COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF PROJECT MANAGEMENT

DETERMINANTS OF FINANCIAL PERFORMANCE IN ETHIOPIAN MICROFINANCIAL INSTITUTIONS

By

SAMRAWIT SILTAN G/MESKEL

Advisor:

DEJENE MAMO (PhD, Asst.Pof.)

A THESIS SUBMITTED IN THE PARTIAL FULFILLMENT OF THE

REQUAIRMENT FOR THE DEGREE OF MASTERS OF ARTS IN

PROJECT MANAGEMENT

JANUARY, 2022

ADDIS ABABA ETHIOPIA

Certificate of Declaration

This is to certify that the thesis prepared by Samrawit Siltan, entitled: *Determinants of Financial Performance in Ethiopian Micro Financial Institutions* and submitted for the partial fulfillment of the requirement for the degree of Masters of Arts in Project Management complies with the regulation of the university and meets accepted standard with respect to Originality and Quality.

Approved by:

Internal Examiner: Signature_____ Date_____

External Examiner: Signature _____ Date_____

Advisor: DEJENE MAMO (PhD, Asst.Pof.) Signature _____ Date_____

January, 2022

STATMENT OF DECLARATION

I, **Samrawit Siltan** declare that this thesis entitled **"Determinant of Financial Performance in Ethiopia Micro financial Institutions"** submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Project Management, is outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently with only guidance and suggestion of the thesis Advisor. The study complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Name: SAMRAWIT SILTAN

Signature……

Date…….

Acknowledgement

First and foremost, I am thankful to God for the good health and wellbeing that were necessary to complete this paper. Secondly, I would like to express my heartfelt gratitude and indebtedness to my advisor, Dejene Mamo (PHD, Ass.Pof), for his constructive comments, guidance and encouragement throughout my thesis work. Lastly, I would like to express my gratitude to all of my friends and Family for their help and supports.

ABSTRACT

The study investigated the Determinant factors on financial performance of micro financial institution in Ethiopia. Basically, micro financial institution financial performance can be determined by both internal and external factors. The study measure the determinant factors in what extent affect the financial performance from the period of have been studied. The study used secondary panel data for the year 2009-2019 from audited annual financial statements of MFIs included in the sample, annual report of National Bank of Ethiopia to assess the effect of determinant factors on MFIs performance. Purposive sampling was used to select ten MFIs out of more than 35 MFIs on the basis of having full set of data on the range of year from 2009-2019. Besides sampling method, the data analysis tools that have been used in this research work were descriptive statistics as well as econometric model. Fixed effect Model have been applied for the model with dependent variables ROA and Six internal and external to MFIs Variables has used as independent variables such as Capital adequacy ratio (CAR),Gearing Rate(GR),Operational efficiency (OE), Size or Total asset (SIZE),Saving mobilization(SM) and Real gross domestic product(RGDP).The major finding of the study shows that gearing ratio and saving mobilization have significant effect on ROA with positive relationship. Operational efficiency has negative significant relationship with ROA. However both size or total asset and real gross domestic product have positive insignificant relationship with ROA. Finally capital adequacy ratio has negative insignificant effect on ROA.

Keywords: Financial performance, Determinant factors, Micro financial Institutions.

TABLE OF CONTENTS

STATMENT OF DECLARATION iv

Acknowledgement v

ABSTRACT v

CHAPTER ONE 1

1.1. Background of the Study 1

1.2. Statement of Problem 3

1.3. Basic Research Questions 5

1.4. Objective of the Study 6

1.4.1. General Objective 6

1.4.2. Specific Objectives 6

1.5. Hypotheses of the Study 6

1.6. Scope of the Study 7

1.7. Limitation of the study 8

1.8. Significance of the Study 8

1.9. Organization of the Paper 8

CHAPTER TWO 10

REVIEW OF RELATED LITERATURE 10

2.1. Theoretical Literature 10

2.1.1. Theoretical Review of Microfinance 10

2.1.2. Definition of Microfinance 10

2.1.3. Perspective Performance Measures 15

2.1.4. Sustainability of Microfinance 16

2.1.5. Profitability Theory 18

2.1.6. Efficient Structure Theory 21

2.1.7. Portfolio Theory 21

2.2. Empirical Review 22

2.2.1. Internal Factors 23

2.2.2. External Factors 27

2.3. Summary of Literature Review & Knowledge Gap 30

2.4. Conceptual Frame Work 31

CHAPTER THREE 34

RESEARCH METHODOLOGY AND DESIGN 34

3.1. Research Design and Approach 34

3.2. Data, Nature, Sources and Collection Techniques 34

3.3. Population and Sampling Size Determination Techniques 35

3.4. Data Presentation, Analysis and Interpretation 35

3.5. Model Specification and variable definition 35

3.5.1. Model specification 35

3.5.2. Detailed Methodology and Testing Methods 36

3.6. Model assumptions and data properties 39

CHAPTER FOUR 40

DATA ANALYSIS AND PRESENTATION 40

4.1. Descriptive Statistics 40

4.2. The Classical Linear Regression Model Assumption & Diagnostic test 44

4.2.1. Heteroscedasticity test 44

4.2.2. Multicollinearity test 45

4.2.3. Normality test 46

4.2.4. Testing for Serial Correlation 47

4.2.5. Testing for Choosing Random effect (RE) versus fixed effect (FE) models 49

4.3. Regression analysis result and its interpretation 49

4.3.1. Regression result of model specification 49

CHAPTER FIVE 57

SUMMARY CONCLUSION AND RECOMMENDATION 57

5.1. SUMMARY 57

5.2. CONCLUSION 58

5.3. RECOMMONDATION 58

References..... 60

List of Tables

Table 1:Definition and Measurement of Variables to Operationalize 33

Table :2Summary of Descriptive Statistics..... 43

Table :3Heteroskedasticity Test..... 45

Table :4Multicollinearity Test 46

Table :5Autocorrelation test: Durbin Watson..... 48

Table :6Model regressed using ROA as a proxy of financial performance..... 49

Table :7Summary and Comparison of test result with expectation for ROA model. 56

List of Figures

Figure 1:Internal & External Factors vs. Financial Performance of MFIs. 31

Figure 2:Normality Test..... 47

Figure 3:Rejection and Non-Rejection Regions for DW Test 48

CHAPTER ONE

1.1. Background of the Study

Financial institution plays an important role for economic development of the country. Well recognized that economic progress relies largely on access to financial services such as savings, credit and insurance. The cause of poverty in developing economies among other things is that the poor does not have access to credit for the purpose of working capital as well as investment for its small business (Jean-Luc, 2006). According to (Brau andWoller, 2004) exclusion ranges from partial exclusion in developed countries to full or nearly full exclusion in lesser developed countries.

One of the most stylized facts of developing economies is that formal financial institutions leave the poorest population tightly constrained in their access to financial services. Where formal financial institutions fail the large majority of the poor population, there is evidence to support the proposition that microfinance institutions and credit unions can fill some of the gap (Barham, et. al., 1996).

Microfinance institutions (MFIs) have the function of providing financial services to the low-income households who have long been deemed “un-bankable”, including the self-employed and customers without collateral assets. Dedicated to improving the life of the poor in developing countries, MFIs provide to the poor much needed credit loans of small amount to finance their entrepreneurship projects, to finance their consumption, to cope to illness or for the education of their children without any or with little collateral requirement. (Ibtissem and Bouri, 2013).

Microfinance institutions have evolved since the late 1990s as an economic development tool intended to benefit low income people. Micro finance is recognized as an effective tool to fight poverty by providing financial services to those who do not have access to bank or are neglected by the commercial banks and financial institutions. Financial services provided by Micro Finance institutions (MFIs) generally include deposit, loans, payments, money transfers and insurance to poor and low-income households and their micro enterprise. Microfinance allows a sustainable form of financing for the most needed and it helps to reduces inequalities (Yenesew, 2014).

In Ethiopia, the formal microfinance industry began in 1994/1995. The governments designed Microfinance Institution Proclamation to encourage Microfinance Institutions (MFIs) that are responsible to extend credit to both the rural and urban poor of the country. In this process the licensing and supervision of MFIs was the duty of the government office. Proclamation No.84/1994 that allows the Ethiopian domestics private sectors to engage in the banking and insurance business and establishments of MFIs marks the beginnings of new era in the Ethiopian's financial sector and opened the opportunity for an inclusive financial sector in Ethiopia. Currently, the Ethiopia micro finance sector consists of more than(37)Thirty seven Micro finances institutions while their total capital and total assets increased significantly and reach Birr 13.7 billion and Birr 67.2 billion, respectively.(NBE, 2018). As a result of liberalization and openness to entry for private sector in the financial industry has created better opportunities for enhancing access to financial service in the country directly through their operation and indirectly via the spillover effect on public finance institution (Alemu, 2014).

The Ethiopia microfinance sector is characterized by its rapid growth, an aggressive drive to achieve scale, a broad geographic coverage, a dominance of government MFIs, an emphasis on rural households, the promotion of both credit and savings products, a strong focus on sustainability and by the fact that the sector is driven by Ethiopian owned. In recent years, the state and regional governments have made a major push to increase financial services for agricultural, micro and small enterprises and low-income households (IFAD, 2009). Hence the industry has a strong focuses on loans to the very poor, sector outreach is impressive and financial performance of the sector is considered good, although the operational margin and profitability are low. MFIs have also mobilized a significant amount of savings, thereby improving financial as well as operational sustainability (MTF, 2011).

Generally, to meet the objectives of poverty alleviation, MFIs ought to be viable and sustainable in the provision of services. This means they must provide quality and flexible financial services that target the poor, culturally fit, subsidy free and must be profitable in all respect. Profitability is a suitable mechanism for achieving long term viability and sustainability of the microfinance industry. At the micro level, profitability is a precondition to a competitive microfinance industry and the cheapest source of capital, without which no firm would draw external capital. Moreover, market sources of funding are accessible only to MFIs that have established for to

turn a profit (Muriu, 2011). Therefore; the purpose of this study is to identify and investigate factors that determine the financial performance of selected Microfinance institutions in Ethiopia.

1.2. Statement of Problem

Expanding microfinance is currently receiving perhaps the highest attention ever as a key tool to achieving many development goals in poor countries. Indeed, prospects for more inclusive financial services are expanding in poor countries like Ethiopia, with Government's development strategies increasingly giving strong emphasis for sectors that support 'self-employment', thus further improving the enabling environment for financial intermediation (Gobezie, 2007)

The Microfinance industry, along with all the players in it, is found under a quickly changing. Today, the microfinance industry has become both busier and complex. Which means, the concept of microfinance no longer just covers microcredit only, but also includes the possibilities of saving, payments, insurance and money transfer? Though MFIs are characterized as one type when it comes to financial services, there is a great variety of MFIs in terms of legal form, profit status, degree of sustainability and funding sources (Sima, 2013).

The establishment of sustainable and profitable MFIs that reach a large number of rural and urban poor who are not served by the conventional financial institutions, such as the commercial banks, has been a prime component of the new development Strategy of Ethiopia (Wolday,2000).

Profitability is an appropriate device for achieving long term viability and sustainability of the microfinance industry. To achieve their prime objective which is alleviating poverty, MFIs should be able to provide financial services on a sustainable way. To be sustainable MFIs should generate an income sufficient to cover their financial costs, costs of administration, and loan loss provisions. MFIs working towards sustainability on market principle are not different from a formal bank except clientele that it serves. Hence, it will face a challenge that a formal bank faces in achieving its objectives (Hartungi, 2007cited in Yonas, 2012). As a result, there is a clear need to identify and investigate the major factors that contribute to financial profitability of Microfinance institutions.

In the existing empirical literature, factors explaining MFI financial performance may be categorized into MFI-specific and those external to MFI management (Crabb, 2008). MFI specific or internal factors include financial structure, quality of portfolio, and cost per borrower, Saving Mobilization, operation efficiency, capital ratio and size of the MFI. On the other hand, external factors, macroeconomic environment as (GDP and Inflation Rate) and industry specific such as regulatory conditions, concentration and charter that established the MFIs. (Ahlin et al, 2011) showed that macroeconomic-context matters for MFI financial sustainability; while (Hartarska and Nadolnyak, 2007) examine the determinants of MFIs operational performance find positive significant impact from MFI size and capital ratios.

In Ethiopia case studies have conducted regard to identification and assessment of factors/determinants of MFIs profitability considering both internal and external factors. Those studies were conducted by various scholars, the study by (Yonas, 2012) and (Melkamu, 2012) tried to see the determinants of performance by using a proxy of financial and operational sustainability of Ethiopian MFIs. They focused only on internal factors and have not considered external factors like macroeconomic and industry and also, they have not addressed specifically the idea of financial inclusiveness of MFIs. Similarly, (Ashebir, 2017) investigated the internal and external factors affecting profitability of 19 Ethiopian MFIs. The study finding indicate that the MFI specific variables age of MFI, gearing ratio, capital adequacy and operational efficiency were determined to be significant variables in explaining financial performance of MFIs. Moreover, the effect of the external variables Inflation was found to be significant.

In addition,(Sima, 2013) studied determinants of profitability of Ethiopian microfinance institutions by using microfinance specific and macroeconomic factors from secondary data. Moreover, (Yenesew,2014) the study was conducted based on a nine years' secondary data obtained from AEMFI performance analysis report and MOFAD for thirteen (13) selected MFIs in Ethiopia. Beside this the study used primary data analysis to solicit mangers perception towards the determinants of financial performance of MFIs in Ethiopia. Regarding the explanatory variables, operational efficiency, GDP and size of MFIs affect MFIs financial performance significantly. The outcome of the study shows that Age of microfinance institutions has a positive but statistically insignificant effect on their financial performance. The other explanatory variables which is Portfolio at risk>30, Gearing ratio, capital to asset ratio and

Market concentration affect negatively and not significant.

Hence, findings of different researchers had revealed different outcome, even if researches which used the same independent variables at various studies period are outdate. For instance, the study which was conducted by Muriu on micro finance profitability indicated that capital adequacy ratio (CAR) had robust and significant positive association with MFI profitability (Muriu, 2011). On the other hand, local study carried out by Yenesew on determinants of financial performance demonstrated that capital to asset ratio (CAR) is negative and statistically insignificant even at 10% (Yenesew, 2014). The study conducted by Melkamu on determinants of Operational and Financial Self-Sufficiency depicted that gearing ratio (GR) had negative and statistically insignificant with financial performance MFIs in Ethiopia (Melkamu, 2012). On the contrary, the study conducted by Ashebir on factors affecting MFIs profitability showed that gearing ratio(GR)had significant association in explaining financial performance of MFIs in Ethiopia (Ashebir,2017).

Now, this study was conducted to assess outcome of those variables in recent study period (2009 -2019) and to fill the gap in the context of Ethiopian MFIs with the MFIs-specific and macroeconomic factors affecting their financial performance measured by Return on Asset (ROA).

1.3. Basic Research Questions

What are the major determinants of MFIs-specific factors that affect the financial performance of MFI in Ethiopia?

What are the macroeconomic factors that affect the financial performance of MFIs in Ethiopia?

1.4. Objective of the Study

1.4.1. General Objective

To examine determinants that affect financial performance of Microfinance Institutions in Ethiopia.

1.4.2. Specific Objectives

The specific objectives of the study include:

- To examine the impact of capital adequacy ratio on the financial performance MFIs in Ethiopia.
- To investigate the impact of operation efficiency on financial performance of MFIs in Ethiopia.
- To examine the impact of gearing ratio on financial performance of MFIs in Ethiopia.
- To determine the impact of size (total asset) on financial performance of MFIs in Ethiopia.
- To examine the impact of saving mobilization on financial performance of MFIs in Ethiopia.
- To explore the impact of real GDP growth rate on financial performance of MFIs in Ethiopia.

1.5. Hypotheses of the Study

In order to address the research question, stated research problem and also to achieve objectives; the study has developed and to be tested; a number ofhypotheses regarding the relation between the performance of Ethiopia MFIs and the proposed independent variables based on different empirical research and theoretical review made from banks and MFIs. Six hypotheses are developed:

H1:Capital adequacy ratio has positive and significant relation with financial performance of MFIs.

H2: Gearing Ratio has positive and significant influence on financial performance of MFIs.

H3:Oprational efficency has negative and significant relation with financial performance of MFIs.

H4: Size of MFIs has negative and significant impact on financial performance of MFIs.

H5:Saving Mobilization has positive and insignificant relation with financial performance of MFIs.

H6:RGDP has negativeand significant impact onfinancial performance of MFIs.

1.6. Scope of the Study

This study had been confined to identify and examine the key determinants of financial performance of Ethiopian micro finance institutions which are currently operational and can access consolidated financial data and non-financial data. Hence, different studies have conducted by(Crabb,2008),(Ahlin et al,2011), (Hartarska and Nadolnyak,2007) and locally, (Sima,2013), (Yenesew,2014), (Ashebir,2017) and etc. has used the most commonly known variables as capital adequacy ratio, operational efficiency, credit risk ratio, Saving Mobilization, GDP growth rate and inflation rate as MFIs-specific and macroeconomic independent variables with financial performance, ROA. As per the result of those researchers, the variables are highly significant and explanatory of profitability of the MFIs. Because of this, the current researcher used these variables.

The theme of this research was empirically examine the main determinants of Ethiopian MFIs industry profitability (MFIs-specific and macroeconomic) during the period of 2009 - 2019.The time period of 2009 – 2019 is selected because, following 1994 financial liberalization of Ethiopia, large numbers of MFIs and private commercial banks were established continuously and since then the period has significant structural change, profitability increment, financial inclusion and availability of organized financial data in Ethiopian MFIs sector after financial liberalization. This is the basic reason to start the investigation of this research from the recent,

2009 year.

1.7. Limitation of the study

The researcher had experienced various challenges while conducting this study. Lack of easily accessible theoretical frame work and concrete benchmark in the area of Microfinance and necessary data challenged the researcher from employing additional variables.

1.8. Significance of the Study

- This study is conducted be of value to different stakeholders including: scholars and Academicians, managers of MFIs, National Bank of Ethiopia, government through its relevant agencies and the policy makers in Ethiopia. To scholars and academicians, the study will increase body of knowledge on the effect of MFIs-specific &macroeconomic variables on the performance of micro finance institutions in Ethiopia. It will also suggest areas for further research so that future scholars can pick up these areas and study further.
- The study will be important to the government especially the Ministry of Finance and Economic development and the National bank of Ethiopia for making policy decisions whose overall objectives is to influence the level of economic activity and ensure a sustainable micro finance institution sector. To managers of micro finance institutions, they may obtain useful input into their corporate decisions and strategies.
- The policy makers in the micro finance institutions business will find the study useful as a benchmark of policy formulation, which can be effectively implemented for better and easier regulation of the micro finance institutions sector.

1.9. Organization of the Paper

The paper has five chapters, chapter one provides the introduction for the study, which includes back ground of the study, statement of the problem, objective of study, significance of the study and scope of the study. Chapter two has the review of theoretical and empirical literatures.

Chapter three and chapter four presented the methodology, data analysis and interpretation from the collected data. Lastly the paper will present conclusion and recommendation as chapter five.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

Under this section the theoretical and conceptual literature as well as the empirical evidences focusing on the drivers of micro financial institutions' financial performance is presented. In addition, it review and summarize any previous published finding and books literatures related to the determinant factors and financial performance of micro financial institutions' to get a good understanding ground for research problem and to identify gaps exists in literature for further investigation and this in turn helps to formulate and develop clearly articulated Hypothesis, Conceptual framework and Econometric Equation of the study model.

2.1. Theoretical Literature

2.1.1. Theoretical Review of Microfinance

This section discusses the theoretical framework of the existing literature under the line of microfinance area, which is served as a platform for the forthcoming empirical study.

2.1.2. Definition of Microfinance

There is, however, no statutory definition of micro finance. Microfinance institutions have been defined in various ways by different authors and organizations. However, the concept of the definitions is usually the same in which microfinance refers to the provision of financial services; primarily savings and credit to the poor and low-income households that don't have access to commercial banks service.

The term microfinance is of recent origin and is commonly used in addressing issues related to poverty alleviation, financial support to micro-entrepreneurs, gender development etc. Consultative Group to Assist the poor (CGAP,2012) defined "microfinance" the provision of formal financial services to poor and low-income people, as well as others systematically not benefited from the financial system. As noted, "Microfinance" it is not only providing a range of credit products (for consumption, smoothing for business purposes, to fund social obligations,

for emergencies, etc.) but, also it is involving on savings, money transfers, and insurance.

According to (Robinson,2001), Microfinance refers to small-scale financial services primarily credit and savings provided that to people who farm or fish or herd; who operate small enterprises or microenterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages or commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both rural and urban. Many such households have multiple sources of income. According to(Hartarska,2005) microfinance is the provision of small scale financial services to low income or unbanked people. It is about provision of "a broad range of financial services such as deposits, loans, payment services, money transfers and insurance to the poor and low-income households and their farm or non-farm micro-enterprises" (Mwenda and Muuka,2004).

In practice, in addition to financial intermediation, some microfinance institutions provide social intermediation services such as group formation, development of self-confidence, and training in financial literacy and management capabilities among members of a group intended to benefit low-income women and men. This means that the skills and confidence of low-income people have to be developed in addition to giving them access to credit provision. Therefore, the microfinance approach is not a minima list approach offering only financial intermediation but an integrated approach offering both financial intermediation and the other services mentioned above (Ledgerwood, 1999).

The typical users of microfinance services are traders, street vendors, small farmers, service provider's hairdressers, artisans and small producers, such as blacksmiths and seam stresses and belong to the economically active poor population that are living close to the poverty line and are therefore self-employed, low income entrepreneurs in both urban and rural areas (Ledgerwood, 1999). Microfinance institutions are considered as a tool for poverty alleviation through improving access to finance and financial services. According to Basu et al. (2004) MFIs complement effectively the formal banking sector in providing financial services to the poor. The rationale of improving finance comes from the premise that empowerment of the poor through creating income generating capacity enables the poor to access all development requirements to

get out of multifaceted dimensions of poverty and reduce their vulnerability to unexpected events (Davis et al., 2004).

Ethiopian Proclamation No. 626/2009 defines micro financing business as "the provision of financial services like accepting savings extend credit, drawing and accepting drafts payable, providing money transfer services and others specified in the Article 3(2) of the proclamation.

History of Micro Finance

The history of informal financial institutions, especially private money lending, can be traced to ancient Egypt and the Middle East. The Old Testament documents restriction on lending for interest among the Jews and describes morality issues related to collateral from the poor. (E.g. in the books of Deuteronomy, 23:20; 24:10-13, and Ezekiel, 18:8, 12, 13, 18) Thus, money lending to the poor with or without collateral must have been widely practiced, not only for commerce, but also for private consumption, since the provisions in these books of laws at the time were attempts to regulate the practice along religious and moral values, rather than to prohibit them (Degefe,2009).

The emergence of the global microfinance has a history of about three decades yet has gone through stages of historical development. The microfinance industry is said to be in revolution: the service that was initiated in small scale and small village of South East Asia “Chintanga”, Bangladesh now turned to be international agenda and an issue addressing one of the main problems i.e. poverty in developing countries of the world (Arega,2007)

The ideas and aspirations towards microfinance are not new. Small, informal savings and credit groups have worked for centuries across the world, from Ghana to Mexico to India and beyond (Helms, 2006). In Europe, as early as the 15th century, the Catholic Church founded pawn shops as an alternative to usurious moneylenders. These pawn shops spread throughout the urban areas in Europe throughout the 15th century. Formal credit and savings institutions for the poor have also been around for generations, offering financial services for customers who were traditionally neglected by commercial banks. The Irish Loan Fund system, started in the early 1700s, is an early (and long-lived) example. By the 1840s, this system had about 300 funds throughout Ireland (Helms, 2006).

The introduction of the term microfinance followed the success of many microcredit programs around the world and in 1997, during the first Microcredit Summit, 2,900 delegates from 137 countries representing around 1,500 organizations gathered in Washington, D.C. During that occasion the birth of the global industry of microfinance was officially recognized. Since then the focus started to change and move from the predominant welfares idea, where only the provision of credit was considered to be important, to the need of becoming financially sustainable through the provision of a complete range of financial products and to reach more people.

Microfinance in Ethiopia

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

The formal microfinance industry began in Ethiopia in 1994/1995. The government's Microfinance Institution Proclamation designed to encourage Microfinance Institutions (MFIs) that are responsible to extend credit to both the rural and urban poor of the country. In this process the licensing and supervision of MFIs was the duty of the government office. The Monetary and Banking Proclamation of 1994 lays down the legal basis for the financial sector in Ethiopia. In this proclamation, the government clearly assigns the task of licensing and supervising banks, insurers and other financial institutions to the National Bank of Ethiopia (NBE). The key criterion for institutions is that they carry out banking business. This means the country follows rather broad approach to banking supervision, which does not concentrate on deposit taking only, but instead explicitly includes lending of money as a banking activity, independent of the sources of this money.

This formulation in the Monetary and Banking Proclamation has significant implications for the financial sector in general, as well as for the prudential regulation of microfinance. Unlike in many other countries, which focus on regulating only those intermediaries that mobilize deposits, the implication of the logic laid down is that the NBE also has to supervise and license all institutions that are involved only in credit extension.

In 2009, a new proclamation was enacted (626/2009. This proclamation introduced a number of rules to strengthen the microfinance sector. Since 2009, MFIs have to align their financial year to the government fiscal year (July 1st to June 30th) and receive approval from National Bank of Ethiopia (NBE) before hiring their external auditors. The external auditors are required to have sufficient qualifications, no conflict of interests with the audited MFI and have to send their management letters to NBE. the directives have introduced a more conservative provisioning policy; higher capital and liquidity and profitability requirements; qualification criteria for BOD members and CEOs; new rules for licensing and stricter supervision and as well as additional reporting requirements (e.g. on credit concentration). MFIs that cannot meet capital and profitability criteria will be limited in their maximum loan size. On the other hand, the proclamation introduced the possibility for MFIs to be relicensed as banks.

In Ethiopia, MFIs are to be established in the form of share companies as defined under article 304 of the Commercial Code (CC). The Code defines a share company as "a company whose capital is fixed in advance and divided into share and whose liabilities are met only by the assets of the company. "The NBE registers and licenses MFIs upon the latter fulfilling the requirements set by the MFI Proclamation and directives. A share company may not be established by fewer than five shareholders (Article 307 CC). An initial capital of ETB 200,000 is required to form MFI. Like in the other financial services sub-sectors, capital/share of MFIs must be fully owned by Ethiopian nationals and registered under the laws of and having their head office in Ethiopia (Article 2(3) Proclamation No.626/2009). Foreigners must not own MFI, fully or partially. Any foreign national or organization fully or partially owned by foreign nationals may not be allowed to establish MFI. Open branches or subsidiaries of a foreign micro-financing institution in Ethiopia or acquire the shares of Ethiopian MFI (Article 25 of Proclamation No. 626/2009). This rule is a confirmation of what is seen in the investment regulation (Investment Regulation 84-2004).

The microfinance industry in Ethiopia has shown a remarkable qualitative and quantitative growth since the early 1990. By 2017, there were 35 MFIs with total capital and total assets increased significantly to reach Birr 10.7 billion and Birr 49.6 billion, respectively. Their deposit mobilization and credit allocation also expanded remarkably. Compared to last year, their deposits surged by 42.8 percent and reached Birr 26.3 billion while their outstanding credit went-

up by 28.5 percent to Birr 32.4 billion. Amhara, Dedebit, Oromiya, Omo and Addis Credit and Savings institutions were the major MFIs accounting for 83.7 percent of the total capital, 93.1percent of the savings, 88.6 percent of the credit and 89.9 percent of the total assets of the MFIs sector (NBE, 2017).

Since the government prohibits foreign nations from providing banking services in Ethiopia, MFIs in the country were established as share companies with capital owned by Ethiopian or organizations registered under the laws of Ethiopia. This has led to lack of transparency in the sector since much of the initial capital comes from foreign donors who enlist “nominal” shareholders to act as fronts. (Gobezie, 2005) noted, these shareholders are precluded from selling or transferring their shares and "voluntarily forsake" their claim on dividends, if any, declared by the MFI. Such shareholders do not have a real stake in the organization and would be unlikely to give support at a time of financial crisis.

Currently, several formal microfinance institutions are delivering financial service in rural and urban sectors of the country. Despite the obvious disadvantages of the microfinance industry in Ethiopia such as poor communication and infrastructure, weak legal systems as banking sector and lack of technical capacity as compared with other Sub-Saharan countries, the sector has been growing at a significant rate (Amha, 2000).

2.1.3. Perspective Performance Measures

According to (Basu and Woller,2004) cited in (Wale, 2009), two different perspectives on which the MFI performance is to be measured has created two opposing but having the same goals school of thought about the MFI industry. The first one are called welfarists and the second one institution.

Welfarists argue that MFIs can achieve sustainability without achieving financial sustainability. They contend that donations serve as a form of equity and as such donors can be viewed as social investors. Unlike private investors who purchase equity in publicly traded firm, social investors don’t expect to earn monetary returns. Instead, these donor investors realize a social (intrinsic) return. Welfarists tend to emphasize poverty alleviation, place relatively greater weight on depth of outreach relative to the breadth of outreach and gauge institutional success according to social metrics. This is institutions to sacrifice depth of outreach to achieve them. On the contrary,

institutionists argue that unless we build sustainable MFI that are capable of running independent of subsidies the promise of MFI of eradicating world poverty will not be met. They argue that sustainable MFI helps to expand outreach and reach more poor people. Hence, even if the two schools of thought seem contradictory, they are actually not. Their goal is eradicating poverty. Their difference lies on how to go about it. Welfarists say we have to target the very poor and profitability shall be secondary. They prefer to charge subsidized and low interest rates by relying on donor funds. Institutionist argues donor funds are unreliable and MFIs must by themselves generate enough revenues to reach more poor people in the future. They favor marginally poor customer. They charge higher interest rates and focus on efficiency of MFIs to generate profit and reach more poor. The debate between the two schools of thought is endless and today many players in the MF industry use both the welfarists and institutions perspective to assess the performance of MFIs (Wale, 2009).

2.1.4. Sustainability of Microfinance

According to (Letenah,2009) Sustainability defined as the ability of a MFI to cover its operating and other costs from generated revenue and provide for profit. It is an indicator which shows how the MFI can run independent (free) of subsidies. This change in emphasis has created a different perspective on the analysis of performance of the MFIs.

(Guntz, 2010) point out that Sustainability in simple terms refers to the long-term continuation of the Microfinance program after the project activities have been terminated. It entails that appropriate systems and processes have been put in place that will enable the Microfinance services to be available on a continuous basis and the clients continue to benefit from these services in a routine manner or in the day to day activities. This also would mean that the program would meet the needs of the members through resources raised on their own strength, either from among themselves or from external sources.

As the concept of microfinance came into focus, the question of whether donor support is necessary in the long term existence and the issue of sustainability of such institutions came up as well. It could be argued that the long term sustainability of MFIs is not important as long as money was given to micro entrepreneurs and a startup help was given. This would imply that sustainability of the micro enterprises is more important than the long term existence of the

financial institution that stood behind the start up.

As MFIs seek to reach as many poor people as possible in the long run to fulfill their goal to fight against the worldwide poverty, it became clear that this outreach is only possible on a sustainable and efficient basis. Some antagonist of this argument state that sustainability is not possible by reaching the poorest people on the planet (Guntz, 2010).

Financial Sustainability

Financial sustainability indicates the ability of an MFI to survive in the long- run by means of its own income generating activity, i.e. without any contributions from donors (AEMFI, 2013).

As per the MIX Market definition the term financial sustainability is defined as having an operational sustainability level of 110% or more, while Operational sustainability is defined as having an operational self-sufficiency level of 100% or more.

Financial sustainability refers that the ability of a microfinance provider to cover all of its costs on an unsubsidized basis or without accepting donation. According to the United Nations sustainability is necessary to reach a larger number of people on an ongoing basis (Elia, M.2006). If MFIs remain dependent on limited donor funding they will be able to reach only a limited number of people. Financial sustainability is not an end in itself but is the only way to reach significant scale. To analyze the sustainability of an MFI the two known a set of ratios have been developed. These are widely accepted and they enable a comparison among MFIs all over the world. These two most important ratios are Operational Self Sufficiency (OSS) and Financial Self -Sufficiency (FSS).

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

The above formula indicates or measures the degree to which operating income covers operating expenses. If the calculated figure is greater than 100%, the organization under evaluation is considered to be operationally self-sufficient. In microfinance, operationally sustainable institutions are able to cover their costs through operating revenues.

On the other hand, financial self-sufficiency (FSS) % = Adjusted operating income/

Adjusted operating expenses

This also indicates the degree to which operating income covers adjusted operating expense. The adjustments try to show how the financial picture of the MFI would look on an unsubsidized basis or free from donation. Financial self-sufficiency requires adjustments for different reasons. Financial statements must be adjusted to conform to standard accounting practices, to take into account inflation and to remove the effect of subsidies and in-kind donations. FSS shows how an MFI would look if funds had been raised on a commercial basis and if services or equipment had been purchased at a market rate and were not received as a donation (Elia, M.2006).

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

2.1.5. Profitability Theory

Not all MFIs are become sustainable, able to return a profit, or even to break even and therefore still depend on help from donors and subsidies. The rapid growth in the industry is not due to a golden "one-way-road" to profitability since there are still big diversity or difference between the MFI"s and their operations (Joergeson, 2011).

Profitability of Retail Banking

There are large differences between banks, financial institutions or intermediaries especially the clients they serve. Retail banking is, however, the banking practice closest to microfinance institutions and is therefore interesting to look into when it comes to profitability.

Conventional retail banks borrow from people who have surplus of money and lend to those people who have in deficit. The bank thereby makes money on the interest spread between the two, called the net interest income. In the retail bank around half to three- quarters of the income generated or come from this intermediation role. The rest of the revenue comes from a number of other services such as insurance, money transmission, advisory services, investment and taxation

services, card and factoring services etc. These all service amount together represent the non-interest income for the retail banks. One of the key and great factors of success for conventional retail banks is getting enough customers. This is likewise considered as a key factor for MFI‟s, but for different reasons, which depend on the purpose of the individual MFI‟s, whether they are social or economic goals (Jorgensen, 2011).

It is obvious that the objective of conventional retail banks is to make a profit. A bank that own twice as big as a competitor will expect to make around twice as much profit. Profits are therefore in proportion to their size (total asset), though with some advantages from scale economies Since the microfinance industry is not as developed as the conventional banking industry, it is not expected that profit is in proportion to size (total asset), and also because the institutions motive and their products vary much more from each other than those of retail banks.

Retail banking sector use investors to provide capital to get started and to keep running and in return the investors receive equity in the business, thus owning a part of the company. The company's profit and the investors‟ return on equity (ROE) are closely correlated. Retail bank shareholder would like the highest possible ROE, ten percent being below average, fifteen percent the standard, and 20 percent excellent. When we look MFIs only some MFIs have investors, yet this could be an interesting benchmark when looking at ROE for MFIs (Jeorgeson, 2011).

Retail banks do however have to take on some risk, with the result of losing some money. If they lose too little they will have no customers because they will be excluding a major part of the population which they could lend to, but loose too much, and the bank will go bankrupt under this condition. MFIs operate or perform under a very different approach, where they take bigger risks, but MFIs find ways to compensate for this risk the MFIs charge larger interest rates to the borrower and with the innovative methods such as joint liability. This new approach opens up a much larger market segment than seem before seen in banking (Jeorgeson, 2011).

Profit and profitability

Sometimes, the people used the term Profit and Profitability interchangeably. But in real sense, there is a difference between the two. Profit is an absolute term, whereas, the profitability is a

relative concept or meaning. However, they are closely related and mutually interdependent, having distinct roles in business. Profit refers to the total income earned by the firm during the specified period of time, while profitability refers to the operating efficiency of the firm. It is the ability of the firm to make profit on sales. It is the ability of firm to get sufficient return on the capital and employees used in the business operation (Harward& Upton, 1961).

According to (Weston and Brigham, 1972) rightly notes to the financial management profit is the test of efficiency and a measure of control, to the owners a measure of the worth of their investment, to the creditors the margin of safety, to the government 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, while profitability is an outcome of profit. In other words, no profit drives towards profitability (Weston and Brigham, 1972).

According (Al-Shami, 2008) there are different ways to measure profitability such as: return on asset (ROA), return on equity (ROE). Return on Asset indicates of how profitable a company is relative to its total assets. It gives us an idea as to how efficient management is in using its assets to generate earnings. On the other hand, return on equity measures a company's profitability which shows how much profit a company generates with the money shareholders have invested.

Financial performance denotes the percentage or degree of attainment of economic goals, objectives and or targets by the firm. Financial performance is specified as a stated point in time and refers to performance in a given time period (Mueni, 2016)

Financial performance of commercial banks is best measured using ratios such as return on asset, return on equity, net interest margin (Eakins &Mishkin, 2012).

Rate of Return on Asset (ROA): Is also another major ratio that indicates the profitability of banks, it is the ratio of income to its total asset, it measures the ability of MFIs generate income by utilizing company assets at its disposal. In other words, it showed how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of the company in generating net income from all the resource of the institution (khrawish, 2011).

Net interest Margin (NIM): is a measure of the difference between the interest incomes generated by MFIs and the amount of interest paid out to their lenders relative to the amount of their interest earning asset (khrawish, 2011).Accordingly, the research model has used the dependent variable is return on asset (ROA), and with six independent variables.

2.1.6. Efficient Structure Theory

According to the efficient structure hypothesis, on the other hand posits that banks earn high profits because they are more efficient than others. There are also two distinct approaches within the Efficient Structure; the X-efficiency and Scale–efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms inclined to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou et al, 2006 cited in Njerl, 2012). The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can gain lower unit cost and higher profits through economies of scale. This make possible to large firms to acquire market shares, which may manifest in higher concentration and then profitability. The X-efficiency like the Portfolio theory largely assumes that bank performance is influenced by internal efficiencies and managerial decisions (Njerl, 2012).

2.1.7. Portfolio Theory

The portfolio theory approach is the most important and plays a great role in bank performance studies. As per the Portfolio balance model of asset diversification, the best possible holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio (Njerl,2012).The portfolio theory further explained as portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets. Portfolio theory largely supposes that bank performance is influenced by internal efficiencies and managerial decisions (Njerl, 2012).

2.2. Empirical Review

A number of determining factors can be affected financial performance of MFIs. In most literatures MFIs profitability usually expressed as a function of internal and external determinants. (Muriu,2011) also point out that the determinants of MFIs profitability can be divided into two main categories namely the internal determinants which are management controllable and the external determinants, which are beyond the control of management.

The study was used internal determinants originate from MFIs accounts (audited balance sheets and/or profit and loss accounts) and therefore could be termedMFI-specific determinants of profitability. Internal determinants of MFIs profitability can define as those factors that are influence by the MFIs' management decisions and policy objectives. Management effects are the results of differences in MFIs management objectives, policies, decisions, and actions reflected in differences in MFI operating results, including profitability. Essentially, company-level determinants of MFI profitability comprise characteristics of individual MFI companies that affect their profitability. Shareholder and managerial decisions and activities can directly influence these characteristics; hence, they also differ from company to company. (Athanasoglou et al., 2006; kasmidou, 2008 and Sufian, 2011). In this study had used such internal profitability determinants factors are: capital adequacy, operational efficiency, gearing ratio, saving mobilization, size or total asset of the MFIs &real gross domestic product.

The literature suggests that, the environment in which MFI operate influences them, like any firm; from this, the external environment is the common and the uncontrolled one. The external determinants are variables that are not related to MFI management but reflect the industry-related and macroeconomic environment that affects the operation and performance of MFIs. External determinants of MFI profitability are concerned with those factors, which are not influence by specific MFI's decisions and policies, but by events outside the influence of the MFI. Several external determinants are included in the performance examination of MFI profitability: the financial market structure; the economic condition of the country, the legal and political environment all may influence the performance of the MFIs (Athanasoglou et al., 2006; kasmidou, 2008 and Sufian, 2011). This study has used as external determinant factor among macroeconomic determinants is Gross domestic product source from annual report of National

Bank Ethiopia.

Descriptions on potential internal and external factors that can influence the financial performance of MFIs are discussed below.

2.2.1. Internal Factors

Capital Adequacy Ratio

Also known as Capital to Assets Ratio is a simple measure of the solvency of MFIs. This ratio helps MFI assess its ability to meet its obligations and absorb unexpected loss. The determination of an acceptable capital to asset ratio level is generally based on a MFIs assessment of its expected losses as well as its financial strength and ability to absorb such losses. Expected losses should generally be covered through provisioning by the MFI's accounting policies, which removes expected losses from both assets and equity. Thus, the ratio measures the amount of capital required to cover additional unexpected losses to ensure that the MFI is well capitalized for potential shocks.(Dietrich and Wanzried,2009) used unbalanced panel data from 1999 to 2006 from 453banks in a linear regression method to conclude that capital adequacy ratio has a positive and significant effect on bank profitability in Switzerland as measured by the return on average assets (ROAA). Similarly, (Muriu, 2011) using a panel data set of 210 microfinance institutions; he revealed that capital adequacy had robust and significant positive association with MFI profitability. This was depicted by the relatively high coefficient of the equity to assets ratio across the specifications.As per study of (Yenesew, 2014) the capital to asset ratio (CAP) is negative (-0.0212) and statistically insignificant even at 10%. This confirms that for the study period 2003 up to 2011 capital strength of Ethiopian MFIs do not have a positive relationship with their financial performance or holding constant all other variables, increasing CAP by one unit causes to decrease the ROA nearly 0.02 birr. Similarly, (Sima,2013), on his study examined internal and external factors affecting profitability of microfinance institutions in Ethiopia by including a total of thirteen microfinance institutions covering the period of 2003-2010 capital adequacy ratio is found to be statistically insignificant variables.

Operational Efficiency

The efficiency refers to the ability to produce maximum output at a given level of input, and it is the most effective way of delivering small loans to the very poor in microfinance context (Woller, 2000). This involves cost minimization and income maximization at a given level of operation, and it has an enduring impact on financial sustainability of micro finance institutions. Thus, efficiency can be measured by its productivity (for instance, number of borrowers per staff) and cost management (for instance, cost per borrower) dimensions. Operational Efficiency is performance measure that shows how well MFIs is streamlining its operations and takes in to account the cost of the input and/or the price of output. Efficiency in expense management should ensure a more effective use of MFIs loanable resources, which may enhance MFIs profitability. Higher ratios of operating expenses to gross loan portfolio show a less efficient management. Operational efficiency in managing the operating expenses is another dimension for management quality. The performance of management is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staff, and others (Ongore and Gemechu, 2013).

According to (Dissanayake,2012) assessment, operating efficiency is proxies by operating expense ratio which is adjusted operating expense divided by adjusted average gross loan portfolio and concludes that Operating Expense Ratio, are statistically significant predictor variables in determining Return on Assets Ratio. Similarly, (Muriu, 2011) conclude that inefficiency in the management of operating expenses to significantly decrease MFI profitability. (Wollerand Schreiner, 2002) also examined the determinant of financial sustainability and it was found that productivity efficiency was significant determinant of profitability. All these arguments suggest there is a negative relationship between competition and the costs efficiency (Armendáriz&Labie, 2011).

The operational expense ratio is always negatively related with the financial performance in Ethiopia as empirically findings of (Gaim, 2015), (Yenesew, 2014) (Tehulu, 2013) and (Befekadu, 2007) argued.

Gearing Ratio/Debt to Equity Ratio

The debt to equity ratio is calculated by dividing total liability by total equity. Total debt includes everything the MFI owes to others, including deposits, borrowings, account payable and other liability accounts. The debt/equity ratio is the simplest and best-known measure of capital adequacy because it measures the overall leverage of the MFIs (AEMFI, 2012).

The debt to equity ratio is a common measure used to assess a firm's leverage, or in other words the extent to which it relies on debt as a source of financing (Lislevand, 2012).

Microfinance institutions that employ higher debt in their capital structure are more profitable, and highly leveraged microfinance institutions are more profitable, (Muriu, 2011). Besides, a higher debt ratio can enhance the rate of return on equity capital during good economic times (Muriu, 2011). Moreover, it also appears that NGO type of microfinance institutions rely more on debt financing relative to other type of microfinance institutions, perhaps because many are not regulated to mobilize deposits. The significant correlation between performance and gearing ratio is an indication that perhaps more debt relative to equity is used to finance microfinance activities and that long term borrowings impact positively on profitability by accelerating MFIs growth than it would have been without debt financing (Muriu, 2011).

According to (Nelson, 2011) study entitled that performance of assessment of micro finance institution in the Ashaiman municipality, its result show that the Rural Bank recorded debt/equity ratio of 50.89 in 2007 but increased to 54.05 in 2008. It increased further to 61.65 in 2009 and to 77.35 in 2010 showing an average of 60.99%; Depicting that most of its operations are financed by debt instruments and, should probably be regulated. The Savings and Loans recorded a rapid increase from 0.30 in 2007 to 0.8 in 2008. It again increased sharply to 2.97 in 2009 and to 4.89 in 2010 with an average of 2.24. The sharp increment may signify that Savings and Loans of approaching its borrowing limit which in turn will force it to curtail growth. It indicates what proportion of equity and debt the company is using to finance its assets. This is very much connected to where the MFI is located in its life cycle. Traditionally, the funding structure follows a certain pattern over the life cycle of MFI. Startups are characterized by a larger dependency on donations, usually in the form of equity grants, whereas the more mature MFI‟s tend to display higher debt leverage through borrowing and even evolve into a formal institution

or a regulated niche bank. Some MFIs even access capital markets by issuing bonds or by going public (IPO) (Jorgensen, 2011). (Dissanayake, 2012) point out that debt/equity is a statistically insignificant predictor variable for the model at 5% level of significance. Besides the expected direction of the coefficient of the corresponding models are not as per the predicted direction of the researcher. Local studies as an empirically findings of (Yenesew, 2014) (Tehulu,2013) and (Befekadu,2007) argued.

Savings Mobilization

According to (Lengwiler, 2004), total saving determines the amount of investment that the economy as a whole can realize and thus affects future production possibilities. As well, in expansion of microfinance services to more poor society MFIs need trusted and long lasting funds to ensure their sustainability. So, savings mobilization may provide MFIs with inexpensive and sustainable source of funds for lending. Moreover, higher deposit to total assets ratio is associated with improved profitability, assuming that the deposits program is efficient.

Deposits may however require widespread branching and other expenses. In such situation, the deposit mobilization may in contrary diminish the profitability. Many MFIs in Africa remain unregulated with NGO structures. This implies that Africa MFIs may be constrained in financing options, with no shareholder structure for attracting equity or license to mobilize deposits (Muriu, 2011).

Size of Microfinance (Total Asset)

Another factor that can affect the financial performance of an MFI is its size. The size of an MFI is measured by the value of its assets (Hermes et al, 2008). According to (Cull et al, 2007) the size of an MFI is significantly positively linked to its financial performance. This variable is included to capture the economies or diseconomies of scale. There is consensus in academic literature that economies of scale and synergies arise up to a certain level of size. Beyond that level, financial organizations become too complex to manage and diseconomies of scale arise. The effect of size could therefore be nonlinear (Amdemikael, 2012). Natural logarithm of total asset of MFIs is used as a proxy of size. The study observed that since the dependent variable in the model (ROA) can be deflated by total assets it would be appropriate to log total assets before including it in the model.

It is argued that failure to become profitable in microfinance is partly due to lack of scale economies (Muriu, 2011) this implies that profitable MFIs in Africa have a greater control of the domestic market, and therefore lending rates may remain high while deposit rates remain lower since larger MFIs may be perceived to be safer, therefore this high interest rate spread translates to and sustains higher profits margins. (Cull et al, 2007) point out that size of MFIs and financial performance has significantly related but loan size is negatively related financial performance meaning Controlling for other relevant factors, institutions that make smaller loans are not necessarily less profitable. But the result find that larger loan sizes are associated with lower average costs for both individual-based lenders and solidarity group lenders. Since larger loan size is often taken to imply less outreach to the poor, the result could have negative implications.

2.2.2. External Factors

Gross Domestic Product (GDP)

The study used real GDP growth as a proxy of the macroeconomic environment. Arguably, this is the most informative single indicator of progress in economic development. Poor economic conditions can worsen the quality of the loan portfolio, thereby reducing profitability. In contrast, an improvement in economic conditions has positive effect on the profitability of MFIs, (Muriu, 2011). Thus, the variable is expected to exhibit positive relationship with MFIs profitability. (Yenesew,2014) shows that a negative coefficient of -0.005 but it was statistically significant at 10% significance level (P-value 0.09) indicating that growth in economic condition measured in terms of real GDP growth did not affect financial performance of Ethiopian MFIs for the study period. As per (Sima, 2013) GDP are found to be statistically insignificant variables.

According to the study undertaken by (Imalet al., (2012) working paper entitled financial performance of microfinance institutions a macroeconomic and institutional perspective drawing up on the Microfinance information exchange data and cross-country data on macro economy, finance and institutions and use Hausman-Taylor to take account of endogeneity and they found GDP have positive impact on MFIs financial performance.

Ethiopian Senario

The quality literatures on the Ethiopian MFIs industry financial performance are not as such available. However, the study by (Alemayehu, 2008) on which we have accessed to, is worth mentioning. He studied the performance of micro finance institution in Ethiopia by taking six MFIs using simple descriptive analysis using graphs and percentage growth rates. The result shows that Most MFIs are strong performers on return on asset. In connection with liquidity, most MFIs lack strong position to effect immediate obligations. Large MFIs are more efficient and productive than small and medium ones. But small MFIs seem to reach the poorest section of the society. Finally, the trend in performance of microfinance institutions during those years of operation was encouraging.

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

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

(Sima,2013) on his study examined internal and external factors affecting profitability of microfinance institutions in Ethiopia by including a total of thirteen microfinance institutions covering the period of 2003-2010. The researcher uses quantitative research mainly documentary

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

The study by (Yonas, 2012) and (Melkamu, 2012) tried to see the determinants of performance by using proxy of financial and operational sustainability of Ethiopian MFIs. They focused only on internal factors and have not considered external factors like macroeconomic and industry and also they have not addressed specifically the idea of financial performance of MFIs. In addition, (Sima, 2013) studied determinants of profitability of Ethiopian micro finance by using Microfinance specific and macroeconomic factors from Secondary data.

Financial access is basic for economic development, especially for under develop countries like Ethiopia, Hence, further studies will be needed to assure the basic factors affecting sustainability and profitability MFIs.

Since it is believed that MFIs must be profitable for their healthy operation and attainment of the long term goal which is alleviation of poverty, the study will find out the MFIs specific and macroeconomic factors affecting financial performance measure and fill the gap in the context of Ethiopian MFIs.

2.3. Summary of Literature Review& Knowledge Gap

The chapter has presented and discussed the relevant literatures that guide the study. The chapter has begun with an introduction then theoretical review was made. Two main theories relevant to the study have been discussed. And also Basic internal and external determinants of MFIs financial performance, as well as the empirical studies have been discussed. The conceptual framework has also been presented and the chapter ended with this summary.

It is believed that MFIs must be profitable for their healthy operation and attainment of the long term goal which is alleviation of poverty. Hence, findings of different researcher's result had revealed different outcome, even if researches which used the same independent variables at various studies period are outdate. For instance, the study which was conducted by (Muriu, 2011) indicated that capital adequacy ratio (CAR) had robust and significant positive association with MFI profitability. On the other hand, the study carried out by (Yenesew, 2014) demonstrated that capital to asset ratio (CAR) is negative and statistically insignificant even at 10%. The study conducted by (Melkamu, 2012) depicted that gearing ratio(GR) had negative and statistically insignificant with financial performance MFIs in Ethiopia. On the contrary, the study conducted by (Ashebir, 2017) showed that gearing ratio (GR) had significant association in explaining financial performance of MFIs in Ethiopia.

Now, this study was conducted to assess outcome of those variables in recent study period (2009 -2019) and to fill the gap in the context of Ethiopian MFIs with the MFIs-specific and macroeconomic factors such as, Capital Adequacy Ratio, Operational Efficiency, Gearing Ratio, Saving Mobilization, Size (total asset) and Real GDP as Explanatory variables.

Based on the theoretical and empirical Literature review the researcher developed the following frame work.

2.4. Conceptual Frame Work

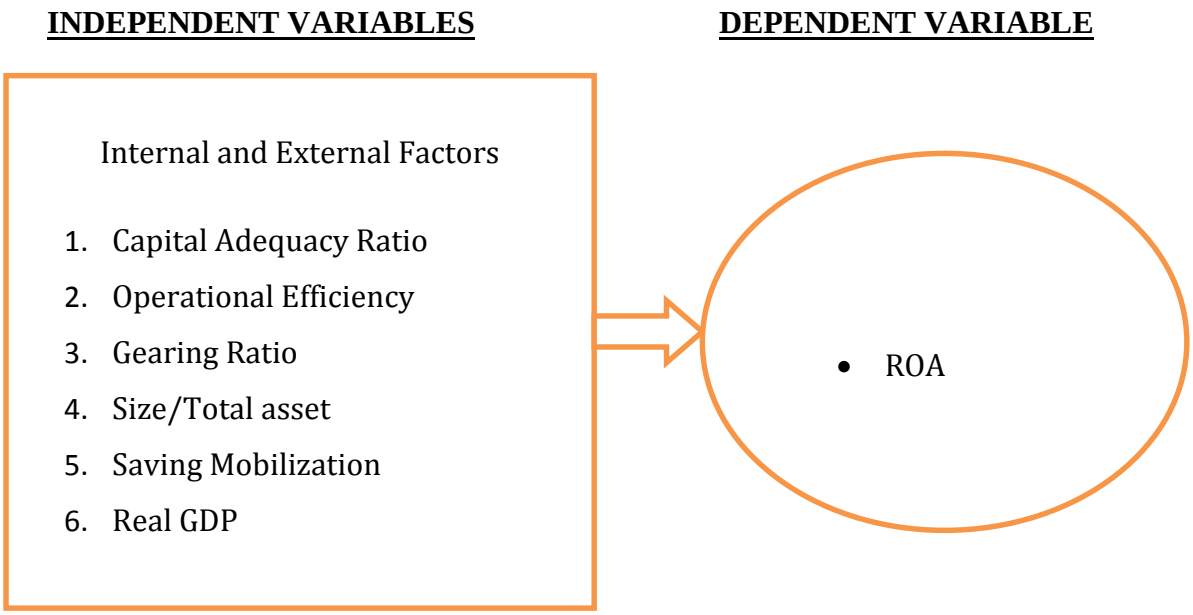


Figure 1: Internal& External Factors vs. Financial Performance of MFIs.

Source***:*** *Adopted from (Muriu, 2011) and (Yenesew2014)*

A. Dependent Variable

Return on Asset (ROA) measures how well the institution uses all its assets. It is also an overall measure of profitability which reflects both the profit margin and the efficiency of the institutions (AEMFI, 2013).

Return on Asset (ROA) was applied as the dependent variables because the Microfinance Financial Reporting Standards recommends the use of ROA and ROE as measures of profitability rather than financial self-sufficiency (FSS) and operational self-sufficiency (OSS) (Muriu, 2011). ROA and ROE may be biased due to off balance-sheet items; It can however be argued that such activities may be negligible in MFIs. The ROA reflects the ability of MFI's management to generate profits from the MFI's assets. It shows the profits earned per birr of assets and indicates how effectively the MFIs assets are managed to generate revenues. The Value period ROE measures the return on shareholders' investment. It shows the profits earned per birr of equity contribution and indicates how effectively the MFIs shareholders' investments are generating revenues. They are more concerned about how much the MFI is earning on their

equity investment, an amount that is measured by the return on equity (ROE), the net income per birr of equity capital.

In Banks and other commercial institutions, the most common measure of profitability is return on asset (ROA) and ROE for instance (Sima, 2013) (Tewodros, 2018). For this study the researcher has selected return on asset (ROA).

Return on Asset =Net Profit Before tax

Total Average Asset

B. Independent Variable

To measure the predictor variables of financial performance of MFIs in Ethiopia, Six measures were used as independent variables which were extracted from different studies. The variables namely capital adequacy ratio, operational efficiency, gearing ratio, saving mobilization, size (total asset of MFI) and real GDP.

Table 1: Definition and Measurement of Variables to Operationalize

Symbols	**Variables**	**Operational Measurements**
ROA	Return on Asset(Dependent Variable	Net Profit Before Tax/Total Average Asset
CAR	Capital Adequacy Ratio	Capital/Total Asset
OE	Operational Efficiency	Operating Expense/Total Outstanding Loan
GR	Gearing Ratio	Debt /Equity
SM	Saving Mobilization	Log of Annual Deposit Volume
Size	Total Asset of MFIs	Log of Total Asset
GDP	Real Domestic Product	Log of GDP Growth Rate

Soure- Adopted (Yenesew2014) and own source, 2021

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

INTRODUCTION

This chapter contains a detailed procedure and guideline of the research methodology employing to conduct the study. Those are discussing about research Design, sources and nature of data, data collection tools and techniques, Model specification and Variable justification, sampling techniques and data analysis and presentation.

3.1. Research Design and Approach

The selection of research design depends on the objectives set to be achieved (Admas, Robert and White 2007). Hence, this study had been designed to examine the causal relationship (cause- and effect) between financial performance of Ethiopian micro financial institutions and its determinant factors; Explanatory and Descriptive design was applied to test formulated Hypotheses and the study used deductive approach with quantitative data analysis.

3.2. Data, Nature, Sources and Collection Techniques

The study used secondary sources of data from selected sample frame. Those data was quantitative in nature such as audited financial statements, annual published reports and bulletins from to be purposively sampled and selected Ethiopian MFIs and/or national bank of Ethiopia. The data was physically collected from national bank of Ethiopia. The study utilized time series data analysis technique.

The research used panels of eleven years' time series data staring from 2009-2019 with cross section data of ten selected MFIs. The panel data involves the polling of observation on the Cross sectional over several time periods. The panel data model is a combining of time series and cross sectional data; the use of panel data model is advantageous than pure time series and cross sectional data as of its capturing and addressing of broad ranging issues and complex problems (Brook, 2008).

3.3. Population and Sampling Size Determination Techniques

The targeted population was all MFIs operating in Ethiopia. In our country, there are more than thirty-seven micro financial institutions (NBE, 2018). Among them, ten MFIs were purposively selected, based on the availability of the appropriate data recorded for the study from NBE report. Moreover, following 1994 financial liberalization of Ethiopia, large numbers of MFIs and private commercial banks were established and continuously had significant structural change, profitability increment and financial inclusion. Accordingly, the institutions were selected starting from the period of 2009 – 2019 that begun operation before eleven years and still operational.

3.4. Data Presentation, Analysis and Interpretation

The collected secondary data was analyzed, presented and interpreted with Descriptive statistics and Fixed Effect panel model regression analysis with a package of Eviwe-10software. The data analysis was done using Econometric model formulate andutilized. Dependent and Independent Variable specification was tested the degree of correlation between variables. The study employed Fixed Effect Panel Data Model regression estimated Coefficient parameter of the regression model in the study. The panel data regression presented in ANOVA tabular (Descriptive-statistics) forms- mean, median, standard deviation and percentage(P-value) etc. with all necessary tests such as overall model fit F-test and individual T-test and also all other necessary tests of Diagnostic(Post-Estimation-test). Finally, the results were interpreted by explaining of independent variable ‘coefficient influence on dependent variable.

3.5. Model Specification and variable definition

3.5.1. Model specification

Depending on the objectives and to test the hypothesis, the researcher formulated and adopted Econometric model and employing Panel Data Regression Model to estimate coefficients of parameter. The Hausman specification test is the classical test of whether the fixed or random effects model should be used. The fundamental distinction between fixed and random effect model is the assumption whether the unobserved individual heterogeneity is correlated with the

rest of the repressors' or not. If the specific effects are correlated with the repressors' fixed effect estimates are consistent but the random effect estimates are not consistent. If the repressors are uncorrelated with the ui, both fixed and random effect estimators are consistent, with all the random effect estimators are efficient (Wooldridge, 2004).

3.5.2. Detailed Methodology and Testing Methods

Panel data consists of both time-series and cross-sectional dimensions; in other words, a panel keeps the same entities and measures some quantities of them over time. Panel data has some advantages compared to using pure time-series data or pure cross-sectional data. The most important advantages are that by using panel data, a broader area-range of issues can be addressed and it can possible to solve more complex problems. By fixing the model in the time-series dimension, it may possible to examine the influence of entity specific, time-invariant characteristics, and by fixing the model in the cross-sectional dimension, it is possible to examine how relationships between variables change over time. Also, it can be examined how variables, or relationships between them, change over time. Using pure time-series data requires a lot of observations to conduct significant hypothesis tests but by using panel data, degrees of freedom increase and therefore, the power of the tests also increases. Finally, by structuring the model in an appropriate way, the impacts of certain forms of omitted variable bias can be removed. However, because we observe the same units repeatedly, it is not applicable to assume independence of different observations (Brooks, 2008; Verbeek, 2012).

For financial research, there are two main approaches that can be applied; the fixed-effects model and the random-effects model. The fixed-effects model decomposes the error term into an entity-specific effect and a remainder error which varies over time and entities. (Brooks, 2008; Verbeek, 2012): It is also possible to use a time-fixed-effects model, rather than an entity-fixed-effects model. In this case the Residual (error term) is decomposed into a time specific-effect and a remainder error. (Brooks, 2008): Finally, it is possible to allow for both entity-specific and time-specific effects within the same model, where the error term is decomposed into an entity specific effect, time specific effect, and a remainder error. Testing for fixed effects without estimating so many parameters can be done in three ways. That is within transformation subtracts the time-mean of each entity from the values of the variable so that the model will contain demeaned variables. An alternative to demeaning is to run a cross-sectional regression on

the time-averaged values of the variables, known as the between estimator. Using the between estimator will likely reduce the effect of measurement error in the variables, but on the other hand, it is not possible to examine time variation in the data. Finally, it is possible to use a first-difference operator so the model explains changes in the dependent variable rather than changes in its level (Brooks, 2008).

The random-effects model, like the fixed-effects model, proposes different intercepts for each entity and/or each time period to get rid of correlations between error terms. However, instead of subtracting the whole mean, a weighted mean is subtracted from the variables using Generalized Least Squares (GLS). This transformation is exactly what is required to ascertain that there is no remaining correlation in the error terms (Brooks, 2008). Generally, the random-effects model may be more appropriate and efficient than the fixed-effects model since fewer parameters have to be estimated; therefore, degrees of freedom are saved, since the GLS approach removes only exactly as much of the variation in the variables as is needed to remove the correlation in the error terms. However, the assumptions of the random-effects model are stricter because it is only valid when the composite error term is uncorrelated with all of the explanatory variables; that is, what need to be independent of all the explanatory variables. It can be tested using a Hausman test when the random-effects model is appropriate, or if the fixed effects model should rather be used. The Hausman test examines the joint significance effect of the γ‘s inthe augmented regression: where are the within transformations of that the explanatory variables. If the null hypothesis stating that is rejected, the random-effects model is miss specified and the fixed-effects model should be used instead (Brooks, 2008).

Hausman Test

A choice on whether to consider the random or fixed effect panel data model has been based on the outcome after running the Hausman test for the random effect model and the Likelihood test for the fixed effect model. The null hypothesis has represented the random effect model and the alternative hypothesis is considered for the fixed effect and we make the following assumptions stated in the hypothesis below;

H0: The random effect model is appropriate

H1: The fixed effect model is appropriate

Both the random and fixed effect model carried out and the probability value (P- value) of random is less than alpha (α) at all levels 1%, 5%, and 10%, and also on other hand the probability value (P-value=0.229) of fixed effect is greater than alpha(α) of 1%,5% and 10% significance levels we reject the null hypothesis (H0). Therefore, the random effect model is not appropriate and we use the fixed effect model to run our balanced panel data for the regression analysis.

Therefore, simplified Econometric equation for both regression model that represents the relationship between variable is as follows;

$Yit = \beta oi + \beta 1Xit + \mu it$

The equation model of this study is expressed as follows;

$ROAit=\beta o+\beta 1CARit+\beta 2OEit+\beta 3GRit+\beta 4SMit+\beta 5SIZEit+\beta 6GDPit+\varepsilon it$……. (1)

Where: i=1,2,3…7 and t=1,2,3…10

ROAit=Return on Asset ofMFIi at time t

βo=intercept Constant Term = Intercept of Regression line

β1- β5=coefficient parameter

CARit=Capital Adequacy Ratio forMFIi at time t

OEit= Operational Efficiency Ratio forMFIi at time t

GRit=Gearing Ratio for MFIi at time t

SMit= Log of total Saving MobilizationofMFIi at time t

Sizeit= Log of total asset i at time t

GDPit= Real GDP of i at time t

εit =Error term where i is cross sectional and t time identifier

3.6. Model assumptions and data properties

The following diagnostic tests were carried out to ensure that the data fits the basic assumptions of linear regression model.

Normality: Descriptive statistics was undertaken to examine the distribution of data. Upon examination the Bera-Jarque (BJ) test uses to know the property of a normally distributed random variable that the entire distribution is characterized by the first two moments the mean and the variance.

Multicollinearity: different empirical studies show different argument towards the Multicollinearity problem. (Masher, 2007) stated that multilicolliantory problems exist when the correlation coefficient among variables greater than 0.75. (Cooper & Schindler, 2009) suggested that a correlation above 0.8 between explanatory variables should be corrected for. Lastly, (Hair et al., 2006) argued that also correlation coefficient below 0.9 may not cause serious multicolinary problem. A correlation matrix used to ensure the correlation between explanatory variables. Then balanced panel data models are applied to control for Multicollinearity.

Heteroscedasticity: Finally, the model was estimated in Eview-10 assuming cross-section heteroscedasticity to control for the possible effects heteroscedasticity in the error variance. Durbin-Watson (DW) test was used to evaluate the problem of heteroscedasticity.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

INTRODUCTION

This chapter deals with the analysis and presentation of the result of the study. The data were analyzed by using E-views 10. The descriptive statistics was discussed followed by diagnostic test to check whether Classical Linear Regression Model assumption is fulfilled or not. The econometrics analysis and discussion of the main finding of the study were presented. Finally, the result of the regression analysis was discussed by evidence of empirical studies.

4.1. Descriptive Statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the sampled MFIs in Ethiopia during the study period of 2009-2019. The dependent variable used in the study was ROA and the independent variables were Capital adequacy ratio, Operational efficiency, saving mobilization, gearing ratio, Size of MFIs (Total Asset) and Real Gross Domestic Product. The total observation for each dependent and independent variable was 110(10 MFIs for 11 years). Table 4.1 demonstrated that the Mean, Standard Deviation, Minimum and Maximum Values of dependent and independent variables for sampled MFIs in Ethiopia of panel data from 2009-2019.

Return on Asset (ROA) measures how well the institution uses its entire asset efficiently in generating the profit (khrawish, 2011), which implies that higher value of ROA indicates that the management is efficient in using its resources the reverse is inefficient. Accordingly, Table 4.1 shows financial performance of Ethiopian Micro Finance institutions, which were measured by Return on Asset. The study result indicates that the average value of ROA was 10.02 during the study period of (2009-2019). Besides, the maximum and minimum values were 25.40 and 0.00 respectively. This implies that MFIs that were included in the sample earned profit on average 0.10cents per every one-birr investment. Of those MFIs, the most profitable MFI earned 0.25 cent of profit before tax for a single birr investment. On the contrary, there were non- profitable MFIs with zero profit for one-birr investment. This clearly illustrates the disparities among MFIs on ROA. This finding is different from the study conducted on Determinants of Financial

Performance in selected Micro Finance Institutions in Ethiopia(Yenesew,2014),which showed mean, maximum and minimum values of ROA -0.0003, -0.155 and 0.141 respectively. This result difference may be due to the progress in innovation and experience of financial industry in the country.

In relation to the capital to asset ratio variable the mean was 34.59 % and maximum value also76.81%. This result indicates that, the average value was above the minimum requirement which is set by consultative group to assist the poor, CGAP. As per the group suggest that, micro finance institutions should be subject to even higher adequacy capital to asset ratio to safeguard their portfolio and advises to maintain ratios approaching 20% (AEMFI, 2013). The ratio of this study mean value resultis34.59% of the total assets of the sample MFIs were financed by shareholders' funds and it is higher than the minimum requirement set by the CGAP.

In regard to gearing ratio or Debt to equity ratio, that the average, maximum and minimum value were 2.24,4.81 and 0.56respectively. Meaning as per the mean value of this variable indicates 2.24; MFIs in Ethiopia were leveraged on average than financed through equity capital, and because of the AEMFIs suggested standard of debt to equity has to be 1.5, (AEMFI, 2013). On the other side, as per the result, minimum gearing ratio (debt to equity) value is 0.56. This showed that few MFIs were financed more through equity capital than debt. Moreover, during the study period the maximum value was 4.81, which implies that debt financing is more considered instead of having proportional financing structure, therefore highly leveraged.

The Operational expense ratio (OE) averagely stands at 11.12 percent which is efficient than any region as micro finance information exchange, MIX, published in 2010 MFIs bench mark. However, during this study period the average operating efficiency of selected MFIs in Ethiopia was 16.39%, which was indicating that on average they were incurring 0.16 cents in operating expense for each birr in the gross loan portfolio. Some highly efficient institutions incur operating expense of 0.06 cent for each birr in the gross loan portfolio. On the other hand, inefficient institutions in the industry incur an operating expense of 0.42 cents for each birr on their gross loan portfolio. Here, the result indicated that there was huge cost management gap along with high operational expense ratio or less efficient in cost management practices and cost management strategy so as to ensure cost efficiency.

MFI size has its own contribution to maintain the position in the market. The mean value of the variable is 12.36 in its natural logarithm value, whereas the maximum, minimum and standard deviation values are 14.92,10.18 and 1.39 respectively. The standard deviation was the highest value among the independent variables and also it indicated that there was higher disparity of size (total asset) in sample MFIs in Ethiopia during the study period, this result is consistent with a study conducted on micro financial institutions in Ethiopia for determinants of financial performance(Yenesew,2014). The assets differences among the MFIs may be affecting their ROA by maintaining better market share position.

Saving or deposit mobilized (SM) during the study period in average was12.28 with maximum and minimum value of 14.78 and10.00 percent respectively with their natural log values. This revealed that, the mobilized resources by the sampled MFIs during the study period. The standard deviation was 1.32, which showed that there were higher disparities on saving mobilization among MFIs in Ethiopia. As a result, high value implies that, better saving mobilized from the society by MFIs during the study period. And this helps the institutions to deliver better loan and to maximize their financial performance (ROA).

The average mean of RGDP during the study period was 9.94 percent with a maximum and minimum value of 12.34 and 1.23 percent respectively. In view of that, RGDP has showed in average nearly double digit growth over the last eleven years. While, the standard deviation value was 0.06 and the difference between the maximum and minimum growth in RGDP minimal, this may help, MFIs to deliver their loans and to mobilize saving from the society.

Table 2: Summary of Descriptive Statistics

Variable		Observation	Mean	Maximum	Minimum	Standard deviation
Dependent	ROA	110	10.02	25.40	0.00	0.08
Independent	CAR		34.59	76.81	7.76	0.06
	GR		2.24	4.81	0.56	0.76
	OE		16.39	42.08	5.80	0.07
	SIZE		12.36	14.92	10.18	1.39
	SM		12.28	14.78	10.00	1.32
	GDP		9.94	12.34	1.23	0.06

Source: computed from E-views 10

4.2. The Classical Linear Regression Model Assumption & Diagnostic test

According to (Brooks, 2008), there are basic assumptions required to show that the estimation technique, OLS, had a number of desirable properties, if the Classical Linear Regression Model (CLRM) assumptions hold true, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators (BLUE). Hence, the following sections discuss results of the diagnostic tests (i.e., heteroscedasticity, autocorrelation, Multicollinearity and normality) that were conducted to ensure whether the data fits the basic assumptions of classical linear regression model or not. The implication of the test, decision rules therein, test results and their discussion are discussed in the upcoming sub sections.

4.2.1. Heteroscedasticity test

The homoscedasticity is one of the assumptions of the CLRM which states that the variance of the errors must be constant. If the errors do not have a constant variance, they are said to be heteroscedastic (Brooks, 2008) and as a result the OLS estimators are no longer BEST and error variances are incorrect, therefore the hypothesis testing, standard error and confident level will be invalid. A white test has been made, to ensure that this assumption is not violated. The Hypothesis for the heteroscedasticity test was formulated as follow: -

H0=There is no heteroscedasticity problem

H1=There is heteroscedasticity problem

A=0.05

Table 3:Heteroskedasticity Test

Heteroskedasticity Test: White

F-statistic	1.388206	Prob. F(10,59)
Obs*R-squared	13.33311	Prob. Chi-Square(10)
Scaled explained SS	6.478216	Prob. Chi-Square(10)

Source: computed from e-views 10

Accordingly, table 4.2 shows that both the F-statistic and chi-square (χ 2) test give the same conclusion that there is no significant evidence for the presence of Heteroscedasticity in ROA models. Since the p-values in the cases was above 0.05, that shows that there is no evidence for the presence of the heteroscedasticity.

4.2.2. Multicollinearity test

According to (Brooks, 2008), Multicollinearity will occur if some or all of the independent variables are highly correlated with one another. It shows the regression model has difficulty in explaining which independent variables are affecting the dependent variable. If Multicollinearity problem is too serious in a model, either additional important variable should be added or unimportant independent variable should be dropped. Usually, as noted by (Brook, 2008) correlation coefficient below 0.8 may not cause serious Multicollinearity problem, in this study there is no correlation coefficient that exceeds 0.8. Accordingly, in this study there is no problem of Multicollinearity which enhanced the reliability for regression analysis.

Table 4:Multicollinearity Test

	CAR	GR	OE	SIZE	SM	RGDP
CAR	1.000000	-0.46817	0.253191	-0.21888	-0.13227	0.098682
GR	-0.46817	1.000000	-0.44648	0.169766	0.190690	- 0.01104
OE	0.253191	-0.44648	1.000000	-0.41519	-0.39341	-0.04184
SIZE	-0.21888	0.169766	-0.41519	1.000000	0.225425	-0.07024
SM	-0.13227	0.190690	- 0.39341	0.225425	1.000000	0.079493
RGDP	0.09868	-0.01104	-0.04184	-0.07024	0.079493	1.000000

Source: computed from E-views 10

4.2.3. Normality test

According to (Brooks, 2008) in order to conduct hypothesis test about the model parameter, the normality assumption must be fulfilled. The normality assumption is about the mean of the residuals is zero. In this study, the normality of the data was checked with the popular Bera-Jarque test statistic (Brooks, 2008). (Brooks, 2008) noted that, the Jarque-Bera statistic will not be significant for disturbance to be normally distributed around the mean. The hypothesis for the normality test was formulated as follow:

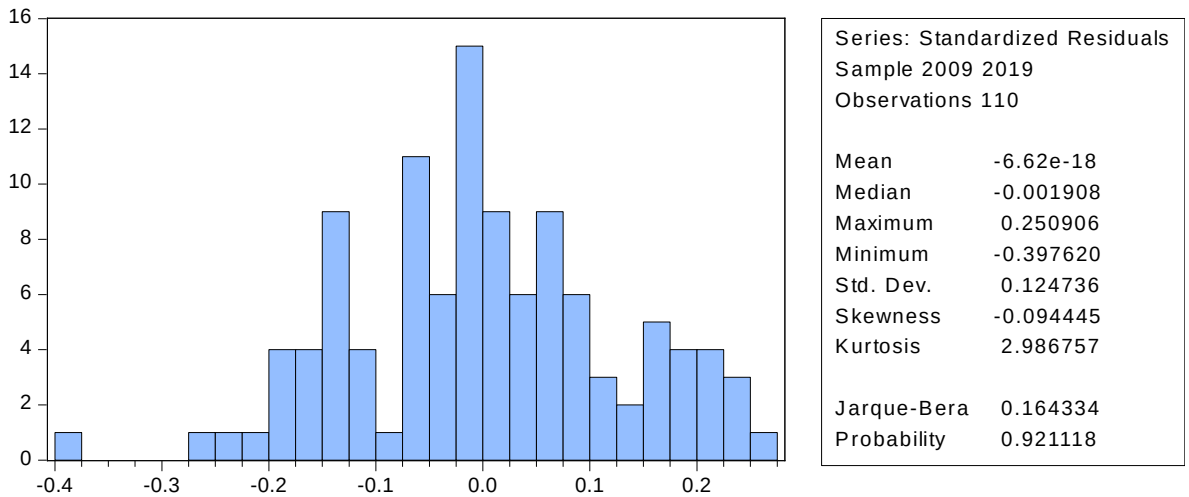
H0: Error term is normally distributed

H1: Error term is not normally distributed

$\alpha = 0.05$

Decision Rule: Reject H0 if P value of JB less than significant level 0.05. Otherwise, do not reject H0.

Figure 2: Normality Test



Source e-view 10

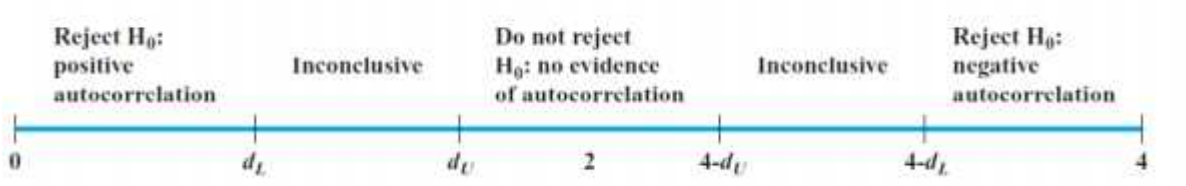
As shown in figure 4.1, the histogram is bell-shaped and the Bera-Jarque statistic is not significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level so, the residuals are normally distributed in this study, concluded that there is no the problem of normality on ROA Model.

4.2.4. Testing for Serial Correlation

According to (Brooks, 2008), assumption three said that the CLRM"s disturbance terms are the covariance between the error terms over time (or cross-sectional, for that type of data) is Zero. In other words, it is assumed that the errors are uncorrelated with one another. In addition, he said that if the errors are not uncorrelated with one another, it would be stated that they are "Auto correlated" or that they are "serially correlated". To test this assumption, the Durbin– Watson (DW) statistical test was applied. The test for autocorrelation was made by using Durbin and Watson. Durbin Watson (DW) is a Test for first order autocorrelation, i.e. it tests only for a relationship between an error and its immediately previous value. DW is approximately equals to $2(1 - \hat{\rho})$, where $\hat{\rho}$ is the estimated correlation coefficient between the error term and its first

order lag (Brooks, 2008). The null hypothesis for the DW test is no autocorrelation between the error term and its lag. According to (Brooks, 2008), DW has 2 critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. The rejection, non-rejection, and inconclusive regions are shown on the number line in figure below.

Figure 3: Rejection and Non-Rejection Regions for DW Test



Source: Adopted from (Brook, 2008)

The study used the dL and dU values for 110 observations. As per the DW table for 110 observations with 6 explanatory variables at 1% level of significance, the dL and dU values are 1.283 and 1.645 respectively. According to The Durbin-Watson test statistic value in table 4.5 The DW value of ROA lies in non-rejection region. So according to table 4.5 below ROA model was not correlated where the null hypothesis of no autocorrelation can be accepted.

Table 5: Autocorrelation test: Durbin Watson

Variable	DW Test Statistics
Determinants	ROA
	1.286

Source: computed from E-views 10

4.2.5. Testing for Choosing Random effect (RE) versus fixed effect (FE) models

Because, there are broadly two classes of panel data estimator approaches that can be employed in empirical research: fixed effects models and random effects models. This also requires the high concern when the researcher employed the panel data approaches.

According to (Gujarati, 2004), if T (the number of time series data) is large and N (the number of Cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model (FEM) and random effect model (REM). Hence the choice here is based on computational convenience. Based on these facts, FEM have been preferred for this study because the number of time series (i.e. 11 year) is greater than the number of cross-sectional units (i.e. 10 MFIs).

4.3. Regression analysis result and its interpretation

This section presents the overall results of the regression analysis on determinant factors that affect financial performance of MFIs in Ethiopia.

In this study ROA was used as proxy for performance measure. The regression analysis result is presented by using table for the model.

4.3.1. Regression result of model specification

Table 6: Model regressed using ROA as a proxy of financial performance

Model regressed using ROA as a proxy of financial performance

Dependent Variable: ROA

Method: Panel Least Squares

Date: 01/26/21 Time: 09:02

Sample: 2009 2019

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.069847	0.089967	0.776359	0.4395
CAR	-0.155988	0.046106	-3.383262	0.7717
GR	0.010288	0.007341	-1.401437	0.0456
OE	-0.295339	0.101349	-2.914078	0.0045
SIZE	0.002453	0.004536	0.540819	0.5899
SM	0.010145	0.003718	2.728345	0.0076
GDP	0.008746	0.347449	0.025171	0.9800

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.746413	Mean dependent var	0.100206
Adjusted R-squared	0.702785	S.D. dependent var	0.077874
S.E. of regression	0.042455	Akaike info criterion	-3.339540
Sum squared resid	0.167625	Schwarz criterion	-2.922193
Log likelihood	200.6747	Hannan-Quinn criter.	-3.170262
F-statistic	17.10863	Durbin-Watson stat	1.285656
Prob(F-statistic)	0.000000		

Source-E-views 10

Table 4.6 shows the regression analysis for the dependent variable is ROA while the independent variables are CAR, GR, OE, SIZE, SM and RGDP.

The R-squared and Adjusted R-squared values of 0.75 and 0.70 respectively and have an indication that the model is a good fit. This means more than 70% of variations in return on asset of Ethiopian MFIs were explained by independent variables included in the model. However, the remaining 30% changes returns on asset of Ethiopian MFIs are caused by other factors that are not included in the model. Furthermore, the F-statistic was 17.10 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 0.000000 indicates that the overall model is highly significant at 1% and that all the independent variables are jointly significant in causing variation in return on asset.

The panel fixed effect estimation regression result in the above table 4.6 shows that; coefficient intercept (β0) is 0.070. This means, when all explanatory variables took a value of zero, the

average value ROA would be take 0.070 unit and statistically significant at 1% level of significance.

Capital Adequacy Ratio (CAR) and Return on Asset (ROA)

As the above fixed effect regression output table 4.6 presented that, the coefficient of Capital Adequacy Ratio (CAR) is -0.155988 and its P-value is 0.771.Holding other independent variables constant at their average value, when on Average Capital Adequacy Ratio (CAR) increase by one percent, return on asset (ROA) of sampled Ethiopian MFIs will decrease by 1.156% and statistically insignificant even at 5% significant level for the study period 2009 up to 2019.This confirm that capital strength of Ethiopian MFIs do have negative and insignificant effect with their financial performance. Therefore, the researcher rejects the null hypothesis that Capital Adequacy Ratio has a positive significant Relationship to ROA. This means, there is no sufficient evidence to support the positive significant relationship between ROA and CAR, even though the theory says the argument that well capitalized MFIs is more flexible in dealing with problems arising from unexpected losses and against credit risks and results in a better chance for financial performance, but result of the study not supports the argument. This indicates that the sampled MFIs during the study period were made poor and inefficient investment on the increased capital position. Due to this, having more liquid asset and poor asset quality management leads to lower profitability even to loss. Hence, managers of Ethiopian MFIs should progress on managing their capital investment to increase the financial performance.

This finding inconsistent with of Dietrich and (Wanzried, 2009) and (Muriu, 2011) had revealed that capital adequacy had significant positive association with MFI profitability. However, the result is consistent with previous local studies with (Sima, 2013) and (Yenesew, 2014).

Gearing Ratio (GR) and Return on Asset (ROA)

Table 4.6 depicted that, the coefficient of Gearing Ratio (GR) is 0.010288 and its P-value is 0.04564. Holding other independent variables constant at their average value, when on average Gearing Ratio (GR) increased by one percent, return on asset of sampled Ethiopian MFIs would be increased by 1.02%, and statistically significant at 5% of significance level within the study period of 2009 to 2019. In other words, there is significant positive relationship between GR and

ROA of Ethiopian MFIs. Therefore, the researcher fails to rejects the null hypothesis that there is positive and significant relationship between GR and ROA. This means, there is sufficient evidence to support the positive relationship between ROA and GR.

Microfinance institutions that employ higher debt in their capital structure are more profitable, and highly leveraged microfinance institutions are more profitable. More to the point, a higher debt ratio can enhance the rate of return on equity during good economic times, this is perhaps more debt relative to equity is used to finance microfinance activities and that long term borrowings impact positively on financial performance by accelerating MFIs growth than it would have been without debt financing (Muriu,2011).

The result is inconsistent with (Dissanayake, 2012), (Melkamu,2012) and (Yenesew,2014) but consistent with (Muriu,2011).

Operational Efficiency (OE) and Return on Asset (ROA)

4.6 above depicted that, the coefficient of Operational Efficiency (OE) -0.295339 and its P-value is 0.0045. Holding other independent variables constant at their average value, whenon average Operational Efficiency (OE) increased by one percent, return on asset (ROA) of sampled Ethiopian MFIs would be decreased by 29.53%, and statistically significant at 5% of significance level. In other words, there is significant negative relationship between Operational Efficiency (OE) and return on asset (ROA) of sampled Ethiopian MFIs during the study period of 2009 to 2019. The result confirms the common rule of thumb that the higher our expense the lower our financial performance. The perception of managers towards operational efficiency result supports the regression finding which is minimizing expense to loan portfolio have a significant role to achieve the financial performance of their MFI. Operational Efficiency is performance measure that shows how well MFIs is streamlining or reforms its operations and takes in to account the cost of the input and/or the price of output. And efficiency of the MFIs management measured in terms of adjusted operating expense to adjusted average gross loan portfolio.

The result was consistent with findings many research like, (Dissanayake, 2012) and (Muriu, 2011) and the operational expense ratio is also always negatively related with the financial performance.

It is also consistent with local study empirically findings of (Gaim, 2015) (Yenesew, 2014) (Tehulu,2013) and (Befekadu,2007) (Sima,2013) and(Yenesew,2014).Based on the finding the study fails to reject null hypothesis there is a negative relationship between Operational efficiency and MFIs financial performance in Ethiopia because the result supports the expectation. Accordingly, operational efficiency was a key determinant of financial performance of Ethiopian MFIs for the study period 2009-2019.

Size of MFIs (Total Asset) and Return on Asset (ROA)

Another factor that can affect the financial performance of MFIs is their size. The size of MFI is measured by the value of its total assets (Hermes et al, 2008) and natural logarithm of total asset of MFIs is used as a proxy of size. This variable is included to capture the economies or diseconomies of scale. There is consensus in academic literature that economies of scale and synergies arise up to a certain level of size. Beyond that level, financial organizations become too complex to manage and diseconomies of scale arise. The effect of size could therefore be nonlinear (Amdemikael, 2012). Table 4.6 depicted that, the coefficient of Size (Asset) is 0.002453 and its P-value is 0.5899. Holding other independent variables constant at their average value, when on average Size of MFIs(Total Asset) increased by one percent, return on asset of sampled Ethiopian MFIs would be increased by 0.25%, and statistically insignificant at 5% of significance level. In other words, there is insignificant positive relationship between Size (Asset) and ROA of Ethiopian MFIs during the study period 2009 to 2019. Therefore, the researcher rejects the null hypothesis that there is negative significant relationship between Size of MFIs and ROA. This means, there is no sufficient evidence to support the significant and negative between ROA and Size of MFIs for the study period.

This finding is consistent with the findings of (Gaim, 2015) and (Muriu, 2011) but not similar to (Yenesew, 2014) and (Sima, 2013). Therefore, based on the regression result from the study, reject the null hypothesis size or total asset of MFIs has insignificant relationship with financial performance of Ethiopian MFIs the study period of 2009 to 2019.

Saving Mobilization (SM) and Return on Asset (ROA)

Savings mobilization is the most important activity in the micro finance business, because

savings are suitable financing sources that have advantages in matching the short term investments and relatively inexpensive. Moreover, financing operational and financial activities by savings rather than subsidized would allow MFIs to become financial self-sustainable (i.e. to cover financial and operational costs by operating incomes). As the above fixed effect regression output table 4.6 presented that, the coefficient of Saving Mobilization(SM) is 0.010145 and its P-value is 0. 0076.Holding other independent variables constant at their average value, when on Average Saving Mobilization(SM) increase by one percent, return on asset (ROA) of sampled Ethiopian MFIs will increase by 1.10% and statistically significant at 5% significant level for the study period of 2009 to 2019. The implication of this study is that saving mobilization has high effect and influence on the ROA or profitability behavior of Ethiopian MFIs and a change in it will yield the highest change in MFIs‘ performance. Hence, Ethiopian MFIs should give more emphasis on incremental of saving mobilization so as; there is sufficient evidence to support the positive significant relationship between ROA and SM.

The result is inconsistent with previous studies empirical finding like (Tehulu, 2013), (Assefa, Hermes, &Meesters, 2010) and (Gaim, 2015). While the regression result assures that saving mobilization has an important role in ensuring financial performance MFIs in Ethiopia; this means the impact of saving mobilization on financial performance of the industry in Ethiopia is encouraging. So, board of directors and managements of MFIs’ need to develop an enabling strategy and mobilize intensively. Therefore, based on the regression result from the study, reject the null hypothesis so as saving mobilization has positive significant relationship with financial performance of Ethiopian MFIsof the study period 2009 to 2019.

Real Gross Domestic Product (RGDP) and return on asset (ROA)

Table 4.6 depicted that, the coefficient of Real Gross Domestic Product (RGDP) is 0.008746and its P-value is 0.9800. Holding other independent variables constant at their average value, when on average Real Gross Domestic Product (RGDP) increased by one percent, return on asset of sampled Ethiopian MFIs would be increased by 0.87%, and statistically insignificant at 5% of significance level. In other words, there is insignificant positive relationship between RGDP and ROA of Ethiopian MFIs. Therefore, the researcher rejects the null hypothesis that there is negative significant relationship between RGDP and ROA. This means, there is no sufficient

evidence to support the positive and significant relationship between ROA and RGDP for the study period of 2009 to 2019. The result showed that the incremental of RGDP during the study period has insignificant association with financial performance of the sampled MFIs of Ethiopia.

The result was consistent with (Muriu, 2011) and (Sima, 2013). Therefore, the current study found that real GDP growth has positively insignificant effect on MFIs financial performance in Ethiopia.

Table 7: Summary and Comparison of test result with expectation for ROA model.

Explanatory Variable	Expected relationship	Actual relationship	Hypothesis status
CAR	Positive/Significant	Negative/insignificant	Reject
GR	Positive/significant	Positive/significant	Do not Reject
OE	Negative/significant	Negative/significant	Do not reject
SIZE	Negative/significant	Positive/insignificant	Reject
SM	Positive/insignificant	Positive/Significant	Reject
RGDP	Negative/significant	Positive/insignificant	Reject

Source: own computation

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.1. SUMMARY

The main objective of this study was to examine and determine the major internal and external determinant factors that affect the financial performance of selected Ethiopian MFIs. The study covered the data of ten MFIs in Ethiopia from the period 2009-2019. Regarding the data source of this study; audited balance sheet and income statement report were collected from National Bank of Ethiopia.

To achieve the intended objective, the study has been used fixed effect panel regression model for six independent variables of the study which were both MFIs specific and external variables. The study variables included are Capital Adequacy Ratio (CAR), Operational Efficiency (OE), Gearing Ratio (GR), Saving Mobilization (SM), Size or Total Asset of MFIs (SIZE) and Real Gross Domestic Product (RGDP).

The study ‘s regression analysis was employed by using panel data estimation technique of fixed effect panel model using Eview-10 statistical software package. To address the aim of the study, the data was being analyzed by descriptive statistics, and multiple linear regression analysis which is made in line with the specific research objectives and stated hypotheses formulated in the study. Before the regression analysis, diagnostic test was performed and all the data fitted the classical linear regression model (CLRM) assumptions; the data was found to be free of Heteroscedasticity, Multicollinearity, and Autocorrelation as well as normally distributed. Finally; using Hausman Model Specification Test the fixed effect regression results was selected and results were analyzed and interpreted.

Accordingly, the financial performance is measured by ROA; GR, OE, and SM have significant impact on the financial performance of Ethiopian MFIs, but CAR, SIZE and RGDP have insignificant effect on financial performance of sampled MFIs.

GR, SM, SIZE and GDP have positive coefficient but others such as CAR and OE have negative coefficient. The explanatory variables included in this study jointly explain about 70 percent of

the variation in return on asset (ROA).

5.2. CONCLUSION

Based on the regression findings, it can be concluded that gearing ratio(GR)has significant impact on return on asset(ROA) of sampled MFIs in Ethiopia with a positive relationship, which means any increase/decrease on the value of these variables leads to an increase/decrease on total financial performance of MFIs (ROA)for the study period 2009 to 2019.And also operational efficiency (OE) has significant impact on financial performance (ROA) with negative relationship; which means any Increase/Decrease on the value of these Variables leads to Decrease/Increase on financial Performance (ROA) for the study of same period. Saving Mobilization (SM) has significant impact on financial performance (ROA) with a positive relationship; which means any increase/decrease on the value of these variables leads to an increase/decrease on financial performance (ROA) of MFIs of Ethiopia for the study period. Capital adequacy ratio (CAR) has negative insignificant effect with financial performance (ROA).Size or total asset (SIZE) and real gross domestic product (RGDP) has positive insignificant effect with financial performance (ROA).

5.3. RECOMMONDATION

Based on the study finding, the financial performance of Ethiopian MFIs measured by ROA was mainly affected by determinant factors/variables such as gearing ratio (GR), operational efficiency (OE) and saving mobilization(SM) among six determinant Variables involved in the study. Hence, these significant Variables are MFI- specific factors in nature on which the Management of MFIs have able to control them. Therefore, a manager has to make their MFIs profitable by incorporating quality and professional consideration for those organizational specific factors when crafting their strategic plan. Therefore, based on the finding of the study the following possible recommendation was forwarded.

Gearing ratio (GR) found to have positive significant effect on financial performance of MFIs measured by ROA; accordingly, the management should give great attention on their optimum MFI debt to equity structure. So, the management should ensure that this determinant factors are well managed as it growth affects the profitability of MFI.

Operational efficiency (OE) found to have negative significant impact on financial performance as measured by ROA. Operational efficiency is the bottleneck of MFIs in Ethiopia; the management should give great attention to a good expense management policy and should apply new technology that can minimize cost example internet and mobile money.

Saving mobilization was the major factors that positively and significantly affect the financial performance of MFIs of in Ethiopia during the study period. Hence, MFIs need to work intensively towards improving their saving mobilization effort and efficiently liquidity position so as to increase their lending performance; consequently, which has effect on financial performance MFIs. Thus, MFIs in the country should formulate strategy on how to mobilize and retain more deposits so as to further improve their lending service provision performance. Additionally, MFIs should adopt unique and attractive incentives strategies to improve saving mobilization by expanding branch outreach with intensive technological and virtual-supported MFIs services throughout the country.

Finally; However, the study examined the internal and external determinants of financial performance for selected MFIs in Ethiopia by using selected MFI specific and external variables; the study covered only ten MFIs in the country for 11years' time period and it also may not be included potentially important MFI specific and external financial determinant variables like Portfolio Quality, Age, Market Concentration, Competition and Inflation Etc. Therefore, it is recommended for future researchers to further study on determinants of financial performance by incorporating more MFIs and additional determining factors.

References

Alemayehu Y. (2008) „"The performance of Micro Finance Institutions in Ethiopia: A case of six microfinance institutions"", MSc thesis, Addis Ababa University, Ethiopia.

Ali-Shami, A.H. (2008) Determinants of insurance company"s profitability in UAE. Master"s thesis, University of Ultara Malaysia.

Amdemikael, A. (2012) "Factors affecting profitability: An empirical study on Ethiopian Banking Industry", MSc thesis, Addis Ababa University.

Athanasoglou, P, Brissimis,S. and Matthaios, D. (2005) Bank specific, industry- specific and Macroeconomic determinants of bank Profitability. MPRA Paper No. 32026 posted 5. July 2011 14:01 UTC, Bank of Greece.

Ayayi , A. (2010) „Microfinance: Debt or Equity? What are the Implications for Profitability and Social Welfare", Global Economic and Finance Journal, Vol. 2, No.2 PP64-80

Basu, A. Blavy, R., and Yulek, M. (2004) Microfinance in Africa: Experience and Lessons from Selected African Countries. International Monetary Fund IMF Working Paper No.04/174

Belayneh, H. (2011) Determinants of Commercial Banks Profitability: An Empirical Evidence from the Ethiopia Commercial Banks, MSc thesis,Addis Ababa University, Addis Ababa Ethiopia.

Birhanu, T. (2012) Determinants of Commercial Banks Profitability: An Empirical Evidence from the Commercial Banks of Ethiopia, MSc thesis, Addis Ababa University, Addis Ababa Ethiopia.

Brau, J. M. and Woller, G. M., (2004) „Microfinance: A Comprehensive review of the Existing Literature" Journal of Entrepreneurial Finance and Business Venture, Vol. 9, no.1, PP.1-6

Brooks, C. (2008) Introductory Econometrics for Finance, 2nd end, Cambridge University Press, New York.

CGAP, (2012) A Guide to Regulation and Supervision of Microfinance Consensus Guidelines. Consultative Group to Assist the Poor. Washington, DC

CGAP, (2003) Microfinance Consensus Guidelines: Guiding Principles on Regulation and Supervision of Microfinance. Consultative Group to Assist the Poor (CGAP).

Cull R. Demirgùç-Kunt, A., and Morduch, J. (2007) Financial Performance and Outreach: A Global Analysis of Leading Micro Bank. Economic Journal, Vol. 117, pp. 107-133.

Cull, R. Demirgùç-Kunt, A., and Morduch, J. (2009) Does Regulatory Supervision Curtail Microfinance Profitability and Outreach? Policy Research Working Paper, The World Bank.

Dietricha, A. and Wanzenried, G. (2009) „"What Determines the Profitability of Commercial Banks?"".New Evidence from Switzerland.

Dissanayake, D. M. (2012) the determinants of Return on Assets: Evidence from Micro Finance Institutions in University of Kelaniya Sri Lanka.

Elia, M. (2006) Microfinance: Text and Cases, Basics on micro finance cases studies from the Arab Region.

Flamini, V. McDonald, C., and Schumacher, L. (2009) Determinants of commercial bank profitability in Sub-Saharan Africa., IMF Working Paper, pp. 1-30.

Gajure,P. D. and Pradhan, S.R.(2012) Concentration and Competition in Nepalese Banking, Journal of Business, Economics and Finance, vol 1 Issue1 ISSN: 2146-7943

Gujarati, (2004) Basic Econometrics, 4th edn, McGraw Hill, Boston.

Guntz, S. (2011) Sustainability and profitability of microfinance institutions,Research Paper, Center for Applied International Finance and Development (CAIFD).

Habtamu, N. (2012), Determinants of Bank Profitability: An Empirical Study on Ethiopian Private Commercial Banks, MSc thesis, Addis Ababa University, Addis Ababa Ethiopia.

Harward & Upton, 1961 "Introduction to Business Finance", Mc Graw Hill, New

Helms, B.(2006) access for all, building inclusive financial system The International Bank for Reconstruction and Development. The World Bank, Washington, DC 20433.

Iezza, P. (2010)‟"‟ Financial sustainability of microfinance institutions (MFIs):an empirical analysis‟"‟, MSc thesis, Copenhagen Business School.

Imai, K. S, Gaiha, R. Thapa, G. Annim, S. k., and Gupta, A.(2012) financial performance of microfinance institution a macroeconomic and institutional perspective discussion paper series, RIEB, Kobe university,Japan.

Jørgensen, N. A. (2011) The profitability of microfinance institutions and the connection to the yield on the gross portfolio, MSC thesis, Copenhagen Business School.

Kindane, A. (2007) „Outreach and Sustainability of the Amhara Credit and Saving Institutions (ACSI) Ethiopia‟", MA thesis, Norwegian University of Life Sciences. Lafourcade, A-l, Jennifer Isern, Patricia Mwangi, and Matthew Brown, (2006) Overview of the Outreach and Financial Performance of Microfinance Institutions in Africa. Feature Articles, Micro banking Bulletin, April 2006.

Ledgerwood, J. (1999), "Microfinance Handbook: An Institutional and Financial Perspective", World Bank, Washington D.C.: World Bank.

Letenah, E. (2009) „"Performance analysis of a sample microfinance institutions of Ethiopia‟", International NGO Journal Vol. 4 (5), pp. 287-298, May, 2009.

Lislevand, C. J. (2012) The effect of capital structure on microfinance institutions performance, MSc thesis, University of Agder.

Melkamu, T.(2012) Determinants of Operational and Financial Self-Sufficiency: An Empirical Evidence of Ethiopian Microfinance Institutions. MSc thesis, Addis Ababa University, Addis Ababa Ethiopia.

Meyer, J. (2002) "Track record of financial institutions in assessing the poor in Asia", ADB research institute paper, No.49.

Molyneux, P. and Thornton J. (1992) Determinants of European bank profitability: A note Journal of Banking and Finance 16 (1992) 1173-I 178. North-Holland.

Muriu, P. (2011)‘‘‘‘Microfinance Profitability: What explains the low profitability of African microfinance.s?‘‘‘‘, PhD thesis, Birmingham Business School, University of Birmingham.

Nelson, S. (2011) Performance Assessment of Micro Finance Institution in the Ashaiman Municipality, MSc thesis. Ongore, O.K. and Gemechu, B. (2013) Determinants of Financial Performance of Commercial Banks in Kenya, International Journal of Economics and Financial Issues, Vol. 3, No. 1, 2013, pp.237- 252 ISSN: 2146-4138

Robinson, M. S.(2001) book the microfinance revolution ,sustainable finance for the poor , The World Bank, Washington, D.C. Open Society Institute, New York.

Sima, G. (2013) Determinants of Profitability: An Empirical Study on Ethiopian Microfinance institution, MSc thesis, Addis Ababa University, Addis Ababa Ethiopia.

Singh, K. Y. (2006) Fundamentals of research methodology and statistics, new age international (p) limited, New Delhi- 110002

Vong, A. and Chan, H.(2010) Determinants of Bank Profitability in Macao, Faculty of Business Administration, University of Macau. Washington, DC.June 2003. Weston,F.J. and Brigham,F.E.,1972 Managerial Finance, P. 88

Wolday, A. and Peck, D. (2010), Agricultural finance potential in Ethiopia Constraints and opportunities for enhancing the system AMFI, Addis Ababa Ethiopia.

Yonas, M. (2012) Health check up of commercial Banks by Using CAMEL framework. MSc thesis,Jimma University.

Yonas, N. (2012) Determinants of Financial Sustainability of Ethiopian Microfinance Institutions, MSc thesis. Addis Ababa University, Addis Ababa, Ethiopia.

Appendices

ANNEX

Summary of Ratio Data

YEAR	MF	ROA	ROE	CAR	OE	SM	GR	Size	GDP
2009	Addis	0.0301	0.2505	0.2941	0.0580	12.4568	2.5401	13.1701	0.1220
2010	Addis	0.0329	0.1507	0.3001	0.0582	13.1245	2.5424	13.1793	0.1125
2011	Addis	0.0293	0.0596	0.2513	0.0682	12.2231	1.0367	13.5475	0.1251
2012	Addis	0.0304	0.0795	0.2789	0.0783	12.8323	1.6164	14.0081	0.1140
2013	Addis	0.0773	0.1903	0.3015	0.0878	13.5475	1.4627	14.2372	0.0890
2014	Addis	0.0808	0.2115	0.2351	0.0803	13.9990	1.6178	14.5990	0.1990
2015	Addis	0.0972	0.2528	0.2589	0.0851	14.1943	1.6007	14.8183	0.1030
2016	Addis	0.1388	0.3542	0.2314	0.0892	14.3044	1.5521	14.9178	0.0104
2017	Addis	0.1656	0.4996	0.3315	0.1015	14.4476	2.0166	15.0751	0.1880
2018	Addis	0.1881	0.5384	0.2135	0.0942	14.2886	1.8616	15.1907	0.1090
2019	Addis	0.1892	0.5494	0.2590	0.1017	14.3887	1.9717	15.2010	0.0100
2009	Oromia	0.0990	0.4140	0.2401	0.0900	13.0401	3.1301	14.1400	0.1220
2010	Oromia	0.1000	0.4959	0.2416	0.0925	13.0470	3.1397	14.1443	0.1125
2011	Oromia	0.1306	0.5914	0.2634	0.1002	13.4286	2.7965	14.3408	0.1251
2012	Oromia	0.1503	0.5542	0.2712	0.0965	13.8195	2.6875	14.5640	0.1140
2013	Oromia	0.1471	0.5865	0.2508	0.1092	14.2053	2.9879	14.8809	0.0890
2014	Oromia	0.1286	0.6574	0.1956	0.1147	14.6444	2.2365	15.3343	0.1990
2015	Oromia	0.1842	0.7217	0.2552	0.1338	14.6472	2.9188	15.3680	0.1030
2016	Oromia	0.0549	0.1874	0.2932	0.1293	14.7082	2.4105	15.4575	0.0104
2017	Oromia	0.1775	0.3092	0.2194	0.0870	15.1280	3.5579	15.9705	0.1880
2018	Oromia	0.1665	0.8450	0.1960	0.0936	15.2666	2.1568	14.3235	0.1090
2019	Oromia	0.1675	0.3594	0.2016	0.0947	15.2667	2.4568	13.3333	0.0100
2009	Omo	0.0011	0.5521	0.2701	0.0801	12.2600	2.6500	13.3501	0.1220
2010	Omo	0.0001	0.4523	0.2734	0.0887	12.2630	2.6579	13.3585	0.1125
2011	Omo	0.0081	0.5329	0.2447	0.0938	12.6281	3.0867	13.5105	0.1251
2012	Omo	0.0078	0.2438	0.1781	0.1163	13.1031	2.4568	14.0967	0.1140

2013	Omo	0.0270	0.1568	0.1721	0.0958	13.5624	3.0125	14.4372	0.0890
2014	Omo	0.0242	0.1651	0.1463	0.0854	13.9668	3.1254	14.8127	0.1990
2015	Omo	0.0298	0.2043	0.1459	0.0825	14.2067	3.4561	15.0915	0.1030
2016	Omo	0.0249	0.2152	0.1156	0.1033	14.4012	2.4568	15.2732	0.0104
2017	Omo	0.0213	0.2743	0.0776	0.1081	14.7841	3.4568	15.5725	0.1880
2018	Omo	0.0177	0.1661	0.1064	0.1035	15.0948	2.4568	15.9706	0.1090
2019	Omo	0.0178	0.1784	0.1074	0.1044	15.1000	3.4568	15.9908	0.0100
2009	Vision	0.0220	0.0388	0.2314	0.2745	10.0164	1.1074	11.6145	0.1220
2010	Vision	0.0230	0.0488	0.2586	0.2837	10.0165	1.1176	11.7003	0.1125
2011	Vision	0.0456	0.0947	0.1280	0.2667	10.2436	1.0794	11.8403	0.1251
2012	Vision	0.0120	0.0252	0.2319	0.2704	10.9376	1.0984	12.4460	0.1140
2013	Vision	0.0548	0.1129	0.2963	0.2361	11.4386	1.0627	12.8570	0.0890
2014	Vision	0.0839	0.1612	0.1245	0.2863	11.8206	2.9225	12.9845	0.1990
2015	Vision	0.1460	0.2678	0.3114	0.2137	12.1342	2.8342	13.1187	0.1030
2016	Vision	0.2098	0.3911	0.2345	0.2319	12.3409	2.8639	13.3289	0.0104
2017	Vision	0.2540	0.4954	0.3251	0.1821	12.6668	2.9507	13.5624	0.1880
2018	Vision	0.2292	0.3777	0.2356	0.1839	13.0751	1.5206	13.9967	0.1090
2019	Vision	0.2291	0.2871	0.3000	0.1842	13.0821	1.5304	13.9977	0.0100
2009	Sidama	0.0060	0.0184	0.3100	0.1801	13.1235	2.2100	13.5001	0.1220
2010	Sidama	0.0060	0.0195	0.3106	0.1847	13.4587	2.2195	14.5034	0.1125
2011	Sidama	0.0187	0.0656	0.2849	0.2097	12.8965	2.5095	14.7889	0.1251
2012	Sidama	0.0441	0.1669	0.2643	0.1891	10.2579	2.7837	11.0464	0.1140
2013	Sidama	0.0344	0.1707	0.2016	0.1874	10.5250	3.9612	11.5344	0.0890
2014	Sidama	0.0507	0.1531	0.3315	0.1890	10.7647	2.0168	11.6957	0.1990
2015	Sidama	0.0476	0.1402	0.3397	0.2026	10.8639	1.9436	11.8220	0.1030
2016	Sidama	0.0481	0.1631	0.2951	0.1706	11.3590	2.3889	12.1403	0.0104
2017	Sidama	0.0703	0.2138	0.3288	0.1671	11.5646	2.0415	12.3426	0.1880
2018	Sidama	0.0697	0.1975	0.3529	0.1482	11.7305	1.8336	12.6535	0.1090
2019	Sidama	0.0787	0.2010	0.3630	0.1584	11.8475	1.8559	12.7534	0.0100
2009	Bussa	0.1901	0.3861	0.2136	0.1901	12.1237	1.0201	11.0044	0.1220
2010	Bussa	0.1959	0.3961	0.2146	0.1946	13.4587	1.0223	11.0044	0.1125
2011	Bussa	0.2254	0.4284	0.1324	0.1575	12.9870	0.9003	11.3338	0.1251
2012	Bussa	0.2295	0.4936	0.2314	0.1726	13.1254	1.1507	11.7292	0.1140
2013	Bussa	0.2167	0.5525	0.3000	0.1623	12.3652	1.5494	12.1600	0.0890
2014	Bussa	0.2312	0.6230	0.2570	0.1486	13.2564	1.6946	12.4744	0.1990
2015	Bussa	0.2374	0.6670	0.3560	0.1691	11.3019	1.8092	12.7315	0.1030
2016	Bussa	0.2098	0.1330	0.2893	0.1921	11.5490	1.3480	12.7634	0.0104
2017	Bussa	0.0681	0.1600	0.2137	0.1908	11.6806	1.3480	12.9038	0.1880
2018	Bussa	0.2292	0.1374	0.3489	0.2067	12.1211	1.8661	13.2509	0.1090
2019	Bussa	0.2340	0.1394	0.1234	0.3021	12.1311	1.9110	13.2612	0.0100
2009	Eshet	0.0708	0.1045	0.3214	0.2801	12.4568	1.5201	10.7200	0.1220
2010	Eshet	0.0708	0.1082	0.2156	0.2892	14.0000	1.5279	12.7200	0.1125
2011	Eshet	0.0665	0.1041	0.1945	0.2351	12.2365	2.5645	14.7409	0.1251

2012	Eshet	0.1239	0.2004	0.2564	0.2236	12.2365	2.6171	13.9152	0.1140
2013	Eshet	0.1423	0.2614	0.2134	0.2270	13.3125	0.8374	11.0915	0.0890
2014	Eshet	0.1660	0.3414	0.2315	0.2454	12.1246	1.0566	11.1010	0.1990
2015	Eshet	0.1932	0.3717	0.2314	0.2811	10.0495	0.9233	11.0081	0.1030
2016	Eshet	0.1014	0.2859	0.1235	0.2242	10.0217	1.8203	12.9541	0.0104
2017	Eshet	0.0774	0.2275	0.3401	0.2146	12.2546	1.9406	13.9678	0.1880
2018	Eshet	0.0586	0.1694	0.3463	0.2366	10.0054	1.8880	13.9497	0.1090
2019	Eshet	0.0650	0.1255	0.3451	0.2354	10.0074	1.8941	12.9699	0.0100
2009	Wassa	0.1601	0.5314	0.3101	0.0800	10.0882	2.1800	11.4600	0.1220
2010	Wassa	0.1671	0.5326	0.3137	0.0826	14.3689	2.1878	11.4633	0.1125
2011	Wassa	0.1886	0.5441	0.3467	0.1160	13.5894	1.8847	11.7571	0.1251
2012	Wassa	0.2004	0.4189	0.3016	0.1178	12.2648	1.4104	12.1651	0.1140
2013	Wassa	0.2172	0.6835	0.3178	0.1369	11.0435	2.1464	12.3835	0.0890
2014	Wassa	0.2071	0.6983	0.2966	0.1585	11.3131	2.3718	12.4504	0.1990
2015	Wassa	0.1696	0.5224	0.2348	0.1409	11.6162	3.2591	13.0453	0.1030
2016	Wassa	0.1699	0.3434	0.2286	0.1773	11.8193	3.3743	13.2278	0.0104
2017	Wassa	0.2063	0.4670	0.2690	0.2021	11.9989	2.7173	13.2139	0.1880
2018	Wassa	0.2306	0.2862	0.2933	0.2053	12.2034	2.4092	13.2449	0.1090
2019	Wassa	0.2475	0.3782	0.3011	0.2112	12.3014	2.5121	13.2455	0.0100
2009	Harbu	0.0079	0.0101	0.2141	0.0900	13.2356	1.3001	13.1450	0.1220
2010	Harbu	0.0079	0.0103	0.2212	0.0908	12.3264	1.3019	12.1254	0.1125
2011	Harbu	0.1161	0.2241	0.2145	0.1257	12.2365	1.1254	13.3108	0.1251
2012	Harbu	0.0062	0.0186	0.3314	0.2236	13.5698	2.0171	11.8492	0.1140
2013	Harbu	0.0078	0.5468	0.3104	0.2266	13.4598	2.2213	11.0207	0.0890
2014	Harbu	0.0093	0.4562	0.3448	0.2479	12.3654	1.8999	11.0504	0.1990
2015	Harbu	0.0793	0.4570	0.1235	0.1235	13.2365	1.6369	11.1395	0.1030
2016	Harbu	0.0049	0.2156	0.2991	0.2345	13.5269	2.3437	11.3861	0.0104
2017	Harbu	0.0077	0.0345	0.2224	0.1931	14.1255	3.4970	11.7776	0.1880
2018	Harbu	0.0279	0.1439	0.1939	0.1893	13.2564	2.4092	12.1129	0.1090
2019	Harbu	0.0279	0.1421	0.1939	0.1893	12.7894	2.4092	12.1129	0.0100
2009	AMAR	0.0546	0.2111	0.2678	0.0681	13.1234	2.3533	12.4570	0.1220
2010	AMAR	0.0655	0.2134	0.2689	0.0671	12.2365	2.4744	12.4587	0.1125
2011	AMAR	0.0645	0.2315	0.2789	0.0791	13.4570	2.5855	13.1255	0.1251
2012	AMAR	0.0691	0.2472	0.2794	0.0649	12.2365	2.5786	11.1254	0.1140
2013	AMAR	0.0621	0.2330	0.2667	0.0669	12.4569	2.7493	12.1255	0.0890
2014	AMAR	0.0551	0.2298	0.2400	0.0747	13.2365	3.1668	11.1254	0.1990
2015	AMAR	0.0531	0.2305	0.2302	0.0745	12.3698	3.3446	12.1259	0.1030
2016	AMAR	0.0516	0.2270	0.2274	0.0943	13.2589	3.3979	11.1254	0.0104
2017	AMAR	0.0508	0.2174	0.2337	0.0926	12.2365	3.2785	11.1254	0.1880
2018	AMAR	0.0458	0.2129	0.2150	0.0931	13.2365	3.6509	12.5478	0.1090
2019	AMAR	0.0518	0.2140	0.2241	0.0945	12.3659	3.6700	11.1254	0.0100