percentage of loans to clients below poverty line, percentage of female clients, the level of transaction costs levied on the poor and the extent of client satisfaction with respect to financial services. Bereket and Lalitha (2012) also stated the average loan size can also be a proxy to outreach or a number of women borrowers as an alternative proxy to breadth of outreach. For the

purpose of this study, the number of active clients, average loan size, number/share of women clients, age of institutions and total client savings were used as a proxy of the effect of outreach on financial performance of MFIs.

Numbers of active clients: The breadth of outreach refers to the number of poor served by a microfinance institution Hishigsurem, (2004). Various studies have used the number of borrowers as a measure of microfinance breadth of outreach Ganka, (2010); Mersland and Strom, (2009); Harmes et al., (2008). It is generally assumed that the larger the number of borrowers the better the outreach.

Age: There has been an enormous progress in the existence of MFIs and client outreach. As more and more MFIs start up, it is also interesting to investigate whether only the mature MFIs reach large clients, or whether the new MFIs entering the industry has different set of goals in reaching clients Therefore, the expected sign of age is positive. Age is denoted by the number of years

Number /Share of women borrowers is also often used as an outreach indicator, and, similarly, the share of rural clients or ethnic minorities could be used as one when outreach to specific discriminated groups is of concern.

Average Loan size: while median or monthly outstanding gross loan size is a preferred indicator of loan size(rather than using the average) these metrics may be more difficult to obtain than average figures, which require only beginning and end of period amounts. In an effort to approximate the relative precision of a median value, MFIs using average calculations should, at the very least, remove high loan balance outliers from their calculation in an effort to approximate more closely the true average loan size of its client base SEEP Network's (2011)

3.7 Model Specification

This section covers the operational panel fixed regression model (multiple regression model) that was used in the study. The multiple regression model used for this study to determine the affect of outreach on financial performance of MFIs in Ethiopia is explained as follows. The model is adopted from different studies conducted on the same area. $ROA_{it} = \beta_{0i} + \beta_1 * NAC_{it} + \beta_2 * PWC_{it} + \beta_3 * ALS_{it} + \beta_4 * TCS_{it} + \beta_5 * AGE_{it} + \mu_{it}$

Where β_1 to β_5 are the coefficients of the variables and μ_{it} is the random error term.

β_{0i} ; stands for the intercept term which varies across MFIs but constant over time

NAC_{it} : stands for number of active client of MFI i at time t

PWC_{it} : stands for percentage of women client of MFI i at time t

ALS_{it} : stands for average loan size of MFI i at time t

TCS_{it} : total client saving in MFI i at time t

AGE_{it} : stands for age of micro finance for MFI i at time t

CHAPTER FOUR

4. DATA ANALYSIS AND DISCUSSION

This chapter deals with the results of study which include descriptive statistics of variables, correlation results for dependent and explanatory variables, model misspecification tests (tests for the Classical Linear Regression Model assumptions), and finally presentation of panel data regression analysis and discussion of results.

4.1 Descriptive Statistics of Variables

In this section the study presents the results based on the descriptive statistics for both dependent variable, the Return On Asset (ROA), and independent variables discussed in chapter three over 10 years.

Table 4.1 Descriptive Statistics

Dependent Variable	Mean	Maximum	Minimum	Std.dev	Observation
ROA	0.028442	0.230000	-0.112	0.055609	120
Independent Variable					
NAC	176742.7	976735.0	5544.000	229594.4	120
PWC	0.516583	0.820000	0.100000	0.182947	120
ALS	2163.624	7888.670	366.0000	1365.978	120
TCS	275000.8	459000.9	380350.0	61000.08	120
AOI	15.83333	17.00000	14.00000	1.147400	120

Source: EvIEWS 6 output (2015)

Table 4.1 provides a summary of the descriptive statistics of the dependent and independent variables. As discussed in the methodology part, the Return on Asset (ROA) indicates or measures how well the institution uses all its assets. It is also an overall measure of profitability which reflects both the profit margin and the efficiency of the institutions. The above table 4.1

shows descriptive statistics for all variables. The financial performance of Ethiopian Micro Finance institutions which is measured by Return on Asset for 120 observations indicates that averagely positive value of 0.028442 during the study period of (2005-2014). In addition to this the Maximum value of ROA 0.2300000 and minimum value of -0.1120000. This shows that the MFIs included in the sample in the study period earned on average 0.028442 cents in every one birr investment they made on total asset and the profitable MFIs earned 0.2300000 cent of profit after tax for a single birr investment they made on total asset. On the contrast, not profitable MFIs lost -0.1120000 cents for one birr investment made on total assets of the firm. This clearly illustrates the disparity of rates of return earned by MFIs.

Assessing the number of active clients being served by a MFIs has been noted in literatures as core point of performance indicator for a given MFIs. Regarding the variable number of active client, number of active clients served by the studied MFIs shows mean value of 176742.7 on the number of active client. In line with this, the maximum and minimum number of active client served by the MFIs is found to be 976735 and 5544 respectively as can be observed in the above table 4.1.

In regarding the percentage of women client, percentage of women clients served by the studied MFIs shows mean value of 0.516583 on the percentage of women client. In line with this, the maximum and minimum percentage of women client served by the MFIs is found to be 0.82 and 0.10 respectively as can be observed in the above table 4.1.

The number of client is a mere indicator for MFIs in reaching the poor. Loan size is one of the simpler indicators that small loans represent poor clients (Robert Cull et al., 2007). The logic is that better off clients are not interested in smaller loans. In this regard, the study found that the accesses of credit on the studied MFIs the mean value of average loan size is 2163.62. On the other hand the maximum and the minimum values of average loan size that provided to the clients by the studied MFIs is 7888.67 and 366.0 respectively. Age which was measured in terms of number of years of operation has a mean of 15.8333 with a minimum 14 and maximum 17. The standard deviation of 1.147 shows that there is a deviation among MFIs in terms of age.

The other variable included in the investigation was client saving that had mean of 275,000 with maximum of 459,000 and minimum of 380,350.

4.2 Test results for the classical linear regression model assumptions (CLRM)

As it is mentioned in methodology part, diagnostic tests were carried out to ensure that the data fits the basic assumptions of multiple regression models. Hence, the results for model misspecification tests are presented as follows:

A. Correlation Analysis

Correlation matrix between independent variables is presented in table 4.2. As shown in table 4.2 there were fairly low data correlations among the independent variables. Multiple correlation is a measure of the degree of association between dependent and all the independent (explanatory variables) jointly Gujarati, (2004). According to Gujarati, (2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 0.80 and according to Hailer et al, 2006 cited in Abebaw, (2014) Multicollinearity could only be a problem if the pair wise correlations coefficient among regressors is above 0.90 which is not more or less in the case of this study variables. By taking a correlation result which is presented below from 2005 up to 2014 the study period the independent variables to dependent variable which is the Return on asset (ROA), except Age, which are positively correlated to return on asset of an MFI, implies the change in these explanatory variables positively contributes towards the change in return on asset of sample MFIs. The number of active client of all MFIs which are included in this study shows improvement. Increase in the number of active client of the MFIs shows a higher positively correlated with percentage of women clients (0.2318), average loan size (0.2529), and total client saving (0.1485). Except age of institution the other variables have positively correlated with ROA, imply that when AOI increases ROA move in opposite direction.

Table 4.2 Correlation Matrix of dependent and independent Variable

Correlation	ROA	NAC	NWB	ALS	CS	AOI
ROA	1.000000					
NAC	0.189908	1.000000				
PWC	0.231885	-0.22466	1.000000			
ALS	0.252917	0.395481	0.009766	1.000000		
CS	0.148559	0.660095	-0.04546	0.623722	1.000000	
AOI	-0.03097	0.533979	-0.36823	0.048990	0.322482	1.000000

Source: Evies 6 output (2015)

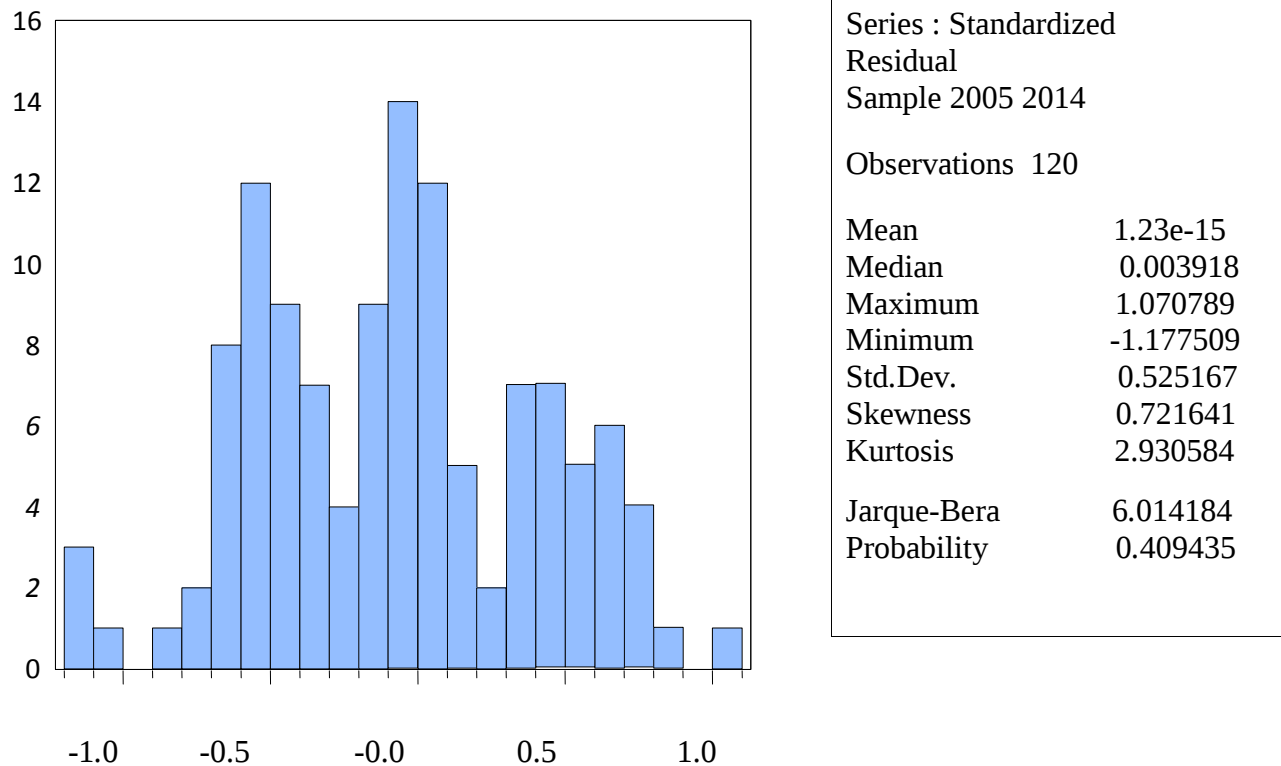
B. Normality Assumption

If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the mean. This means that the p -value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level (Brooks, 2008). Therefore, the normality tests for this study as shown in figure below, the Bera-Jarque statistic has a P-value of 0.409 implies that the p -value for the Jarque-Bera test for models is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level.

Ho: Normally distributed errors

Ha: Non-Normal Distribution error

Figure 4.1 Normality test for residuals



C. Homoscedasticity Assumption

One of the CLRM assumptions says that the variance of the errors is constant. This is known as the assumption of homoscedasticity. As stated in Brooks (2008) if the errors do not have a constant variance, they are said to be heteroscedastic. In this study as shown in table 4.1, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values were in excess of 0.05.

Table 4.3 Heteroskedasticity Test: White

F-statistic	1.77783	Prob. F(5,114)	0.3229
Obs*R-squared	8.68016	Prob. Chi-Square(5)	0.3225
Scaled explained SS	20.6921	Prob. Chi-Square(5)	0.2109

Source: Eview 6 Output (2015)

D. Autocorrelation Assumption

The Durbin-Watson test statistic value in table 4.3 was 1.527. To identify determinants of microfinance outreach, 120 (10*12) observations and five regressors were used in the model. Therefore, to test for autocorrelation, the DW test critical values were used. The relevant critical lower and upper values for the test are $dL = 1.44$ and $dU = 1.65$ respectively, for 120 observations and 5 regressors. The values of $4 - dU = 4 - 1.647 = 2.353$; $4 - dL = 4 - 1.441 = 2.559$. The Durbin-Watson test statistic of 1.827 is clearly between the upper limit (dU) which is 1.647 and the critical value of $4 - dU$, 2.353 and thus the null hypothesis of no autocorrelation is within the non-rejection region of the number line and thus there is no evidence for the presence of autocorrelation.

Table 4.4 Autocorrelation test: Durbin Watson

Variables	DW test statics result
All MFI specific and macro economic factors	1.827

Source: Evies 6 output (2015)

E. Multicollinearity

Correlation matrix between independent variables is presented in table 4.5. As shown in table 4.5 there were fairly low data correlations among the independent variables. These low correlation coefficients indicate that, there is no problem of multicollinearity in this study. Kennedy (2008) stated that multicollinearity problem exists when the correlation coefficient among the variables are greater than 0.70. As shown in table 4.5, correlation between NAC and CS (0.6600) and NAC and AIO (0.5339) are relatively higher than the rest coefficients, but it can be said fair. The rest of the correlation coefficients were low indicating the absence of multicollinearity in this study; making the regression analysis more reliable.

Table 4.5 Correlation Matrix of Independent Variable

Correlation	NAC	NWB	ALS	CS	AOI
NAC	1.000000				
NWB	-0.224664	1.000000			
ALS	0.395481	0.009766	1.000000		
CS	0.660095	-0.045461	0.623722	1.000000	
AOI	0.533979	-0.368232	0.048990	0.322482	1.000000

Source: Evies output (2015)

4.3 Finding of the Regression

This part presents the empirical findings from the econometric results on the factors affecting the financial performance of microfinance institutions in Ethiopia. The section covers the operational panel data regression model used and the results.

Operational model: The specific panel fixed regression model used to study the determinants of financial performance was:

$$ROA_{it} = \beta_0 + \beta_1 * NAC + \beta_2 * PWC + \beta_3 * ALS + \beta_4 * CS + \beta_5 * AOI + \mu_{it}.$$

Deciding on whether the random effect (RE) model or fixed effect model (FE) was an appropriate model for this study depended on whether the individual effect were fixed or random. Despite increasing availability of panel data, panel data regressions may not be appropriate in every situation so one has to use some practical judgment in each case Gujarati, (2004). Based on the outcome of the two in the regression or in the model the current study applied fixed effect model; since the adjusted R square figure, significance level and Durbin-Watson stat value increases with the use of cross-sectional fixed effect model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared	0.566095
C	0.019015	0.160458	0.118503	0.9059	Adjusted R-squared	0.433714
NAC	1.25E-07	4.78E-08	2.610104	0.0103	S.E. of regression	0.044239
NWB	0.075677	0.041541	1.821748	0.0711	F-statistic	6.28517
ALS	1.87E-05	4.53E-06	4.138488	0.0001	Prob(F-statistic)	0.000035
CS	-3.67E-11	1.28E-11	-2.861645	0.005	Durbin-Watson stat	1.827069
AOI	-0.005191	0.009853	-0.526784	0.5994		

4.4 Discussion of the Results

Based on the regression result, the R² value is 0.566 (56.6 %) which implies that 56.6% of fitness can be observed in the sample regression line. This can be further explained as, 56.6% of the total variation in the financial performance that is ROA is explained by the independent variables (Number of active clients, percentage of women clients, Age of institution, Total saving of clients, and Average loan size) jointly. The remaining 43.4% of change is explained by other factors which are not included in the model. The Prob (F-statistic) value is 0.000 which indicates strong statistical significance, which enhanced the reliability and validity of the model. Each variable are described in detail under the following sections.

A. Number of Active Client

The breadth of outreach refers to the number of poor served by a microfinance institution Hishigsurem, (2004) , the current study which covers the time period from 2005 to 2014 indicates that coefficient of 0.0190 and it was statistically significant at 1% significance level (P-value 0.010) this result shows that holding constant all other variables, increasing number of active client in one unit cause to increase ROA nearly by 0.02 birr it is an indication that MFIs should give great attention in number of client maximization technique. The result indicated that there was a positive relationship between number of active client and financial performance of Ethiopian MFIs during the study period. The result confirms the common rule of thumb that the higher number of active client the higher our financial performance. Based on the finding the

studies reject null hypothesis no.1 namely there is a negative relationship between number of active client and financial performance of MFIs in Ethiopia because the result supports the expectation. Generally number of active client was a key that affects the financial performance of Ethiopian MFIs for the study period 2005-2014.

The result is similar to Befekadu, (2012), Yonas, (2012) and Melkamu, (2012). Therefore this study concludes that number of active client of MFIs that affects MFIs financial performance positively.

B. Age of institution

The coefficient of the Age of institution (AOI) is negative (-0.00519) and statistically insignificant even at 10%. This confirms that for the study period 2005 up to 2014 age of institution of Ethiopian MFIs do not have a positive relationship with their financial performance or holding constant all other variables, increasing AOI by one year causes to decrease the ROA nearly 0.005 birr. Therefore hypothesis No.2 which is age of institution is positive relationship financial performance of MFIs in Ethiopia is rejected because the data did not support the hypothesis.

C. Percentage of Women Client

Used as an outreach indicator and, similarly, the share of rural clients or ethnic minorities could be used as one when outreach to specific discriminated groups is of concern. Previously, in hypothesis no.3 indicated that percentage of women client of the MFIs has a positive relationship with financial performance of MFIs in Ethiopia. And according to this finding, the variable confirms or supports the hypothesis and its coefficient is 0.07567 but statistically at 10% significance level or in the other interpretation holding constant all other variables, increasing percentage of women client by one percent causes to increase the ROA nearly by 0.08birr. The result inconsistent with Yonas,(2012), and, Bereket and Lailtha (2012) finding.

D. Average Loan Size

According to this finding, the variable confirms or supports the hypothesis and its coefficient is 1.87005 but statistically at 1% significance level. Based on the regression result from the study, the study fail to reject the hypothesis no.4 namely average loan size has negative relationship with financial performance of Ethiopian MFIs which was formulated to show the absence of a insignificant relationship between average loan size and financial performance of Ethiopian microfinance institutions. Similarly branch managers have also perceived that average loan size would not have a negative impact on the financial performance of their MFI. The result was consistent with Melkamu (2012) but dissimilar to the result, Luka (2007) and Bereket and Lalitha, (2012).

E. Total client saving

According to this finding, the variable confirms or supports the hypothesis and its coefficient is -3.67011 but statistically at 5% significance level. Based on the regression result from the study, the study fail to reject the hypothesis no.5 namely total client saving has negative relationship with financial performance of Ethiopian MFIs which was formulated to show the absence of a significant relationship between total client saving and financial performance of Ethiopian microfinance institutions. Similarly branch managers have also perceived that total client saving would not have a positive impact on the financial performance of their MFI.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATION

This chapter presents conclusions and recommendations based on the analysis made in previous chapter.

5.1 Conclusions

Microfinance has been accepted not only as a financial mean to target specific people who excluded from the formal financial system to gain access to sources of financing, but it comprehends also a social aspect contributing to poverty reduction, women empowerment, economic development and employment creation.

The study aimed to investigate the effect of outreach on financial performance of MFIs in Ethiopia. This study used a descriptive survey method to achieve this objective. The population of interest consists of 33 MFIs registered by NBE (National Bank of Ethiopia) and operating in Ethiopia. Data analysis was done using descriptive statistics and regression analysis.

The regression analysis has shown that 56.6% of the dependent variable, return on asset, can be explained by the independent variables, number of active clients, percentage of women clients, average loan size, age and total client saving. However, number of active clients, percentage of women client, average loan size and total client saving are statistically significant predictors of return on asset. Age of institution is not statistically significant predictor of return on asset.

Based on the descriptive and empirical evidence obtained from the econometric results in Chapter 4, the researcher generally conclude that financial performance of microfinance institutions is highly affected by the outreach. Based on the study findings, MFIs keen on enhancing their financial performance should focus on increasing the number of active borrowers, percentage of women clients, average loan size, and total client saving. Number of active borrowers, percentage of women clients, and total client saving is the breadth of outreach for MFIs and therefore outreach is seen to affect financial performance of MFIs significantly.

Although the other elements of outreach such as age of institution affect financial performance of MFIs, they are not significant.

5.2 Recommendations

Based on the findings of the research, this study recommends that MFIs should to develop models based on number of active borrowers, percentage of women clients, average loan size and total client savings to enhance their outreach. This will in turn improve their financial performance as has been established in this study. New entrants MFIs and existing MFIs should also focus to grow their active number of borrowers, percentage of women client, average loan size and total client saving if they are to perform well financially.

The regulators and policy makers in the financial services sector such as National Bank of Ethiopia should encourage policies that focus on borrowers to increase outreach and profitability of MFIs in Ethiopia.

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