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## College of Business and Economics Department of Management

### *Financial Innovation Towards Profitability of Microfinance Institutions in Ethiopia*

A Thesis submitted to Graduate Department of Management in fulfillment of the  
requirement of Master of Science in Management; Specialization in  
*Innovation Management and Entrepreneurship*

**By: Zerihun Necho Chali**

**ID No:** GSE 4407/09

**Phone No:** +251924147101

**E-mail:** zerihunnecho143@gmail.com

**Advisor: Dr. Yohannes Workaferahu**

**Addis Ababa, Ethiopia  
June 2019**

## Declaration

I Zerihun Necho, ID No: GSE 4407/09, do hereby declare that this Thesis that entitled '*Financial Innovation Towards Profitability of Microfinance Institutions in Ethiopia*' is my original research work and it has not been submitted partial or in full by other person for an award of degree in any other university or institutions.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

### **Endorsement**

This Thesis that entitled "*Financial Innovation Towards Profitability of Microfinance Institutions in Ethiopia*," has been submitted to Addis Ababa University, College of Business and Economics, Department of Management, MSc in Management program for examination with my approval as a University Advisor.

**Advisor:** *Yohannes Workaferahu (PhD)*

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Addis Ababa University**  
**College of Business and Economics**  
**School of Graduate studies**  
**Thesis Approval**

The undersigned certify that we have read and hereby recommend to Addis Ababa University to accept the Thesis submitted by ***Zerihun Necho Chali*** that entitled "***Financial Innovation Towards Profitability of Microfinance Institutions in Ethiopia***," in fulfillment of the requirements for the award of a Master of Science in Management, Specialization in Innovation Management and Entrepreneurship. It is complies with the regulation of the University and meets accepted standards with respect originality and quality.

**Advisor: *Dr. Yohannes Workaferahu***

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Internal Examiner: *Dr. Tilahun T.***

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**External Examiner: *Dr. Gete A.***

Signature\_\_\_\_\_

Date\_\_\_\_\_

**Graduate Program Coordinator \_\_\_\_\_**

Signature\_\_\_\_\_

Date\_\_\_\_\_

## ABSTRACT

*The robust financial innovation has unreserved role in boosting profitability of MFIs. Since sufficient researches had not been conducted on the subject this study was carried out to fill the gaps. In effect, inferential design and more quantitative & qualitative methods were used. Accordingly, the explanatory variables have explained the profitability of MFIs by 65% (i.e.  $R^2$ ). The percentage change of credit innovation changes the percentage of profitability. Moreover, major innovative credit products were extended by MFIs in Ethiopia. The percentage change in total deposit changes percentage of profitability and statistically significant. Therefore, the credit and saving product innovations are strongly, positively and significantly affects the profitability of MFIs. The MFIs have mobilized various deposits as deposit product innovations that increased profitability status. Institutional innovation credited to equity capital and the equity capital affect profitability of MFIs. The percentage change in equity capital changes the percentage of profitability of MFIs and statistically significant. Accordingly, the study approved that institutional innovation of MFIs is practically and statistically affects their profitability. Although institutional innovation determines profitability of MFIs, in most of Ethiopian MFIs institutional innovation that secure their profitability was not practiced. The percentage change increased in operational expense decrease the percentage change of profitability of MFIs and statistically significant. To this end, newly created or improved financial process innovation decreases operational expenses of MFIs that in return increases the profitability of MFIs. In abstract, the credit product innovation, saving product innovation, financial process innovation, and institutional innovation are strongly and significantly affect the profitability of MFIs in Ethiopia. Accordingly, the financial innovation practices of MFIs in Ethiopia needs due attentions.*

**Key words:** *Ethiopia, Microfinance Institutions, Financial Innovation, Profitability*

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## Lists of Acronyms

|        |                                                       |
|--------|-------------------------------------------------------|
| ATM:   | Automatic Teller Machine                              |
| CCE:   | Commercial Code of Ethiopia                           |
| EC     | Equity Capital                                        |
| Dlog   | Differenced logarithm of variables                    |
| DTIs:  | Deposit Taking Institutions                           |
| MFISD: | Microfinance Institutions Supervision Directorate     |
| MFIs:  | Microfinance Institutions                             |
| NBE:   | National Bank of Ethiopia                             |
| NGOs:  | Non -Governmental Organizations                       |
| OECD:  | Organization for Economic Cooperation and Development |
| OE     | Operational expenses                                  |
| OLS:   | Ordinary least square                                 |
| OL:    | Outstanding loans                                     |
| PR:    | Profitability                                         |
| SACCO: | Saving and Credit Cooperative Company                 |
| TD     | : Total Deposit                                       |
| TC     | Total Credit                                          |
| TS     | Total Saving                                          |

## CHAPTER ONE

### I. INTRODUCTION

This study was addressed Financial Innovation towards Profitability of Microfinance Institutions in Ethiopia. Accordingly, Background of the study, Statement of the Problem, Objectives of the study, Research Questions, Significance, Scope, Limitations, and Organization of the study are discussed in this chapter.

#### 1.1. Background of the Study

Innovative and profitable Financial Institutions are very crucial for economic development of the country. In Ethiopia, financial institution includes Insurance Company, Banks, Micro-financing Institution, Postal Savings, Money Transfer Institution, or such other similar, institution as determined by National Bank of Ethiopia, (*Proclamation No. 626/09*). Accordingly, financial institutions in Ethiopia are composed of Commercial Banks, Development Bank, Insurance Companies, Microfinance Institutions, and Capital Goods Finance Companies. As compared to Banks and Microfinance Institutions Capital Goods Finance Companies are established recently to foster financial services in Ethiopia.

Thus, in Ethiopia Microfinance Institutions (MFIs) are formal institutions that providing micro financial services such as Micro Credits, Savings, Money Transfers, and micro insurances. In providing its micro financing business, the MFI utilizes financial innovation practices.

Innovation is the implementation of a new or significantly improved product, process, a new marketing methods and new organizational method in business practices. The four types of innovations are product innovation, process innovation, marketing innovation and organizational innovation (*OECD, Oslo Manual, 2005*). Accordingly, financial innovation is the creation and implementation of new financial products, delivery process, marketing methods and institutional structure.

Financial innovation has extended concerns in developed countries like EU and USA. Most African nations still need to take full advantage of the many benefits procured by mobile banking services (*Lambert, 2018*). Some countries (like Kenya) become ultimate sources for innovative financial services. Unlike, in Ethiopia albeit some mobile money services such as M- Birr, Hello

cash and etc have started, it not effective. Hence, in Ethiopia financial innovation practices is not addressed adequately.

Microfinance Institution is innovative financial institution. Beside its social purposes, MFIs have profit maximization objectives. To achieve these objectives MFI must ensure its continuous financial performances that enable it to provide sustainable financial services. Hence, MFIs strive to maximize their profitability that enhanced by financial innovation.

The robust financial innovation practices such as product Innovation, process innovation, marketing innovation, and institutional innovation can guaranteed to continuous profitability of MFIs. In contrast, inefficiencies in financial innovation practices leads to poor profitability and upset the growth of Microfinance Institutions. Thus, this assessment was conducted to determine Financial Innovation practices towards Profitability of Microfinance Institutions in Ethiopia.

### **1.2.Statement of the Problem**

The future profitability and growth of MFIs is mainly depends on how well it innovate and implement its financial services. Adequate financial innovation plays a significant role in registering significant profitability. Furthermore, in maintaining good financial innovation that enhancing profitability and sustainability of MFIs financial innovation practices such as product innovation, process innovation, marketing innovation and institutional innovation are very crucial. Particularly, good credit & saving innovations, good delivery process that reduces operation expenses and adequate ownership structure (shareholders equity) can secure MFIs' profitability. If these good financial innovation practices are not practiced, it results into poor profitability performances that may lead to insolvency.

Practically, almost all MFIs were providing similar credit and saving product in the same business areas. Moreover, there were very high credit concentration on agricultural loan product that exposes credit risk and losses against profitability. Beside, in Ethiopia Commercial Banks and MFIs are mobilizing almost the same saving products in the same market. But, MFIs has no capacity to compete with banks. Yet group model credit system that adopted from abroad so far is practiced in all MFIs. On the other hand, there were problems in creating and providing financial Products that may has significant roles in profit maximization of MFIs. Hence, there was weakness in financial innovation in MFIs.

Due to weak delivery process, nature of the business and clients' characteristics, MFIs incur high operational expenses. Although NBE issued regulation on Mobile and Agent Banking and some MFIs are licensed to provide Mobile and Agency Banking services, it was very inadequate in all aspects.

Institutionally, the ownership structures of MFIs have some complications that may affect their profitability. The equity contribution systems of MFIs were not in an innovative manner. In most cases, the shareholders were limited in numbers and they are nominal shareholders who have no financial stake in the MFIs. Accordingly, there were weaknesses in credit & saving products, process and institutional or ownership structure innovations that may affect the profitability of MFIs.

Scholars or local researchers do not examine the theme of financial innovation towards Profitability of MFI in Ethiopia. Only some related works have been done in some other countries. Kibugo et al (2016) has examined the effect of financial innovation on performance of MFIs in Nakuru town, Kenya and concluded that institutional and process innovation were the most units of MFIs' performance. However, this research had focused on only one town and may not be applicable to Ethiopian MFIs. Salame (2015) studied the influence of Financial Innovation on Financial performance of SACCOs in Nyeri, Kenya and concluded that telephone and internet banking are the main drivers of financial performance of SACCOs. This study addressed only e-banking systems in SACCOs which are not pertinent in Ethiopian MFIs currently. Kamau and Mark (2014) studied the Effect of Financial Innovation on Banks' performances in Kenya and concluded that use of credit cards, mobile banking, internet banking and agent banking in Kenya has great impacts on financial performance of commercial banks in Kenya. This is also not relevant to MFIs in Ethiopia. Hence, since sufficient researches had not been conducted on the subject, this study was carried out to fill the gaps.

Weak Financial Innovation practices of MFIs lead to losses and insolvency that end in merger, liquidation, receiverships, and closure of the institution in particular and affect the financial sector of the country at large. To this end, it was intended to assess the Financial Innovation practices towards Profitability of Microfinance Institutions in Ethiopia.

### **1.3.Objectives of the Study**

Based on the problem statement and research gap, to accomplish this study the general and specific objectives of the study were noted as follow.

#### **1.3.1. General Objective**

The general objective of this research is to study the effect of Financial Innovation on Profitability of Microfinance Institutions in Ethiopia.

#### **1.3.2. Specific Objectives**

- ☞ To examine effect of credit product innovation on profitability of MFIs
- ☞ To scrutinize effect of saving product innovation on profitability of MFIs
- ☞ To study effect of financial process innovation on profitability of MFIs
- ☞ To examine effect of institutional innovation on profitability of MFIs

#### **1.3.3. Research Questions**

Does financial innovation affects profitability of MFIs? Specifically:-

- What is the effect of credit product innovation on profitability of MFIs?
- What is the effect of saving product innovation on profitability of MFIs?
- How financial process innovation affects profitability of MFIs?
- How institutional innovation affects profitability of MFIs?

### **1.4.Scope of the Study**

The financial service providers in Ethiopia are Banks, Insurance Companies, Microfinance Institutions, Capital Goods Finance companies, and Saving & Credit cooperatives, (not regulated). Among which the study was focused on the financial innovation of MFIs towards their profitability in Ethiopia. The MFIs are licensed and working throughout Ethiopia. The data that represent MFIs was obtained from NBE and analyzed properly.

Furthermore, financial innovation involves the creation and implementation of new financial products, financial process, marketing methods and institutional structure. Among others the research has focused on assessment of financial innovation practices in terms of credit & saving products innovation, financial process innovation (measured by improvements in operational

expenses) and institutional innovation that measured by increments of owner's' equity capital towards profitability of MFIs in the country.

### **1.5.Limitations of the Study**

The limitation of time and costs were dispute in concentrate more on all MFIs in Ethiopia. Moreover, the limitations were faced in data collections system and data analysis because of poor documentation practices of MFIs. Auspiciously, these limitations were managed adequately and the objectives of the study were addressed appropriately.

### **1.6.Significance of the Study**

This paper has addressed the importance of Financial Innovation in MFIs to the stakeholders, regulator, investors, directors, and managers of microfinance institutions who oversee proliferation profitability of the institutions. Furthermore;

- It contribute great help to the policy makers in making updated decisions and use agile looking in regulating financial innovation as well as take further supervisory actions.
- Provide some insights on financial innovation for all MFIs stakeholders/ shareholders so as to assure their business in innovative and profitable manner.
- Used as further reference to other researchers and it will provide practical guidance for stakeholders, investors, boards, and senior managers in creating and implementing financial innovation of MFIs.

### **1.7.Organization of the Study**

This Thesis consists five Chapters. Chapter 1 is introduction, which contains, Backgrounds of the study, Statement of the problem, Objectives, Research questions, Scope, Limitations and Significance of the study. Chapter 2 provides theoretical and empirical reviews, research gaps, and conceptual framework. Chapter 3 contains research methodologies Chapter 4 is about Empirical Results and Analysis and Chapter 5 is conclusion and Recommendations. Finally, references are listed in APA style. Accordingly, the study was conducted and delivered fruit full outputs.

In conclusion of chapter one, financial innovation in MFI is the creation and implementation of new financial products, process, marketing, and institutional structure to generate sustainable profitability. Inefficiencies in financial innovation affect the institution's profitability performances. Sufficient researches were not conducted on the theme of financial innovation towards profitability of MFI in Ethiopia. Hence, this study is crucial to provide tangible outputs. In effect, the researcher has reviewed and brings up the theoretical and empirical relevant points of the study in the next chapter.

## CHAPTER TWO

### II. Literature Review

The theoretical and empirical evidences that spotlighted on Financial Innovation towards profitability performance of MFIs in Ethiopia are reviewed and presented under this chapter. Accordingly, the first section describes theoretical and conceptual overviews and Financial Innovation concepts. The second and third sections presented empirical studies on Financial Innovation practices and profitability of MFIs. Moreover, the Research Gap and Conceptual Framework of the study are incorporated in this part.

#### 2.1.Theoretical and Conceptual Overviews

To get better understanding on the respective study, relevant theoretical and conceptual frameworks are provides inclusive contributions. Hence, various related literatures have been reviewed. Likewise, the theoretical and conceptual frameworks on Financial Innovation practices and microfinance institutions that serve as a platform for the study were reviewed and noted as follow.

##### 2.1.1. Financial Innovation

Innovation is the process of translating an idea or invention into a good or service that creates value (*Business dictionary*). Innovation is the process of making changes, large and small, radical and incremental, to products, processes, and services that result in the introduction of something new for the organization that adds value to customers and contributes to the knowledge store of the organization (*Sullivan, 2008*). According to *OECD (2005)*, innovation is the implementation of new or significantly improved product, process, a new marketing methods and new organizational method in business practices, workplace organization or external relations. Innovation is also the ability to apply creative solutions to problems and opportunities to enhance business sustainability and people's lives.

Schumpeter (1934) stated that innovation comes through new combinations made by entrepreneur resulting in a new product, a new process, opening of new market, new way of organizing the business and new sources of supply. Furthermore, the concept of innovation

involves quickly adopting new novelties in product, process, marketing strategies and organization.

Specifically, financial innovation is the act of creating new financial instruments as well as new financial technologies, institutions, and markets. The recent financial innovations include hedge funds, private equity, weather derivatives, retail-structured products, exchange-traded funds, multi-family offices, and Islamic bonds i.e. Sukuk (*Wikipedia*). However, these financial innovations are applicable in developed capital markets that are not established in Ethiopian Financial system.

In general, financial Innovation is the redesigning, creating, and implementing of innovative institutional structure, financial product, financial process, and marketing system that add lucrative values.

### **2.1.2. Types of Financial Innovation**

OECD, Oslo Manual (2005), elaborates innovations into four categories such as product innovations, process innovations, marketing innovations and organizational innovations. Directly and applicably, these four types of innovations are forms of financial innovations. Thus, Microfinance Institutions can run-through these financial innovation practices to secure their profitability.

Since a product innovation is the creation and implementation of good or service that is new or significantly improved, it is the introduction of new credit products, new saving products and new micro insurance products or services in MFIs. A process innovation is creating or adoption and the implementation of a new or significantly improved delivery method. It includes new or significantly improved methods for the creation and provision of financial services. An institutional innovation is the creation and implementation of a new organizational structure and business forms. Innovatively formed Microfinance institution maintains its profitability. A marketing innovation is creation and implementation of a new marketing method in financial product design, distribution, promotion and pricing based on customers need as well as new market areas. Hence, MFIs can practices financial innovation practices such as financial products innovation, process innovation, and institutional innovations to generate profits adequately.

### **2.1.3. Theories Related to Financial Innovation**

For further understanding of the subject, some theories are reviewed. In effect, Schumpeter's Innovation Theory and Innovation Theory of Profit are reviewed and stated as pursue.

#### **1. Schumpeter's Innovation Theory**

According to Śledzik (2013), Schumpeter described development as historical process of structural changes and substantially driven by innovation. Innovation is divided into five types such as launch of a new product or a new species of already known product, application of new methods of production or sales of a product, opening of a new market, acquiring of new sources of supplies and new industry structure. Schumpeter argued that anyone seeking profits must innovate. Schumpeter believed that innovation is considered as an essential driver of competitiveness and economic dynamics. Innovation is essential to explaining economic growth. Innovation is creative destruction that develops the economy.

Among other things, innovation includes new product, new methods, new marketing and new industry structure creation & implementations. This theory revealed that innovation has vital role in seeking profits and economic growths. However, it focused more on production industries not financial industry. Thus, even though it was not fully addressed impact of financial innovations on profitability of MFIs, it is input to execute this research.

#### **2. Innovation Theory of Profit**

The Innovation Theory of Profit is advanced by Joseph Schumpeter. In Innovation Theory of Profit Schumpeter believed that an entrepreneur can earn economic profits by introducing successful innovations. This theory suggests that an entrepreneur introduce innovations and get profit in returns. According to Schumpeter, innovation refers to any new policy that an entrepreneur undertakes to reduce the overall cost of production or increase the demand for products.

In reducing the overall costs it suggests that the introduction of a new method or technique of production, new machinery and innovative methods of organizing the industry. To increase the demand for products introducing a new commodity or new quality goods, opening new market, finding new sources of raw material, a new variety or a design of the product, etc.

Accordingly, the innovation theory of profit hypothesizes that an entrepreneur gains profit by introducing successful innovation in reducing overall costs of production or increasing the demand for products. The innovation process continues and the profits continue to appear or disappear. This theory teaches that the innovation practices remarkably contributed to seeking ample profits in production industries. However, it is not fully applicable for MFIs. Hence, using this as starting point it is vital to assess the impacts of Financial Innovation on profitability of MFIs.

#### **2.1.4. Micro Finance Institutions in Ethiopia**

Literally, Microfinance is the provision of financial services to the poor and low-income people, as well as others systematically excluded from the financial service systems. It is the provision of Micro credits, Savings, Money transfers, and Insurances. Microfinance institution is a formal institution whose primary business is providing micro finance financial services. The range of institutional types delivering one or more microfinance services includes a wide variety of NGOs, commercial finance companies, financial cooperatives of various types. Many institutions offer financial services to the poor alongside products targeting more affluent client and not necessarily as a primary business activity (*CGAP Guideline, 2012*). Almost this is fact in Ethiopian MFIs.

In 1849, Hermann S. D. established a credit society to help shopkeepers and urban workers in Germany. On the other way, Friederich Raiffeisen was considered as the German founder of credit cooperatives. Drawing from inspirations of the Raffeisen credit union of rural Germany, the Comilla model of rural cooperatives was initiated in the former East Pakistan (Bangladesh since 1971) by Dr, Akhter Hameed Khan in 1959. Because of Dr. Khan's experience, Bangladesh practitioners on microfinance such as Dr. Mohammed Yunus and Fazle Hassen Abed, a founder and leader of Grameen Bank and BRAC, respectively, were directly targeted the poorest attempting to exclude those who were less poor from village organization<sup>1</sup>

Since 1970s, the NGOs had been delivering relief and development services in Ethiopia. They were directly funding micro credit services as part of their income generating programs or

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<sup>1</sup> Coady International Institute: unpublished Training Manual (2013)

projects. However, it had been found that the NGOs micro credit programs had several problems. To resolve the problems, the Ethiopian government has introduced Microfinance Business Proclamation No.40/1996, to regulate and support microfinance institutions. Hence, most of the donor funded micro credit programs that were carried out by NGOs were transformed into regulated Microfinance institutions. After the issuance of this regulation MFIs are regulated and supervised by National Bank of Ethiopia. Furthermore, the recent Microfinance Business Proclamation No.626/2009 is more elaborates the regulation and supervisions of microfinance business in Ethiopia.

Until 2009, proclamation No 40/1996 was the major law used to regulate and supervise MFIs. This proclamation was replaced by a relatively strong proclamation No. 626/2009 that focuses on maintaining sound and sustainable MFIs. This prudential regulation of MFIs in Ethiopia is relatively enabling development of deposit taking MFIs in Ethiopia, (Wolday, 2008).

The Ethiopia government has giving due attention for poverty alleviation in the country than ever. It has implemented various types of poverty reduction programs like, micro and small enterprise development, access to finance through different donor aid programs and others. In view of that, microfinance is considered as one of the tools for reducing poverty by providing micro credit and deposits services to the excluded population. In Ethiopia locally established NGOs, development related organizations and Regional governments as well as privative business sectors and individuals have involved in the provision of microfinance services. MFIs have been playing vital role in providing financial services and promoting economic development mainly in the rural areas of the country. Recently, there are 38 regulated Microfinance Institutions in Ethiopia. In attention, the researcher has eager to see the practical financial innovation of these MFIs towards their profitability.

### 2.1.5. Profitability Performances of MFIs

According to Beck et al (2013), Africa's microfinance industry has been growing. The continent's total asset increase over the last five years has been in line with a worldwide trend of a growing industry. The financial returns of MFIs are gained by the use of capital and assets employed. The profit level also shows the MFIs' self-sufficiency in relation to covering costs and building its equity. It revealed that MFI have the financial resources to continue serving members and clients tomorrow as well as today (*Micro save, 2008*).

The main objective of MFI is to generate justifiable profitability that assures its stability. Profit is a financial benefit that is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity (*Investopedia*). According to Business Dictionary, profit is the surplus remaining after total costs are deducted from total revenue, and the basis on which tax is computed and dividend is paid. It is the best known measure of success in an enterprise. Profit is reflected in reduction in liabilities, increase in assets, and/or increase in owners' equity. It furnishes resources for investing in future operations, and its absence may result in the extinction of a company. As an indicator of comparative performance, however, it is less valuable than return on investment (ROI). It also called earnings, gain, or income.

In microfinance institutions, profit is equal to Total Incomes minus Total Expenses. Total income includes incomes from interest income from loans, services charges, revenue from investment and other financial revenue. While total expenses include the expenses incurred for interests/fees on deposits & borrowings, loan loss expenses, other financial expenses and operational expenses such as personal & administrative expenses.

In banks and other commercial institutions, the commonest measures of profitability are return on equity (ROE) and return on assets (ROA). ROE measures the returns produced from the owners' equity and ROA reflects the institution's ability to use its assets productively. Furthermore, the profitability and financial sustainability for commercial institutions is measured by return on assets or return on equity. The profitability level financial sustainability for subsidized institutions is measured by financial self-sufficiency (FSS) or adjusted return on assets (AROA) or Subsidy dependence index (SDI).

Among the 18 ratios jointly developed by SEEP members and CGAP for microfinance organizations, the earnings ratios such as return on asset (*ROA*), return on Equity (*ROE*), operational efficiency ratio (*OER*), operational self-sufficiency ratio (*OSSR*) and financial self-sufficiency ratio (*FSSR*) are used as the financial performance indicators of MFIs. Particularly, the profitability is the foremost indicator of financial performance of MFIs that to be given due attentions.

According to Dechasa and Cherinet (2018) financing structure and age of MFIs have significant impact on Profitability of MFIs. The MFIs' profitability determined by various related factors. Capital financing structure, operating expenses and portfolios qualities have great role in profitability of MFIs. Hence, innovative financing structure and delivery process that reduces operational expenses and increases financial incomes as well as innovative financial product that increases the demand of the same is crucial in boosting profitability of financial institutions.

Here, the research question is practically what is the extent of financial Innovation on Profitability of MFIs in Ethiopia? To this end, the financial innovation practices such as institutional structure (*equity financing structure* or Owners' Equity), product innovation (*Credit Product Innovation*, and *Saving Product Innovation*), and Process Innovation that will be measured by *Operating Expenses* were taken as independent variables. Profitability of the MFIs was assessed used as dependent variable in this study.

In conclusion of theoretical reviews, innovation is act of redesigning, creating and implementation of new or significantly improved product, process, a new marketing methods and new organizational method in business practices. Accordingly, financial innovation is the rethinking, creating and implementing new or significantly improved financial products, financial services delivery process, a new financial marketing/methods and innovative organizational/or business structure in financial services practices. The Schumpeter's Innovation Theory and Innovation Theory of Profit are relatively good to use as starting point for this research. Microfinance is the provision of micro credits, savings, money transfers, and Insurances and Microfinance institution is a formal institution whose primary business is providing micro finance financial services.

Profit is equal to total incomes minus total expenses in microfinance institutions. Likewise, it is intended that to see effect of financial innovation on profitability of the same. Moreover, further empirical reviews have made as pursue.

## **2.2. Empirical Review: Financial Innovation and Profitability of MFIs**

Innovation is a broadly positive force within financial services (*World Economic Forum, 2012*). Amabel et al (2018) found that financial innovations collectively are a good measure of profitability of Deposit Taking SACCOs. Furthermore, impacts of financial innovation on Profitability of MFIs are reviewed and presented as pursue.

### **2.2.1. Institutional Innovation of MFIs**

Innovative institutional structure is guarantee for profitability. Financial institutional innovation is act of redesigning, creating and implementing micro financing business structure, which includes innovative ownership structure so as to assure sustainable capital financing structure. Innovative institutional structure is very crucial for proper and success full delivery of micro financing services.

According to Kibugo et al (2016), Institutional Innovations relate to changes in microfinance structures, establishment of new types of financial intermediaries, and changes in the legal and supervisory framework. Organizational innovation positively enhances business performance when they examined organizational innovation, transformational leadership, knowledge management, organizational learning, and organizational performance. Moreover, the creating and implementing new governance and ownership structure and capital financing structure are the most also part of institutional innovation. Poor practices in ownership structure and capital financing system greatly affect profitability of MFIs.

The MFIs in Ethiopia are owned by Regional governments & City Administrations, local NGOs, private individuals, & private business sectors, Commercial Banks, Insurance Companies, Christian churches and other Social development organizations. In cases of Regional Government and NGO or other development organization there is no clear ownership structure. In most MFIs owners were nominal shareholders who have no real financial stake in the institution. There were no dividend share practices and no other stakeholders who have financial

motive interested to involve in nominally owned MFIs. As a result, the MFIs could not issue and sold additional share equity to increase their owners' equity. In addition, the numbers of shareholders are limited to small numbers and their capital is not growing as needed.

The capital of MFIs comes from paid up capital, donations, retained earnings and other capitals. Since, the institutional structure of the MFIs are not established in innovative manner the paid up capital of the same is not increased. Consequently, adequate profits are not registered in some MFIs.

Existing Microfinance institutions whose paid up capital is below 10,000,00 ( Birr ten million) shall raise their paid up capital to the said amount within seven years from the effective date these directives (*NBE, Directives, No. MFI/27/2015*). In order to enforce the MFIs so as to increase their paid up capital National Bank of Ethiopia has issued Directives. However, some MFIs could not fulfill the required amount by newly issued and sold shares. For the purpose of the Directives they have transferred some part of their retained earnings to paid-up capital has not add value to the total capital.

Many of the MFIs in Ethiopia are not-for-profit organizations where ownership is often unclear (Wolday 2008). *Most MFIs in Ethiopia were established customarily not innovatively.* Uniquely the MFIs shareholders in Ethiopia are characterized by *real, nominal* and *both real & nominal* shareholders. The real shareholders are individuals or institutions those processing financial stake in the institutions. The nominal shareholders are the volunteer shareholders who are nominated to hold shares in the institutions for regulatory requirements. The volunteer shareholders do not have financial benefits in the MFIs (*Necho, 2016*). The nominal shareholders were nominal and private investors were not interested to invest in MFIs. Thus, there were weak source of capital financing structure that may have impressions on profitability of MFIs.

### **2.2.2. Financial Product Innovation of MFIs**

MFIs are the formal financial institutions that providing micro financial services such as micro credit, saving, micro insurances and money transferring. Micro financing Product innovation is introduction of new microfinance products that create demands and increases profitability.

If there is innovative financial products the demand for the product will increased and it may has direct effect on profitability of MFIs. The product innovation indeed significantly influences firm performance (*Kibugo et al, 2016*). Improving the financial products or developing new products, (innovations) create additional value, if they reduce households and enterprises' transaction costs of accessing financial services (*Wolday, 2008*).

Product innovation indeed significantly influences firm's performance (*Sidek, 2013 and Kibugo et al, 2016*). In Ethiopia, the main products and services of microfinance institution are loan products, saving products, micro insurance products, and local money transfer services. Loan products are group business loans, individual business loans, rural agricultural loan and consumption loans. Saving products includes Compulsory savings, voluntary savings, Time deposits, Contractual saving, Coin box Savings and child savings. In most MFIs credit life insurance is provided as micro insurance services.

### **1. Credit Products Innovation in MFIs**

Credit products offer clients the ability to borrow money in exchange for an agreement to repay the funds with interest and/or fees at some future point(s) in time. Credit products are working capital loans, emergency and consumption loans, leasing products and housing loans (*Ledgerwood, 2013*). In reviewing credit products, the loan by sector like agricultural loan, trade, manufacturing/ construction loans, services and others are extended by MFIs. Moreover, MFIs provide a variety of loan products such as agricultural loans, micro-business loans, micro and small enterprise loans, employee loans, package loans (food security loans etc), housing loans etc. In Ethiopia, the major loans of MFIs are group loans followed by individual and cooperative loans.

According to Ayana (2003), improving the financial products or developing new products is valuable for MFIs adopting them if they increase their profitability by reducing their costs or increasing revenues. Thus, improvements in credit products improve profitability performance of MFIs. Relatively the MFIs in Ethiopia provide both group and individual loans. However, out of the 27 MFIs only 13 MFIs provided individual loans. Almost all MFIs provided Agricultural loans (*Wolday, 2008*). Product innovations dimensions in terms of new products, improved products, and quality products largely and positively influence firm performance (*Kibugo et al*

2016). It is obvious that if innovative credit products are introduced the demand for the same will increase and profitability of MFIs is escalating.

**Lease Financing in MFIs :** Leasing is a form of financing that allows Businesses or individuals to make use of equipment and other assets without having to own them or purchase them outright at the beginning. The user (the lessee) pays specific regular amounts to the owner (the lessor). Commonly leased assets include machinery (such as plows or shovels), vehicles, farming equipment, and livestock (*Ledgerwood, 2013*).

In Ethiopia MFIs are allowed to providing financial leasing services to peasant farmers, micro and small-scale urban and rural entrepreneurs in accordance with the Capital Goods Leasing Business Proclamation No. 103/1998<sup>2</sup>. Hence, as part of lease financing, some MFIs provide loans to purchase relevant equipment in Ethiopia. This leasing loan product increases outstanding loans of MFIs which is major source of its profits.

**Islamic Financing in MFIs:** Islamic finance is a way of doing financial transactions and financial services by respecting Islamic laws or sharia. The global Islamic banking landscape is well addressed in France, UK, Hong Kong, Dubai, UAE, Singapore, Australia and Malaysia. According to Malaysian International Islamic Financial Center (*MIFC*), rapid expansion is reflected in more than 600 Islamic financial institutions operating in more than 75 countries with total assets of USD one (1) trillion.

In Ethiopia, currently only some Commercial Banks are allowed to provide interest free financial services. However, informally some MFIs are involved in provision of interest free micro financial services. The Islamic credit product encourages Islamic communities to engage in the services and increases the financial performances of MFIs.

## **2. Saving Products Innovation in MFIs**

According to *Ledgerwood (2013)*, deposit products available from regulated providers include current accounts, savings accounts, contractual savings accounts, time deposits, and long-term savings or micro pensions. Saving services from formal providers can improve upon informal services and, in some cases, support increased incomes. In Ethiopia like commercial Banks, all MFIs allowed to mobilize all deposits from the public. MFIs can benefit from providing saving

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<sup>2</sup> Micro-Financing Business, Proclamation 626/2009 Art.3/k.

services. It can earn income from interests income from Commercial Banks and lend it to its customers with lending interest rates. Thus, innovative saving products can increase demand of the same and boost profitability MFIs.

### **3. Micro Insurance in MFIs**

Micro insurance is much younger than other financial services for the poor. It is emerging as a complementary tool to help low-income people manage risks more effectively. Micro insurance products can be broadly classified into five primary categories: life, health, property, agriculture, and composite (*Ledgerwood, 2013*). However, only, credit life insurance was provided by some MFIs in Ethiopia.

In general, the credit product, saving products and Micro insurance product innovation and other financial innovation practices like leasing loans, housing loans, Islamic finance and energy loans increase customers demand so as to boost profitability.

#### **2.2.3. Financial Process Innovation of MFIs**

Delivery channel refers to the mechanism by which financial services are delivered to clients and is distinct from both the product and the provider (*Ledgerwood, 2013*). According to NBE Directives No. FIS/01/2012, use of technology and innovative financial service delivery channels such as mobile devices and agents have significant contribution in deepening financial service accessibility to the wider section of the population at an affordable price. Process innovations include financial delivery process such as Mobile and Agent Banking, Internet Banking, AMT, credit & debt cards and POS Machines that easy to deliver financial services at cost effective.

Process innovation is creating and implementing of new micro financing business delivery system that brings stable efficiency and profitability. Some researchers (*Mabrouk, Mamoghli & Kibugo et al*) had been stated that if process innovation is continued and new technologies are introduced then innovative banks continue to earn high profits. According to Salome M. et al (2015), SACCOs which utilize telephone banking are more likely to be profitable than those who do not embrace it. In addition, SACCOs which utilize internet banking are more likely to perform well financially than those who do not. Financial innovation leads to better financial performance through enhanced service delivery, improved customer convenience, and

satisfaction as well as increases geographical coverage and reach to previously unbanked population.

Amabel et al (2018) have concluded that the SACCOs to adopt financial innovations strategies to enhance efficiency in all their operations to boost profitability and expand their market share focusing on firm characteristics as a competitive advantage. Process enhances speed and quality result to flexibility and cost efficiency (*Kibugo et al, 2016*). The use of financial innovations, which include the use of credit cards, mobile banking, internet banking and agent banking, has had great impacts on the financial performance of Commercial Banks in Kenya (*James Ngari, 2014*).

It is obvious that innovative financial delivery process such as mobile Banking, Agency Banking, Internet Banking, Credit Cards, POS machines, and ATM accelerates the delivery of financial services at cost reduction platforms. Accordingly, in Ethiopia commercial banks and some MFIs are allowed to provided Mobile and Agency Banking services as per of NBE Directives No/ FIS/01/2012. These innovative financial delivery systems expected to augment reduction of operational expenses that in return increases the profitability of MFIs.

In conclusion, of empirical reviews, it is outlined that as part of financial innovation the owner's structure/equity, Credit, Saving and Insurance products, Process (i.e. operational expenses) and other factors could influences profitability of MFIs.

### **2.3.Research Gap and Conceptual Framework of the Study**

#### **2.3.1. Research Gap**

Financial Innovation is the redesigning, creating, and implementing of innovative institutional structure, financial products, financial process that add lucrative values. It was expected that the financial innovation practices such as institutional innovation, product innovation, process innovation and marketing innovation imposes influences profitability of MFIs.

The *Institutional*, *Product*, and *Process* innovations were addressed in this research. As part of institutional innovation, the capital financing structure /owners' equity was used. The innovative way of product designing such as credit product innovation, saving product innovation and Micro insurance services innovations boosting profitability.

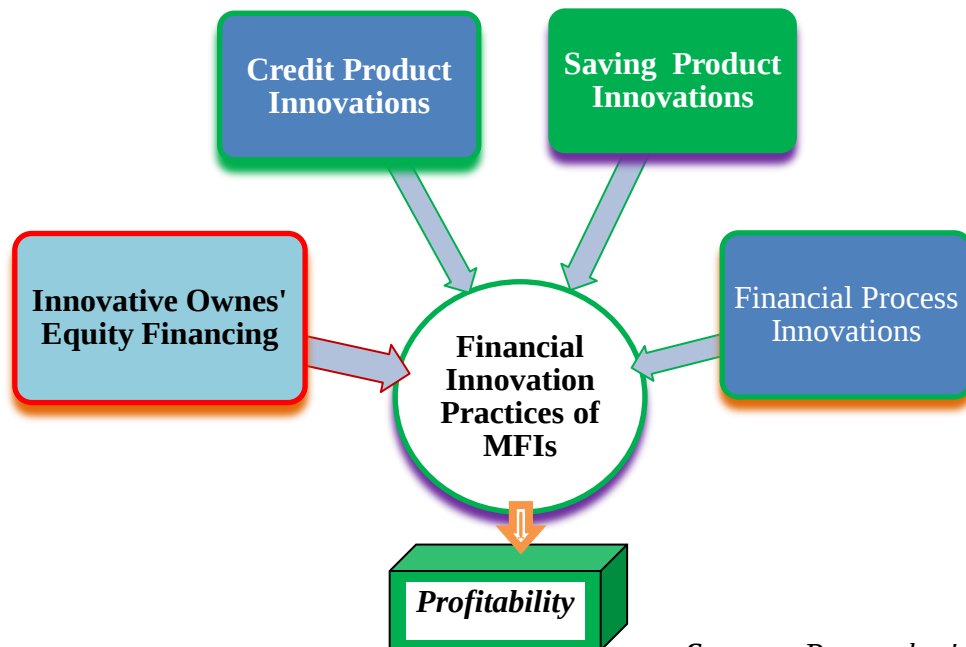
There are weaknesses in credit & saving products, process and institutional or ownership structure innovations that may affect profitability of MFIs. Scholars or local researchers do not examine financial innovation towards Profitability of MFI in Ethiopia. Sufficient researches were not conducted on the subject this study was carried out to fill the gap. Here, the assessment is to address influence of improvements in Owners' equity capital, outstanding loans, total deposit, and operational expenses on profitability of MFIs as a result of respective financial innovations.

### **2.3.2. Conceptual Framework of the Study**

The study has addressed the Financial Innovation toward Profitability of MFIs. In effect, financial innovation practices such as owners' equity finance structure, credit product, saving product and process innovations were taken as independent variables. The Profitability specifically annual net income of the MFIs was used as dependent variable.

Since there is no completely fit theory to this study, it is better to develop conceptual framework of the study. Thus, based on theoretical and empirically reviewed literatures as well as the researcher's view on Financial Innovation and Profitability of MFIs the researcher has developed the following conceptual framework of the study.

*Figure 2:1: Conceptual Framework of the study*



*Source: Researcher's own view*

## CHAPTER THREE

### III. Research Methodology

This research is to assess Financial Innovation Practices of MFIs particularly on their profitability. To this end, the study has been conducted on each Financial Innovation variables as designed on conceptual framework. Accordingly, this section presents the methodology that was used in the study. It includes operational definition of variables, data sources, research design, target population & sample size, data collection and data analysis methods.

#### 3.1. Operational Definition of Variables

In this study, the key words are Financial Innovation, Profitability, MFIs and Ethiopia. Ethiopia is the country, which is located in East Africa where the researcher aimed to conduct the study. Microfinance Institutions are formal financial institutions that provide micro credits, deposits, and micro insurance services in Ethiopia. Financial Innovation practices in MFIs include institutional, product and process innovations. Profitability is the positive financial performance of MFIs. The researcher has used more quantitative and qualitative data to verify the study. The Financial innovation Practices were used as independent variable to determine trends of profitability. Here, as stated on Figure 2.1, independent variables such as institutional innovation measured by owners' equity capital, Credits products (Total credit), saving products (Total Saving) and process innovation (measured by improvement of Operational expenses) were assessed to know their effects on profitability of MFIs which was seen as dependent variable

#### 3.2. Research Design and Model Specification

The inferential research design was used in this study to assess Financial Innovation practices on profitability of MFIs. The quantitative method of study was conducted in order to find out the relevant information on financial innovation that affects profitability performance of MFIs. The qualitative study was also taken into account to drawn the relationships between the variables and as cross sectional to obtain the current and updated data on the study. This was enabling the researcher to conduct an in-depth survey.

Since the research method is quantitative or mixed, dependent variable is profitability of the institution from income statement. Independent variables are innovative Owners' equity capital, Credit products, saving products and process innovation that was measured by reduction in

operational expenses. Credit product innovation measured by Total Credits (TC) from balance sheet. Saving product innovation assessed using (Total Saving) from balance sheet. Process innovation assessed in terms of reductions in operational Expenses. Accordingly, the regression model for this study was designed as follow.

$$\Delta \text{Log PR}_{it} = \alpha_{0it} + \alpha_{1it} \Delta \text{Log TC}_{it} + \alpha_{2it} \Delta \text{Log TS}_{it} + \alpha_{3it} \Delta \text{Log EC}_{it} + \alpha_{4it} \Delta \text{Log OE}_{it} + E_{it}$$

- $\Delta \text{Log PR}_{it}$  : Percentage (logarithm) change of Profit of the institution over a given time periods
- $\Delta \text{Log TC}_{it}$  : Percentage (logarithm) change of Total Credits of the institution over a given time periods
- $\Delta \text{Log TS}_{it}$  : Percentage (logarithm) change of Total Saving of the institution over a given time periods
- $\Delta \text{Log OE}_{it}$  : Percentage (logarithm) change of Operational Expenses as result of process innovation over a given time periods
- $\Delta \text{Log EC}_{it}$  : Percentage (logarithm) change of Equity Capital of the institution over a given time periods
- $E_{it}$ : Error terms
- $\alpha_{1it}$ -----  $\alpha_{5it}$ : coefficients of variables over time periods

### 3.3.Target Population and Sample Size

The target population of this study is all Microfinance institutions licensed by National Bank of Ethiopia, and operating in Ethiopia. Currently, 38 Microfinance Institutions are licensed to provide micro financing services in the country. Among which the four were new. This survey was considering all the target population. In effect, the consolidated industry level numerical data and audited financial statements were collected from NBE to enable the researcher in examine practices of Financial Innovation of MFIs.

The data were collected from Microfinance Institutions and enabled the researcher to examine Financial Innovation practices of MFIs. Among 34 MFIs, sample sizes of 16 Microfinance institutions were considered. The MFIs are very different in size and ownership structures. For convenience, the target populations are clustered into groups of MFIs, i.e. large (group 'A'), medium (group 'B') and small (group 'C'). In procedure, a purposive sampling was used to select the sampled MFIs. The table below shows the target population and sample size for each clustered target population for the study focuses

**Table-3.1:** Sample size Distributions

| No | MFIs                   | Population | Sample | n/N, (%) |
|----|------------------------|------------|--------|----------|
| 1  | Big MFIs (A group)     | 5          | 2      | 40       |
| 2  | Medium MFIs ( B group) | 13         | 7      | 54       |
| 3  | Small MFI (C group)    | 16         | 7      | 44       |
|    | Total                  | 34         | 16     | 47       |

*Source: Researcher's plan*

Accordingly, the consolidated industry level data and audited financial statements were collected from NBE and used as input for the study.

### **3.4. Data Collection Techniques**

In order to address the objectives of the study, it was planned to use data collection instruments such as quantitative data collection, open ended questionnaires and document reviewing techniques.

#### **3.4.1. Quantitative Data Collection**

The researcher has used panel data to analysis the influences of financial innovation on profitability of MFIs. Among other things, equity capital or shareholders' equity was collected to assess the institutional innovativeness. To assess credit and saving innovations outstanding loan and total deposit were collected, respectively. Furthermore, operational expense was considered so as to see the role of process innovation in improvement of profitability. To this end, outstanding loan, Total deposit Equity capital, Operational Expense, and Profit were collected from NBE and audited financial statement of the respective MFIs.

#### **3.4.2. Questionnaires**

In order to get further information for the study, among 34 MFIs, sample of 8 MFIs' Operation Department Manager or general managers (GM) and 8 NBE; Microfinance Institutions Supervision Directorate's Principal & Senior supervisors were selected randomly. The open ended questionnaire was distributed to sampled 8 NBE principal & senior staffs (MFISD) and 8 Sampled MFIs' Operation Department Managers. This is to get balanced responses from these relevant respondents. Thus, 16 responses were collected adequately and used as qualitative information.

### **3.4.3. Documentary Reviews**

The numerical and non-numerical data on the same was collected systematically. In addition, secondary data sources were reviewed to quantify the quantitative data and qualify the qualitative study. The additional data were also obtained especially from annual reports, websites of respective MFIs, and others. In addition, other areas including written articles, relevant regulations & laws, policy & procedures, related books, pamphlets, internets, journals and other reliable sources were used while collecting data/information and analysis as well as interpreting the results.

### **3.5. Data Analysis and Discussions**

The collected data were compiled and analyzed. The obtained data from panel data, relevant respondents, and reviewed documents were properly support it each other. The simple analyze tools like spreadsheets and excel were used to compiled and simplified data for analyze and discussions. Eviews tool was used to scientifically analysis the effect of financial innovation on Profitability of MFIs. The basic econometrics assumptions were analyzed to assure the validity and relevance of the specified model for this study.

An analyzed data were presented in vivid and easily understandable way. The variables were analyzed and disused separately thereby noted findings in good manner. Based on the results and findings conclusion and consequent recommendations were forwarded to the related stakeholders and future researchers in the next chapter four and chapter five.

## CHAPTER FOUR

### IV. EMPIRICAL RESULTS AND ANALYSIS

Financial innovation involves forming of new institutional structure, new financial products and new financial service delivery systems i.e. institutional, product, and process innovations. In broad sense, financial innovation can create innovative institutional structure that boosts its profitability. It helps to reduce operational costs/expenses, facilitate risk sharing, and accelerate economic growth. Particularly, financial innovation is an engine for profitability of financial sectors. MFIs are one of the financial sectors. All MFIs in Ethiopia are regulated by prudential regulation. A strong financial innovation practice contributes to strong profitability status of MFIs, which in return contributes to stability of the sector. Otherwise, the weakness in financial innovation practices may leads to insolvency.

Hence, the aim of this research is to assess the financial innovation MFIs towards their profitability in Ethiopia. Accordingly, this part incorporates detail empirical results and analysis of the same. Mainly, Data Validity and Reliability, Diagnostic Tests of the Regression Model, and Elaborative Discussions of the findings in view of each independent variables & dependent variable are addressed in vivid manner.

#### 4.1. Data Validity and Reliability

The data sources and quality of the study was very trusted. In order to get a validate and relevant data for the purpose of the study, the target populations were clustered into groups of MFIs, i.e. large, medium and small groups that are refereed as Group A, B, and C, respectively. A purposive sampling method was used to obtain data of the sampled MFIs from the clustered groups. All MFIs are genuinely included.

The sampled of 16 MFIs, which are accounted for 47% of MFIs in Ethiopia, were selected. The 8 years audited data of the respective sample MFIs was collected. Hence, the number of observations for the study is increased to 128 (i.e.  $16 \times 8$ ). Accordingly, the researcher has believed that these sampled MFIs were remarkably represented all MFIs in Ethiopia and validate to assess and discuss on the Financial Innovation towards Profitability of MFIs in Ethiopia.

The relevant data was collected and consolidated in accurate and relevant manner. The proposed sample size was adequately addressed. The audited financial statements of Microfinance sector are collected from National Bank of Ethiopia, Microfinance Institutions Supervision Directorate. Likewise, among the stratified MFIs, the sampled MFIs are purposively identified to consolidate the value of variables expected to measure financial innovation of MFIs. As promised the variables taken into consideration in this study are Credit product innovation that measured by total outstanding loans, Saving product innovation that measured by Total Deposit, Financial Process innovation that seen by reduction of operational expenses and institutional innovation that that measured by innovative equity capital of MFIs.

Thus, Total Credit (TC), Total Saving (TS), Operational Expense (OE) and shareholders' Equity Capital (EC) were taken as independent variables and Profitability (PR) was taken as dependent variable. In addition, qualitative responses were collected from eight NBE senior staffs and eight managers of MFIs using questionnaires.

Accordingly, the expected data were reliably collected and consolidated for the purpose of analysis. It was appreciated that all the sampled MFIs have full data on the expected variables that enable the researcher to ensure the objectives of the study. Hence, the data collected from relevant source on the sample MFIs were very genuine and relevant to analyze and discuss on empirical results of the study

#### **4.2.Diagnostic Tests of the Regression Model**

Accurate data alone could not provide accurate study results. A precise data collected from relevant source needs appropriate statistical tool and regression method to generate appropriate output and genuine finding results. Likewise, after reviewing various statistical tools the researcher has believed that Eviews software is appropriate for the study. According to Brooks (2014), Eviews is a simple to use, interactive econometrics software package providing the tools most frequently used in practical econometrics. Hence, since Eviews is built around the concept of objects with each object having its own window, its own menu, its own procedure, and its own view of the data the researcher has opt to use it in this study.

Regarding to the data type among the three types of data such as time series, cross sectional and panel data, the type of data employed in this study is panel data. Panel data is a data set that containing time series and cross sectional elements or entities. It addresses broader range of issues and tackles more complex problems than time series and pure cross sectional data alone (Brooks, 2014). On the other hand, the MFIs in Ethiopia are at emerging ages and have no long time data that enable the researcher to deploy time series data.

Hence, due to its more benefits and applicability, panel data was used in this study. In effect, the sample of 8 years (from June 2011 to June 2018), data was taken in cross sectional on sampled 16 MFIs. Accordingly, the data was prepared in convenient forms to Eviews software so as to produce the desired results to meet the objectives of the study properly. Particularly, the fixed effect panel method was used. Moreover, based on the relevant input /data entered the regression outs and required results were produced and tested as pursue.

In addition to data relevancies and good descriptive statistics of variables, it is important to test appropriateness of the specified model. Likewise, this part describes Descriptive Statistics of Variables, Goodness of fit statistics, and significances of variables and notion of residual diagnostic tests. Furthermore, the random effect vs fixed effect determination for the study was elaborated as pursues.

#### 4.2.1. Descriptive Statistics of Variables

The mean value tells about average and percentage value of dependent and independent variables such as Profitability, Total Credits, Total Saving, Equity Capital, and Operational Expense. Standard deviation was used to analysis the variations in variables. To make dynamic model that is more accurate and error free the researcher used the differenced natural logarithm of these variables.

**Table 4.1: Descriptive Statistics of Variables**

|           | <b>Log(PR)</b> | <b>Log(TC)</b> | <b>Log(TS)</b> | <b>Log(EC)</b> | <b>Log(OE)</b> |
|-----------|----------------|----------------|----------------|----------------|----------------|
| Mean      | 0.16           | 0.21           | 0.21           | 0.29           | 0.22           |
| Median    | 0.17           | 0.20           | 0.22           | 0.20           | 0.24           |
| Maximum   | 3.52           | 3.28           | 1.30           | 4.66           | 1.60           |
| Minimum   | -1.94          | -1.37          | -0.69          | -2.26          | -1.26          |
| Std. Dev. | 0.60           | 0.46           | 0.28           | 0.83           | 0.37           |

**Source:** Own Computation using Eviews 10

The average percentage of profitability for sample MFIs was 0.16, with maximum and minimum value of 3.52 and -1.94, respectively. Its standard deviation was 0.60 from the average value of 0.16. Here, the standard deviation of 0.60 suggests that there is small depression in the profitability of sample MFIs.

The explanatory variables are total credit, total saving, equity capital, and operational expenses. The average percentage of outstanding loan was 0.21 with minimum and maximum 3.28 and -1.37, respectively. Its standard deviation indicates that the percentage change of outstanding loan of the sample MFIs varies by 0.46 from the average percentage of 0.21. The standard deviation of 0.46 suggested that there is no wide dispersion in the percentage change of outstanding loan of sample MFIs.

Regarding to percentage of savings, the average percentage change of total saving was 0.21 with maximum and minimum 1.30 and -0.69, respectively. Its standard deviation indicates that the percentage change of total savings of the sample MFIs varies by 0.28 from its mean percentage of 0.21. The standard deviation of 0.28 suggested also that there is no wide dispersion in the percentage change of deposits of sample MFIs.

Pertinent to equity capital value that assumed to measure institutional innovation of MFIs, the average percentage change of equity capital of sampled MFIs was 0.29 with maximum and minimum 4.66 and -2.26, respectively. The standard deviation indicates that the percentage change of equity capital of the sampled MFIs varies by 0.83 from the average percentage of 0.29. Hence, the standard deviation of 0.83 suggested also that there is no wide dispersion in the percentage change of Equity Capital of sampled MFIs.

Concerning to operational expense that assumed to measure process innovation of MFIs, the average percentage change of operational expense of sampled MFIs was 0.22 with maximum and minimum 1.60 and -1.26, respectively. The standard deviation indicates the percentage change of operational Expense of the sampled MFIs varies by 0.37 from the average percentage of 0.22. Hence, the standard deviation of 0.37 suggested that there is small dispersion in the percentage change of operational Expense of sampled MFIs.

In general, the descriptive statistics of the considered variables revealed that the percentage change of total credit, total saving, equity capital, and operational expenses were positioned at good mean and median values. Furthermore, the standard deviations of all variables from their mean were very small and indicate that variables are very crucial for the study.

#### **4.2.2. Goodness of fit Statistics and Significances of Variables**

Goodness of fit statistics are available to test how well the sample regression function fits the data that is, how close the fitted regression line is to all of the data points taken together. The most common goodness of fit statistic is known as  $R^2$ , (Brooks, 2014).

In effect, as it can be seen from Figure 4.1, the value of  $R^2$  and Adjusted  $R^2$  for the specified regression model for this study are 0.65 ( 65%) and 0.59 (59%) , respectively. Which means 65% of the variation in profitability of MFIs was explained by independent variables (i.e. financial innovation). On the other hand, only 35% of variation in profitability was due to other factors that were not included in this study. The adjusted  $R^2$  (59%) which measures how well the model fits the data by taking into account the loss of degree of freedom associated with adding extra variables to test the model was also positioned at very good position and revealed that the model is fits all requirements properly.

As summarized on Figure 4:1 below the probability value of all independent variables are significant and t-statistics shows all variables are very significant for the study. Furthermore, the joint significance of the same was excellent. F-Statistic depicted that overall variables were jointly significant.

The correlation coefficients of all explanatory variables and dependent variable were shown good and economically expected sign of coefficient relationship. In this study, outstanding loan, deposits, and equity capital were positively and significantly correlated with profitability of the MFIs. Normally, operational expense was negatively and significantly correlated with profitability of MFIs.

The variables are significant, and the model was adequately describes the data. Therefore, it is pleasure to conclude that Financial Innovations have a significant effect on Profitability of MFIs in Ethiopia.

#### 4.2.3. Residual Diagnostic Tests

Brooks (2014) suggests critical assumptions that must be met before utilizing OLS estimation model. The test should be made to validate the hypotheses and estimation coefficients. Thus, even though the panel data with cross sectional weight was used to estimate the model in this model rather than Time series data, the researcher has made relevant residual Diagnostic Tests as follow.

##### A. Serial Correlation Test

This is to test the notion of no serial correlation or autocorrelation among the disturbances.

**Ho:** No Serial Correlation among disturbance terms

**H1:** There is Serial Correlation among disturbance terms

It is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are autocorrelated or that they are serially correlated. A test of this assumption is therefore required (Brooks, 2014). Hence, to define good regression model, it is expected that error terms are uncorrelated with one another.

In effect, since panel method was used in the study Durbin Watson (DW) Test Statistics relevant critical value is used to test uncorrelated disturbance terms in the model. In practice, the DW test stat value of the regression was 2.5. Considering the number of observations and number of explanatory variables of the study the DW relevant lower critical value (dL) and relevant upper limit critical value (dU) are 1.4 and 1.7, respectively. Hence,  $4-dL = 2.6$  and  $4-du = 2.3$ . In comparing the DW test, stat. the value of 2.5 was clearly between the two critical values. This is revealed that there is no evidence for the presence of serial correlation among errors terms.

As a result, the null hypothesis of no autocorrelation among disturbance terms was not rejected and concluded that the model is almost respectable.

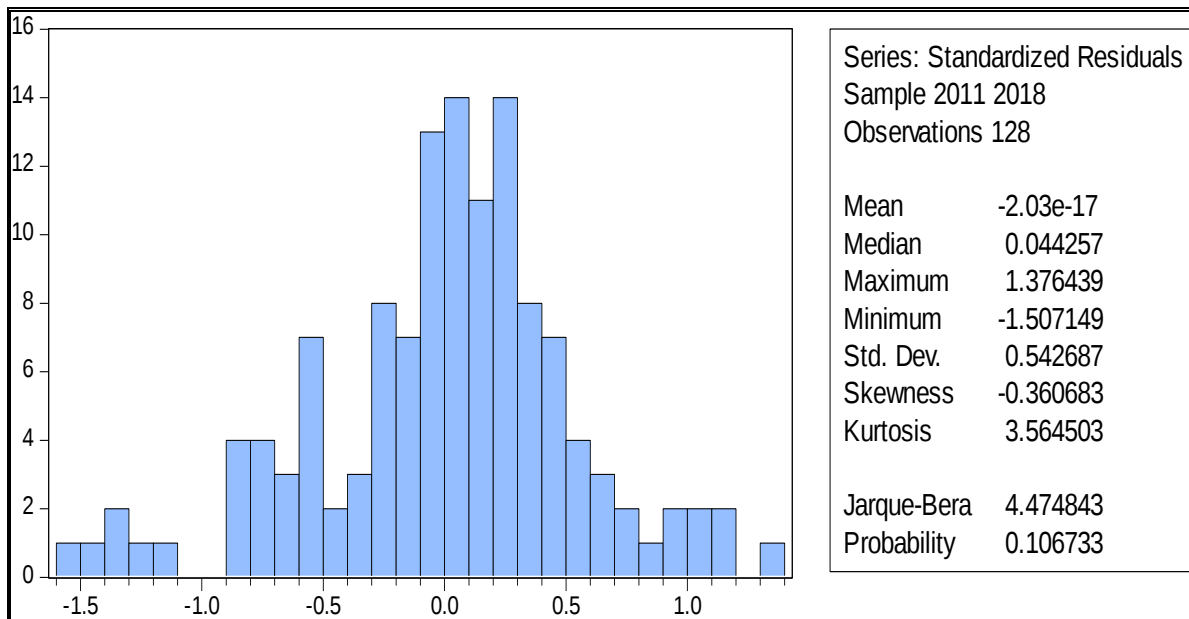
##### B. Non Normality Test

In good regression model, the residuals are normally distributed. In most cases, this assumption is tested by Jarque Bera test statistics. It is also used in this study as follow.

**Ho:** Residuals are normally distributed

**Ha:** Residuals are not normally distributed

Figure 4.2: Normality Test



Source: Own computation using Eviews 10

The statistic has a  $\chi^2$  distribution with two degrees of freedom under the null hypothesis of normally distributed errors. If the residuals are normally distributed, the histogram should be bell-shaped and the Bera–Jarque statistic would not be 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 (Brooks, 2014).

Accordingly, the above Figure 4.2, revealed that the p-value of JB test stat was about 0.11 or 11% (i.e. bigger than 0.05). Hence, the null hypothesis of residuals is normally distributed was not rejected.

Moreover, according to Brooks (2014) Kurtosis measures the fatness of the tails of the distribution and how peaked at the mean the series is. A normal distribution is defined to have a coefficient of kurtosis equal to 3. It is possible to define a coefficient of excess kurtosis, equal to the coefficient of kurtosis minus 3; a normal distribution will thus have a coefficient of excess kurtosis of zero. In view of that, the skewedness that measure the extent to which a distribution is not asymmetric about its mean value and the kurtosis that measure how far the tails of the distribution were also almost shown good normally distribution position.

Consequently, it is clear that the value of JB test stat was insignificant and the null hypothesis of residuals are normally distributed is not rejected. Thus, disturbances are normally distributed around the mean and assured that the quality of the model is good.

### C. Multicollinearity Test

In OLS estimation method explanatory variables are not correlated with one another and testing for multicollinearity is surprisingly difficult, and hence all that is presented here is a simple method to investigate the presence or otherwise of the most easily detected forms of near multicollinearity (Brooks, 2014). Multicollinearity exists when one or more explanatory variables are highly correlated each other's in the regression model. To this end, correlation matrix was used to test multicollinearity of independent variables.

**Table 4.2.: Correlations Matrix for Explanatory Variables**

| Variables | Log(OL) | Log(TD) | Log(EC) | Log(OE) |
|-----------|---------|---------|---------|---------|
| Log(TC)   | 1       |         |         |         |
| Log(TS)   | 0.31    | 1       |         |         |
| Log(EC)   | 0.34    | 0.06    | 1       |         |
| Log(OE)   | 0.39    | 0.01    | 0.19    | 1       |

*Source: own computation (Eviews 10)*

The explanatory variables under consideration for this study are Total Credit, Total Saving, Equity Capital, and Operational Expense. These variables are supposed to be independent to on each other or statistically unrelated to each other. The above table 4.2 depicted good correlations of explanatory variables. Fortunately, the correlations of explanatory variables were very good and there was no multicollinearity evidences in the model used for analysis and discussions.

### D. Heteroscedasticity Test

Heteroscedasticity is occurred where the variance of a series is not constant throughout the sample (Brooks). The Eviews 10 is not allowed to test heteroscedasticity. However, since the study was employed panel data this problem is not occurred in the regression. Moreover, the specified model is used differenced natural logarithm of the variables.

Taking a logarithm can often help to rescale the data so that their variance is more constant, which overcomes a common statistical problem known as heteroscedasticity (Brooks, 2014). Thus, there was no the heteroscedasticity problem in the regression model.

#### 4.2.4. Fixed Effect Versus Random Effect Test

The pooled OLS estimator ignores the panel structure of the data and simply estimates. Pooled model does not distinguish varies MFIs. It assumes as the same institutions and denies the heterogeneity or individuality among 16 MFIs. Thus, pooled OLS model is not appropriate for this study.

Fixed effect model allows for heterogeneity or individuality among the given samples by having its own intercept value, but the intercept does not vary over time. In random effect model, the sampled MFIs have common mean value for the intercept. Therefore, it is important to determine whether the fixed effect or random effect approach is appropriate.

The commonly the Hausman test is running to select among random effect or fixed effect model.

Table 4.3: Correlated Random Effects - Hausman Test

**H<sub>0</sub>**: Random Effect model is appropriate

**H<sub>1</sub>**: Fixed effect model is appropriate

| Correlated Random Effects - Hausman Test |                      |              |               |
|------------------------------------------|----------------------|--------------|---------------|
| Equation: FI                             |                      |              |               |
| Test cross-section random effects        |                      |              |               |
| Test Summary                             | Chi-Sq.<br>Statistic | Chi-Sq. d.f. | Prob.         |
| Cross-section random                     | 11.609044            | 4            | <b>0.0205</b> |

*Source: Own computation using Eviews 10*

The result of Hausman test as shown on above table is depicted that the p-value of the test summary is 0.020. Thus, the null hypothesis of random effect model is appropriate is rejected and the alternative hypothesis of fixed effect model is appropriate is accepted.

Generally, all the above tests prove that the result obtained from the regression model of the study are consistent, free from bias, and efficient. For convenient the summary of the opted regression model out was presented in the Figure 4.1.

**Figure 4.1: Regression Output, Financial Innovation towards Profitability of MFIs**

| Dependent Variable: Dlog(PR)                      |             |                    |             |        |
|---------------------------------------------------|-------------|--------------------|-------------|--------|
| Method: Panel EGLS (Cross-section weights)        |             |                    |             |        |
| Date: 05/15/19 Time: 21:50                        |             |                    |             |        |
| Sample: 2011 2018                                 |             |                    |             |        |
| Periods included: 8                               |             |                    |             |        |
| Cross-sections included: 16                       |             |                    |             |        |
| Total panel (balanced) observations: 128          |             |                    |             |        |
| Linear estimation after one-step weighting matrix |             |                    |             |        |
| Variable                                          | Coefficient | Std. Error         | t-Statistic | Prob.  |
| C                                                 | 0.055326    | 0.028340           | 1.952216    | 0.0535 |
| Dlog(TC)                                          | 0.218187    | 0.040193           | 5.428490    | 0.0000 |
| Dlog(TS)                                          | 0.383982    | 0.092251           | 4.162363    | 0.0001 |
| Dlog(EC)                                          | 0.041575    | 0.014251           | 2.917260    | 0.0043 |
| Dlog(OE)                                          | -0.313604   | 0.058793           | -5.334019   | 0.0000 |
| Effects Specification                             |             |                    |             |        |
| Cross-section fixed                               |             |                    |             |        |
| Weighted Statistics                               |             |                    |             |        |
| R-squared                                         | 0.653307    | Mean dependent var | 0.311603    |        |
| Adjusted R-squared                                | 0.592315    | S.D. dependent var | 0.939103    |        |
| S.E. of regression                                | 0.588490    | Sum squared resid  | 37.40267    |        |
| F-statistic                                       | 10.71132    | Durbin-Watson stat | 2.528299    |        |
| Prob(F-statistic)                                 | 0.000000    |                    |             |        |

*Source: own computation (Eviews 10)*

### 4.3. Elaborative Discussions of Findings

Innovation is the process and outcome of creating something new with value. Financial innovation is the creation of new financial products (Credit, saving and insurance), better process, and efficient systems. It may be improvement of the existing products and working process to meet the demand of relevant customers. Financial innovation in MFIs is becoming the hot and continuous activities. Microfinance is innovative financial service itself, which is created to serve the populations that are not addressed by conventional banking systems.

Hence, the MFI's financial products are innovative products that fit and create value for low-income population. Financial innovations in MFIs come from different part of the world. The Ethiopian MFIs are take part in adopting and using these innovations. The poverty reduction and financial inclusion issues are enforces Ethiopian MFIs to adopting /or creating and using new financial products, better process or programs and efficient systems.

As discussed above all assumptions prove that the developed regression model for this study is excellent. The R-square that measure the goodness of fit of explanatory variables in explaining the variation in dependent variable (i.e. profitability of MFIs) was positioned at 65%. Thus, all explanatory variables such as outstanding loan (credit product innovation), Total deposits, (Deposit product innovation) equity capital (institutional innovation) and operational expenses (process innovation) are collectively explained by 65 percent change in profitability of MFIs in Ethiopia. Only 35 percent of change is explained by other factors not included in the study. The p-value of t- statistic and f- statistic of the explanatory variables were far less than 0.05. Hence, the individual and joint significance of explanatory variables were excellent.

Furthermore, the objectives of the study was achieved by assuring the model specification as follow.

#### Model Specification

$$\Delta \log(\text{Pr}_t) = \alpha_{0it} + \alpha_{1it} \Delta \log(\text{TC}_{it}) + \alpha_{2it} \Delta \log(\text{TS}_{it}) + \alpha_{3it} \Delta \log(\text{EC}_{it}) + \alpha_{4it} \Delta \log(\text{OE}_{it}) + E_{it}$$

=====

#### Estimation Equation:

$$\text{DLOG}(\text{PR}) = \text{C}(1) + \text{C}(2) * \text{DLOG}(\text{TC}) + \text{C}(3) * \text{DLOG}(\text{TS}) + \text{C}(4) * \text{DLOG}(\text{EC}) + \text{C}(5) * \text{DLOG}(\text{OE}) + [\text{CX} = \text{F}]$$

=====

### Substituted Coefficients:

$$\text{DLOG}(\text{PR}) = 0.055 + 0.218 * \text{DLOG}(\text{TC}) + 0.383 * \text{DLOG}(\text{TS}) + 0.041 * \text{DLOG}(\text{EC}) - 0.313 * \text{DLOG}(\text{OE}) + [\text{CX}=\text{F}]$$

=====

The substituted coefficients are perfect and all explanatory variables are significant. Thus, the researcher has heading for explaining all variables in elaborative manner. Accordingly, the effect of Credit product innovation, saving product innovation, institutional innovation, and financial services process innovation on Profitability of MFIs was disused as pursue.

#### 4.3.1. Credit Product Innovation and Profitability of MFIs

The MFIs provides credit, saving and micro insurance services to the respective population. Over time, there were new creations, innovations, and redesigning to improve the existing financial products in MFIs.

Credit is the most activity of MFIs. As a financial sector, the major work of MFI is extending credit to the relevant customers. It is also fact in Ethiopia. Even though the characteristics of clients of MFIs are different from convectional banks, MFIs are empowered to provide credit to the population. In Ethiopia all regulated MFIs evolved in extending of credit on return basis. In return, they secure returns in the forms of lending interest rate and services charges. The cash collected from loan client in the form of loan repayment, lending interest rate, service charge and others are income (profit) for the MFIs.

As part of credit innovation, Ethiopian MFIs were extended various types of loan products. It was assumed that the MFIs which have highest outstanding loan balances were employed credit innovation practices. In most Ethiopian MFIs, interest income from loan was the foremost source of income. The MFIs, which have low outstanding loan, were reported low income or losses over time. Thus, credit is unreserved backbone of MFIs.

Similarly, the regression results of the study indicates credit innovation has positive relationship with profitability of MFIs and very significant at 5% (i.e. the p-value was 0.000). The percentage change of credit innovation changes the percentage of profitability of MFIs by 0.218. To this end, it was concluded that Credit Product Innovation is positively and significantly affect the

Profitability of MFIs in Ethiopia. This result goes with the specific objective that states credit innovation affects profitability of MFIs.

This result is consistent with some empirical studies. In instance, there is a positive relationship between product innovation and performance of microfinance institutions (Kibugo and Kimani, 2016).

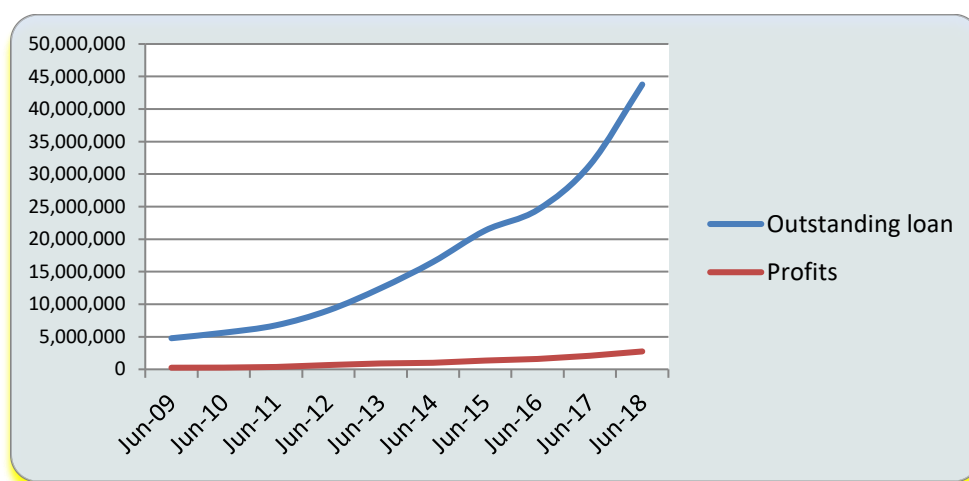
Based on Proclamation No. 626/2009, that empowers MFIs to extending credit to rural and urban farmers and people engaged in other similar activities as well as micro and small-scale rural and urban entrepreneurs; MFIs have provided various credit products. Accordingly, in Ethiopia the loan products of MFIs are agricultural loan, individual micro business loan, SME loans, employee loan or consumption loan, package loans (food security, irrigation, modern bee farming, dairy cow, poultry, etc), leasing loan, housing loan, clean energy loan and others.

The credit products have different name in different MFIs such as regular loan, agricultural input loan, civil servant loan, rural package loan, urban package loan, business loan, housing loan, cooperatives loans, etc; as defined by their policies and procedural manuals of the respective MFIs. These loans also provided in various sectors such as Agricultural, Trade, Manufacturing, Consumptions, and Services loans.

In most cases, MFIs have made maximum efforts to redesign, adopt and create relevant credit products for the target clients. Innovatively appropriate loan size, repayment schedules, and loan cycles/ due date and collaterals were put in place.

As depicted in the next Figure 4.3, these innovatively created and adopted credit products have been increased the value of outstanding loans eventually. Accordingly, the profit of MFI sector was increased.

**Figure 4.3:** Trends of outstanding loan over 10 years against Profit of MFIs



**Source:** Own computation using MFI Sector Data

The lending methods of MFIs are group-based systems under which the loan clients are grouped in respective groups. The loan groups are joined together and create center. A loan client group is a collection of individual clients and the loan client center is a collection of loan client groups. The groups used as group guarantees and secure loan repayments. The group lending methods are adopted from other world and effectively working for Ethiopian MFIs. This is the lending methods found in MFIs not banks. As a demand for large loans become existed, the individual graduating loans are extended to individual clients based on various collaterals systems.

Likewise, the credit products of Ethiopian MFIs were extended on different sectors for various loan products in innovative ways as compared to Commercial banks. In most cases the innovative lending system of providing in-kind loans rather than money to the respective clients are practiced. Particularly, by creating value chain systems with other stakeholders, the MFIs are providing finances while the other stakeholders supply and buying the in-kind products (e.g. agricultural inputs and products).

Among others the major innovative credit products extended by MFIs in Ethiopia are:

- **Agricultural loan:** It is extended entirely for purchase of agricultural inputs such as fertilizer and seeds. It contains various loans that are connected with agriculture and farming related activities.
- **Regular loans:** Provided to the respective clients' peer group of determined members as guarantee.
- **Group Business Loans:** It is created for small and medium enterprises or interested groups to run their business.
- **Individual Business Loan:** Provided for capable individuals to run their business. It requires collaterals. Called graduated loan in some MFIs.
- **Employee loan:** extended to unique customers like employees and civil servants on a salary basis for various purposes.
- **Rural Package Loan:** Provided to rural households to ensure food security at household level through diversifying and increasing households' income. Mostly provided by Regional Government owned MFIs. This loan is guaranteed by Regional Governments.
- **Urban Package Loan:** specially designed to owners of Micro and small business enterprises in the urban areas.
- **Housing loan:** Provided for construction of residential or business buildings. As special cases the loan period of this loan is extended to 15 years by NBE directives.
- **Cooperative Loans:** mostly designed to create job opportunities for graduate students, youths, and interested groups.
- **Clean Energy Loans:** albeit is not adequately practiced in most MFIs, biogas loan and some related loans were provided by some MFIs on a project based.
- **Women Entrepreneurs Loans:** Designed at some MFIs to implement women entrepreneurs' development program.
- **Others:** Short-term business loans, leasing, input loans and other suitable loans to target customers are also provided by MFIs.

Likewise, the outstanding loan of MFIs is the summation of these credit products. Thus, as much as possible MFIs have adopted, created, and using innovated loan products and this also increased their profitability status.

Innovatively created and adopted credit products have been increased the value of outstanding loans eventually. Accordingly, the profit of MFI sector was increased.

On the other hand, in most Ethiopian MFIs there was weakness of practicing Credit Product Innovations. In most cases, more than 80% of total outstanding loan of the MFIs was concentrated on agricultural loan product only. The MFIs were following each other rather than innovating their own credit products. All MFIs extended agricultural loans. Very high credit concentration on agricultural loan product exposed MFIs to credit risks and losses that eradicated their profitability. If credit innovations were practiced by each MFI, there would be strong profitability that guaranteed the stability microfinance sector in Ethiopia.

The practices to create own new loan products are yet needed improvements. Moreover, there were MFIs that were in loss over a decade. The credit product innovation practices of these MFIs are not strong. As result, they were reported loss over time instead of profit. Particularly the small size MFIs in the country have such problems and need focus attentions of shareholders and related stakeholders.

Furthermore, there are credit products not addressed by MFIs. More or less the untouched credit products by MFIs in Ethiopia are:-

- Formal Islamic or interest free loans
- Educational loans
- In prison loans/prison inmates and disabled groups loans
- More clean Energy loans (biogas, solar energy, or electric power supply from government)
- Mobile loans(access credit on move)
- Touching life loan products (education, emergency loan, loans for clinic/nursing or health care loans)
- More value chain financing loans

- Credit card and debit card loan products
- Trade service loans
- On line/ internet credit products
- Credit only products
- Very short term credits ( i.e. one week or one month etc)
- In kind loans /leasing
- Others as the fintech time requested.

If these innovative credit products had been practiced properly, the positive impact of the same on profitability of MFIs in Ethiopia would be greater. Furthermore, although Ethiopian MFIs are empowered to provide local money transfers, MFIs were not used and benefited from the services properly.

In general, credit product innovations positively and significantly affect profitability of MFIs. In addition, if the weaknesses in credit product innovations are improved and more credit products innovations were practiced the positive impact of credit innovation on profitability of MFIs in Ethiopia will be superior.

#### **4.3.2. Saving Product Innovation and Profitability of MFIs**

Innovation increases product demand; demand increases sales and sales increases profitability. This also fact in MFIs. Saving is one of products of MFIs. All Ethiopian MFIs are empowered to mobilize savings from the public. However, not all MFIs are effectively and efficiently mobilize deposits. Deposit is the most important activity in micro financing business. It is suitable and inexpensive source of finance for MFIs. Getting loan funds from other stakeholders is very challenge to MFIs. As a result, most MFIs encountered liquidity problems to continue their micro financing business operations. Borrowing from convectional banks is very expensive as compared to mobilizing deposit from public.

In Ethiopia, Commercial Banks and MFIs are mobilizing almost the same saving products in the same market. However, MFIs has no capacity to compete with banks. The mobilized saving helps to extend loans and generate incomes when deposited at convectional banks. After

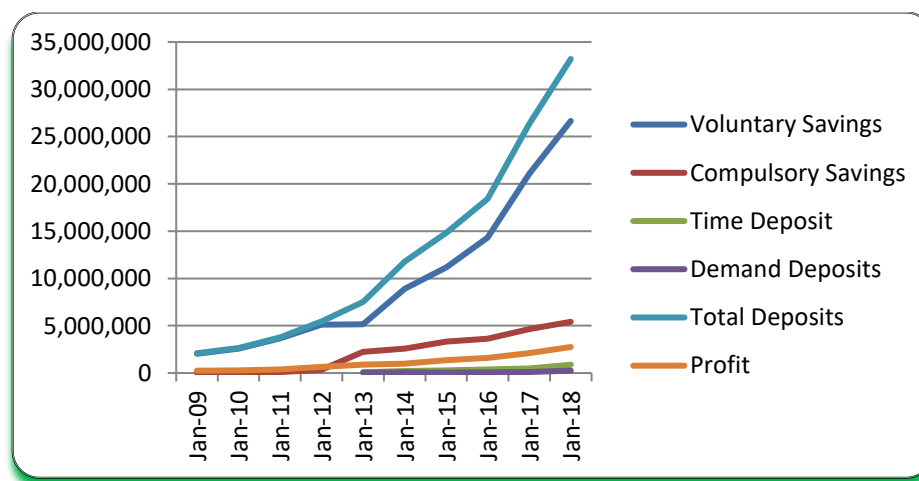
covering related costs, the operational incomes gained from loans and bank interest could be credited to profitability of MFIs.

Saving mobilization is the core work of MFIs in Ethiopia. Moreover, to generate profit MFIs should mobilize deposits and extend credits. Practically, in most MFIs there were no strong saving mobilization systems and the saving products are not in innovative ways. Hence, no abundant liquidity to extend loans, no incomes from banks to cover operational costs/expenses and lastly, no profit that nurtures shareholders equities.

Here, the regression result depicted that the percentage change in total deposit changes percentage of profitability of the MFIs by 0.383 and statistically significant 5% significance level (i.e. the P- value was 0.0001). Therefore, the saving product innovation is strongly, positively and significantly affects the profitability of MFIs. This accurate result is consistent with some study findings like Amabel and Dominic (2018) who stated new products have significant effect on performance of SACCOs.

Furthermore, as depicted in the following Figure 4.4, the MFIs have mobilized various deposits as deposit product innovations. Likewise, the trend of their profit revealed increased status.

**Figure 4.4:** Trends of Deposits over 10 years against Profit MFIs



Source: Own computation using MFI Sector Data

As part of their mission and deposit product innovations, MFIs in Ethiopia are taking various deposits such as compulsory savings, voluntary, time deposits, planned time deposits, coin box, child saving, and housing savings and others.

- ✓ **Voluntary Saving:** it is a volunteer's deposit. It includes the demand deposits, planned deposit, regular voluntary saving, time deposit, coin box, housing saving, vehicle saving, child saving, retirement saving etc. on voluntary basis.
- ✓ **Compulsory Saving:** It is connected with loans and mandatory deposits. It is a credit collateral and pre loan saving, or up front saving, regular compulsory saving, etc.

Furthermore, compulsory saving is the deposit connected with provided loan and used as collaterals. Coin saving is the voluntary saving collected using boxes at the client destinations. Child saving is the deposits made by the family to children. Apart these saving products there were interest free savings services in MFIs. Those saving products are adopted and created by the MFIs so as to boost their profitability. Accordingly, in some cases there were improvements their profitability status.

On the other hand, in some case there was weakness in deposit mobilization by creating innovative deposit products. According to Doris Kohn (2013), perhaps the most fruitful area for further design and delivery innovation is deposit mobilization. There would seem to be many opportunities to design products around specific family goals such as meeting annual school fees or planting expenditures and around specific cash flow such as harvest payments or the daily profits from a microenterprise.

Hence, also saving product innovation have significant effect on current profitability of MFIs to employ more benefits of saving innovation, the untouched saving products shall be practiced to solve liquidity problems and register maximum profits.

#### **4.3.3. Institutional Innovation and Profitability of MFIs**

The institutional innovation of MFIs in Ethiopia can be surveyed in terms of nature of MFIs, ownership and governance structure, equity financing practice, business structure, and regulatory & supervisory framework. In further looking, the impacts of nature, ownership, governance, and business structure of MFIs are seen on its shareholders equity. In effect, among others the researcher used Equity Financing Practices of MFIs to assess the institutional innovation of the same.

Thus, institutional innovation credited to equity capital and the equity capital affects profitability of MFIs. In this study, the regression output described that the percentage change in equity capital changes the percentage of profitability of MFIs by 0.041 and statistically significant at 5% significance level (P-value 0.004). Accordingly, the study approved that institutional innovation of MFIs is practically and statistically affect their profitability.

This result is consistent with some study findings like Kibugo and Kimani (2016) concluded that there is a positive significant relationship between institutional innovation and performance of microfinance institutions.

Strong institutional innovation leads to strong institutional structure that guarantees strong profitability status of MFIs. Hence, institutional innovation is starting point for profitability of MFIs. However, the institutional innovation is very weak in Ethiopian MFIs. Rather than in innovative ways, most of them were established in customarily ways. Even since it is more tied up to restrictive internal laws and practices, it is cumbersome to adopt vigorous institutional innovations that boost its profitability.

In Ethiopia MFIs are established as share company. A share company is a company whose capital is fixed in advance and divided into shares and whose liabilities are met only the assets of the company (*Commercial Code of Ethiopia (CCE), 304 (1)*). In addition, it was also declared that MFIs shall registered a share company in which the capital is wholly owned by Ethiopian nationals or organizations wholly owned by Ethiopian nationals (*Proclamation No. 626/09, 2/3 and 5/c*).

The MFIs in Ethiopia are unique from MFIs in other countries by nature of regulations and ownerships. All MFIs are deposit taking and regulated institutions in Ethiopia. The government, local NGOs, volunteer individuals or development associations and private sectors own the MFIs. The MFI is used as a weapon to fight poverty and improve social performances. In used as weapon and improve social performances, the MFIs is urged to practice financial innovations.

Literally, MFIs are required to be owned by more than five members (CCE, 307/1). However, practically it was not practiced. As a result, most Government and NGO owned MFIs were owned by nominal shareholders who have no real shareholding and financial stakes in the MFIs. In most cases, these shareholders have no divided share rights in the respective MFIs.

Due to these discouraging practices, these MFIs could not sell their new shares to the new investors and return based investor not interested to involve in the same MFIs. As a result, in most cases, the numbers of shareholders are not increased and the equity capital of the same was not increased as much as possible. Rather than in innovative way, Most MFIs are customarily established by NGOs, Social Development Associations, and Government. However, the recently and privately established MFIs are good in some issues.

Thus, the nature & institutional structure of the MFIs in Ethiopia was limited by restricted internal laws and ill ownership & governance practices. Accordingly, the Institutional innovation of MFIs in Ethiopia is weak and affecting the profitability of MFIs.

On the other hand, all MFIs in Ethiopia are deposit taking institutions. Like banks, MFIs can provide all financial services except international financial services. In some other countries MFIs may be only credit providers. Hence, this unique nature of MFIs in Ethiopia has noticeable contribution to their institutional innovation and profitability performances.

A financial institution's structure is determined by its legal form, its ownership and governance structure, the degree to which it is supervised by the state, and the types of clients it serves. These, in turn, influence an institution's product offering, financial management, reporting needs, funding sources, and overall financial sustainability and independence (Ledgerwood, 2013 P 172). Although the MFIs are established as Share Company, practically ownership of most the Microfinance Institutions are nominal form. Here, since the ownership form of MFIs determines its governance, the MFI institutional structure was weak in most Ethiopian MFIs.

In Ethiopia, in the innovatively established MFIs, the shares are sold on premium basis, numbers of shareholder are many, and equity capital is proportionally at good position. In these MFIs, their profitability status was relatively upright. In contrasting, the customarily or nominally established MFIs, could not sold their shares to business-minded investors and their equity capital is not increased as much as expected. Even it was eroded by retained losses in some cases.

Although institutional innovation determines profitability of MFIs, in most of Ethiopian MFIs institutional innovation that secure their profitability was not practiced. Thus, it leads to say ***‘the baby that born with untreated disease may not be alive’***. Accordingly, the microfinance institution that formed with untreated institutional problems may not be alive.

Among other things, the untreated institutional problems that discouraging Ethiopian MFIs to practice institutional innovation were:-

- ***Regional and Government Ownership Practices:*** Since the Directives, Policies, Procedures, and Practices come from Government offices, it is difficult to practiced financial innovation in most Government owned MFIs in dynamic ways.
- ***Nominal shareholding practices in most MFIs:*** Financial innovation is the accomplishments of financial entrepreneur not the hobby of nominal shareholder.
- ***Weak Corporate Governance Practices in most MFIs:*** in most cases, there were no strong corporate governance that encourage institutional innovation.
- ***Restrictions on foreigners:*** the ownership and involvement of foreigners are legally restricted. MFIs also enforced to work only with local currency (Birr).
- ***Fraternal overseeing of Regulatory body on some MFIs:*** Equal enforcement is needed for all MFIs.

One can see that these problems delimit the institutional innovation and needs more focus to increase this positive effect of institutional innovation on profitability of MFIs.

In attention, the institutional innovation of MFIs significantly affects their profitability by increasing equity capital. Practically and use fully, to increase this positive and significant effects of institutional innovation these problems needs focus attention of the stakeholders so as to foster adequate institutional innovation that boost the profitability of MFIs.

#### **4.3.4. Financial Process Innovation and Profitability of MFIs**

As it is stated on the scope of the study, among other things operational expense is taken as the best measurement of process innovation that in response affects profitability of MFIs. In this study, the regression output described that the percentage change increased in operational expense decrease the percentage change of profitability of MFIs by 0.313 and statistically significant at 5% significance level (i.e. p-value is 0.000). To this end, newly created or improved financial process innovation decreases operational expenses of MFIs that in return increases the profitability of MFIs.

This is good indicator that require good attention for employing financial process innovation so as to reduce operational expenses. In effect of the study, the regression result ensures that the objective of financial process innovation affects the profitability of MFIs. Accordingly, the study concluded that financial process innovation of MFIs is strongly and significantly affect the profitability of MFIs in Ethiopia. Furthermore, as per the literature and regression result financial process innovation is a key factors that strongly affect the profitability of MFIs in Ethiopia. Moreover, this result of study is consistent with Mabrouk and Mamoghli (2010) who states that if process innovation is continued and new technologies are introduced then innovative banks continue to earn high profits. Amabel and Dominic (2018) who assured new service processes have significant effect on the performance of DTS and reduction in service time and reduction of operational costs resulting to increased income to the SACCOs. In addition, according to James K. and James M. (2014) the use of financial innovations which, include the use of credit cards, mobile banking, internet banking, and agent banking has great impacts on the financial performances of banks.

Financial process innovation is the creation of new easy and affordable service delivery system. In Ethiopia MFIs are working their business operations by opening branches and sub branches in different remote areas. For inclusion of the remote populations in their services, some MFIs also establish Rural Service Facility centers and Satellite Offices in remote areas around the respective local community. Likewise, they provide micro financing services under trees, in kebele or private individuals' compounds or in small offices. In most cases, the target populations of MFIs are at remote areas. Thus, the operational costs of MFIs are high.

To serve these target customers staffs are recruited and high cost transportation services are used. The clients of MFIs are relatively many and their transactions are many in number with small balances. To record this many transactions most MFIs use manual records. There were no computerized processes at MFIs that save their transactional costs.

On the other hand, MFIs are playing intermediation roles between commercial banks and their target customers. Accordingly, they borrowed money from commercial banks at high banks' lending rate and extend loans to their customers at very high MFIs' lending rate. In addition, in loan appraisal process the MFIs provide training to their customers by incurring necessary costs. All these costs and others raise/increase the operational costs or expenses of MFIs.

All the time, when operational expenses of the MFIs become high; their profitability status goes down. If the MFIs' operational expenses decreased, their profitability would be increased. Hence, an increase of operational expenses decreases profitability. Here, economically we need to decrease operational expenses to increase profitability. To decrease operational expenses, financial process innovation has an unreserved role. Amicably, the profitability and operational expenses are inversely related and hence, the improvement in financial process innovation reduces operational expenses and improves profitability of MFIs.

Although financial process innovation significantly and strongly affects profitability of MFIs, the process innovations of the respective Ethiopian MFIs are very weak. Most MFIs have no aspiration and capacity to put in place adequate financial delivery systems that facilitate their financial process innovation practices. On the other hand, some MFIs are on process to establish core-banking system that will encourage their process innovations. However, they are not effective and efficient. The digital financial services are the hot issue in the world. It is believed to accelerate the financial inclusions there by reducing poverty. Likewise, the Ethiopian Government has taken the initiatives to develop mobile and agent banking services. In effect, the regulation of mobile and agent banking services Directive No. FIS /01/2012, was issued. It declared that the use of technology and innovative financial service delivery channels such as mobile devices and agents have significant contribution in deepening financial service accessibility to the wider section of the population at an affordable price. Based on initiatives and the issued directive, about Six MFIs are commencing mobile and agent banking services. However, due to various problems the service was not effective in most cases. Most of these MFIs

not were not used the system effectively and efficiently. Its impact was not reducing operational expenses of the respective MFIs as expected.

Digital financial services are the new news for developed and developing countries. In instances, the M-PESA & M-shwari of Kenya has hot discussions. Accordingly, the digital financial services technologies such as M-Birr, Hello Cash and others are introduced and commencing to provide financial services in Ethiopia. Some MFIs have owns these technologies to provide the respective financial services. Even though it is not effective as much as needed, the experts, benchmarks, and initiations from the world and neighboring countries help to introduce the services in Ethiopia.

Unlike other countries, the financial service delivery processes of Ethiopian MFIs were not modernized in cost effective and affordable manner. This revealed that the financial process innovation practices (like mobile banking, agent banking, internet banking, ATM and other digital machines) of MFIs in Ethiopia were very weak.

In this study, among other things the key challenges that delimit the MFIs in adopting or creating easy and affordable process innovation were also observed. These were including followings:-

- ✿ Lack of financial capacity in most MFIs
- ✿ Weak corporate governance in some MFIs
- ✿ Weak cooperation among Stakeholders and MFIs
- ✿ Weak infrastructures like Network Services, Power, etc.
- ✿ Lack of computerized systems: no secured and efficient financial technologies
- ✿ Financial Innovations Proceedings Regulations:
- ✿ Financial illiteracy and
- ✿ Weak initiatives of MFIs and enforcements from other stakeholders

To this end, the study concluded that statistically the financial process innovation of MFIs has significant effect on their profitability. On other hand, there were challenges that delimited MFIs to execute financial innovations so as to boost their profitability in Ethiopia.

In conclusion of this chapter, the quality of data was adequate, all regression assumptions were assured goodness of the specified regression. As a result, the findings were elaborated in more vivid method.

## Chapter Five

### V. Conclusion and Recommendations

#### 5.1. Conclusion

Financial innovation is creating new or redesigning of institutional structure, new financial products or services and new financial services delivery systems i.e. institutional, product, and process innovations. Financial innovation is an engine for profitability of MFIs in Ethiopia. This was assessed financial innovation and profitability of MFIs in Ethiopia. In view of that, the Diagnostic Tests were assured that the created model is good to discuss the empirical findings.

All explanatory variables such as credit product innovation, saving product innovation equity capital (institutional innovation) and operational expenses (process innovation) are collectively explained by 65 percent change in profitability of MFIs in Ethiopia. Only 35 percent of change is explained by other factors not included in the study. The individual and joint significance of explanatory variables were excellent.

**Credit product innovation:** credit innovation has positive relationship with profitability of MFIs and very significant. The percentage change of credit innovation changes the percentage of profitability of MFIs by 0.218. Hence, credits Product Innovation is strongly, positively and significantly affect the Profitability of MFIs in Ethiopia. Moreover, among others the major innovative credit products extended by MFIs in Ethiopia are agricultural loan, regular loans, group business loans, individual, business loan, employee loan, rural package loan, urban package loan, housing loan, cooperative loans, clean energy loans, and women entrepreneurs' loans. As much as possible MFIs have adopted, created, and using innovated loan products and this increased their profitability status. Besides, there are credit products not addressed by MFIs.

**Saving product Innovation:** the regression result depicted that the percentage change in total deposit changes percentage of profitability of the MFIs by 0.383 and statistically significant. Therefore, the saving product innovation is strongly, positively and significantly affects the profitability of MFIs. The MFIs have mobilized various deposits as deposit product innovations. Likewise, the trend of their profit revealed increased status. MFIs in Ethiopia are taking various deposits such as compulsory savings, voluntary, time deposits, planned time deposits, coin box, child saving, and housing savings and others. Those saving products are adopted and created by

the MFIs to boost their profitability. Accordingly, in some cases there were improvements in their profitability status. On the other hand, in some case there was weakness in deposit mobilization by creating innovative deposit products. Hence, the untouched saving products shall be practiced to solve liquidity problems and register maximum profits

***Institutional Innovation:*** institutional innovation can credited to equity capital and the equity capital can affect profitability of MFIs. In this study, the regression output described that the percentage change in equity capital changes the percentage of profitability of MFIs by 0.041 and statistically significant at 5% significance level (P-value 0.004). Accordingly, the study approved that institutional innovation of MFIs is practically and statistically affects their profitability. Although institutional innovation determines profitability of MFIs, in most of Ethiopian MFIs institutional innovation that secure their profitability was not practiced. Thus, it leads to say ‘the baby that born with untreated disease may not be alive’. Accordingly, the microfinance institution that formed with untreated institutional problems may not be alive. Among other things, the untreated institutional problems that discouraging Ethiopian MFIs to practice institutional innovation were: Regional and Government Ownership Practices, nominal shareholding practices in most MFIs, fraternal overseeing of regulatory body on some MFIs, weak corporate governance practices in most MFIs, and Restrictions on foreigners’ ownership. In short, the institutional innovation of MFIs significantly affects their profitability.

***Financial Process Innovation:*** the percentage change increased in operational expense decrease the percentage change of profitability of MFIs and statistically significant. To this end, newly created or improved financial process innovation decreases operational expenses of MFIs that in return increases the profitability of MFIs. The key challenges that delimit the MFIs in adopting or creating innovative process innovation were lack of financial capacity, weak corporate governance, weak cooperation among stakeholders, weak infrastructures, lack of computerized systems, financial innovations proceedings regulations and, financial illiteracy.

In summary, financial innovations practices such as credit product innovation, saving product innovation, financial process innovation, and institutional innovation are strongly and significantly affect the profitability of MFIs in Ethiopia. Accordingly, the Provider, Product, Process, and Provision (4P) innovation practices of Microfinance Services in Ethiopia are need due attentions.

## 5.2.Recommendations

The study was addressed the Financial innovation towards Profitability of MFIs in Ethiopia. Based on the findings and conclusion, the subsequent recommendations were forwarded as follow.

### 5.2.1. Recommendations for Relevant Stakeholders of MFIs

- ☞ To generate sustainably adequate profits in MFIs, clear and innovative institutional structure is very important. Hence, upright institutional innovation should be practiced by rectifying the respective obstacles.
- ☞ In order to generate high profit and secure its competitiveness MFIs shall design relevant credit product innovation to the relevant customers at the relevant duration with relevant loan appraisal systems.
- ☞ Innovative saving mobilization strategy should be devised to resolve the problems in liquidity gaps and boost satisfactory profitability that add value to the economic development of the country.
- ☞ Most of Ethiopian MFIs were not used computerized systems. They use manual and long process that increase their operational expenses and kill their profit status. Hence, maximum effort should be exerted to bring innovative financial process in Ethiopian MFIs.
- ☞ Generally, more focus attention shall be given to the Provider, Product, Process, and Provision (4P) innovation practices of Microfinance Services in Ethiopia.

### 5.2.2. Recommendation for Future Research

Microfinance service is an innovative financial service as compared to Banks. It adds value to the financial sector and the financial innovation in MFIs also add relevant value. However, many problems delimit MFIs in employing financial innovation in Ethiopia. Thus, various studies should be conducted on Financial Innovation of MFI in various insights.

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## Appendixes

### 1. Open ended Questionnaires

**Addis Ababa University, College of Business and Economics, Department of Management,  
Master of Science in Management  
Questionnaires  
on  
Financial Innovation Towards Profitability of MFIs in Ethiopia**

OECD, Oslo Manual (2005), elaborates innovations into four categories like product innovations, process innovations, marketing innovations and organizational/institutional innovations. *Product innovation* is the creation and implementation of good or service that is new or significantly improved; it is the introduction of new credit products, new saving products, new micro insurance and other products or services in MFIs. *A process innovation* is creating or adoption and the implementation of a new or significantly improved delivery method. It includes new or significantly improved methods for the creation and provision of financial services. *An institutional innovation* is the creation and implementation of a new institutional structure and innovative microfinance business forms.

Please! I want your support by answering the next questions for the purpose of my study. Thank you!!

**Zerihun Necho, 0924147101 or [zerihunnecho143@gmail.com](mailto:zerihunnecho143@gmail.com)**

1. As a credit product innovation, what credit products are created /or designed and provided by MFIs? A) Please could you explain them?

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- B) What credit products are not addressed by MFIs in Ethiopia?

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2. As a saving product innovation, what saving products are created /or designed and mobilized by MFIs? A) Please could you explain them?

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B) What saving products are not addressed by MFIs in Ethiopia?

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3. What are the obstacles delimit Ethiopian MFIs to apply Institutional innovation?

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4. Why MFIs are not creating, adopting and or owning financial process innovation (like ATM, Mobile Banking, Agency Banking, Internet Banking etc)?

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5. In general, as to you what are the opportunities and challenges to financial innovation in Ethiopian MFIs?

A) Opportunities

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B) Challenges

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