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ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

**THE EFFECT OF BRANCH EXPANSION ON
MICROFINANCE PROFITABILITY IN ETHIOPIA:**

Evidence from Panel of Microfinance Institutions

By:

Seada Ali Mohammed

Advisor: Abebaw Kassie (PhD)

Addis Ababa University

December, 2019

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**THESIS SUBMITTED TO THE DEPARTEMENT OF
ACCOUNTING AND FINANCE, ADDISS ABABA
UNIVERSITY IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTERS
OF SCIENCE IN ACCOUNTING AND FINANCE**

Advisor: Abebaw Kassie (PhD)

Addis Ababa University

December, 2019

Statement of Declaration

I, Seada Ali, declare that this study entitled “the effect of branch expansion in microfinance profitability: **Evidence from panel in Ethiopia**” is my own work. I have carried out the research work independently with the guidance and support of the research advisor. This study has not been submitted to any degree/diploma in this or any other institution. It is done in partial fulfillment of the requirement of MSc Degree in Accounting and finance.

Seada Ali

Date: December,2019

Statement of Certification

This is to certify that Seada Ali has carried out her research work on the topic entitled “the effect of branch expansion in microfinance profitability: Evidence from panel of Microfinance Institutions in Ethiopia” under my supervision. This work, to the best of my knowledge, is original in nature and is suitable and accepted for submission for the award of MSc in Accounting and Finance.

Advisor: Abebaw Kassie (PhD)

Signature_____

Date: December, 2019

Addis Ababa University

School of Graduate studies

This is to certify that the thesis prepared entitled “the effect of branch expansion in microfinance profitability: Evidence from panel of Microfinance Institutions in Ethiopia” and submitted in partial fulfillment of the requirements for the degree of Master of Science in Accounting and finance complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

Approved by:

Internal Examiner: _____ Signature _____ Date _____

External Examiner: _____ Signature _____ Date _____

Advisor: _____ Signature _____ Date _____

Chair of Department of Graduate Program Coordinator

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Abstract

The study investigates the effect of branch expansion in microfinance profitability which is measured as a rate return on asset. The study used panel data from 24 microfinance institutions over 9 years. In particular, it employed a regression analysis and a dataset covering nine years (2010 to 2018) to examine the relationship between profitability and its branch expansion. The random effect model estimation technique is used to answer the research question and achieve the objectives.

The major finding of the study is that the Rate of Return on asset is positively affected by the number of branches, loan advanced and number of employees and size. And, the general expense, deposits, and ownership showed significant negative effect on Return on Asset.

The policy implication of this study is that, for microfinance to improve the rates of return on assets they have to expand their number of branches, firm size and they have to increase loans, and employed more qualified employees. However, to improve their rates of returns, the microfinance institutions must reduce their deposit at bank, general expenditure and ownership.

The future research direction shall include detailed investigation of factors affecting demand for microfinance loans and characteristics of the borrowers. The result of this study shall serve as a reference point for further investigations.

Key words and phrases: Rate of return, Microfinance institutions, Profitability.

List of Acronyms and Terms

CLRM	Classical Linear Regression Model
DEP	Deposit
FE	Fixed Effect
FS	Firm Size
GEN	General Expense
HR	Human Resource
LOA	Loan
MFI	Microfinance Institutions
BIL	Billion
MIS	Management Information System
NBE	National Bank of Ethiopia
NGO	Non-Governmental Organization
NOB-	Number of branch
OLS	Ordered Least Square
OWN	Ownership
RE	Random Effect
ROA	Return on Asset
ROI	Return on Investment
SD	Standard Deviation
SE	Standard Error
BLUE	Best Linear Unbiased Estimators
REM	Random Effect Model
FEM	Fixed Effect Model

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CHAPTER ONE: INTRODUCTION

1.1. BACKGROUND

According to Robinson (1998), microfinance is the provision of financial services to the poor people with very small business or business projects (Martzys, 2006). Microfinance projects were originally entirely donor funded with limited budgets, limited time period, limited economic activity and limited geographical location (Lingerwood, 2001; Christen, 1997). Although the successful concern of microfinance projects was restricted, the poverty levels and financing needs among the communities were boundless. There were growing needs for financial services among the poor communities especially from those who were financially constrained and vulnerable but have feasible and promising investment ideas (Morduch, 2005; Morduch & Haley, 2002).

Today, most observers see microfinance as a useful financial service but not transformative social and economic intervention (Mossman, 2015). Others, reacting against high expectations, dismiss microfinance as a failed fashion, a neoliberal contrivance that entranced donors but failed to deliver services that truly helped poor communities (Bateman and Chang 2012). Even sympathetic observers worry that microfinance has “lost its moral compass” by focusing more on the profitability of lenders than on the poverty of customers (Hulme and Maitrot 2014). Mamatzakis and Remoundos (2003) used the supply of money as a measure of market size and found that it significantly influences profitability.

There is arguably more widespread support for microfinance today than any other single tool for fighting global poverty (Daley-Harris, 2009; Armendáriz and Morduch, 2010).

Micro finance play a key role in improving economic efficiency by providing funds from resource absence to those with better productive investment opportunities. Microfinance also play a key role it has wide-open that the working poor can create significant benefits for themselves with quite insignificant amount of loans (Maier & Pischke, 2006) by investing and engaging themselves in income generating activities for their livelihood.

Microfinance helps households with the challenges of managing the ups and downs of lives in poverty and near-poverty, even when poverty persists (Collins, et al. 2009). Microfinance businesses aim to extend microloans and other services to borrowers who typically lack

collateral, steady employment and a certifiable credit history (Bureau et al 2012) Micro finance has also been defined as the provision of very small loans that are repaid within short period of time and is essentially used by low income individuals and households who have few assets that can be used as collateral (Ukeje, 2005).

The microfinance institutions have been affected by information technology development of microfinance system. The information technology has become a very important business opportunity because its nonappearance could result in poor service and finally business failure. It has indirect benefits like employee knowledge promotion, quality improvement, more coordination and better response that have no direct impact on profitability in the short term (Eyadat & Kozak 2005; Li, 2007; Matteucci & Sterlacchini 2004). The Growth of high-speed networks and computing power is making possible to process different microfinance services making mobilized fast and reach well organized service, brings customer satisfaction, enhanced time management, and quality improvement can reach for many people at the same time.

Through innovative lending technology, Micro Finance Institutions (MFIs) are generating high loan repayment rates on non-collateralized loans in diverse environments that often exceed 95 percent (Cull, DemirgüçKunt and Morduch 2007). Translating high repayment rates into profits remains a challenge to most MFIs. Although micro-banking is dominated by NGOs and socially-oriented investors, experts believe only one percent of all NGO-sponsored MFIs are profitable and predict that no more than five percent would ever be (Armendáriz and Morduch, 2010). This argument is however subjective and largely based on general consensus than empirically observed and objectivized facts and research.

The industry has experienced a fast growth in terms of the number of firms, geographical area covered, and the number of customers served (Triodos Facet, 2011; UBOS, 2010, MFT, 2011). MFIs should give emphasis to economic, demographic, and social characteristics of the geographical regions when considering in branch site selection in order to provide the best financial services in line with their customers' demands. So, one should always give emphasis on how people usually prefer regions and cities with comparative advantage in terms of economic, demographic and socio-cultural characteristics when they are making decisions about opening a branch and to give service at a given region and/or city.

However, owners of MFIs compromise with the question of which factors are more effective on selection of branch site with concerns to areas and metropolises. The determination of variables influencing branch site selection for regions and cities would provide MFIs executives and directors with effective insights into the selection of the most appropriate sites for opening branches.

The purpose of this study is to examine the effect of branch expansion in microfinance institutions profitability in Ethiopia.

1.2. STATEMENT OF THE PROBLEM

Finance has always played a critical role for human being, given it is at the soul of consumption, saving, and investment decisions by individuals, firms, and governments. As microfinance marketplaces become more economical, institutions composition increasing compression to achieve and sustain growth. A critical driver of success and sustainability, growth allows microfinance institutions (MFIs) to expand their selection by providing financial services to a larger number of clients while at the same time fulfilling an MFI's social mission. A main goal of many micro finance institutions is to provide sustainable micro finance facilities to the poor to facilitate income generation and reduce poverty (Baumann, 2001). To support this MFIs action, other Microfinance institutions are meant to provide suitable funds to small business as a poverty-fighting instrument to influence national growth of the economy.

Microfinance geographic branching in Africa has increased considerably since the early 2000s (Donovan, 2012; Quayes, 2015). In 1995, the donor community arrived at a consensus that all MFIs should in principle become profitable after seven to ten years of start-up support (Balkenhol 2007). However, it is questionable that whether the MFIs attain the stated objective of profitability given their different diversity from poverty reduction to profitability (Muriu 2011). In one of the larger studies available to date, Gonzalez and Rosenberg (2006) combined confidential information from The Microcredit Summit Database with data from The Micro Banking bulletin as well as The Mix Market to produce a dataset of over 2600 microfinance institutions to evaluate impacts on profitability and outreach. The authors find that neither scale nor an MFI's age appears to impact an MFI's profitability, measured by net adjusted returns on assets. They also find that for-profit microfinance is financially viable opportunity to move into competition with others in the investment market.

At the same time, Nobel laureate and “microfinance pioneer,” Muhammad Yunus is on record as opposing the for-profit movement in microfinance, saying “When you are making profits you are moving into the mentality of the loan shark. We are trying to get that loan shark out”. (Burgis, 2008, p 4). Research by Mersland and Strom (2008) and Cull et al. (2009) has different implications for the optimal ownership type for a MFI, though neither investigation provides an empirical consensus for the microfinance industry. Profitability leads to greater access to capital, as investors in general, such as private or institutional investors demand some kind of financial return (Dieckmann 2007). Gibbons, David, Meehan and Jennifer (1999) point out that the only way for MFIs to become financially sustainable is by adopting commercially motivated, for “profit strategies” and thereby be able to achieve the goal of reducing poverty among large numbers.

The impact of size is also important. McAllister and McManus (1993) find positive impact of size on the profitability. This is a result of economies of scale. It means large size microfinance enjoy better profitability. Efficiency is also very important for profitability. Study by Tan and Floros (2012) provide empirical evidence that efficiency has impact on profitability.

Large body of research on financial institutions profitability has been undertaken in the conventional banking industry Flamini, et al (2009), García-Herrero, et al (2009), Marcucci and Quagliariello (2008) Athanasoglou et al (2008), but exact empirical evidence on microfinance profitability remains limited; except study regarding their sustainability and performance. At the macro level, a profitable microfinance industry is better placed to overcome negative shocks and contribute meaningfully to the stability of the overall financial system (Muriu 2011). Kimani (2014) examined firms to establish the relationship between firm size and profitability. The findings indicated a negative relationship.

MFIs with access to donor funds may not respond to funding pressures to operate Efficiently or may deliberately choose outreach over profitability by serving poorer Or rural clients with higher delivery costs (Armendáriz and Morduch, 2010).At the macro level, a profitable microfinance industry is better placed to overcome negative shocks and contribute meaningfully to the stability of the overall financial system(Muriu 2011).That, in itself, is worth paying attention to. Beyond demonstrating the possibility of new kinds of financial institutions, microfinance has inspired innovations adopted in other sectors, including health, education, and energy. Early efforts to build social businesses and foster social investment owe their inspiration to the pioneers of microfinance (Yunus 2008, Conning and Morduch 2011).

Panel data circles, composed over multiple periods for the same division of branch expansion, are more helpful for understanding branch expansion of microfinance profitability but only few studies are available engaging such panel data in developing countries and rarely available panel data sets the findings indicated positive and negative outcome about microfinance and profitability emphasis with unrelated topic, very restricted factors affecting branch expansion microfinance profitability. To overcome these problems, branch expansion of MFIs in Ethiopia approaches are developed. These approaches are believed to provide a good vision for policy prescriptions especially in developing countries due to two main reasons. First, Hirtle & Stiroh (2007) opine that growth of a firm serves a major role in the expansion of a business especially in enhancing sustainability as a result of high customer numbers and corporate reputation operations (Delmar & McKelvie, 2013). Second, households and societies are best benches of their own poverty prestige and outreach branch expansion and monetary estimates and hence they should be a reliable source of information.

While assessing existing literature in the area, I found out that branch expansion in Ethiopia has been relatively unexplored, especially with a sole focus in Ethiopia. In that respect, a gap in the literature motivated this study as the study sought to answer the research question, “What is the effect of branch expansion of microfinance institutions’ profitability in Ethiopia?”

Thus, this study tries to find out the determinants of branch expansion and the relationship between branch expansion profitability of MFIs and their effect.

1.3. OBJECTIVE OF THE STUDY

1.3.1. General Objective

To examine the overall contribution of branch expansion in microfinance profitability in Ethiopia

1.3.2. Specific objectives

☞ To identify the effect of microfinance branch expansion on total profitability

☞

1.4. Research Hypothesis

The study was done based on the following research hypotheses which were derived from empirical evidences and tested throughout the analysis of the study:

Thus, the researcher has developed the following hypothesis to estimate the significance of relationship between the variables.

The independent variables:-

H₀:.There is a significant positive relationship between Number of Branch (NOB) and financial performance measure – Return on Asset (ROA).

The other is control variables

H₀:.There is a significant negative relationship between deposits and financial performance measure (ROA).

H₀:.There is a significant positive relationship between Loan amount (i.e., amount advanced to borrowers or customers of microfinance) and financial performance measure (ROA).

H₀:.There is a significant positive relationship between human resource, which is the number of employees and financial performance measure (ROA).

H₀:.There is a significant negative relationship between general expense and microfinance profitability

H₀:.There is a significant negative relationship between the government ownership of MFI and their financial performance measure (ROA).

H₀:.There is a significant positive relationship between size of MFI and their financial performance measure (ROA).

1.5. SIGNIFICANCE OF THE STUDY

Microfinance institutions play a significant role in convention the financial needs of all poor peoples, caring bright for economic cycle. If the microfinance service activities declined due to the services defaults ultimately it will affect all financial activities. The finding of this study will enable management of the whole organizations to come out with practical policies aimed at improving the quality of their loan, deposit and other financial service. It will also help the country policymakers to implement effective monetary policies concerning credits and other

services and therefore prevent the occurrence of non-providing service in the economy. Apart from practical implications for microfinance branch microfinance directors, business experts, business entrepreneurs and country policy makers, the study will extend the existing literatures by providing evidence on the determinants of real outcome effective result of the context by utilizing both microfinance and branch specific variables. Moreover, the study will play a significant role as a literature base for future researches to verify the current findings. The research also potentially serves as a stepping stone for further research.

1.6. SCOPE AND LIMITATIONS OF THE STUDY

Scope

This study specifically focuses on investigating the effect of branch expansion towards microfinance profitability. The researcher relied on secondary sources of information collected for nine years of the study. For the quantitative analysis, the researcher collected data on Return on Asset, human resource which is the number of employees, loan amount advanced to borrowers/customers, general expense, deposit at banks, firm size (asset) at microfinance and ownership.

Microfinance data is taken from National Bank of Ethiopia.

In this study the researcher only considers data of nine fiscal years i.e. from 2010 to 2018 for the microfinance analysis of 24 out of the total 38 MFIs in Ethiopia.

Limitation

MFIs that have incomplete data in the stated period are not considered. Due to the presence of outliers and incomplete set of data in the tenure of selected period and organization the researcher used unbalanced panel data. The exclusion of such data is expected not to significantly affect the overall result due to the immateriality of such data.

1.7. ORGANIZATION OF THE STUDY

The rest of the paper is organized as follows. The next chapter, chapter two is the theoretical and empirical related literatures to this study. The third chapter of the paper deals with the methodology followed by the fourth chapter that presents the findings based on the research questions. Finally, the fifth chapter concludes the study. A set of recommendations are also included in the final chapter.

CHAPTER TWO: REVIEW OF THEORITICAL LITREATURE AND EMPIRICAL EVIDENCES

2.0 Introduction

This chapter tries to extensively capture literature works in the area and study to comply with the theme of this research work. Description of the theoretical framework is presented following identification of the existing literature gap. The chapter brings out various concepts related with topic of the research and introduces readers with general concepts. Various theories pertaining to microfinances including their historical development are discussed followed by empirical evidences of variables that contribute either positively or negatively to profitability of MFIs. In the later part of this chapter the identified research gap and a conceptual framework are presented.

2.1 Theory of Microfinance

2.1.1. Branch Microfinance

Broadly speaking, Microfinance branches are considered to be the entities which involve the primary role of distributing financial requirement and desires.it specify one robust theory according to Cerasi, Chizzolini and Ivaldi (1998) were able to construct a log-likelihood function that allowed them to draw the following conclusions the industry is segmented across regions, relative to the degree of competition that prevails in each region and the marginal profitability of a branch has increased over time. Microfinance varies in their organization gathering which is characterized by a micro finance number of branches.

Since the creation of the Microfinance institution, studies have shown that the poor who have access to the services of the programs are able to improve their lives and family conditions (Morduch, 2002).microfinance is a strategy to change the life of the poor people in terms of generating revenue to cover the necessary cost and institutions meet the demand (United Nation, 2011) According to Getaneh (2005a) to further stimulate economic activities and provide opportunities for the majority of poor to escape poverty through availing more and appropriate financial services, establishment of microfinance institutions is the approach to capable to enhanced, to bring progress, and making self-esteem is the main issue of government.

The extent to which microfinance programs are able to reach the poorest of the poor remains an open debate (SEEP network, 2006). On the other hand, according to Wolday (2004), the Ethiopian microfinance industry has been growing in terms of its outreach as well as its asset and capital base. International donors, NGOs, and the government of Ethiopia have supported the expansion of credit services to the rural poor since 1994. There is a strong tendency to move to the top of the clientele group, and to give little attention to the needs of the poorest, with the end result that their proportion diminishes over time (Navajas et al 2000).

Expanding primary education for children have a wide-ranging impact on the poverty reduction targets (income, health, and nutrition) Capabilities are inherent in people and enable them to use their assets in different ways to increase their wellbeing. Human capabilities include good health, education, and production or other life enhancing skill (WorldBank, 2002:15). Microfinance Institutions (MFIs) raise their own financing, offer attractive schemes, recruit and retain clients, keep operating costs low, motivate clients, and control the distribution and loan recovery systems (Roodman & Qureshi, 2006).

As many microfinance institutions expand in their lending operations by increasing the size of faithful repeated borrowers' loans, it is vital to organize sufficient funds to sustain the process (International Year of Microcredit, United Nations, 2005). Otero, (1999) says that microfinance institutions creates access to capital jointly with education and training of human capital, addresses social empowerment to move people out of poverty, and strengthened their dignity by empowering them to contribute to the economy and society.

MFI's which are able to reach out more people are able to make higher profits therefore outreach and profitability are alternative, complementary performance-measures (A. Vanroose and B. D.Espallier 2009). Thus, there are many economically active poor people still unreached and it will be more recommended to enhance sustainable branch expansion of microfinance in Ethiopia.

2.1.2. Location Analysis

People are circulated unequally in ground gap and they have to attain many kinds of commodities and services from facilities located at generally separated spaces. They have an obvious interest in the location of these facilities being 'most accessible' to them." (Rushton, 1976)

One of the early location models is known as the **gravitational or magnitude model**. These models have been developed in an extensive range of disciplines including financial aspect. In some cases the assumption of behavior was used to provide the justification for the gravity model. In some cases the model had no speculative basis and was strictly empirical and in other cases the model resulted from a straight transfer of physical science principles into the behavioral sciences with neither theory nor empirical reasons (Lundsten, 1978)

A second class of models is based on Applebaum's (1968) **classic analog technique**. This technique addresses trade area description and promotes access. The analog model is used most successfully when a company is difficult to position a particular ability or a few broadly dispersed facilities over a large metropolitan area. Comparable to the gravity model, the principal weakness of the analog model is that it evaluates single facilities while ignoring the effects of an entire network of sites (Chelst Schultz and Sanghvi 1988).

Ingene (1984) and Mahajan, Sharma, and Srinivas (1985) have developed a third method which draws on econometric methods of promote potential estimations using multiple regression to estimate demand. Mahajan *et al.* (1985) presents a **Portfolio Approach** which was developed for evaluating existing and identifying attractive potential locations for financial institutions. This advance is used for analyzing multiple-store locations.

2.1.3. Micro-Finance-Branch Location Selection

According to Wolday (2000), Microfinance lending saving and other financial services to poor people is an effective way to help poor people. To request this service for the people MFIs have to reach for un-reached people. Microfinance institutions now reach well over 100 mil. clients and achieve impressive repayment rates on loans (Cull et al, 2009). The rapid growth of microfinance branch location selection has increased over time but still a gap in between people who need financial access and place of access for that matter micro-finance-branch location selection is a very crucial point and have to select branch location.

These days, Micro finance is not only a matter of providing loans to the poor, but also of building a viable institutional framework that will cater to the needs of the poor, today as well as tomorrow (Schreiner,1997). Consequently, issues of organization, governance and financial regulation and become matters of concern. According (Schreiner, 2002) the debate on whether to subsidize microfinance is not only about helping the poor now but also about ensuring the future of microfinance as a long-term development intervention. That means the main goal of microfinance is not only providing service but also make sure how to outreach of the need of people.

Microfinance institutions are the main vehicles through which financial services reach out to the need of the poor. Efficient and sustainable institutions build client confidence, increase positive impacts on clients 'lives and justify do-nor and development aid investments (Krahn and Schmidr,1994).Sustainable institutions enable continuity of service with wider outreach to many poor, which is the main objective of microfinance services (Rhyne,1998).

Sustainability is the means to expand outreach, not an end in itself (Rhyne, 1998)MFI's "ability to operate at a level of profitability that allows sustained service delivery with minimum or no dependence on donor input"(Christen et al., 1995)

2.1.4. Merits and Demerits of expanding branches of Microfinance

Branch micro finance is having two or more branches in different places. Consequently having more branches has its pros and cons. According to S Priyadarshini (2017), having more branches has the following advantages as well as disadvantages:

2.1.4.1. Merits of expanding branches of Microfinance:

a. Economies of Large Scale and Subsidization:

Branch microfinance has a lot of benefits for subsidization and economies of large scale a key operation with greater applicability of the division of labor specialization work.

This subsidization would be beneficial to both the economy and society because it will help micro lenders realize economies of scale and the productivity that comes with profitability (Harper 1998)

b. Easy and Increased Mobility of Funds:

Branches microfinance increases the mobility of funds from one place to another which in turn brings standardization of interest rates in different localities. The microfinance under branch system can change resources from branches situated in those localities where demand for money is relatively low. which could be of great advantage to the poor people.

c. Greater Safety and Liquidity:

Branch microfinance also brings about a broader choice for the selection of numerous securities and diverse investments, so that a higher degree of safety and liquidity can be maintained.

d. Provision of complete microfinance Service:

Branch microfinance makes comprehensive micro finance services available to the smallest communities. In certain more of unreached areas, branches may operate even at a loss which can be balance by the profit earnings of the unreached areas. Thus, branch microfinance is very helpful in achieving a balanced growth of the country's economy.

2.1.4.2 Demerits of Branch microfinance:

Lack of promotional activities to create awareness(Tassew,2001) Non-development of management information system(MIS) to implement strict financial control, absence of loan portfolio tracking system to enhance risk management and inability to generate timely reports to inform the decision makers are also among weaknesses mentioned (IFAD,2001) Despite the obvious disadvantages of the branch microfinance industry in Ethiopia such as poor communication and infrastructure and lack of technical capacity as compared with other sub-Saharan countries, the sector has been growing at a significant rate (Amha, 2000)

a. Lack of Promotional Activities to Create Awareness

Branch microfinance presents the difficulty of efficient promotional activities, supervision creating enough awareness, Proper supervision and scrutiny become more and more difficult as the microfinance becomes more and more become broad.

b. Lack of Financial Control

Branch microfinance very dispersed , because with the opening of too many branches, establishment and maintenance charges of the branches are bound to be high and, as a result, profits may shrink and difficult to implement strict financial control.

c. Absence of loan portfolio tracking system to enhance risk management

The system of branch microfinance also suffers from red tape and delay on account of the inadequate authority of risk management. Usually, application for big credits has to be referred to the head office by the branch director. This causes absence of loan portfolio tracking system and gives little initiative to branch risk management.

d. Inability to generate timely reports to inform the decisions makers

In this system, the weak and unprofitable branches continue to operate under the protection cover of the large and more profitable branches and it will create inability to generate timely reports and difficult making perfect decisions making.

e. Poor Information and communication infrastructure

Poor communication infrastructure is major obstacle to avail branches of microfinances. Government and people have to give emphasis to build physical facilities and systems that serve the public at large.

f. Lack of technical capacity

That has to do largely with optimizing human resources' knowledge and skill; production capacity and so on. It is to be noted that many projects fail for they don't considering skills and experience to manage the challenges and complexities of the particular technical capacity.

2.2.5. History of International and Local Microfinance

The early history of modern microfinance was first created in Bangladesh by a German bank (David, 2008). Major versions of what we call today "microfinance" began to appear in the early 1900s in parts of rural Latin America (Global Envision, 2006). Hence during this period

many of these institutions transformed themselves into formal financial institutions in order to access and lend client, savings, to enrich their outreach. in 1970s(Armendariz de Aghion,et al.,2004)while organizations, such as Grameen Bank of Bangladesh with the microfinance pioneer Muhammad Yunus, were starting and expand the modern industry of micro financing.Through Grameen Bank, the modern microfinance pioneer, Yunus, an able to grant access.

These individuals lack collateral, steady employment and a verifiable credit history and therefore cannot meet even the most minimal qualifications to gain access to traditional credit (Yunus, Muhamed,2003).Microenterprise credit was based on solidarity group lending in which every member of a group guaranteed the repayment of all members (Global Envision, 2006).Another term for microfinance is microcredit although they do not have exactly the same meaning but are interchangeable It is called microcredit because it gives out small loans to poor people (Grammen Bank, 2011).

The former UN Secretary General Kofi Annan during the launch of the International Year of Micro Credit (2005), pointed out that “Sustainable access to microfinance helps alleviate poverty by generating income, creating jobs, allowing children to go to school, enabling families to obtain health care, and empowering people to make the choices that best serve their needs.Micro finance is about profitable banking with the poor and therefore subsidized credit and subsidized banking with the poor are hostile to best practices in microfinance (Remenyi 2000).

Since the mid-1990s, as Global Envision, (2006)underline, a limited "microcredit" started to be replacement by a new name “microfinance” that come up to embrace not only credit, but also savings, insurance, payments, and other financial services. There are number of institutions, such as like, international NGOs and research institutions et al., which have played a vital role in developing microfinance programs and institutions by supporting microfinance initiatives financially.

Micro-finance in Ethiopia has its launch in traditional informal process used to accumulate saving and access credit by people who needed access to formal financial institutions. Micro financing in Ethiopia formally started in the years 1994-95 (RamanaiahM.Venkata and MangalaC.Gowri, 2011). The poor people in most developing countries have practically no access to formal financial services (Gobezie, 2005).

Microcredit activities in rural and urban Ethiopia were initiated by local and international NGOs (Wolday, 2004). In Ethiopia has encouraged the further spread of modern financial services in the country the program believes to reduce the poverty by giving loans for the poor. (Gobezie, 2005). According to Getaneh (2005a), to further stimulate economic activities and provide opportunities for the majority of poor to escape poverty through availing more and appropriate financial services, the Government has been refining the regulatory framework for the microfinance operations.

The demand for financial services in the country is also high (IFAD, 2001) and the prospect to meet the demand largely depends on the success and sustainability of these institutions. There is a general consensus that governmental agencies and regional governments should relinquish their role in supplying credit for farmers to the MFIs (IPRSP, 2000).

Beside banks and insurance companies, Microfinance institutions have continued to play a significant role in giving credit and saving facilities to the micro sectors of the economy. Ethiopia's formal financial sectors, which are comprised of banks, insurance firms and micro finance institutions meet only a fraction of the demand for financial services.

The practice resulted in subsidized "cheap" credit, which soon fell under severe criticism as the specialized institutions accumulated large loan loss balances which made it difficult for them to achieve the desired objective (Ledger Wood, 1999). In addition, subsidization to microfinance is still a hot issue. Definitely, subsidies support MFIs in their efforts to offer financial services to the poor, who request small loans involving high operational costs (Copestake, 2007).

According to Robinson (2001), government intervention in rural credit was advocated by stressing the responsibility of government for economic development and emphasis on supply-led finance theories. This assumption led to providing loans in advance of demand, while saving was disregarded, which the critics call the "forgotten half of rural finance" (Vogel, 1984).

Up until the 2011/12 fiscal year, all the MFIs operating in the country mobilised 3.8 billion Br in the form of voluntary and compulsory savings. The total outstanding loan disbursed reached seven billion Birr. The total assets of these institutions and the total number of active clients also reached 10.2 billion Br and 2.7 million, respectively. According to the annual report published by the NBE.

The establishment of sustainable microfinance institutions 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. Although the development of microfinance institutions in Ethiopia started very recently, the industry has shown a remarkable growth in terms of outreach, particularly in number of clients (Amah, 2000). Currently, the 38 Micro Finance Institutions (MFIs) operating in the country meet only about millions of the demand for financial services, according to the annual report published by the NBE 2018.

2.2 Empirical Evidences

2.2.1. Determinants of Profitability

2.2.2. MICROFINANCE PERFORMANCE

The research on MFI performance is still in its infancy (Mersland and Strøm, 2014). The recent trend of MFIs shifting their focus from social performance towards a stronger focus on profitability has been referred to as mission drift (Copestake, 2007; Mersland and Strøm, 2010; Armendariz and Szafarz, 2011). Mission drift is a risk for all types of social enterprise and nonprofit organizations (Jones, 2007).

Reid (1993) recognizes that the macro-economic environment in which the MFI is active is an important determinant for MFI-performance in addition to institution-specific characteristics. MFIs worldwide have benefited from millions of dollars in subsidies from local governments, multilateral aid agencies, and, more recently, socially responsible investors. Subsidies have helped to provide financial access for approximately 210 million people (Reed, 2015).

Most firms, however, prefer to adopt financial indicators to measure their performance (Grant et al., 1988). Financial performance is a measure of how well a firm can use assets from its primary mode of business and generate revenues (Bessler et al., 2008). Although the stated objective of microfinance movement is national development and poverty alleviation it is neither theoretically nor empirically clear how much the micro lenders can help improve the situation in the third world (Meir 1968).

The level of goal accomplishment generally defines a firm's performance (Achrol and Etzel, 2003). Firm performance is the outcomes achieved in meeting internal and external goals of a

firm (Lin et al., 2008). In order to measure the overall financial performance, financial revenue and financial expense indicators as well as returns can be compared against the institutional of equity and assets (Lafarcade et al, 2005) Bruett (2005) states that the adjustments are made to reflect the true performance of MFIs, to measure the MFIs' ability to maintain their level of operations over the long term, and to enable benchmarking across a wide range of institutions. The financial market structure, the economic condition of the country, the legal and political environment all may influence the performance of MFIs (Mcdonald J, 1999)

2.2.3. ENTREPRENER

Currently there are about 7000 micro lenders who serve about 25 million micro entrepreneurs all over the world, most of whom are poor women in rural areas (Pear and Philips, 2001) This has led to the establishment of the micro finance industry and the micro lenders seem to have a comparative advantage over the conventional banks in rendering their financial services to the poor (Meir 1968, Myrdal 1956)

The micro finance theory seems to be apparently grounded on the idea that poverty is a perpetual condition of human society and these micro lenders might work to perpetuate poverty in society for their continual existence (Allen 1987). Information tends to be segmented and to circulate within specific groups or networks excluding others (Robinson2001). Communities can be driven by vested interest of local elite (Bashir, 2000). Productive MFIs maximize services with minimal resources, including staff and funds (Lafourcade et al, 2005).

The appropriate training has to be provided for all directives, manager, chief, leader, and for all user. Statham (2008) stated that training from MFI to the clients can be broadly classified into two areas; group formation and business development. Moreover, inadequacy of well trained personnel in their rolls and staff incentives within any formal organization paradigm (private or public) that seeks to deliver these services is challenges for Microfinance institutions (Basu, 2005).

The study shows that clients who participate in microfinance programs have increased household income, better nutrition and health, the opportunity to achieve higher education, a decreasing in vulnerability to economic shock, greater empowerment, and in some cases, the ability of completely life themselves and their families out of poverty (Murdoch and Haley 2002).

Taking business entrepreneur is a key success to build self-stem, create solutions, brining technical skill is a very crucial point. The MFI will increase their capacity through training field officers (Statham, 2008).

Definitely Armendáriz and Morduch (2010), points that Grameen Bank originally had a majority of male clients but decided to concentrate almost entirely on women due to repayment problems related to male clients and perhaps because female entrepreneurs face tighter credit availability compared to men (Fletschner 2009), even though they do not pay higher interest rates (Bellucci, et al 2010). On the contrary, MFIs that focus on women usually make use of smaller loans, which increases their operational costs (D’Espallier et al 2010; Balkenhol, 2007).

2.2.4, INFORMATION TECNOLOGY DEVELPOMENT

Competition in microfinance could be harmful due to the risk of over indebtedness (Schicks, 2013).Porter and Millar (1985) argue that investing in IT plays an important role in lowering the total costs of a firm (giving a cost advantage) and differentiates its products (giving a competitive advantage), which should be reflected in increased net profit. Information technology (IT) is more likely to have a positive impact on individual Perform (Goodhue& Thompson 1995).The success of an information system has a strong correlation between task and technology; hence success has been related to individual performance (Goodhue andThompson 1995) and to group performance (Zigurs& Buckland 1998).

The research accomplished that the use of technology, including the reallocate to IT-based delivery systems and the creation of financial technologies such as financial derivatives and crooked expanse credit commitments shows improvements in micro finance performance and consolidation of the industry during the operation of new technologies, although establishing the relations between technological progress and both microfinance industry productivity growth and business structure require multivariate analyses.

Use of modern information technology to process data and report on activities is thus not a matter of choice but necessity for MFIs(Christen,1997)Even software produced exclusively for MFIs cannot implemented universally due to differences in microfinance practices, namely (Ledgerwood,1999,Waterfield and Ramsing,1998)Other researchers (Abdullah, 1985, Katagiri, 1989, Shawkey, 1995 and Gupta, 1998) have posited that the deployment of ATMs by MFIs

results in greater turnover in services without needing to recruit more staff and open more branches, thereby reducing transaction costs and eventually improving profitability. Kwan and Eisenbeis (2005) suggest that the difference in profitability among large and small financial institutions is due to production technologies and outputs, which vary across them.

Another difficulty faced by the MFIs in implementing MIS is the cost of acquiring and maintaining the system, as they cannot afford the high price of software and technology, including the cost of staff to operate and maintain the system (Ledger Wood, 1999). Waterfield and Ramsing (1998) give the fundamental principles to be followed in designing and implementation of the MIS for microfinance institutions. The communication between the systems staff and user of the information should be clear and mutual to gain maximum benefit (Christen 1997; Ledger Wood, 1999)

Finally Different authors conclude Zeller and Meyer (2002) review and synthesis of empirical evidence until the early 1980s only a handful of microfinance intermediaries existed; today the number of microfinance institutions are reaching 7,000 approximately 16 mil. poor people. However, according to David Hulme (2000), although some scholars support that microfinance has positive economic and social impacts on the poor, others argued that microfinance has negative impacts on the poor clients. Impact of chronic poverty: living in absolute poverty for a prolonged time strongly affects a person's dignity and hope for the future, as well as his or her ability to take initiative and overcome stigma. Moreover, poor health (especially chronic diseases such as malaria HIV/AIDS) presents a major obstacle to conduct successful micro-enterprise activities (Maes, 2006).

Naceur and Goaied (2001) indicate that the best performing financial institutions are those who have maintained a high level of deposit accounts relative to their assets. The profit function of a financial institution includes the size and composition of its credit portfolio (Bashir, 2000 and Fries et al., 2002).

2.3. Research Gap

From the foregoing review of relevant literature, branch expansion in Ethiopia has been relatively unexplored, especially with a sole focus in Ethiopia. It is evident that research in the area of branch expansion has not been done. Limited literatures reviewed indicates that previous researchers on developing countries only concentrated on return on asset, branches, efficiency, and firm size evidence from sub-Saharan Africa Chikalipah (2019). To understand the branch expansion and also only few studies are available with a different topic employing such panel data in developing countries and rarely available panel data sets contain information about branch expansion profitability in Ethiopia.

The existing few studies concentrate on modifying pre existing ones by including additional variables of branching while this study covers additional important variables that were omitted by previous studies like ownership and human resource which makes the study more comprehensive. This study therefore intends to fill these pertinent gaps in literature by studying the effect of branch expansion profitability in Ethiopia.

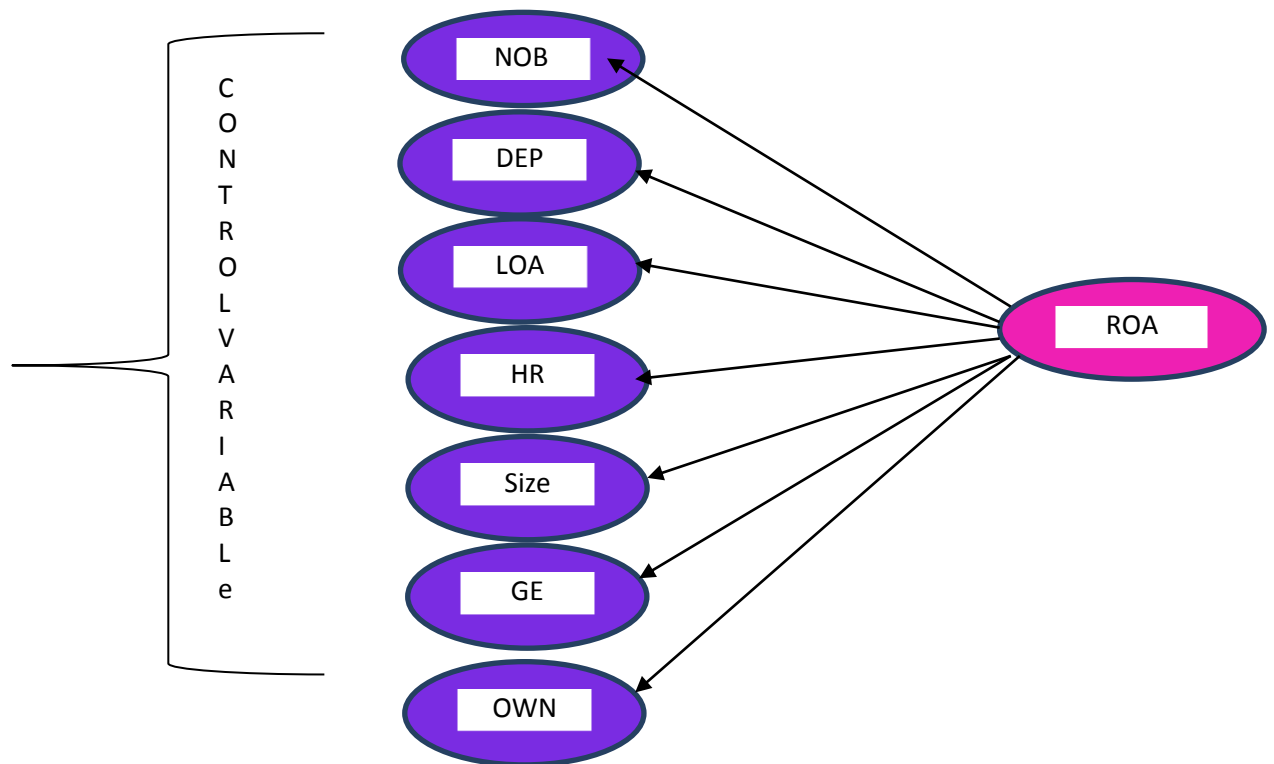
2.4 Conceptual Framework for the Study

From the literature review, discussed above, the researcher constructed the following conceptual framework to summarize the main focus and scope of this study in terms of dependent and independent variables.

Figure 1: Conceptual Framework

Independent Variable and control variable

dependent variables



Source: Developed for the Research, and written materials.

Sydneyn Chikalipah (2019), does the geographic expansion of microfinance branches affect profitability? Panel data evidence from sub-saharan africa, Journal of International Development, DOI: 10.1002/jid.3410, 2019

THREE: RESEARCH METHODOLOGY

3.0 Introduction

The third chapter of this study briefly discusses about the research methodology – including methods and Tools & Techniques. The chapter first describes the research design, discusses target population and sampling technique of the study, the data collection as well as the data analysis techniques to be used to achieve the objective of the study are also revealed. Then model specification and finally research hypotheses are presented in the later part of this third chapter.

3.1. Research Design

A research design expresses both the structure of the research problem and the plan of investigation used to obtain empirical evidence on the relations of the problem (Kerlinger, 1986). Polit (2001) define a research design as “the researcher’s overall approach for answering the research question or testing the research hypothesis”. This thesis is carried out with the aim of finding the effect of branch expansion in microfinance profitability in Ethiopia.

Different authors classify research analysis different way. However, mostly it is classified as qualitative and quantitative. This thesis adopted only quantitative research approaches. Quantitative research sees for review of data and briefly interprets explaining the findings. It uses methods to review records and documents in numerical way.

Furthermore, this thesis follows explanatory research design. It is explanatory because it tries to find out the real effects of branch expansion in profitability. It is also important to consider that there exists fast branch expansion of microfinance institutions in Ethiopia.

3.2. Population and Sampling Techniques

3.2.1 Target Population

Target population is the population to which a researcher wants to generalize the results of the study (Mugenda&Mugenda, 2003). According to Malhotra (1999),population is the aggregate of all the elements that share some common set of characteristics and that comprise the universe for the purpose of the research problem. The target population for this research is the thirty eight (38) microfinance institutions in Ethiopia.

3.2.2. Sampling Design

Purposive sampling (also known as judgment, selective or subjective sampling) is a sampling technical in which research relies on his or her own judgment when choosing members of population to participate in the study.

Purposive sampling technique was employed from the existing microfinances that operate in Ethiopia because MFIs that have complete data in the stated period are considered.

3.2.3. Sample Size

Twenty four (24) consolidated and audited microfinance institutions (organized financial statement report by NBE since 2010-2018) are considered in the sample. These are the microfinances that have invested heavily in financial statement based on information available

3.3. Source and Type of data

The research is processed by using only secondary data. For secondary data, microfinance international journals and local journals and also other written materials from different institutes and sources are used.

The study takes a quantitative research approach by using secondary data gathered from 24 organizations consolidated and audited financial statement from national bank of Ethiopia. In order to increase the credibility and reliability of the research findings, the study used consolidated and audited financial statements.

This study used panel data covering a period of 9 years (2010 to 2018) unbalanced data. In this study the researcher only considers nine fiscal years Due to the presence of outliers and incomplete set of data in the tenure of selected period and selected organization. The Panel data involves the pooling of observations on a cross section of units over several time periods and provides results that are simply not detectable in pure cross sections or pure time series studies (Brooks, 2008).

Brooks (2008), states that panel data set has two major advantages; first, it can address a broader range of issue and tackle more complex problem than pure time series or pure cross-sectional data alone and by structuring the model in appropriate way, the researcher can remove the impact of certain forms of omitted variable bias in the regression result. Second, it is often examined how the relationships between variables change. Hence, by combining cross-sectional data and time series data, the researcher can increase the number of degree of

freedom, and thus the power of test, by employing information on the dynamic behavior of a large number of entities at same time.

3.4. Data Analysis Tools and Techniques

First, the researcher collected data from individual microfinance institutions. The collected data were hardly complete. Some of the institutions didn't have the data at all. Afterwards, the needed data had to be obtained from a centralized place - National Bank of Ethiopia (NBE).

Afterwards, the obtained data was rearranged, and calculated in order to make it complete and fit for this study. Next, this panel data was analyzed using descriptive statistics, and multiple linear regression analysis.

Descriptive statistics was used to show the nature of data and summary of findings. Multiple linear regression models were used to determine the relative importance of each independent variable and control variables in explaining branch expansion on microfinance profitability in Ethiopia.

The multiple linear regressions model was conducted using E-views version 8 econometric software package.

Diagnostic checking is done to test whether the sample is consistent with the following CLRM assumptions:

- 1) The errors have zero mean.
- 2) The variance of the errors is constant and finite over all values
- 3) The errors are linearly independent of one another.
- 4) There is no relationship between the error and corresponding x variate

3.5.1 Diagnostic Analysis

Diagnostic checking is done to test whether the sample is consistent with the following assumptions:

- 1) The model is correctly specified
- 2) There is no relationship between independent variables (No multicollinearity).

3) There is no relationship among the error term at the period t and the error term at period before t (No autocorrelation problem)

4) The error term is constant across the number of observations (Homoscedasticity).

5) The error term is normally distributed. If all the above assumptions are consistent with the sample, E-view result will be accurate. The following tests are done in this research to test the above assumptions.

Assumption 1: $E(u_t) = 0$

The first assumption required is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption will never be violated (Brooks, 2008). Since this equation includes constant number this assumption is not violated.

Assumption 2: $\text{var}(u_t) = \sigma^2 < \infty$

This assumption state that the variance of the errors is constant and finite over all values this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic (Brooks, 2008). If heteroscedasticity occurs, the estimators of the ordinary least square method are inefficient and hypothesis testing is no longer reliable or valid as it will underestimate the variances and standard errors. There are several tests to detect the Heteroscedasticity problem, which are Park Test, Glesjer Test, Breusch-Pagan-Goldfrey Test, White's Test and Autoregressive Conditional Heteroscedasticity (ARCH) test. In this study, Breusch-pagan-Godfrey test was employed to test for the presence of heteroscedasticity. The hypothesis for the Heteroscedasticity test was formulated as follows:

H0: There is no Heteroscedasticity problem in the model.

H1: There is Heteroscedasticity problem in the model.

$\alpha = 0.05$

Decision Rule: Reject H0 if p-value is less than significance level. Otherwise, do not reject H0.

Assumption 3: $\text{cov}(u_i, u_j) = 0$ for $i \neq j$

This assumption states that covariance between the error terms over time (or cross-sectional, for that type of data) is zero. it is assumed that the errors are uncorrelated with one another. In the case of autocorrelation problem, the estimated parameters can still remain unbiased and consistent, but it is inefficient. The result of T-test, F-test or the confidence interval will

become invalid due to the variances of estimators tend to be underestimated or overestimated. Due to the invalid hypothesis testing, it may lead to misleading results on the significance of parameters in the model. In this study to test for the existence of autocorrelation, the popular Breusch-Godfrey Serial Correlation LM Test was employed.

H0: There is no autocorrelation problem in the model.

H1: There is autocorrelation problem in the model.

$\alpha = 0.05$

Decision Rule: Reject H0 if p-value less than significance level. Otherwise, do not reject H0

Assumption 4: the xt are non-stochastic

Based on this assumption the repressors are not correlated. However, if one or more of the explanatory variables are contemporaneously correlated which is called multicollinearity. If the multicollinearity occurs, the regression model is unable to tell which independent variables are influencing the dependent variable. The consequences of Multicollinearity are large variances and covariance of OLS estimators, wider confidence interval, insignificant t ratio, high R^2 but few significant t ratio, sensitivity of OLS estimators and their standard errors to small changes in data.

There is no one unique method to detect the multicollinearity problem, it only have some rules of thumb, which are high R^2 but few significant t ratio, high pair wise correlation coefficient and Variance Inflation Factor (VIF) or Tolerance (TOL). This study used high pair-wise correlation coefficients method to test the presence of multicollinearity problem in a regression model. Because it can see the correlation of independent variables between each other one by one. If the correlation coefficient was higher than 0.8, the model would be considered as it consists of serious Multicollinearity problem, Gujarati (2004).

Assumption 5: the disturbances are normally distributed

Normality tests are used to determine if a data set is well-modeled by a normal distribution. With the normality assumption, ordinary least square estimation can be easily derived and would be much more valid and straight forward. This study used JarqueBera Test (JB test) to find out whether the error term is normally distributed or not. The hypothesis for the normality test was formulated as follow:

H0: Error term is normally distributed

H1: Error term is not normally distributed

$\alpha = 0.05$

Decision Rule: Reject H0 if p-value is less than significance level. Otherwise, do not reject H0

3.5.2. Model Specification test

According to Brooks (2008), Specification error occurs when omitting a relevant independent variable, including unnecessary variable or choosing the wrong functional form, so that regression model will be wrongly predicted. If the omitted variable is correlated with the included variable, the estimators are biased and inconsistent if the omitted variable is not correlated with the included variable; the estimators are unbiased and consistent. Ramsey RESET test was used to see whether the developed model is correctly regressing.

H0: the model is correctly specified

H1: the model is not correctly specified

$\alpha = 0.05$

Decision Rule: Reject H0 if p-value is greater than significance level. Otherwise, do not reject H0.

3.5.3. Model Specification

Model specification refers to the determination of which independent and control variables should be included in or excluded from a regression equation. In general, the specification of a regression model should be based primarily on theoretical considerations rather than empirical or methodological ones. A multiple regression model is, in fact, a theoretical statement about the causal relationship between one or more independent variables and a dependent variable (Allen, 1997).

Model specification is the first and most critical stage of regression analysis; followed by estimation of parameters and interpretation of those parameters. Our estimates of the parameters of a model and our interpretation of them depend on the correct specification of the model (Allen, 1997)

Jackson (2009) stated that multiple regression analysis involves combining several predictor variables in a single regression equation. With multiple regression analysis, we can assess the effects of multiple predictor variables (rather than a single predictor variable) on the dependent measure.

According to Brooks, (2008), the general multivariate regression model with K independent Variables can be written as follows:-

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \epsilon_i \quad (i = 1, 2, 3, \dots, n)$$

Where Y_i is the i^{th} observation of the dependent variable, $X_{1i} \dots X_{ki}$ are the i^{th} observation of the independent variables, $\beta_0, \dots, \beta_k$ are the regression coefficients, ϵ_i is the i^{th} observation of the stochastic error term, and n is the number of observations. Hence, the effect of branch expansion of microfinance institutions profitability in Ethiopia can be model as follow:-

The original model by Chikalipah (2019) is modified by including Human Resource (HR), Loan(LOA), General Expense (GEN), Deposit (DEP) and (OW) Ownership . Thus, the final modified model in the panel form is:

$$ROA_{it} = \beta_0 + \beta_1 NOB_{it} + \beta_2 HR_{it} + \beta_3 LOA_{it} + \beta_4 GEN_{it} + \beta_5 DEP_{it} + \beta_6 SIZ_{it} + \beta_7 OWN_{it} + \epsilon_{it}$$

In the model i represents the individual microfinance institutions which range from $i = 1, 2, 3, \dots, 10$; whereas t ranges from 2010 to 2018, meaning $t = 1, 2, 3, \dots, 10$. In the model,

ROA	=	Rate of Return on Asset
NOB	=	Number of Branches
HR	=	Human resource, which is the number of employees
LOA	=	Loan Amount advanced to borrowers or customers
GEN	=	General Expense
DEP	=	Deposit at banks.
SIZE	=	Size of microfinance
OWNERSHIP	=	Ownership
ϵ_{it}	=	the error term assumed to be normally distributed with all classical assumptions supposed to hold

3.6. Variable Definition and Hypothesis Development

3.6.1. Research Hypotheses

i. Dependent variable

According to Creswell, (2009), to make it is clear to readers what groups are receiving the experimental treatment and what outcomes are being measured, the variables need to be specified in quantitative researches.

3.6.2. Profitability

According to Harward and Upton (1961), profitability is the ability of a given investment to earn a return from its use. Weston and Brigham (1972), noted rightly that for financial management, profit is the test of efficiency and a measure of control, to the owners, it is a measure of the worth of their investment, to the creditors is the margin of safety, to the government it is a measure of taxable capacity and a basis of legislative action and to the country, profit is an index of economic progress, national income generated and the rise in the standard of living, whereas profitability is an outcome of profit". Vijayakumar (2011) defines profitability as ability of the firm to use its resources to produce more revenues than expenses.

According to Al-Shami (2008), there are different ways to measure profitability such as: return on asset (ROA), and return on equity (ROE). equity (ROE). Return on Asset shows how profitable a company is relation to its total assets. It gives knowledge as to how effective management is in using its resources to produce earnings. Though, return on equity measures a company's profitability which shows how much profit a company generates with the money stockholders have capitalized. This degree gives logic of how well a company is in using its cash to generate returns.

According to earlier studies that analyzed the determinants of microfinance profits, I use return on assets (ROA) as a measure to evaluate micro finance profitability and as a dependent variable. Because profitability, as ascertained by researchers, is best measured by ROA - it represents the best measure of the ability of a firm to generate returns on its portfolio assets (Kosmidou, 2008; Naceur and Goaid, 2008). Rosenberg (2009) also stated that return on asset reflects that organizations' ability to deploy its asset profitably. According to Wolday (2013), Return on Asset is the most common measure of profitability in banks and other commercial institutions. Return on asset measures how well the institution uses all its assets and it is also

an overall measure of profitability reflecting both the profit margin and the efficiency of the institution's. (Ledgerwood, 1999) ROA indicates the profit earned per unit asset and which is most important, it shows the management's ability to utilize the microfinance's financial and real investment resources to generate profits.

$$\text{ROA} = \text{Net Profit before tax} / \text{Total Asset}$$

There are many options to measure Micro Finance Institutions, but all measures can pick in Addition. Return on Assets (ROA), average annual occupancy rate, net profit after tax and return on investment (ROI) are the commonly used financial or accounting indicators by firms (Tavitiyaman et al., 2012). Some other common measures are profitability, productivity, growth, stake holder satisfaction, market share and competitive position (Bagorogoza and Waal, 2010).

ii. Independent variables

In this thesis, microfinance total numbers of branch number is considered as the major independent variables. However, factors that influence and determine the expansion of microfinance branches are considered as control variables. Branch expansion of microfinance is affected by a number of factors. In this study the researcher wants to examine the effect of branch expansion of microfinance profitability of microfinance branch expansion. The control variables beside associated with branch expansion shall be represented by a number of variables. Hence, this study considers number of branch, human resource, loan, deposit, general expense, firm size and ownership as variables and in line with the variables the following seven hypotheses:

Assuming that MFIs are efficient, an increase in the number of branches could ultimately lead to profitability due to an increase in revenue (Diamond, 1984 ; Boyd & Prescott, 1986) essentially, firm size comprises structure of individual firms' influences their profitability. Shareholder, administrative decisions and activities can directly impact to these structures; hence, they vary from company to company. They include capital size, size of deposit liabilities, size and composition of credit portfolio, market share among others (Athanasoglou, 2011).

HP 1: There is a significant positive relationship between NOB and ROA.

Number of Branch.

HP 2: There is a significant negative relationship between deposits and ROA.

Micro finance Deposit:

Deposit is one of tools of microfinance funding and hence it has an impact on the profitability of the microfinance. Deposits are one type of source of microfinance to provide loan, even though the contribution of increasing amount of deposits to the profitability depends upon a number of factors. Firstly, it depends on the capability of the microfinance to convert deposit liabilities into earnings. Increasing those means that microfinance has funds available to use in different profitable ways and that should increase ROA.

MFIs may also effectively use local depositors as in the case of Irish loan funds (Hollis, and Sweetman, 2007) not just for funding, but also because of the important discipline that depositors can impose on expenses management—which has an impact on profitability. Guru et al 2002 also support the argument by stressing that banks pass their some of their overheads to depositors and borrowers in form of reduced deposit rate and larger borrowing rates. (Hollis and Sweetman, 2007) found out that higher net income is no correlation with salaries and wages without forgetting other non-interest earning costs.

HP 3: There is a significant positive relationship between the amount of Loan advanced to borrowers or customers of microfinance and the microfinance profitability. loans generate revenue through interest and increase profits (Rhoades and Rutz, 1982) subsequently substandard credits are a source of heavy financial losses and have actually been held responsible for numerous institution failures (Olajide, 2006), . Hence, it is accurate to conclude that the extent of a MFI's credit portfolio affects its profitability either positively or negatively, depending on its organization of substandard credits.

Microfinance loans:

HP 4: *There is a significant positive relationship between human resource, which is the number of employees and microfinance profitability*

Human Resource: -

HP 5: *There is a significant negative relationship between general expense and microfinance profitability*

General Expense:-

The preceding arguments on the effect of size on financial institutions profitability overlap with the idea that large ones can benefit from economies of scale (Baumol, 1959). However, some researchers suggest that little cost saving can be achieved by increasing the size of a financial firm (Berger et al., 1987).

HP 6: *There is a significant positive relationship between size of MFI and their financial performance measure (ROA).*

Firm size:

HP 7: *There is a significant negative relationship between the government ownership of MFI and their financial performance measure (ROA).*

Ownership:

3.7. Operationalization of study variables

Table 1. Summary of Independent variables and Expected sign on Profitability (ROA)

	Variable	Notation	Measurement	Expected sign
Dependent variable	Return on Asset	ROA	Net income after tax /total asset	
Independent Variable	Number of branch	NOB	Number of Branches	+
	Deposit	DE	Deposit of Microfinance to Bank	—
	Loans	LO	Loan given to customers	+
	General Expense	GE	General expenses of MFI	—
	Human Resource	HR	Number of employees	+
	Firm Size	FS	Log of Total asset	+
	Ownership	OW	Government of capital	—
Control variable				

CHAPTER: FOUR:

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with data analysis and interpretation. It has three sections: the first is about descriptive statistics, and then correlation analysis among ROA and determinants of branch expansion; finally CLRM assumptions and panel data random effect model regression analysis are discussed.

To empirically investigate the determinants of branch expansion and achieve the objectives stated in the first chapter, all microfinances, their years of service (nine years) were included. Based on the stated year of service twenty four microfinances having financial data of 9 years period from (2010-2018) were included from a total of twenty four microfinances. Therefore,

4.2. Descriptive statistics

Table 2 provides the summary of the variables obtained from twenty four microfinances institutions from the year 2010 to 2018 with a total of 124 observations. The table shows the mean, median, minimum, maximum, standard deviation and number of observations for the dependent variable Return on asset (ROA) independent variables number of branch (NOB), and control variables, loan (LO), human resource (HR), general expense (GE), deposit (DP) size (SIZ) ownership(OW).

Table 2. Descriptive statistics

Measures of Central Tendency	ROA	NOB	LOA	HR	GEN	DEP	SIZE (ASSET)	OWN (only government)
Mean	0.116192	54	826,980,762	970	36,986,788	1.56 mil	1,978,296,648	586,506,069
Median	0.070283	17	754,903,298	156	34,233.50	1.21 mil	1,020,243,143	593,172,736
Maximum	0.446806	472	2,076,685,319	12,702	1.65(bil)	2.59bil	3,955,744,491	638,172,736
Minimum	0.051391	2	784,511.2	8	50,000	512,456.17	1,048,805	508,172,736
Std. Dev.	0.119098	102	678,999	2481	1.89(mil)	827,231	37,348,903	45,977,047
Observations	124	124	124	124	124	124	124	124

Source: Own computation from E-views output

Summary of Descriptive Statistics

Table 2 shows the measures of central tendency of observations computed from the financial statements and other sources and measures of dispersion particularly standard deviation that shows how much dispersion exists from the average value.

According to Brooks (2008), a low standard deviation indicates that the data point tend to be very close to the mean, whereas high standard deviation indicates that the data point are spread out over a large range of values. It shows the summary data for the variables used in the analysis. The data are average values across years and reported showing the trend of the key variables over the period 2010 to 2018.

The data shows that during 2010 to 2018 the average profit level. i.e, ROA of Ethiopian microfinance was 11.61 percent and the standard deviation was 0.11 as indicated in table 4.1. This implies that the volatility of ROA ratio varies from the mean by 0.1161 and that means ROA significantly changes from time to time in Ethiopia.

While one MFI had only one branch while it began and had only two in 2018 , the MFI with the highest number of branches had 248 during 2010 it grew to 472 in 2018 (Addis Credit and Saving Institution - ACSI). The median observation during the first year was 15 while the median value during the last year was 17. Standard Deviation of the last year is calculated to be 102 – implying a wide variation of branches among MFIs.

In terms of Loan, the largest size was by that of ACSI with a value of 2,076,685,319. The minimum amount was by that of Leyfada and it amounted to be 784,511.20. The standard deviation was computed to be 678,999.

Human Resource capacity ranges from a minimum of eight to a maximum of twelve thousand and seven hundred two to 12,702 with mean value of 970. Standard Deviation is computer to be 2481 which shows that there is a huge difference in terms of distribution of staff of the MFIs.

The minimum amount of general expense that an MFI had was 50,000 while the maximum general expense was 1.65(bil). The mean general expense amounted to be 369,867.88.

Deposit in birr amount has an average value of 1.56 million. The Maximum amount of deposit is the one by Addis Credit and saving amounting 2.59 billion birr. The minimum amount is observed to be 512,456.17 birr. The standard deviation amounted 827,231birr. We can observe

that there is a variation of billions of birr among the MFIs. And that those owned by government have much bigger assets than those owned by private MFIs.

The average (mean) size or Asset of the MFIs is computed to be 1,978,296,648. While the largest MFI in terms of Asset was ACSI with 3,955,744,491.00 birr, the smallest was Lefayeda with a total asset size of 1,048,805 birr. The Standard deviation was found out to be 37,348,903 implying big variation larger than the smallest MFI in terms of Asset.

Ownership measured in terms of capital, as explained beneath Table 2 is observed to have an average value of 586,506,069. The standard deviation is computed to be 45,977,047. And with the maximum value of ownership is 638,172,736 and minimum value of ownership 508,172,736 microfinance of government capital implying that there is little gap in terms of ownership capital.

4.3. Classical Linear Regression Model (CLRM) Assumptions

To maintain the data validity and robustness of the regressed result of the research, the basic Classical Linear Regression Model (CRLM) assumptions must be tested for identifying any misspecification and correcting them so as to augment the research quality, Brooks (2008). There are different CLRM assumptions that need to be satisfied and that are tested in this study, which are: errors equal zero mean test, normality, homoscedasticity, autocorrelation, and multicollinearity.

A. Assumptions of OLS

i. Test for heteroscedasticity

Assumption 1, $(\text{var}(u_t) = \sigma^2 < \infty)$

The condition of classic linear regression model implies that there should be homoscedasticity between variables. This means that the variance should be constant and same. Variance of residuals should be constant otherwise, the condition for existence of regression, homoscedasticity, would be violated and the data would be heteroskedastic Brooks,(2008). The presence of heteroscedasticity in OLS estimators will still give unbiased (and also consistent) coefficient estimates, but they are no longer best linear unbiased estimators (BLUE) – that is, they no longer have the minimum variance among the class of unbiased estimators Brooks, (2008).

To check this, the popular Breusch-Pagan-Godfrey test was applied.. The test statistics give us the information we need to determine whether the assumption of homoscedasticity is valid or not, but seeing the actual auxiliary regression in the second table can provide useful additional information on the source of the heteroscedasticity if any is found (Brooks 2008). The result of the test is as follows:-

Heteroskedasticity Test: Breusch-pagan-Godfrey test

Table 3. Heteroskedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.541075	Prob. F(7,116)	0.1603
Obs*R-squared	10.55035	Prob. Chi-Square(7)	0.1595
Scaled explained SS	11.93074	Prob. Chi-Square(7)	0.1029

Source: own computation on Eviews

In this case all the F-, Scaled explained SS and χ^2 ('LM') versions of the test statistic give the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values are considerably in excess of 0.05. Therefore, the null hypothesis of is failed to reject since the level of significance is more than 5% which means it homoscedasticity error term.

ii. Test for absence of Autocorrelation

Assumption 2: $\text{cov}(u_i, u_j) = 0$ for $i \neq j$ (No Autocorrelation)

Another basic assumption of regression model says that the co-variance between error terms should be zero. This means that error term should be random and it should not exhibit any kind of pattern. If there exists co-variance between the residuals and it is non- zero, this phenomenon is called auto-correlation Brooks, (2008). To check this we can use different methods. Breusch–Godfrey Serial Correlation LM test has been employed for this research.

The Breusch–Godfrey serial correlation LM test was run for autocorrelation that will allow examination of the relationship between $\hat{u}_t$ and several of its lagged values at the same time. According to Brooks (2008), The Breusch-Godfrey test is a more general test for autocorrelation up to the rth order

Hypothesis of this test are:-Following the general null hypothesis of Breusch–Godfrey serial correlation LM test, the researcher develops the following:

Hypothesis to check the absence of autocorrelation:

H_0 = No autocorrelations errors

H_1 = Autocorrelations errors

Table 4. Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.539150	Prob. F(2,114)	0.1435
Obs*R-squared	14.21314	Prob. Chi-Square(2)	0.1149

Source: *own computation on Eviews*

As can be seen in the above table 4, F test result and the P value of F-statistic and Chi-Square is 0.1435 and 0.1149 which is in excess of the significance level of 5%. Hence, the null hypothesis, there is autocorrelation, passed 5 percent of significant level. This implies that there is no evidence for the presence of autocorrelation in this model.

iii. Test for Normality (ut $\sim N(0, \sigma^2)$)

In this study, the normality of the data was checked with the popular Bera-Jarque test statistic, Brooks (2008). According to Bera-Jarque test statistic, normally distributed data is not skewed and has a coefficient kurtosis of 3. As shown in figure 1below, the coefficient kurtosis is 3.22 which means kurtosis of the data in this particular study was much closer to 3, and the Bera-Jarque statistic had a P-value of 0.79 implying that there is no evidence for the presence of abnormality in the data. Thus, the null hypothesis that the data is normally distributed should not be rejected since the p-value was considerably in excess of 0.05.

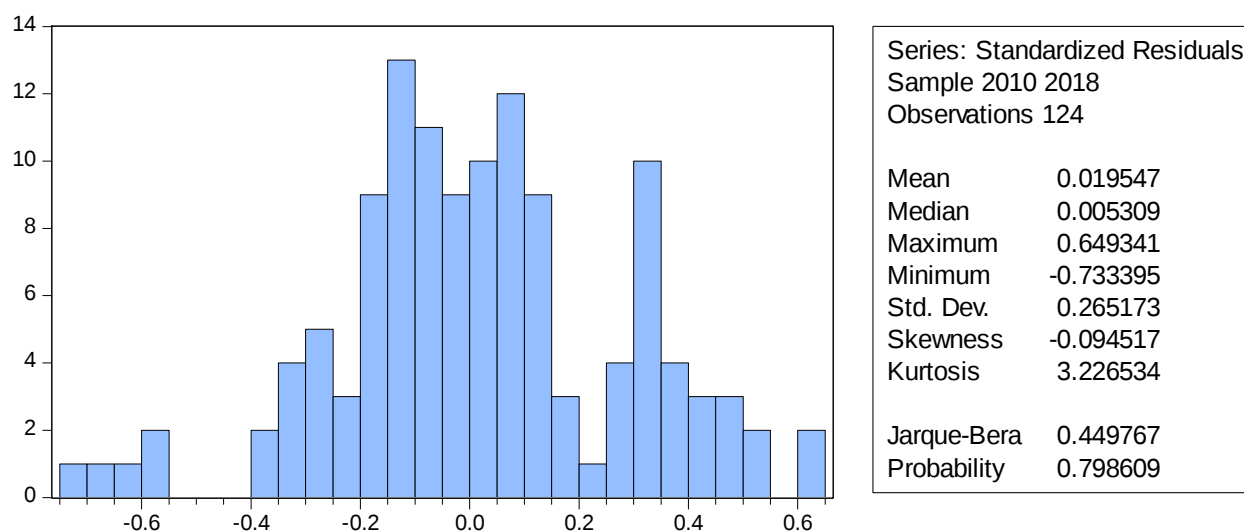


Figure 1. Normality test for residuals

Source: own computation on Eviews

iv. Test for multicollinearity

Multicollinearity is an implicit assumption that is made when using the OLS estimation method which says that the explanatory variables are not correlated with one another, Brooks (2008). When there is multicollinearity between explanatory variables; R^2 will be high but the individual coefficients will have high standard errors, so that the regression ‘looks good’ as a whole, but the individual variables are not significant.

This arises in the context of very closely related explanatory variables as a consequence of the difficulty in observing the individual contribution of each variable to the overall fit of the regression. Second, the regression becomes very sensitive to small changes in the specification, so that adding or removing an explanatory variable leads to large changes in the coefficient values or significances of the other variables. Multicollinearity will thus make confidence intervals for the parameters very wide, and significance tests might therefore give inappropriate conclusions, Brooks (2008). According to Lewis-Beck, (1993) suggestion in order to find out the multicollinearity problem, the bi-variate correlations among the independent variables should be examined and the existence of correlation of about 0.8 or larger indicates a problem of multicollinearity.

Table 5. Test for presence of Multicollinearity

	SIZE	OWNERSHIP	NOB	LOA	HR	GEN	DEP
SIZE	1.000000	0.678796	0.714376	0.692900	0.746183	0.769806	0.788850
OWN	0.678796	1.000000	0.596870	0.626207	0.614408	0.581631	0.704654
NOB	0.714376	0.596870	1.000000	0.713239	0.755335	0.706720	0.700287
LOA	0.692900	0.626207	0.713239	1.000000	0.744435	0.766781	0.782290
HR	0.746183	0.614408	0.755335	0.744435	1.000000	0.729730	0.733237
GEN	0.769806	0.581631	0.706720	0.766781	0.729730	1.000000	0.761893
DEP	0.788850	0.704654	0.700287	0.782290	0.733237	0.761893	1.000000

Source: own computation on Eviews

One can understand from the table above that there is no presence of multicollinearity from the data in this research.

v. Choosing Random effect Vs fixed effect model

The random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-sectionally and temporally Brooks, (2008).

To examine whether individual effects are fixed or random, a Hausman specification test was conducted providing evidence in favor of the REM model, Baltagi (2005). The null hypothesis for this test is that unobservable heterogeneity term is not correlated or random effect model is appropriate, with the independent variables. If the null hypothesis is rejected then we employ Fixed Effects method Brooks, (2008).

The Hausman test hypothesis is:-

H_0 = Random effect model is appropriate

H_1 = Fixed effect model is appropriate

HausmanTest Test cross-section random effects

Table 6. Hausman Test Correlated Random Effects

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.766558	6	0.9929

Source: own computation on Eviews

Table 6 above shows Hausman specification test, the P-value of a model is 0.99, which is more than 5% level of significance. Hence, the null hypothesis of the random effect model is appropriate is to not rejected at 5 percent of significant level. This implies that, fixed effect model is less appropriate than Random effect model and gives more comfort that random effects model results are valid and were adopted in this paper.

The results so far indicate that all CRLM assumptions are not violated, so the ordinary least square regression can be safely applied. However, since this study uses a panel data, there are two types of panel estimator approaches that can be employed, namely: fixed effects models (FEM) and random effects models (REM) Brooks, (2008).for this study i use random effects approach.

4.4. Regression Analysis Results

Eviews regression output is divided into three panels. The top panel summarizes the input to the regression, the middle panel gives information about each regression coefficient, and the bottom panel provides summary statistics about the whole regression equation.

The two most important numbers, “R-squared” (the one that answers how much percent of the variance in the dependent variable in the regression accounted for) and “S.E. of regression.” and the one that shows how far is the estimated standard deviation of the error term. Five other elements, “Sum squared residuals,” “Log likelihood,” “Akaike info criterion,” “Schwarz criterion,” and “Hannan-Quinn criter.” are used for making statistical comparisons between two different regressions.

The next two numbers, “Mean dependent var” and “S.D. dependent var,” report the sample mean and standard deviation of the left hand side variable Brooks, (2008). “Adjusted R-squared” makes an adjustment to the plain-old to take account of the number of right hand side variables in the regression. Measures what fraction of the variation in the left hand side variable is explained by the regression. The adjusted, sometimes written, subtracts a small penalty for each additional variable added. “F-statistic” and “Prob (F-statistic)” come as a pair and are used to test the hypothesis that none of the explanatory variables actually explain anything. Put more formally, the “F- statistic” computes the standard F-test of the joint hypothesis that all the coefficients, except the intercept, equal zero. “Prob (F-statistic)” displays the p-value corresponding to the reported F-statistic. The final summary statistic is the “Durbin-Watson,” the classic test statistic for serial correlation. A Durbin-Watson close to 2.0

is consistent with no serial correlation, while a number closer to 0 means there probably is serial correlation Brooks, (2008). Hence, as concluded in the Hausmantest (Table 4.6) above the random effects model is appropriate regression analysis to this study.

Regression analysis results

Table 7. Regression Analysis Results

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 05/09/19 Time: 10:19
Sample: 2010 2018
Periods included: 9
Cross-sections included: 24
Total panel (unbalanced) observations: 124
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NOB	0.720337	0.264015	2.728399	0.0074
LOA	1.250373	0.276626	4.520094	0.0000
HR	-0.485396	0.236167	-2.055303	0.0421
GEN	-0.119943	0.160119	-0.749089	0.4553
DEP	-1.125027	0.200400	-5.613919	0.0000
SIZE	0.085465	0.341602	0.250190	0.8029
OWNERSHIP	-0.325867	0.155304	-2.098247	0.0381
C	-2.058698	0.583319	-3.529282	0.0006
Effects Specification				
			S.D.	Rho
Cross-section random			0.242750	0.6533
Idiosyncratic random			0.176845	0.3467
Weighted Statistics				
R-squared	0.400098	Mean dependent var		-0.314836
Adjusted R-squared	0.363897	S.D. dependent var		0.234014
S.E. of regression	0.172745	Sum squared resid		3.461528
F-statistic	11.05212	Durbin-Watson stat		1.616427
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.559330	Mean dependent var		-1.048324
Sum squared resid	8.696337	Durbin-Watson stat		0.643410

Source:own computation on Eviews

The estimation results reported in Table 4, in the previous page depicted that, the Rsquared and adjusted R-squared values are 0.40 and 0.36 respectively. It is an indication that the model is a good fit. This means more than 36% of variations in financial performance indicator i.e. return on asset ratio, of MFI were explained by independent variables included in the model.

However, the remaining 64% changes are caused by other factors that are not included in the model. Because there are also remains variables which is not included in this study like: government intervention, efficiency, follow up it can be tested to bring more than 36% it wasn't complete data to test the other variables and mentioned variables in this study does not have complete data. Furthermore, the F-statistic was 11.05 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable (ROA) and the independent variables, is 0.00 indicates that the overall model is significant at 1% and hence all the independent variables jointly are significant in causing variation in return on asset of MFI.

4.4.1. Number of Branch and Profitability

Hypothesis testing of the relationship between number of branch and profitability:

H_0 : number of branch does not have a significant effect on profitability.

H_1 : number of branch has a significant effect on profitability.

Conclusion: Reject H_0 since there is a positive and significant relationship between number of branch and profitability. The E-view result on the above table, table 7, shows that the number of branch and profitability is positive. As shown in the regression output presented in Table 7, the coefficient of Number of Branch of MFI (NOB) as measured by expansion of branch of MFI is 0.7203 and its corresponding P-value is 0.0074. Meaning that holding other independent variables fixed at their average value, when Number of Branch (NOB) increase by one unit, MFI return on Asset (ROA) will increase by 0.7203 unit and significant at 1% of significance level. Therefore, the study accepts the hypothesis H_1 that, there is a significant positive relationship between the branch expansion of MFI and their financial performance measure (ROA).

The expected negative coefficient estimate of number of branch and profitability is inconsistent with the result of the study. There is a lack of consensus on the causal effect of geographic expansion of microfinance branches on profitability (Goetz, Laeven, & Levine, 2016). For example, (i) Diamond (1984) and Boyd and Prescott (1986) claimed that geographically spread out microfinance enjoy cost-efficiency that enhances stability and profitability. The result indicates that the confirmation of statistically significant negative relationship was also found in stark contrast, Jensen (1986) and Servaes (1996) suggested that geographic expansion lowers loan quality and significantly increases fragility.

4.4.2. Loan and Profitability

Hypothesis testing of the relationship between loan and profitability:

H_0 : loan does not have a significant effect on profitability.

H_1 : loan has a significant effect on profitability.

Conclusion: Reject H_0 since there is a positive and significant relationship between loan and profitability. As shown in the regression output presented in Table 7, the coefficient of Loan of MFI (LOA) as measured by loan given to customers is 1.2503 and its corresponding P-value is 0.00. Meaning that holding other control variables fixed at their average value, when Loan increase by one unit, MFI return on Asset (ROA) will increase by 1.2503unit and significant at 1% of significance level.

Therefore, the study accepts the hypothesis H_2 that, there is a significant positive relationship between the loan provision of MFI and their financial performance measure (ROA).The expected negative coefficient estimate of loan and profitability is inconsistent with the result of There is a lack of consensus on the causal effect MFI loans are subject to significantly higher transaction costs than retail profit seeking organizations, which include cost of funds for on-lending, the loan loss, and administrative costs (Cull et al 2009a). This result is inconsistent which states worse performance is positively associated with increases in loans and lending money to a diversified range of borrower's microfinance institutions can successfully increases their loans.in contrast Hermes et al (2008) found out that MFIs profitability that have lower average loan balances were also less efficient.

4.4.3 Human Resource and Profitability

Hypothesis testing of the relationship between human resource and profitability:

H_0 : number of branch does not have a significant effect on profitability.

H_1 : human resource has a significant effect on profitability.

Conclusion: Reject H_0 since here is a positive and significant relationship between human resource and profitability. As shown in the regression output presented in Table 7, the coefficient of employment of MFI (HR) as measured by number of employees hired by MFI's is -0.4853 and its corresponding P-value is 0.0421. Meaning that holding other control

variables fixed at their average value, when MFI hire one additional employee, MFI return on Asset (ROA) will decrease by -0.4853 unit and significant at 5% of significance level.

Therefore, the study rejects the hypothesis H3 that, there is a significant positive relationship between the human resource of MFI and their financial performance measure (ROA). The expected negative coefficient estimate of human resource and profitability is inconsistent with the result of the work of Bassey and Tapang (2012) points to the fact that human resources have been identified as one of the main sources of competitive advantage by many organizations in today's economy. Human resource management greatly influences an organization's human and organizational resources and so can be used to gain competitive advantage (Schuler & Macmillan, 1984). Athanasoglou *et al.* (2005) shows that labor productivity growth has a positive and significant effect on financial institution profitability.

4.4.4. General expense and Profitability

Hypothesis testing of the relationship between general expense and profitability:

H₀: general expense does not have a significant effect on profitability.

H₁: general expense has a significant effect on profitability.

Conclusion: do not Reject H₀ since there is a negative significant relationship between general expense and profitability. The regression output showed in Table 7 presented that, the coefficient of General expense (GEN) measured by the value of general expense is -0.1199 and its corresponding P-value is 0.4553. Meaning that holding other control variables constant at their average value, when general expense (GEN) increase by one unit, MFI return on asset (ROA) will decrease by 0.11 unit but statistically insignificant at 5% of significance level.

Since there is insignificant negative relationship between GEN and ROA of sampled MFI, the study do not rejected the forth hypothesis H4 that, there is a significant negative relationship between General expense (GEN) of MFI and their financial performance measure (ROA). The insignificance relationship could be attributable to the fact that, the MFI control their general expense under control. The expected negative coefficient estimate of general expense and profitability is consistent with the result of one of microfinance and banks profitability used by many researchers differently but most of them is more similarly the same, A.R Idris et al (2011)

As the traditional belief suggest that the higher the expense the lower the profit is the MFIs or bank makes hence , the higher the expense of the banks the lesser the bank's profitability will be. Therefore there is a negative relationship which implies that high profitable banks operates at the lowest cost possible (Vong, A.P.I and Chan, H.S. 2011), And Jiang et al, 2003 support that there exist a negative correlation between profit and expenses which implies that profitable microfinance are able to operate at the lowest cost possible.

4.4.5. Deposit and Profitability

Hypothesis testing of the relationship between general expense and profitability:

H₀: Deposit does not have a significant effect on profitability.

H₁: Deposit has a significant effect on profitability.

Conclusion: do not Reject H₀ since there is a negative significant relationship between deposit and profitability. As shown in the regression output presented in Table 7, the coefficient of deposit of MFI (DEP) as measured by deposit at bank is -1.2503 and its corresponding P-value is 0.0000. Meaning that holding other control variables fixed at their average value, when deposit decrease by one unit, MFI return on Asset (ROA) will decrease by -1.2503 unit and significant at 1% of significance level.

Therefore, the study accepts the hypothesis H5 that, there is a significant negative relationship between the deposit of MFI and their financial performance measure (ROA).

4.4.6. Size and Profitability

Hypothesis testing of the relationship between size and profitability:

H₀: size does not have a significant effect on profitability.

H₁: size has a significant effect on profitability.

Conclusion: Reject H₀ since there is a positive e significant relationship between size and profitability. The regression output showed in Table 7 presented that, the coefficient of MFI size (size) measured by log of total asset is 0.0854 and its corresponding P-value is 0.8029. Meaning that holding other control variables constant at their average value, when Size of MFIs increase by one unit, MFI return on asset (ROA) will increase by 0.08 unit but statistically insignificant at 5% of significance level.

Since there is insignificant relationship between size and ROA of sampled MFI, the study rejected the forth hypothesis H4 that, there is a significant positive relationship between size-of-MFI and their financial performance measure (ROA). The insignificance relationship could be attributable to the fact that, the MFI size does not have an impact on the profitability of the MFI. The expected negative coefficient estimate of firm size and profitability is inconsistent with the result of Akbas and Karaduman (2012) argue that firms large in size are more stable since they are capable of achieving huge sales because of capital savings from economies of scale. Wilson&Morris (2000) posit that small firms rely on internal source of finance to expand their businesses and evade finances from external sources. It has been argued that the effect of a growing size on financial institutions profitability is significantly positive to a large extent (Smirlock, 1985).

4.4.7. Ownership and Profitability

Hypothesis testing of the relationship between ownership and profitability:

H₀: ownership does not have a significant effect on profitability.

H₁: ownership has a significant effect on profitability.

Conclusion: do not Reject H₀ since there is no significant relationship between ownership and profitability. As shown in the regression output presented in Table 7, the coefficient of (OWN) as measured by an dummy variable 1 for government ownership is -0.3258 and its corresponding P-value is 0.0381. Meaning that holding other independent variables fixed at their average value, when the MFI is ownership, MFI return on Asset (ROA) will decrease by -0.3258 unit and significant at 5% of significance level.

Therefore, the study accepts the hypothesis H7 that, there is a significant negative relationship between the government ownership of MFI and their financial performance measure (ROA). This indicates that since the governments of MFI it has negative impact on the profitability of the MFI.

CHAPTER FIVE:

CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

Summary of major finding to examine the overall contribution of branch expansion in microfinance profitability in Ethiopia. As discussed in the first chapter; the researcher used ROA to measure profitability of selected micro finances. The study used panel data during the period 2010-2018 and selected twenty four micro finances as a sample out of thirty eight governmental, private and Non-government organization that have been operating on these periods. In the fourth chapter descriptive statistics, correlation analysis and balanced RE regression analysis were performed to describe the effect of branch expansion in microfinance profitability in Ethiopia. This final chapter presents conclusion of the study by summarizing the study's findings and provides a recommendation for stakeholders as well as for further studies.

5.2. CONCLUSIONS

The study briefly discussed the correlation analysis of dependent, independent, and control variables based on the Correlation Coefficient after random effect (RE) regression analysis made to identify the effects of branch expansion on profitability.

Considering, microfinances use ROA to explain their financial profitability and the above three analysis's the research reached on the following conclusions:

The study investigates the impact of branch expansion factors on the dependent variable over the period of 9 years from 2010 to 2018. Accordingly; NOB, LOA, GEN, DEP, HR, FS, and OWN are selected as explanatory and control variables while ROA is taken as dependent variable.

The correlational analysis of the study shows that variables like NOB, LOA, HR, and FS) are positively correlated to ROA; while DEP, GE and OW are negatively correlated with ROA.

The overall association has shown independent and control correlation with the dependent variable. But the majority of the variables have moderately strong correlation with ROA. And the remaining variables show weak correlation with the dependent variables (ROA). The results of RE regression analysis reveal that NOB, LOA, HR and FS are most important

determinants of micro finances in Ethiopia since they are statistically significant and the remaining variables like DEP, GE, and OW have shown statistically insignificant association.

Generally, based on this value the research confirmed that the microfinance sectors included in the study are not in a good profitability stage i.e. it shows their average return for each birr of fixed asset invested.

The most important factors of profitability i.e. NOB appeared to be significant and positively affects financial performance of Ethiopian microfinance institutions. This implies that, increasing NOB tends to increase the level of profitability, since as microfinance increases the number of branches it becomes strong enough to absorb losses; and continue operations through addressing a high number of customers. This is explicitly seen in this study by those micro finances who established more branches in the study period like: micro finances were produced more profit than the remaining. Additionally, it predicts that performances of large size micro finances are better than small size micro finances in order to get more profit.

The coefficient of variable HR is positive and statistically insignificant. The positive effect communicates that increase in number of employees will increase the probability of being profitable. The higher the number of employees and their competence, the lower is the vulnerability of the micro finance and the likelihood of making wrong decisions, which lets them fail but increasing number of employees without analysis would possibly let the impact of HR on ROA less or not at all.

The positive coefficient of variable LOA specifies significantly positive relationship with the dependent variable ROA. The higher the firm's LOA, the higher the ability of the firms is cover its fixed charges and the higher probability of the firm to profitable.

5.3. RECOMMENDATIONS

Based on the major findings obtained from the result, the researcher provided the following recommendations:

Since on average all micro finances are not producing sufficient return for their invested total asset and with current number of branches; it is better to increase the number of branches to address remote areas and to be more profitable since profitability of microfinances increase through the expansion of their branch.

Furthermore, the selected microfinances should review their branch expansion strategy and take remedies by observing the result of individual variables obtained in this research and measures of revised ROA.

In relation with employment, increasing number of employees without any assessment of maximum requirement will not benefit profitability. It shall rather increase the number of idle HR.

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Appendices

Annex 1: List of All microfinance institutions (Total population)

Category	Name of Institution
NGOs	
1	Specialized Financial and Promotional Institution S. Co.
2	Gasha Microfinance Institution S. Co.
3	Vision Fund Microfinance Institution S. Co.
4	Sidama Micro financing Institution S.Co.
5	BussaGonofaa Micro Financing S. Co.
6	Poverty Eradication & Community Empowerment (PEACE) S. Co.
7	Meklit Micro Finance Institution S. Co.
8	Eshet Micro Finance Institution S.Co.
9	Wasasa Micro Finance Institution S.Co.
10	Harbu Micro Financing Institution S. Co.
11	Africa Village Financial Services S. Co.
12	Kendil Microfinance Institution S.Co
13	Metemamen Micro Finance Institution S. Co.
14	Letta Micro Finance Institution S. Co.
15	Tesfa Micro Finance Institution S. Co.
16	Lideta Micro Finance Institution S.C.
	Adeday Microfinance Institution S.Co.

Private

- 1 Aggar Micro Finance S.Co.
- 2 Lefayeda Credit and Saving Institution S.Co.
- 3 Dynamic Microfinance Institution S. Co.
- 4 Nisir Micro Finance Institution S.Co.
- 5 Rays Microfinance Institution S.Co.
- 6 Digaf Micro Credit Provider S. Co.
- 7 Kershi Microfinance Institution S.Co.
- 8 Debo Microfinance Institution S.Co.
- 9 Sheger Microfinance Institution S.Co
- 10 Yemisrach Microfinance Institution S.Co

Regional Government

- 1 Amhara Credit and Saving Institution S. Co.
- 2 Dedebit Credit and Saving Institution S.C.
- 3 Oromia Credit and Saving Institution S.Co.
- 4 Omo Micro Finance Institution S. Co.
- 5 Addis Credit and Saving Institution S. Co.
- 6 Benishangul-Gumuz Micro FinanceS.Co.
- 7 Dire Micro Financing Institution S. Co.
- 8 Harar Microfinance Institution S. Co.
- 9 Gambella Micro Financing S. Co.
- 10 Somali Micro finance Institution S.Co.
- 11 Afar Microfinance Institution S.Co.

Annex 2 – Microfinance institutions included in the study (samples).

Name of MFIs Request for Approval

Category A

- 1 Amhara credit and savings Ins.
- 2 Dedit credit and savings ins.
- 3 Oromia credit and savings ins.
- 4 Omo credit and savings ins.
- 5, Addis credit & savings ins.
- 6 Dire micro-financing ins

6

Category B

- 1 Specialized fina. & prom. ins.
- 2 Gasha micro-financing ins.
- 3 Wisdom micro-financing ins.
- 4 Sidama micro-financing ins.
- 5 Peace micro-financing ins.
- 6 Meklit micro-financing ins.
- 7 Eshet micro-financing ins.
- 8 Wassassa micro-financing ins.
- 9 Agar micro-financing ins.
- 10 Harbu Micro-financing ins.

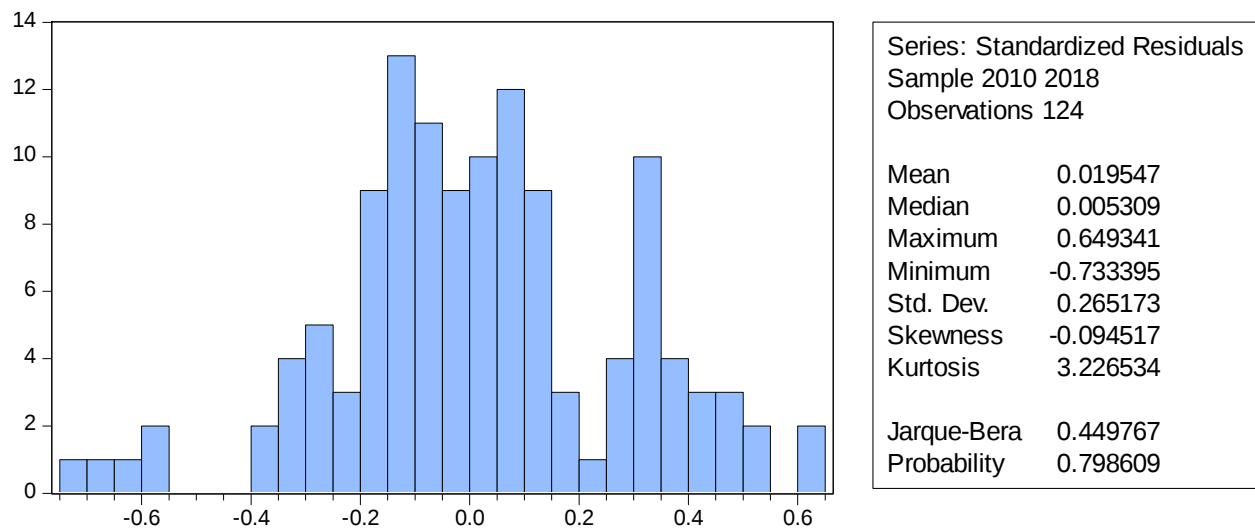
Category C

- 1 Metemamen micro-financing ins.
- 2 Leta micro-financing ins.
- 3 Harar micro-financing ins.
- 4 Lefayda credit & saving ins'n
- 5 Tesfa micro-financing ins.
- 6 Lideta micro-financing ins.
- 7 Nisir micro-financing ins.
- 8 Adeday micro-financing ins.

SOURCE: Audited financial statement of from national bank of Ethiopia in June 2019.

Annex 3 – Results of specific regression analysis tests

A



B

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.541075	Prob. F(7,116)	0.1603
Obs*R-squared	10.55035	Prob. Chi-Square(7)	0.1595
Scaled explained SS	11.93074	Prob. Chi-Square(7)	0.1029

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 05/09/19 Time: 10:24

Sample: 2 226

Included observations: 124

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.216915	0.241662	0.897597	0.3713
NOB	-0.009252	0.057501	-0.160893	0.8725
LOA	0.022458	0.133207	0.168596	0.8664
HR	-0.020094	0.051698	-0.388679	0.6982
GEN	0.110296	0.073724	1.496068	0.1374
DEP	-0.052717	0.083346	-0.632504	0.5283
SIZE	-0.082080	0.156946	-0.522983	0.6020
OWNERSHIP	0.038085	0.045588	0.835429	0.4052

R-squared	0.085083	Mean dependent var	0.066731
Adjusted R-squared	0.029873	S.D. dependent var	0.107712
S.E. of regression	0.106091	Akaike info criterion	-1.586698
Sum squared resid	1.305615	Schwarz criterion	-1.404744
Log likelihood	106.3753	Hannan-Quinn criter.	-1.512784
F-statistic	1.541075	Durbin-Watson stat	1.273228
Prob(F-statistic)	0.160264		

C

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 05/09/19 Time: 10:19
Sample: 2010 2018
Periods included: 9
Cross-sections included: 24
Total panel (unbalanced) observations: 124
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NOB	0.720337	0.264015	2.728399	0.0074
LOA	1.250373	0.276626	4.520094	0.0000
HR	-0.485396	0.236167	-2.055303	0.0421
GEN	-0.119943	0.160119	-0.749089	0.4553
DEP	-1.125027	0.200400	-5.613919	0.0000
SIZE	0.085465	0.341602	0.250190	0.8029
OWNERSHIP	-0.325867	0.155304	-2.098247	0.0381
C	-2.058698	0.583319	-3.529282	0.0006

Effects Specification		S.D.	Rho
Cross-section random		0.242750	0.6533
Idiosyncratic random		0.176845	0.3467

Weighted Statistics			
R-squared	0.400098	Mean dependent var	-0.314836
Adjusted R-squared	0.363897	S.D. dependent var	0.234014
S.E. of regression	0.172745	Sum squared resid	3.461528
F-statistic	11.05212	Durbin-Watson stat	1.616427
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.559330	Mean dependent var	-1.048324
Sum squared resid	8.696337	Durbin-Watson stat	0.643410

D

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.766558	6	0.9929

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NOB	0.571401	0.720337	0.243645	0.7629
LOA	1.247370	1.250373	0.010080	0.9761
HR	-0.258212	-0.485396	0.104288	0.4817
GEN	-0.139466	-0.119943	0.004216	0.7637
DEP	-1.137829	-1.125027	0.012745	0.9097
SIZE	0.102261	0.085465	0.014505	0.8891

Cross-section random effects test equation:

Dependent Variable: LROA

Method: Panel Least Squares

Date: 05/09/19 Time: 10:22

Sample: 2010 2018

Periods included: 9

Cross-sections included: 24

Total panel (unbalanced) observations: 124

WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.381517	0.742915	-3.205640	0.0018
NOB	0.571401	0.559775	1.020768	0.3100
LOA	1.247370	0.294282	4.238694	0.0001
HR	-0.258212	0.400079	-0.645402	0.5202
GEN	-0.139466	0.172784	-0.807168	0.4216
DEP	-1.137829	0.230011	-4.946850	0.0000
SIZE	0.102261	0.362212	0.282324	0.7783
OWNERSHIP	NA	NA	NA	NA

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.851032	Mean dependent var	-1.048324
Adjusted R-squared	0.805074	S.D. dependent var	0.400552
S.E. of regression	0.176845	Akaike info criterion	-0.420198
Sum squared resid	2.939781	Schwarz criterion	0.262128
Log likelihood	56.05230	Hannan-Quinn criter.	-0.143021
F-statistic	18.51755	Durbin-Watson stat	1.890085
Prob(F-statistic)	0.000000		

E

Ramsey RESET Test

Equation: UNTITLED

Specification: LROA LNOB LLOA LHR LGEN LDEP SIZE OWNERSHIP C

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.183536	115	0.8547
F-statistic	0.033686	(1, 115)	0.8547
Likelihood ratio	0.036316	1	0.8489

F-test summary:

Sum of Sq.	df	Mean
------------	----	------

	Squares		
Test SSR	0.002423	1	0.002423
Restricted SSR	8.274633	116	0.071333
Unrestricted SSR	8.272210	115	0.071932

LR test summary:

	Value	df
Restricted LogL	-8.108985	116
Unrestricted LogL	-8.090826	115

Unrestricted Test Equation:
Dependent Variable: LROA
Method: Least Squares
Date: 05/09/19 Time: 10:25
Sample: 2 226
Included observations: 124

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NOB	0.749553	0.489836	1.530213	0.1287
LOA	1.375372	1.068333	1.287400	0.2005
HR	-0.633727	0.419121	-1.512039	0.1333
GEN	-0.024616	0.187258	-0.131453	0.8956
DEP	-1.203365	0.722099	-1.666482	0.0983
SIZE	-0.004120	0.448111	-0.009193	0.9927
OWNERSHIP	-0.157655	0.159825	-0.986419	0.3260
C	-2.074747	1.164173	-1.782164	0.0774
FITTED^2	-0.048286	0.263088	-0.183536	0.8547

R-squared	0.580822	Mean dependent var	-1.048324
Adjusted R-squared	0.551661	S.D. dependent var	0.400552
S.E. of regression	0.268202	Akaike info criterion	0.275658
Sum squared resid	8.272210	Schwarz criterion	0.480356
Log likelihood	-8.090826	Hannan-Quinn criter.	0.358812
F-statistic	19.91827	Durbin-Watson stat	0.716844
Prob(F-statistic)	0.000000		

F

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.539150	Prob. F(2,114)	0.1435
Obs*R-squared	14.21314	Prob. Chi-Square(2)	0.1149

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 05/09/19 Time: 10:28
Sample: 2 226
Included observations: 124
Presample and interior missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNOB	-0.062627	0.148662	-0.421270	0.6744
LLOA	-0.003989	0.339540	-0.011748	0.9906
LHR	0.081582	0.137695	0.592487	0.5548
LGEM	-0.210428	0.186641	-1.127448	0.2621
LDEP	0.020237	0.209208	0.096730	0.9231
SIZE	0.145057	0.402445	0.360441	0.7192
OWNERSHIP	-0.038527	0.115014	-0.334974	0.7383
C	0.103607	0.603222	0.171756	0.8640
RESID(-1)	0.627878	0.147723	4.250377	0.0000
RESID(-2)	0.206677	0.144121	1.434053	0.1545
R-squared	0.114622	Mean dependent var	-7.88E-16	
Adjusted R-squared	-0.017771	S.D. dependent var	0.259371	
S.E. of regression	0.261666	Akaike info criterion	0.283243	
Sum squared resid	7.326177	Schwarz criterion	0.669894	
Log likelihood	-0.561060	Hannan-Quinn criter.	0.440310	
F-statistic	0.865772	Durbin-Watson stat	1.473398	
Prob(F-statistic)	0.609249			