

Addis Ababa  
University



# Addis Ababa University School of Information Science

## Utilization of ICT in Microfinance Institutions in Ethiopia

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Abraham Abayneh

June, 2016

Addis Ababa University School of Information

Science

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Ethiopia

A Thesis submitted to the School of Information Science of Addis  
Ababa University in Partial Fulfillment of the Requirements of the  
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Name and Signature of the Examining Board

<b>Name</b>	<b>Title</b>	<b>Signature</b>	<b>Date</b>
1. Solomon Teffera (PHD)	Chair Person	_____	_____
2. Rahel Bekele (PHD)	Examiner	_____	_____
3. Ato Getachew Jemaneh	Examiner	_____	_____

## **Declaration**

I declare that this thesis is my original work and has not been presented for a degree in any other University.

Abraham Abayneh: \_\_\_\_\_

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

This thesis has been submitted for examination with my approval as a university advisor.

Solomon Teffera (PHD): \_\_\_\_\_

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

## **Dedication**

This thesis is dedicated to my beloved mother, Mintwab Woldemeskel

## **Acknowledgement**

*I first and foremost would like to give all the glory and honor to the Almighty God who gave me strength and helped me through my study.*

*I would like to express my thanks to Dr. Solomon Teferra for his time in going through my work and providing me his invaluable comments. My gratitude extends to all my instructors at Addis Ababa University School of Information Science .Also, my sincere appreciation goes to the staffs of Microfinance Institutions who participated in this study for their time and willingness to give information relevant to the study.*

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## LIST OF ABBREVIATIONS

<b>MFI:</b>	Microfinance Institution
<b>ACSI:</b>	Amhara Credit and Saving Institute
<b>DECSI:</b>	Dedebit Credit and Saving Institute
<b>ADCSI:</b>	Addis Credit and Saving Institution
<b>OCSSCO:</b>	Oromiya Credit and Saving Share Company
<b>SFPI:</b>	Specialized Financial and Promotional Institute
<b>AMFIE:</b>	Association of Microfinance Institutions in Ethiopia
<b>NBE:</b>	National Bank of Ethiopia
<b>MIS:</b>	Management Information System
<b>CBS:</b>	Core Banking System
<b>ICT :</b>	Information Communication Technology
<b>IT:</b>	Information Technology
<b>NGO:</b>	Non-Government Organizations
<b>UNDP:</b>	United Nation Development Program
<b>ATM :</b>	Automated Teller Machine
<b>EPOS:</b>	Electronic Point of Sale
<b>EFTPOS</b>	Electronic Fund Transfer Point of Sale
<b>PDA:</b>	Personal Digital Assistant
<b>IVR:</b>	Interactive Voice Response
<b>M –Banking</b>	Mobile Banking
<b>4G LTE:</b>	Fourth Generation Long Term Evaluation
<b>3G:</b>	Third Generation
<b>EV-DO:</b>	Evolution –Data Optimized
<b>LAN:</b>	Local Area Network

**WAN:** Wide Area Network  
**VPN:** Virtual Private Network  
**VSAT:** Very –Small-Aperture Terminal

## ABSTRACT

Microfinances are institutions established to give financial services to the rural poor communities of a country. Providing financial access to the rural poor incurs high operating cost and this usually compromises the financial sustainability of the institutions. Increasing outreach by minimizing operating costs is the main challenge facing Microfinance Institutions around the world which requires innovative operating methods. Nowadays, ICT is becoming a strategic tool in overcoming the challenges and is highly contributing to the MFIs in reaching the hard-to-reach communities by ensuring their financial sustainability. Therefore, ICT is playing a significant role in harnessing the performance of the institutions. Currently, there are 32 MFIs officially registered and operating in different parts of Ethiopia. Encouraging microfinance institutions is one of the strategic directions of the government of Ethiopia in its poverty alleviation program and literatures indicate that the MFIs are playing a significant role towards this through the provision of financial services to the rural poor. In order to enhance their significance, the operation of the institutions need to be supported by appropriate technology. The usage of ICT can help the MFIs in providing more convenient services, faster loan processing, improved quality of financial information, increased outreach reduction in operating costs etc. A study on the usage of ICT in Microfinance Institution helps the MFIs to see the significant role that ICT is playing in harnessing the performance of the institutions and this enables the MFIs managers to put a strategic direction on the adoption and usage of ICT. This study aims at assessing the level of ICT usage in the MFIs in Ethiopia, tries to identify the potential gaps and challenges and highlights the opportunities that technology can bring to the success of the Institutions. Mixed method approach was employed in conducting this study, which was primarily quantitative, but qualitative approach was also used for triangulation purposes. After making intensive assessment, the study found out that despite the endeavor the MFIs are showing towards the usage of ICT, the extent of usage is still minimal. The MFIs need to self-evaluate themselves and need to make a strategic change towards the usage of ICT. Furthermore, the government, donors and other stakeholders should encourage and support the MFIs in adopting and using the right ICT services. This study can be used as a benchmark for further studies on the subject.

# 1 CHAPTER ONE

## INTRODUCTION

### 1.1 Background

The idea behind Microfinance is rooted in rich histories in various countries across the globe. Saving and Credits date back many centuries. The Susu tradition in Ghana, the Chit funds of India, and Iqqub in Ethiopia are some to be mentioned. The modern-day Microfinance started in Bangladesh in the 70's by Dr. Mohammed Yunus (Atikus, 2014). According to Yunus one of the major causes of poverty is the inability to get any access to Institutional credit (Ledgerwood, 1998). Ledgerwood defined Microfinance as "the provisioning of financial services to poor or low-income clients including both customers and entrepreneurs who would otherwise not be served by traditional financial institutions" (Ledgerwood, 1998). Microfinance institutions established with the aim of providing credits and promotion of savings by targeting clients who previously have not had access to formal financial services. The Microfinance Industry has been growing in the developing countries tremendously in the last decades and as a result the institutions have made significant contributions in alleviating poverty in most developing countries. Currently, as per (Etzensperger, 2014) there are more than 10,000 MFIs globally consisting of a range of institutions from Credit Unions and Cooperatives to Non-Government organizations (NGOs), government agencies, private companies and banks. However, with respect to the booming number of MFIs across the globe, the impact is not to the level expected. According to the UNDP report, from the estimated 500 million poor households, only 3 % - 6 % reached (Sui, 2001). There are a number of factors contributing to this. Poor ICT implementation is one of the major factors contributing to the inefficiency of the MFIs. Efficient use of technology can help MFIs cut costs, offer faster services, improve efficiency, and meet their business goals (Dellamore, 2011). As per (Frankiewicz, 2003) if Information technology applied as a strategic tool to MFIs, it can allow more efficient and effect collection, processing and use of data open the door to MFIs to offer new products and better customer service enable greater outreach facilitate integration with the rest of the financial sector. Nowadays, the survival of any financial sector including MFIs is impossible without having ICT as a strategic tool.

Ethiopia has shown fast economic growth in the last decade with an average growth rate of 10.7 %. Despite this, poverty is still a challenge in Ethiopia. One of the directions of the

Government of Ethiopia about poverty reduction as in any developing countries is establishing sustainable financial services to the rural poor communities of the country. This is planned to be achieved through encouraging Microfinance Institutions. As of January 2014, there are 32 licensed MFIs operating in the country (Wolday & Kifle, 2013). With continuing development in ICT worldwide, Ethiopia is also experiencing significant development in the prevalence and usage of ICT. The increasing number of internet users, mobile subscribers, personal computer users etc. are good indications for this.

The huge investment on IT and the way IT projects managed are other challenges facing the MFI industry. The paper evaluates the existing usage of ICT in MFIs in Ethiopia, identifies potential gaps and highlights on the way forward. The paper can be used as a bench mark for further studies on the subject.

## **1.2 Statement of the Problem**

The government of Ethiopia developed the first proclamation for Microfinance institutions in Ethiopia in 1996. Since then a number of Microfinance Institutions have been officially registered and operating in different parts of the country (Wolday, 2000). The MFIs have been playing a big role in the poverty alleviation program of the government by providing financial access to the rural poor community. The goal of every MFI should target towards increasing outreach and ensuring financial sustainability. However, most MFIs facing challenges in achieving these two imperatives, sustainability and outreach due to their high operating costs (Rai, 2012). In order to be able to sustain financially, the MFIs are backed by Federal Government, Regional Government, NGOs and others in addition to the deposits made by their clients. Though, this has its own contribution towards achieving their goal, the MFIs need to adopt innovative ways of operating which can help to increase their outreach by minimizing operating costs.

Currently, IT is becoming a strategic tool for MFIs in increasing their outreach and ensuring their financial sustainability. The impact of ICT on business performance in general is a well-known topic in the field of business studies and management. Information Technology as a strategic tool for MFIs can allow more efficient and effective collection, process and use of data, opens door to offer new products and better customer services and enables greater outreach. Most MFIs in Ethiopia use ICT for supporting their businesses in one or another way. However, the researcher couldn't find any research carried out on the usage of ICT and its impact on the performance of the MFIs in Ethiopia. Conducting a research on the subject

provides concrete information to the MFIs managers, government, donors and other stakeholders on the status of ICT usage in the MFIs and on the significance of ICT in harnessing the performance of the institutions. This help all concerned parties to put a strategic direction towards emplacing appropriate ICT services within the MFIs. This study aims at addressing the following research questions.

- ✚ What ICT Services do MFIs use for their business operation ?
- ✚ What is the level of ICT usage in the MFIs? Or to what extent the ICT services are utilized ?
- ✚ What are the barriers towards the usage of ICT ?
- ✚ What Opportunities can Information technology bring to MFIs in Ethiopia ?

The level of ICT usage in this study is investigated in reference to the type of ICT services used and the purpose for which the ICT services are utilized in the MFIs. Therefore, the types of the services used and the purpose of the usage are bench marks in deciding the extent of usage.

### **1.3 Objectives of the Study :**

#### **1.3.1 General Objective**

The purpose of this study is to investigate the level of ICT usage in the Microfinance Institutions in Ethiopia, to identify the gaps and the challenges and to discover the opportunities that ICT may bring to the operations of the Institutions.

#### **1.3.2 Specific Objectives**

In order to achieve the general objective of this study, the following specific objectives were attempted to;

- ✚ Assess the usage of ICT in reference to basic ICT services such as Computers & Internet usage, Computer Infrastructure, Website usage and the usage of ICT innovations such as usage of MIS, Mobile Banking, PDAs, EPOS.
- ✚ Explore and discuss ICT innovations applicable to the context of the Ethiopian MFIs.
- ✚ Assess the recognition given to ICT and the adequacy level of IT staffs within the institutions.

- ✚ Assess the status of staffs awareness with respect to ICT.
- ✚ Assess the barriers towards the usage of ICT.

#### **1.4 Scope and Limitation of the Study**

The study focuses on a survey on the usage of ICT in Microfinance institutions in Ethiopia by taking six microfinance institutions as a sample. The institutions selected for this study were mixture of MFIs from the larger to the mid-sized in terms of their loan portfolio and number of active clients and from Addis Ababa and outside of Addis Ababa in terms of their geographic location and from those backed by the government and those backed by NGOs. Therefore, the institutions can be general representations of the MFIs in Ethiopia. Questionnaires were evenly distributed to the selected MFIs. However, few questionnaires were not returned within the expected time due to the frequent travel of the staffs to the fields and other personal reasons. Some questions related to budget were not answered by the respondents. Nevertheless, the researcher tried his best to overcome the challenges and were able to collect adequate number of questionnaires.

#### **1.5 Significance of the Study**

Microfinance is one of the greatest tool which brought about significant changes in many developing countries specially in the poorer communities. As discussed in the introduction and statement of the problem sections, the two major imperatives of microfinance institutions are increasing outreach and ensuring financial sustainability. Increasing outreach or provision of financial services to the rural poor communities has a profound effect in alleviating poverty. Information Technology plays a significant role and is becoming a powerful tool towards the efficient operation of the institutions. Therefore, implementation of appropriate Information System enables the MFIs to increase their outreach by ensuring their financial sustainability . It is hoped that the results of this study will:

- ✚ Provide an insight to MFI Managers where are the MFIs with respect to ICT usage in supporting their business and what are the potential challenges.
- ✚ Provide concrete information on the opportunities that ICT may bring about in harnessing the efficiency of the MFIs.
- ✚ Provide concrete information to MFI managers that usage of ICT is not an option but a necessity to the MFIs

## **2 CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Microfinance Sector in Ethiopia**

##### **2.1.1 History and Growth of the Sector**

Microfinance is one of the strategic tool used in many countries in reaching the poor with financial services. The establishment of sustainable Microfinance Institutions to serve large number of the poor community is a key component of Ethiopia's development strategy. The objectives of MFIs is similar across countries. Their focus is reducing poverty and vulnerability of poor households by increasing agricultural productivity and incomes, diversifying off-farm resources of income and building household assets by expanding financial services through sustainable Microfinance Institutions. Microfinance Institutions target the poor through innovative approaches which include group lending, regular repayment schedules, and collateral substitutes (Lawrence, 2012).

Microfinance service was introduced in Ethiopia in 1994 after the demise of the derg regime following the policy of economic liberalization. It started with the support of bilateral donors, International NGOs and multilateral projects. Microfinance is taken as a shift from government and NGO subsidized credit program to financial services run by specialized financial institutions (Degefe, 2009). One of the key components of Ethiopia's development strategy is the establishment of sustainable MFIs serving large number of poor people (Sebstad, 2003).

The Ethiopian Microfinance Institutions have undergone tremendous growth in terms of number, outreach and major financial indicators in a very short period. It is characterized by its rapid growth, an aggressive drive to achieve scale, a broad geographic coverage, a dominance of government backed MFIs, an emphasis on rural households, the promotion of both credit and saving products, a strong focus on sustainability and by the fact that the sector is Ethiopian owned and driven (Ebisa, Getachew, & Fekadu, 2013). A legal framework for the establishment and operation of microfinance institutions is provided by proclamation number 40/1996. Following this proclamation, a number of Microfinance Institution have been established. Currently, there are 32 MFIs Operating throughout the country; serving more than 2.89 Million clients through 1,244 branch offices located in different regions of the

the country. The MFIs are grouped as New, Young and Mature based on their age and Large, medium and Small based on their portfolio (Wolday & Anteneh, 2014) .

Table 2.1: Category of MFIs by their Age

<b>Group /Age</b>	<b>Age in years</b>
<b>New</b>	Less than or equal to 4
<b>Young</b>	5 - 8
<b>Mature</b>	Greater than 8

Table 2.2: Category of MFIs based by their Portfolio

<b>Group /Size</b>	<b>No of Active Borrowers</b>	<b>Loan Portfolio</b>
<b>Small</b>	Less than or equal to	Less than or equal to 10 million birr
<b>Medium</b>	15,001 - 50,000	Between 10 million and 15 Million birr
<b>Large</b>	More than 50,0000	Above 50 Million Birr

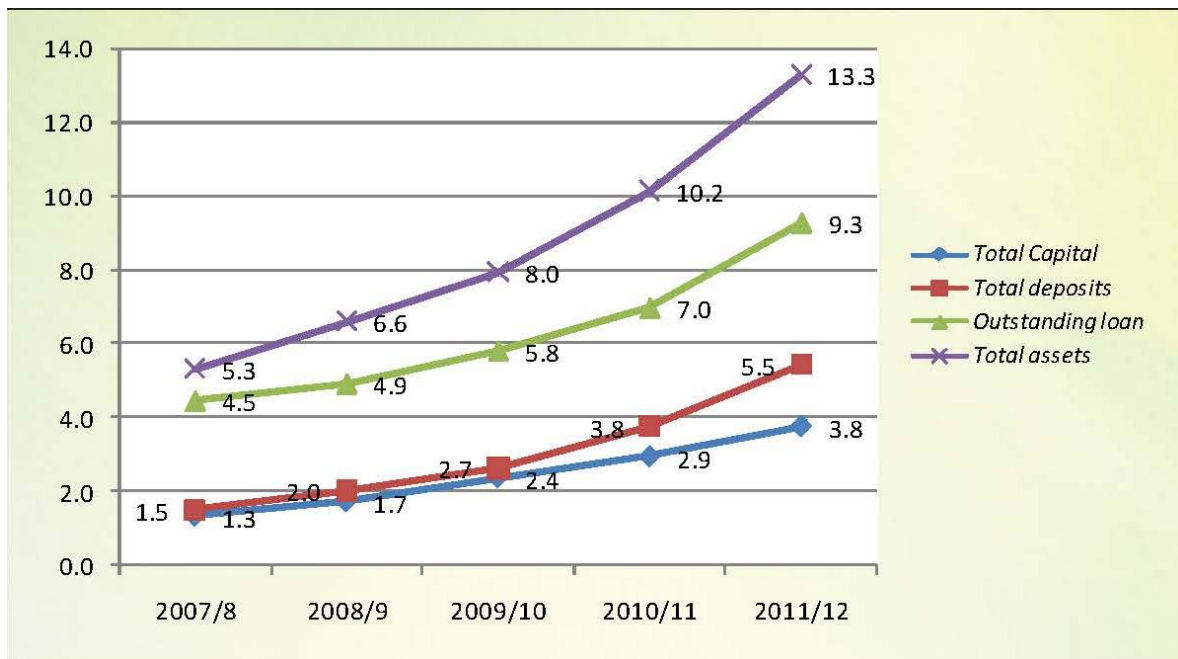
Table 2.3: Sample Microfinance Institution with their outreach as of March, 2013

<b>MFI Name</b>	<b>No of Active Clients</b>	<b>Ownership</b>	<b>Year of Establishment</b>
<b>ACSI</b>	916,736	Government	09/04/1997
<b>OCSSCO</b>	939, 191	Government	04/08/1997
<b>DECSI</b>	391,755	Government	28/04/1997
<b>OMO</b>	327, 888	Government	10/10/1997
<b>ADCSI</b>	249,991	Government	09/04/1997
<b>Wasasa</b>	58,357	NGO Backed	20/09/2000
<b>Busa Gonofa</b>	67,787	NGO Backed	17/05/1999
<b>VisionFund</b>	73,114	NGO Backed	17/06/1998
<b>SFPI</b>	36,550	NGO Backed	21/06/1998

Source: Association of Ethiopian MFIs (AMFIE)

The five top MFIs dominating the scene in terms of total number of clients and total asset are those supported by the government; namely ACSI (Amhara), DECSI(Dedebit), OCSSCO (Oromiya), ADCSI (Addis) and OMO (south). In general, the sector as whole has been showing alarmingly increasing growth since its establishment. As per the report released by the National Bank of Ethiopia, the total asset of the MFIs has increased to Birr 13.3 Billion as of June 30, 2012 from Birr 5.3 Billion as at June, 2008: this is an increment of 125%. Gross loan has grown to birr 9.3 Billion as at June, 2012 from Birr 4.5 Billion as at June 30,2008 which is an increment by 103.3%. Total savings grew from Birr 1.5 billion to Birr 5.5 Billion and capital from birr 1.3 Billion to Birr 3.8 Billion; in the same period (Sintayehu, 2013).The following chart shows the growth trend of major financial indicators of Ethiopian Microfinance.

Figure 2.1: Performance of MFIs (In Billions of Birr)



Source : National Bank of Ethiopia ; Quarterly report , June 30,2012

The above statistics shows the increasing growth of the MFIs despite the many challenges the sector is facing. As per (Sintayehu, 2013), one of the challenges faced by the MFIs is weak MIS and internal control system. Without adopting appropriate ICT services, the MFIs seeking growth will have difficulty. New business practices and innovative solutions by harnessing the benefits of technology are preeminent to achieve the breakthrough in the scale. Integrating the MFIs with MIS is the solution to this (Quadri, Singh, & Iyengar, 2011). Therefore, the usage of MIS plays a significant role in managing the performance of the

MFIs, whereas unable to use MIS can be encumbrances towards the increasing performance of the MFIs.

### **2.1.2 Funding Sources**

One of the features which strictly sanctioned by Microfinance law and all MFIs adhere with is saving mobilization. Savings are central to the operation of the MFIs and provide important source of funds for lending. Especially in larger MFIs an important service for clients and source of funds for MFIs, saving mobilization is central to their future strategy. Besides savings, donated equity finance from regional governments has been critical source of capital for government supported MFIs. Other sources include donor organizations, Foreign NGOs, Churches and Associations.

### **2.1.3 Challenges of the sector**

The Microfinance Institutions operating now in the country show a number of strengths. To mention some; Their services address both the urban and rural areas, the growing number of clients from time to time and working almost in all regional states of the country. Despite these major achievements, the outreach of MF in Ethiopia is still limited. There are a number of challenges facing the institutions. According to literature below are the major challenges facing the MFIs in Ethiopia (Ebisa, Getachew, & Fekadu, 2013).

- ✚ Inaccessibility for foreign capital: Eligibility for foreign capital enables MFIs to enhance their loan portfolio.
- ✚ Lack of clear ownership structure: This is also another challenge facing some MFIs. In some MFIs where private investors are not real owners of the MFIs though they are shareholders. This is resulted in inefficiencies in the management of the MFIs.
- ✚ Lack of personnel: This is a common problem in most MFIs. This situation is more execrated by high turnover of experienced personnel for need of better jobs.
- ✚ Lack of using modern core financial technologies and ICT innovations: This resulted in non-standard reporting and performance monitoring systems and limits the outreach of the MFIs.
- ✚ Other challenges most commonly cited are lack of knowledge of the Microfinance services, weak governance and management capabilities for further development.

As mentioned above, lack of using modern technologies is one of the challenges facing the MFIs. The expensive cost of implementing the technologies, lack of skilled manpower and limitation of budget are some of the challenges facing the institutions towards the adoption of technologies. Nevertheless, most MFIs are realizing that the usage of appropriate technology is becoming a necessity. For this reason, the MFIs are investing a huge amount of money to the implementation of ICT services. In addition, the Association of Ethiopian Microfinance Institution is also proposing a roadmap for the MFIs on the implementation and usage of Core Banking System (CBS) along with the Management Information System (MIS) which is a key component for every MFI to develop their capacity and outreach in a sustainable manner. To this end, AMFIE is exploring possible ways to support MFIs in utilizing technology based solutions for enhanced and efficient delivery of the financial services.

## **2.2 Review of f Related Literatures**

This section reviews related literatures relevant to this study and provides a theoretical rationale for conducting the study. Accordingly, it discusses related literatures conducted in other developing countries. I have tried to search studies conducted on ICT and MFIs in Ethiopia but I couldn't find one. Therefore, all the literatures reviewed are researches conducted in other developing countries.

**Joseph Kasumba Ssewanyana** (Ssewanyana, 2009) studied ICT usage in Microfinance Institutions in Uganda. In his study, the researcher emphasized the use of Information Communication Technology in increasing the outreach and ensuring the financial sustainability of the Microfinance Institutions in Uganda. The researcher investigated the level of ICT usage in the Microfinance Institutions in Uganda in reference to the basic ICT services which should be available in any business firm and the ICT innovations which are suited specifically to microfinance business. The study found out that the usage of ICT in the MFIs had been growing. Different applications and technologies had been adopted by some MFIs to control costs, create efficiency and effectiveness of their operations, improve productivity and increase outreach to the poor. The study also identified the potential barriers towards the usage of ICT and indicated the way forward. In addition, the study indicated the relevance of skilled personnel for the proper management of the ICT services.

The ICT services used to investigate the level of ICT usage of the MFIs were helpful and used as an input to my study. It covered all the important ICT services need to be adopted in the MFIs for the success of the sector. The study found out the potential barriers towards the

usage of ICT in the context of the Ugandan MFIs and put forward possible recommendations. These approaches make the two studies similar. However, there are basic differences between the two studies. Below are the major ones;

- The study conducted in Uganda didn't assess the status of ICT staffing (the adequacy of the number of staffs in managing the ICT services) and the recognition given to ICT by the management of the MFIs which are basic determinants for the adoption of appropriate ICT services in the MFIs.
- There are differences in the findings and the recommendations of the studies. Some of the findings were applicable specifically to the context of Uganda as they are country's policy issues. For example, the high Value added taxes to ICT equipment and services which is pointed out as a barrier to ICT usage. In addition, some of the ICT innovations such as Mobile Banking, PDAs and EPOS had been in use by the Ugandan MFIs even by the time the study was conducted. However, none has been in use in the Ethiopian MFIs since this study was conducted. The recommendations also vary accordingly.
- The assessment included two banks in addition to the MFIs whereas my study focusses only to MFIs.
- My study gave coverage to technology applicable only to the Ethiopian MFIs in relation to the mobile banking usage which is "M-Birr"
- With respect to methodology, both quantitative and qualitative approaches were employed in my study whereas only quantitative approach were used with the one conducted in Uganda.

**Gaamaa Hishigsuren** (Hishigsuren, 2006) studied ICT an option for Mongolian Microfinance Institutions. In his study, the researcher acknowledged microfinancing as a powerful strategy in addressing the financial needs of the rural poor community. He noted that poor Infrastructure, low density, remoteness and dependency on agriculture are the main problems which left the communities behind limited access to financial services. The researcher pointed out that the rapid advancement of Information Communication Technology is becoming a powerful tool in overcoming the challenges and identified the most common ICT applications suited for microfinance businesses and discussed the benefits expected from each of them. In addition, the researcher indicated all the ICT applications

cannot be applicable to all MFIs in every country. Some ICT innovations require a certain level of Infrastructure, an enabling environment, Institutional capacity and human resource may not be available in most developing countries. Therefore, an appropriate ICT solution needs to be identified through detail analysis of the context. The study gives an insight to MFIs of different countries to explore and find out technologies applicable to the context of the country where the MFIs are operating. The researcher proved that ICT has a considerable potential in delivering financial services. However, the number of microfinance institutions implemented ICT services were limited. Finally, the paper mentions a number of reasons for the limited implementation of ICT in the MFIs which can be lessons for the MFIs, the donors and for government.

The paper discusses the significance ICT in reaching the rural poor community by taking an experiment made by one of the MFIs on the Mobile Banking and the franchise model. Having analyzed the experience of the MFI, the paper proposes better and promising ICT solutions to the MFI which may enable the MFI to extend its microfinance services to the rural remote areas on a sustainable bases. The paper also discussed basic ICT services required for bringing the ICT services to the rural community.

The paper has similarities with my study in that both studies emphasize the significance of ICT innovations in reaching the hard-to-reach clients and in enhancing the performance of the MFIs. Exploring the ICT innovation applicable to the Mongolian MFIs is also the other similarity as my study also discovered the ICT innovation most applicable to the context of Ethiopian MFIs. On the other hand, it has major differences with my study. The study primarily focuses on experimenting two selected ICT innovations on one particular MFI and conducting impact assessment of the services whereas my study focuses on an assessment of a range of ICT services including the human resource aspect. Experimenting the usage of ICT and performing impact assesment are beyond the scope of my study.

**Anand Rai** (Rai, 2012) Studied the Role and Impact of ICT in Microfinance Institutions. Anand put Information Communication Technology as an important driver and a great hope in delivering financial services to the rural poor in an efficient and cost effective manner. The researcher agrees with most microfinance practitioners that ICT innovations are key strategic tools to take microfinance to the next level in terms of outreach and sustainability and discusses details on the benefits of each of the innovations to the sector. The paper also identified the major challenges in rolling-out the ICT-enabled services in the microfinance

sector. The paper concluded, despite the challenges electronic banking for the poor will definitely work. The emphasis given to ICT innovations in enhancing the performance of MFIs makes the two studies similar. Otherwise, the two studies have basic differences. First, the study focusses on finding out the role and impact of ICT in the microfinance sector as a whole than assessing the utilization of the ICT services. Second, the scope of the study is exploring the role and impact of ICT in MFIs around the world than MFIs of a specific country. The findings of the studies are also different as the findings depend on the objectives of the studies.

**Sergio Castello and Carlos Danel** (Castello & Danel, 2006) discussed the Right Technology for Microfinance in the book called “An Insider View of Latin American Microfinance.” According to the writers Technology is providing Latin American MFIs with new ways to expand outreach and improve services to micro entrepreneurs in both urban and rural areas. As in any of similar studies, these writers also pointed out the challenges that MFIs in Latin America facing in increasing penetration to some of the region’s largest countries and expanding financial products and services to the rural areas and their poorest citizens. To this end, they showed technology as a solution to overcome the challenges. The researchers pointed out that ATMS, PDAs, Smart Cards, IVR, Credit Scoring and biometrics are in use in Latin American microfinance sector and discussed details on the uses of each of the innovations and the benefits they brought to the Latin American MFIs. The writers concluded that the MFIs throughout Latin America are combining new technologies into unique package that meet their specific need and many of the MFIs are successful in applying innovative technologies are able to reach their rural community with the help of these technologies and the investment to the technologies is returning positive results. However, no cost-benefit studies had been done at the time the paper was conducted. In general, the paper shows clearly how ICT impact the business of the microfinance sector and the experience of Latin American MFIs can be a model to other MFIs in the developing countries. However, the paper didn’t say much about on the challenges in using the ICT innovations and on the possible approaches which can be used in overcoming the challenges. The papers differs with my study in that it aims at assessing the real impact of the ICT innovations specifically ATMs, Smart Cards, PDAs, IVR, Credit Scoring and Biometric technologies in MFIs in Latin America. These services are widely used in the microfinance institutions of Latin American countries and therefore the impact of the services is at a measurable level in the institutions.

From the research papers reviewed above, it is clear that the application of ICT services to the MFIs Plays a great role to reach large number of the rural community in a very short time by ensuring their financial sustainability. Therefore, the Ethiopian MFIs should come out of the way of business as usual and make a strategic shift towards the adoption of ICT services appropriate to the sector. In addition, researches related to the subject need to be conducted so that the institutions can be benefited from the opportunities that ICT could bring in harnessing the performance of their operations. I believe that this study can be used as a bench mark to conduct further studies on the subject.

### **2.3 ICT and Microfinance in Developing Countries**

Microfinance is not a new concept. It follows humankind since the ancient era. Its activities in developing countries have relatively short history. It markedly appeared in the 18th century especially in the first half of the 19th century in the middle Europe.

The development of MFIs accelerated right in the period of decolonization when new states originated. Great banks of the Metropolitan countries created environment for MFIs in this period and gave rise to the relative vacancy in providing basic micro financial services to the rural poor in developing countries. Important personalities who have highly contributed to the development of microfinance in the developing countries were above all, Mohammed Yunus (Grameen Bank), John Kaith Hatch ( FINCA System ), Akhtar Hamid Khan(Tameer Bank), Ela Blatt (SEWA-Self-Employed Women's Association), Michaela Walsh (WWB - Women's World Banking ) and others. (Srncac & Svobodová, 2009).

The Microfinance sector has grown exponentially in the last decade with the turnover estimated US \$2.5 Million Worldwide, and it is expected to grow further with the introduction of mobile banking. According to the World Bank report, it is estimated that 7000 MFIs globally serving 16 Million people in the developing countries and 13 Million are Micro-cred creditors with US \$7 billion in outstanding loans with a repayment rate of more than 95% (Kashyap, 2009).

The three success factors for MFIs in the developing countries are sustainability, outreach and the impact of various Microfinance initiatives (Kashyap, 2009). There is however a creative tension especially between the two imperatives, Sustainability and Outreach. Reaching remote clients is very expensive for Microfinance institutions and compromises their sustainability. This is one of the big challenges of MFIs in many developing countries.

Most of the poorest population are living in very remote areas. One of the main factors that prevent MFIs from reaching these remote rural areas is the large geographical spread, low population density and small volume of transactions which makes it more costly to operate there. Because it is too costly to set up a physical branches, traditional bank branches alone do not seem to be the answer for reaching small rural depositors and borrowers (Hishigsuren, 2006). Alternative delivery systems need to be examined for their merits.

Recently, information and communication technology(ICT) is becoming a powerful tool to reduce operating costs, making MFIs to expand into rural and low-income areas and hence usage of ICT is the only way to overcome the challenges and maximize sustainability and outreach (Hishigsuren, 2006). ICT can enable MFIs to reach remote rural based clients in an effective low cost manner. The usage of ICT in MFIs have a number of benefits to the clients. Some of the identified benefits are (S.Gibbons & W.Meehan, 2000).

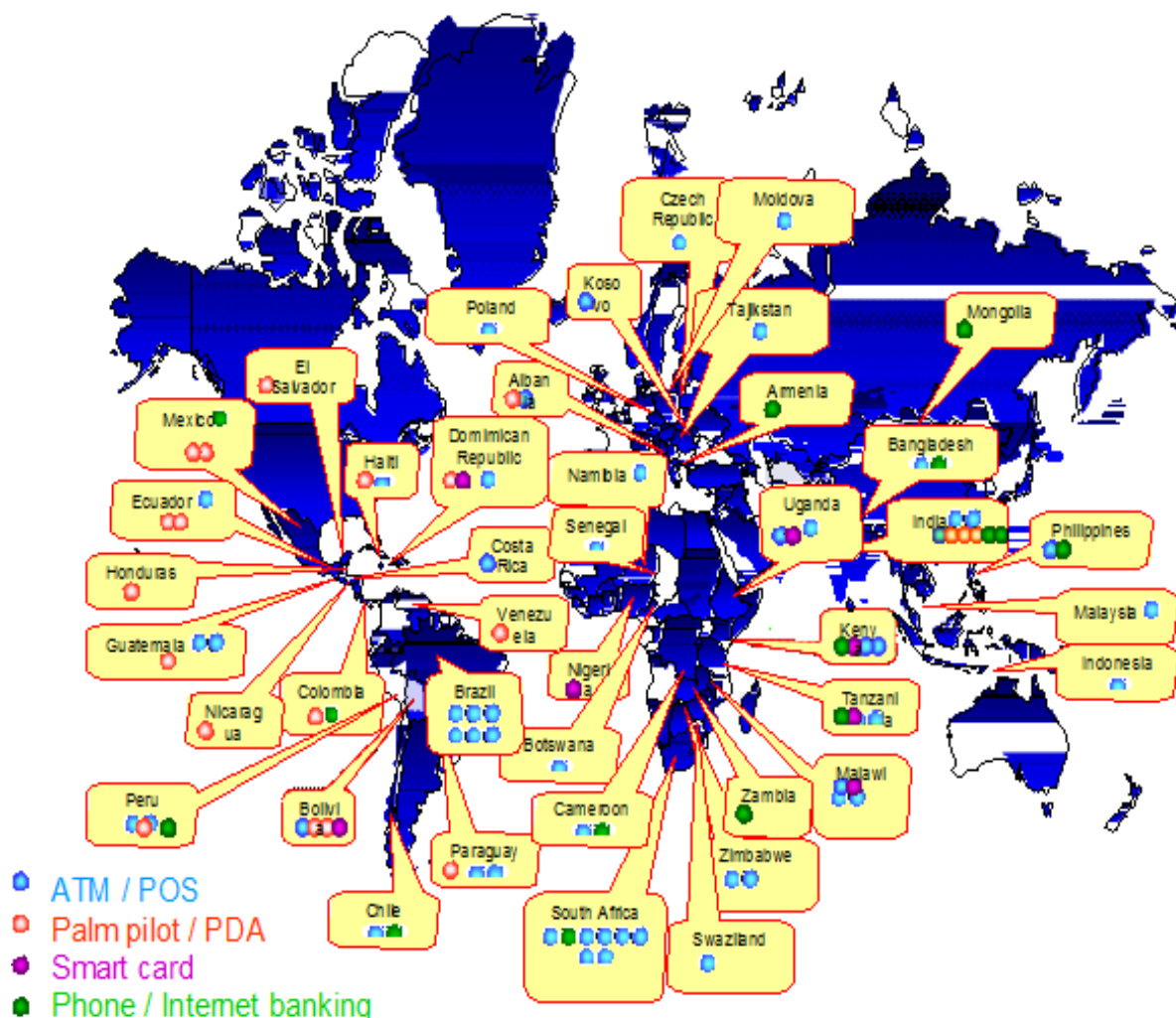
- ✚ access to banking services
- ✚ more convenient services
- ✚ faster loan processing
- ✚ less time in queues; and for the MFIs as reduced transaction costs.
- ✚ less fraud
- ✚ improved quality of financial information
- ✚ increased outreach
- ✚ reduction in operational costs
- ✚ increase in customer satisfaction and loyalty

Literatures examines the role of ICT in particular mobile phones in the delivery of financial services in the developing countries. The experiences of five countries summarized as: In Philippines, more than 2 million people are using their phones as mobile wallets to receive and send payments, pay utility bills among other services. In India, rural farmers and MFIs are using mobile phones to receive and send payments and to pay utility bills. In addition, handheld devices and smart card technology are used to automate loan processing and tracking. Biometric ATMs with smart cards are used for financial transactions without the need for personal identification. In Bolivia, ATMs capable of speaking in local languages are being used to provide financial services including depositing and withdrawing funds without filling forms, and to facilitate funds transfer. In Peru, phone-based systems with voice prompts are being used to provide financial services in rural areas. In South Africa, Wizzit, a

virtual bank uses mobile banking for their clients to send and receive domestic and international payments. In East Africa, the telecom companies of Safaricom, MTN Uganda and Zain are offering financial services for sending and receiving domestic and international payments. Safaricom alone serves more than seven million users with an agent's network that exceeds the total number of bank branches in Kenya (Kashyap, 2009).

The figure below shows the geographical spread of ICT applications in microfinance. The figure demonstrates that there is still a very limited coverage in some parts of the globe. Clearly, the least innovations are applied in Asia, with the exception of India and Philippines and none in Ethiopia.

Figure 2.2: Mapping of ICT in Microfinance



Source: ICT and MFI : Option for Mongolia (Hishigsuren, 2006)

Many literatures prove that the usage of ICT in MFIs in the developing countries is increasing (Ivatury, 2006). Despite the high diffusion, there are numbers of challenges that influence the uptake of ICT in these countries. Below are the major ones .

- ✚ Direct and indirect cost of implementing ICT applications.
- ✚ Policy and regulatory environment.
- ✚ Infrastructure development (communications, connectivity, power, etc.)
- ✚ Development stage of the financial sector, especially the microfinance sector.
- ✚ Level of financial literacy (mentality towards using technology versus human interaction).
- ✚ Population density.
- ✚ Language

Though these are the most common challenges that most of the MFIs in the developing countries experience and share, there are still certain challenges which are specific to the Ethiopian MFIs. The expensive software costs resulted from the unavailability of local software development companies and lack of skilled personnel are the other challenges facing the sector in Ethiopia.

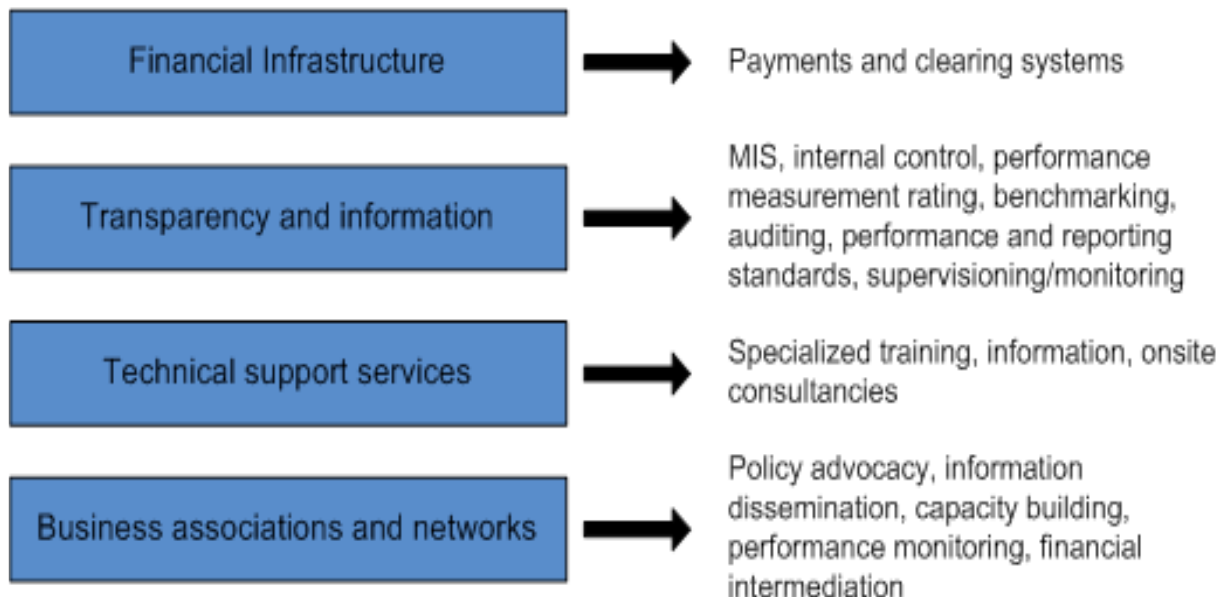
The researcher has reviewed studies conducted on ICT and Microfinances in India, Bangladesh, Uganda, Mongolia, Latin America etc. Most of the studies were aimed at either on the role or the impact of ICT on the MFIs because the MFIs in these countries have been using many of the ICT services extensively and for relatively longer period of time and therefore the impact of ICT is at a measurable level in the countries. All of the studies proved that ICT plays a significant role in harnessing the performance of the MFIs. The studies also revealed that ICT is not a choice for the MFIs but a necessity that every MFI in every country should adopt and make use of. The studies highly contributed to my study in underlining the importance of ICT in harnessing the performance of the Microfinance Institutions in Ethiopia. The assessment on the extent of usage of ICT in microfinance Institutions in Ethiopia will provide invaluable information for all concerned parties to explore ICT services best applicable to the institutions and also opens a door to researchers to conduct further studies on the subject. This will enable the MFIs to move a step forward in the adoption of ICT services in the institutions.

## 2.4 ICT Innovations for Microfinance

The penetration and implication of ICT is continuously growing in the financial sector during the last decade. Although the results from the investment on the ICT services vary from one financial service provider to another, the impact of the ICT service on the sector is not deniable. The disparity in results among various financial sectors are mostly the different levels of understanding between the organizational innovations necessary to complement new investments in technology (Castello & Danel, 2006). As defined by Brigit Helms " Meso Level," in her book called "Access to all financial services", the well-functioning financial Infrastructure or architecture and network of other service providers necessary to the operation of Microfinance Institutions is possibly the least understood component of the financial system within the microfinance community.

Figure 2.3 shows the four tiers of the "meso level". In the Brigit Helms model, ICT is a major component of the "meso level" and consequently a key component that must have its role and implication well understood (Helms, 2006).

Figure 2.3: Meso Level: Financial Infrastructure and Services



ICT is an umbrella term that includes a wide variety of communication devices, applications and the services associated with the applications and the devices. In today's world ICT and the business are becoming inseparable. ICT innovations are considered as a key strategy by many microfinance practitioners in enhancing the efficiency of Microfinance institutions. Below are the most common ICT innovations suited to the Microfinance industry and highly contributing to the sustainability and outreach of the sector (Mathison, 2006).

## **Back-Office Management Information System**

The most fundamental ICT application is the back-office Management Information System. A suitably sophisticated Management Information System helps the MFIs to monitor the quality, sustainability and efficiency of its loan portfolio, to monitor development impact and to manage general administrative tasks. It is not possible for MFIs to upscale significantly without an MIS which can grow with the institution. The Management Information Systems may not be considered as most exiting ICT innovation. But it is the very critical and fundamental aspects of the MFI's hi-tech infrastructure. Having appropriate MIS solution is a base for other innovations of the types discussed below, which are not possible without a sophisticated and appropriate back-office MIS.

## **Mobile Computing**

While the back-office MIS system enables MFIs to monitor their loan portfolio, mobile computing helps in minimizing data delays and the possibility of introducing errors during manual data entry process. The Loan Officers take palmtops to the field so that financial transactions can be recorded directly into the MIS, without the need for intermediary data entry at the branch office. The data entered in the palmtop computers is typically uploaded to the MIS at the end of the day, either directly in the branch office or via a remote communications link.

## **The Branch Office Franchise Model**

One of the challenges of MFIs is reaching very rural areas where the population density is low, the market is smaller and service provision is more expensive. Serving these areas for MFIs is very difficult in terms of cost. The “branch office franchise model” is one approach to meet this challenge where the MFI links with third-party merchant in remote areas. This is an extension of the mobile computing discussed above. These branch office franchisees manage transaction on behalf of the MFIs and they receive an agreed payment for a service on a per-transaction bases. The key qualities of franchisees are that they are long term businesses, respected and trusted in their communities, with computer skills and connectivity. A recent player in this mix, notably in India, is the rural telecentre networks that are particularly suited to serving as retail outlets for a distributed microfinance network, because of their innovation-business orientation and their familiarity with IT systems and telecommunications services.

## **Card Services, EFTPOS 5 and ATMs**

Credit cards were introduced to reduce the high costs associated with the small transaction lending. The common characteristics of this service include: credit for unspecified purposes, small transactions and predefined limits. Other features of credit cards, which other microfinance clients would like their providers to duplicate include, on-demand borrowing, a re-draw facility, and repayment flexibility within predefined guideline.

The introduction of card based service also requires the roll-out of either EFTPOS functionality with a third party merchants (as the branch office franchise model discussed above) and or Automatic Teller Machine (ATMs). The former is probably the better solution for microfinance, because it facilitates immediate receipt for payments and savings, which reduce the possibility of intermediary error or fraud. With ATM solutions, deposited repayments and savings are processed “back at the office” and receipted later, a process that is unlikely to secure the confidence of clients. In either solution withdrawal of credit or savings is equally straightforward. MFIs can utilize ETPOS and ATMs that do not need to be always online. This is a significant advantage in areas where telecommunications are unreliable and/or expensive. Finally, smart cards can be used in conjunction with biometric technologies (such as figure print scanners) to enhance the process of client identification; thereby enhance privacy and data security.

## **Internet Banking**

Internet banking provides clients with real-time information about their accounts, and the ability to transfer funds between their accounts. It is a vital accompaniment to card-based services allowing clients to keep track of numerous small electronic transactions.

From the bank perspective, internet banking is an efficient tool because it reduces the manual work of a teller and therefore reduces labor cost. It is easy and relatively inexpensive service to offer. The main challenge MFIs in implementing Internet banking is their clients minimal access to internet and illiteracy. In some areas, this will be overcome somewhat with the roll-out of rural telecenter networks. It is also possible to for MFIs to develop modified ATMs that provide this functionality.

## **2.5 The ICT Sector in Ethiopia and the Opportunities to MFIs.**

Despite the many challenges with the ICT sector in Ethiopia, recently there are opportunities emerging from which organizations can be benefited. In recent times, the country has shown

encouraging strides towards the expansion and utilization of Information and communication technology. One strategic direction of the Ethiopian government is making ICT as a strategic tool to its poverty alleviation program. It has been realized that the effective application of ICT services will highly contribute to poverty reduction and to the economic development of the country.

The observed realities shows that there is a good improvement in the ICT services and drastic changes will be counted in the near future. The Ethiopian government has made the development of telecommunications one of its strategic priorities. To this end, the country has made a significant progress in ICT, particularly with regard to laying out connectivity infrastructure using undersea cables and mobile technologies. Following the massive improvements in international Band width, national fiber backbone Infrastructure and 3G Mobile Broad Band Services, the county's broadband market is significantly increasing. Recently 4G LTE services are also deployed in Addis Ababa. Several ICT Infrastructure development projects are also underway such as construction of Ethio-ICT village. The village has already started its operation and in the near future it will serve as a technology hub where various technologies would be allocated a spaces to offer their service (Kinfu & Halefom, 2015). The ICT Village is established with a vision to make Ethiopia as the IT hub for Africa. Provide impetus for the development of ICT sector in the country by offering a world class business environment along with a conducive policy and regulatory regime, State-of-art infrastructure and a value proposition geared towards positioning Ethiopia as the preferred IT hub of Africa. The recently emerging companies providing innovative services such as M-Birr, Hello Cash, Kifiya, Lehulu are good initiatives towards the improvement of ICT services in the country.

The improvement in Telecom Infrastructure, the establishment of the ICT Village and emergence of technology service providing companies are good opportunities for business firms, organizations, institutions in promoting their businesses in a better way and in achieving their goals. Therefore the management of the MFIs in Ethiopia need to see the available opportunities and put a strategic direction on how to make use of them.

### **3 CHAPTER THREE**

#### **RESEARCH METHODOLOGY**

##### **3.1 Research Design**

Research designs are the plans and procedures that cover the decision from broad assumption to detailed method of data collection (Creswell, 2003). There are three different types of research designs: qualitative, quantitative and mixed. To achieve the aim and to increase the accuracy of the study, the mixed approach was chosen. The mixed approach helps to better understand and triangulate quantitative results obtained through survey questionnaires. Among the three categories of research types namely; Exploratory, Explanatory and Descriptive, the descriptive approach is applied to this study which describes the distribution of the phenomenon in a population to ascertain the facts. Descriptive research provides more information about the behavior and attributes with a goal of reaching a better understanding of the topic.

##### **3.2 Sampling**

The sample was selected from the 32 members of the Association of Microfinance Institutions in Ethiopia (AMFIE). A sample of six institutions was purposively selected mixing from the mid-sized and the largest, from those based in Addis Ababa and from those based outside of Addis Ababa and from those backed by the government and from those backed by NGOs to participate in this study. Therefore, the selected MFIs for this study can be a general representation of the MFIs in Ethiopia. The purposive sampling is the most suitable for small population (Jarvinen, 2000).

The total number of population was 72 employees from the six MFIs. The survey included Finance Managers, Chief accountants, Finance Officers, IT Managers, IT Officers, Operations Managers, Loan Officers and Administration Managers or Administration Officers. These employees were purposively selected because they have reliable information about the IT services in the institutions. A total of 12 questionnaires were distributed to each of the MFIs. The questionnaire was adopted from pre-existing questionnaires of similar studies.

In addition to the questionnaires, interviews were conducted to selected employees of the MFIs. Physical observation was also undertaken to enhance the reliability of the findings of

the study. The selected MFIs for this study were: ACSI, OMO, VisionFund, Wasasa, Busa Gonofa and SFPI

Table 3.1: The six MFIs with their portfolio

<b>MFI</b>	<b>Number of Active Borrowers</b>	<b>Total Asset</b>	<b>Total Capital</b>	<b>Affiliates to</b>
<b>ACSI</b>	916,736	10,642,654,353	2,435,786,608	Government
<b>OMO</b>	327,888	713,468,141	713,468,141	Government
<b>VISIONFUND</b>	73,114	482,079,719	260,654,739	NGO
<b>WASASA</b>	58,357	325,957,818	102,454,789	NGO
<b>BUSA GONOFA</b>	67,787	190,962,805	74,558,941	NGO
<b>SFPI</b>	36,550	188,412,941	68,901,071	NGO

Source : Association of MFI March, 2015 Report

### **3.3 Data Collection Instruments**

Generally, there are two types of data sources; Primary data sources that are directly collected by the researcher from the source and Secondary data sources which are collected and compiled by others. Data collection methods depends on the research objectives and the research design. In this study primary data are intensively used through questionnaires, interviews and observations. In addition, secondary data from publications and bulletins of AMFIE and NBE were consulted. Collecting data from two or more sources helps to support the quality of the research.

#### **3.3.1 Primary Data**

For the quantitative data a simple questionnaire was used. The questionnaire was designed based on literatures from previous similar studies (Ssewanyana, 2007, 2009) and pre-existing questions were modified to meet the requirements of this study. Pre-existing questions of similar studies provide accurate measures as they are pre-tested before first usage and hence

they have high degree of validity and the quality of the data will also be high. The Questionnaire was divided into five sections (See Appendix1)

- ✚ The first section contains general information.
- ✚ The second was on computer usage.
- ✚ The third section focuses specific to it department.
- ✚ The fourth on the internet usage.
- ✚ The fifth and the last section was on ICT and MFI's performance .

Interview was the other primary data collection method used in this study. Interview is one of the major data collection methods and can be defined as a two-way systematic conversation between an investigator and an informant, initiated for obtaining information relevant to specific study. For this study, personal interviews with Staffs from the selected MFIs were undertaken to support the data collected through questionnaires. In addition to the questionnaire and the interviews, observation had been undertaken to some of the MFIs. According to (Kumar, 1996), there are two types of observations: participant observation and none-participant observation. None-participant observation was carried out to some of the MFIs to supplement the other data collection methods.

### **3.3.2 Secondary Data**

The annual reports and bulletins from Association of Microfinance Institution in Ethiopia (AMFIE) and NBE (National Bank of Ethiopia) were the secondary data sources for this study.

### **3.4 Data Processing and Analysis Procedures**

The data collected through Questionnaires and Interviews were checked for errors and omissions. After the collected data is verified carefully, classification and coding took place. Finally, the data summarized and arranged in a compact form and made ready for further analysis. Out of the 72 questionnaires circulated 63 were returned resulting in 87.5 % response rate. The remaining 9(12.5%) of the questionnaires were not returned. The analysis was done in a way to meet the objectives of the study. The data gathered with questionnaires were analyzed using statistical tools, such as graphs, tabulation and percentage using SPSS version 20.0 software. The quantitative data was analyzed using descriptive statistics. The data gathered through interviews were coded and categorized based on the responses.

Quotations were used to illustrate the results of the interview. The secondary data gathered from documents were also integrated in the analysis and interpretation as appropriate. After both the qualitative and quantitative data are organized, the interpretation of the data and then the findings were discussed. Finally, based on the findings of the study, conclusions and recommendations were drawn.

### 3.5 Validity and Reliability of the Data

There are different content validation approaches discussed by several authors. One approach discussed by Hyman, L. Lamb, J. and Bulmer, M. (Hyman, Lamb, & Bulmer, 2006) is using pre-existing questions of similar studies. One advantage of using this approach is that they will have been extensively tested at the time of first use. Hence, the degree of validity and quality of data are likely to be high. Therefore, the questionnaire in this study was adopted from literatures of similar studies and only few questions were modified to meet the study. It would have been good if the questionnaire was piloted to establish the suitability of the questions. But as most of the questions were adopted and due to the limitation of time the questionnaire was not piloted. However, the questionnaire were reviewed by employees from two of the selected MFIs and corrections have been done based on the comments. The internal consistency of the Likert scale questions for this study was checked using Cronbach's alpha. This single correlation coefficient is an estimate of the average of all correlation coefficients. Measures in this study will be reliable if cronbanch's coefficient alpha is 0.7 or greater (Sakaran, 2003). In this regard, the Cronbach's alpha for this study is 0.756. This shows that the items are reliable and the entire questions are consistent.

Table 3.2: Cronbach's alpha Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.756	.741	12

## 4 CHAPTER FOUR:

### PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter consists of two major parts. The first part presents the general characteristics of the respondents and the second part the analysis and the presentation of the data collected from the respondents in reference to the below research questions.

- ✚ What ICT Services do the MFIs use for their business operation ?
- ✚ To what extent the ICT services are utilized in the MFIs?
- ✚ To what level ICT is recognized in Microfinance Institutions in Ethiopia ?
- ✚ What opportunities can Information technology bring to the MFIs in Ethiopia ?

#### 4.1 Characteristics of the Respondents

This part of the survey is concerned with the background of the respondents to understand the employees who participate in the filling of the questionnaires. This includes the respondents Gender, Educational Background and Years of Experience.

Table 4.1 The distribution of the respondents across the six MFIs

			Microfinance Institution						Total
			ACSI	OMO	VisionFund	Wasasa	Busa Gonofa	SFPI	
<b>Gender</b>	Male	Count	7	9	6	10	6	7	45
		% of Total	11.1%	14.3%	9.5%	15.9%	9.5%	11.1%	71.4%
	Female	Count	4	2	6	1	4	1	18
		% of Total	6.3%	3.2%	9.5%	1.6%	6.3%	1.6%	28.6%
<b>Total</b>		Count	11	11	12	11	10	8	63
		% of Total	17.5%	17.5%	19.0%	17.5%	15.9%	12.7%	100.0%

Table 4.1 depicts, the distribution of respondents across the six MFIs. Out of the total of 63 survey respondents, 17.5 % were from ACSI, 17.5 % were from OMO, 19 % were from VisionFund, 15.9% were from Wasasa, 12.7 % were from SFPI. This shows that the number of respondents slightly greater in the first four MFIs than the last two. The difference is due the questionnaires which were not returned. As mentioned in section 3.4 Some of the

employees were busy and unable to return the questionnaires and few were not willing to fill-out the questionnaires and therefore from the distributed 72 questionnaires 19 were not returned. Even so, the researcher claims that adequate number of questionnaires were returned from each MFI which can represent true information of the MFIs.

Table 4.2: The number of Respondents based on Education

			MicroFinance Institution						Total
			ACSI	OMO	VISIONFUND	WASASA	BUSA GONOFA	SFPI	
Level of Education	Bachelor Degree	Count	9	10	7	10	8	6	50
		% of Total	14.3%	15.9%	11.1%	15.9%	12.7%	9.5%	79.4%
	Masters	Count	2	1	5	1	2	2	13
		% of Total	3.2%	1.6%	7.9%	1.6%	3.2%	3.2%	20.6%
<b>Total</b>		Count	11	11	12	11	10	8	63
		% of Total	17.5%	17.5%	19.0%	17.5%	15.9%	12.7%	100.0%

Table 4.3 Number of Respondents based on their work experience

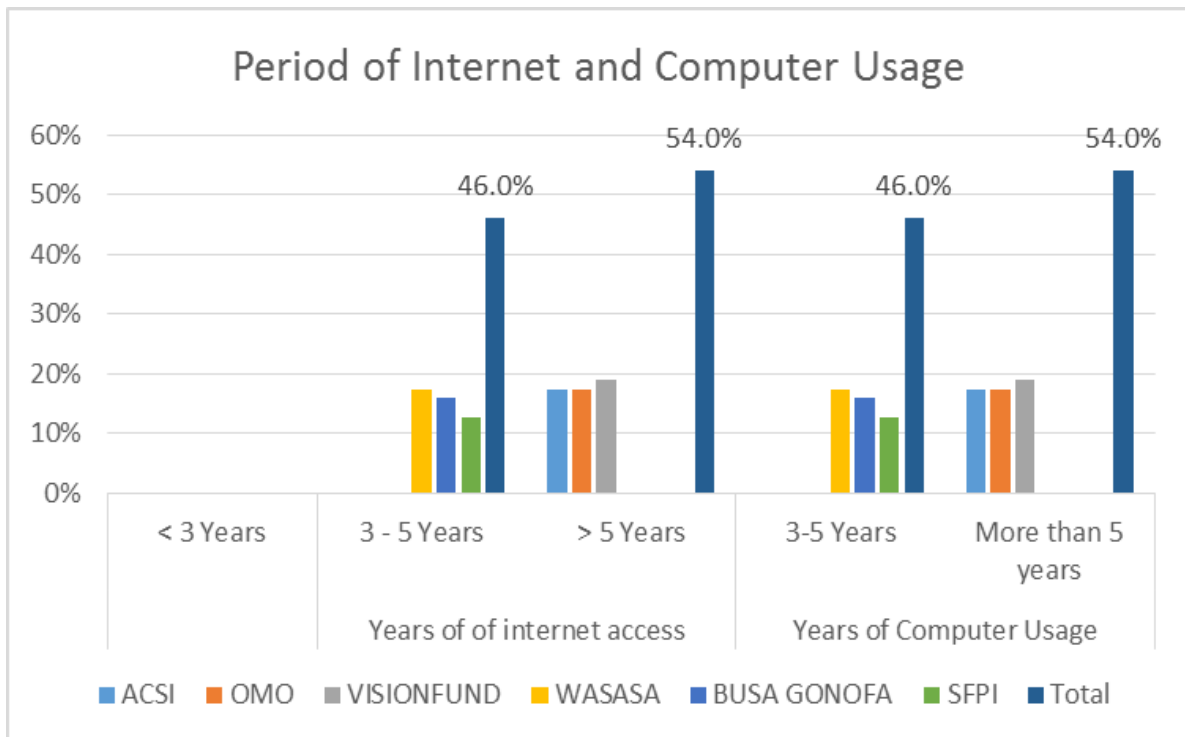
			Microfinance Institution						Total
			ACSI	OMO	Vision Fund	Wasasa	Busa Gonofa	SFPI	
Work Experience	1-2 years	Count	1	3	4	3	2	2	15
		% of Total	1.6%	4.8%	6.3%	4.8%	3.2%	3.2%	23.8%
	3-5 years	Count	6	6	3	5	4	4	28
		% of Total	9.5%	9.5%	4.8%	7.9%	6.3%	6.3%	44.4%
	6-10 years	Count	3	1	3	2	4	2	15
		% of Total	4.8%	1.6%	4.8%	3.2%	6.3%	3.2%	23.8%
	Above 10 Years	Count	1	1	2	1	0	0	5
		% of Total	1.6%	1.6%	3.2%	1.6%	0.0%	0.0%	7.9%
<b>Total</b>		Count	11	11	12	11	10	8	63
		% of Total	17.5%	17.5%	19.0%	17.5%	15.9%	12.7%	100.0%

As table 4.2 depicts, out of the total respondents 79.4 % has a Bachelor degree and the remaining 20.6 % were Master’s degree holders. This shows that the respondents have a good educational background and hence they do not have a difficulty in understanding the questions in the questionnaire. This highly enhances the reliability of the data. Moreover, as depicted in table 4.3, 23.8 % of the respondents have 1-2 years of work experience, 44.4 % of the respondents 3-5 years, 23.8% 6-10 years and the rest of the respondents have more than 10 years of experience. Most of the respondents have more than three years of work experience in their respective institutions and this implies the respondents have good knowledge about their institutions. It can be concluded that the educational background and the number of years of experiences of the respondents have highly contributed to the infallibility of the results of the survey.

#### 4.2 Period of Computer and Internet Usage

Figure 4.1 depicts the Period for which the MFIs have been using Computers and the Internet

Figure 4.1: Perception of respondents towards period of the period of computer & Internet Usage



As can be seen from the figure, all the respondents from Wasasa, Busa and SFPI which make 46% the total population responded that the MFIs have been in use of computers and the internet for three years since this study was conducted. The respondents from ACSI,

VisionFund and OMO which make 54% of the total population responded that the MFIs have been using computers and the internet for over 5 years. Generally, all of the MFIs have been using computers and internet for over 3 years. Relative to their age, the period of usage of the technologies by the MFIs is still very short. However, the initiation shows that there is a certain level of understanding by the management of the MFIs towards the benefits of the technologies. The MFIs use the computers and the internet for a variety of purposes depending on the functions of the departments within the MFIs. For example, employees in the Finance department use the computers primarily for Electronic Bank Transaction, IT primarily for Communications and Operations for spreadsheets.

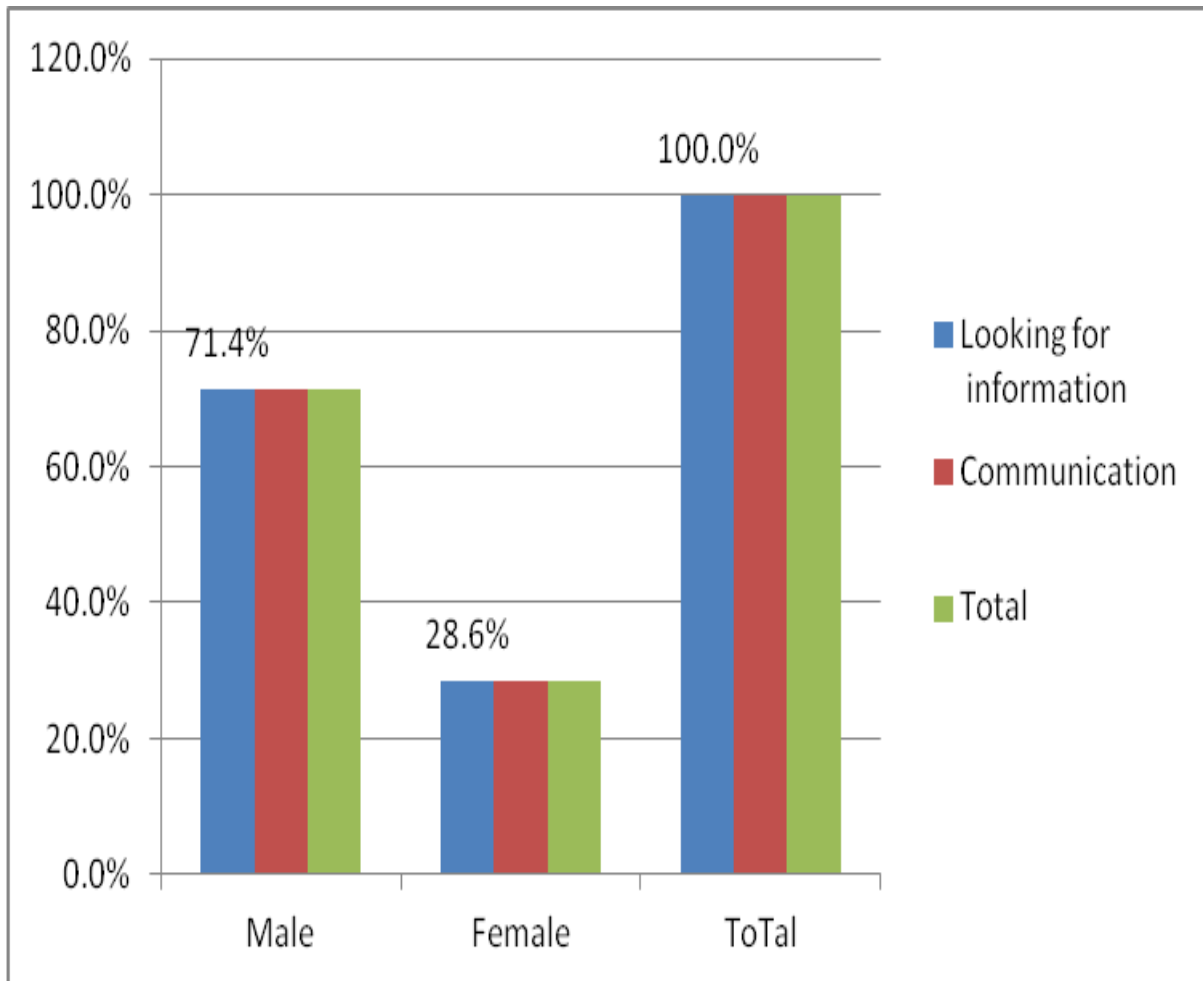
Table 4.4: Perception of respondents towards the rank of Computer Usage Based on Departments

<b>Computer Usage Rank</b>						<b>Total</b>
<b>Department</b>	Spread Sheet	Accounting	Electronic Bank Transaction	Data Management	Communication	
<b>Finance</b>	3	1	14			18
<b>IT</b>			8	1	9	18
<b>Operations</b>	8	1	1	7		17
	11	2	23	8	9	53

Table 4.4 presents the computer usage ranking of three major departments of the six MFIs as an illustration. As the table depicts, from a total of 18 Finance staffs of the six MFIs 14(77.7%) indicated that they are using their computers primarily for the purpose of Electronic Bank Transactions, From 18 IT staffs 9 (50%) indicated they are using computers primarily for communication and from 17 staffs from Operations 8 (47.1%) indicated that they are using their computers primarily for spreadsheets. This indicates that every unit/department within the MFIs uses computers for the day-to-day operation of the business and the type of usage depends on the functions of the departments. With respect to connectivity, Figure 4.2 depicts that the MFIs use Internet for a couple of purposes, for looking for information and for communication. The heights of the bars show the percentage of the respondents and the different colors of the bars show the purpose for which the MFIs

are using the internet. The results of the survey shows 71.4% of the respondents indicated the MFIs are using the internet for looking for information and 28.6% indicated the MFIs are using the internet for communication in addition to looking for information.

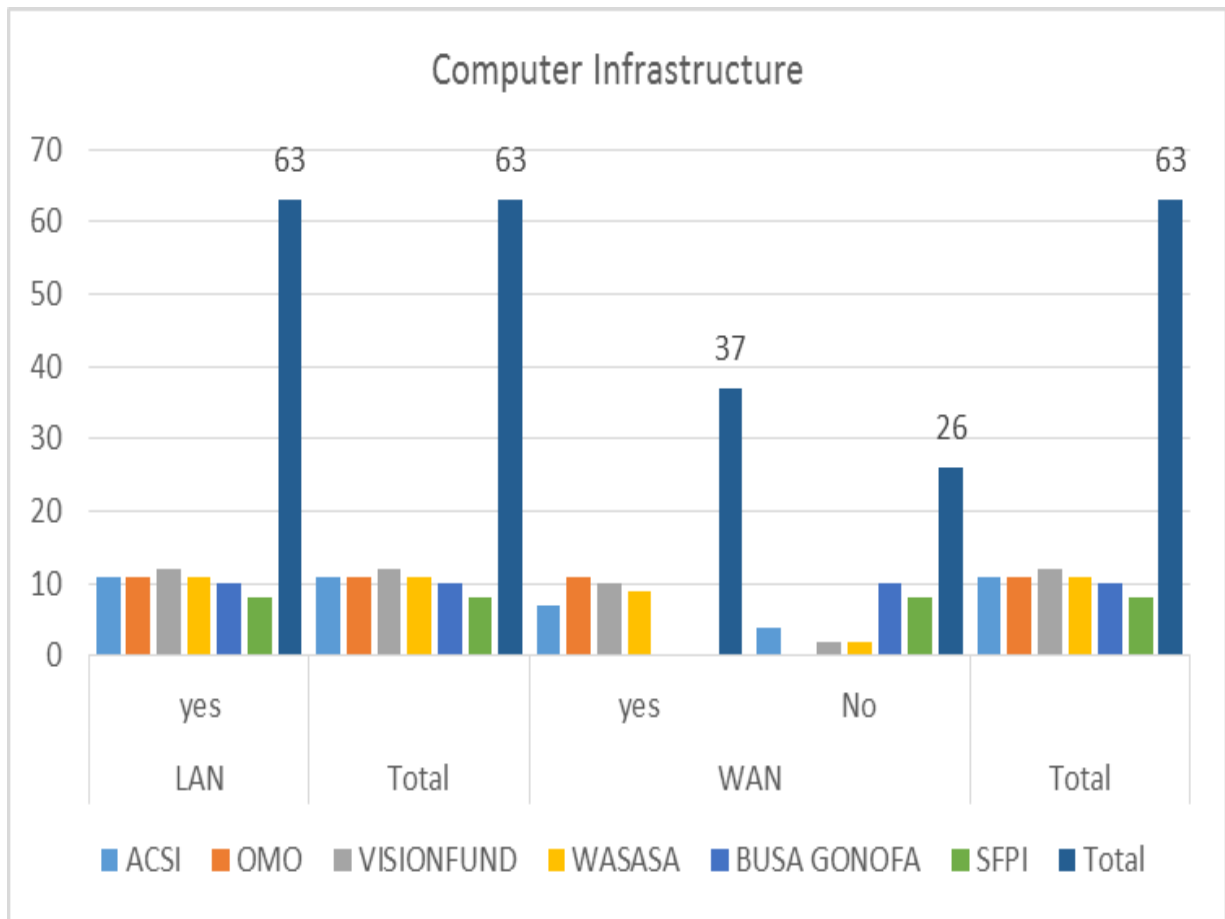
Figure 4.2: Perception of Respondents towards Internet Usage



### 4.3 Computer Infrastructure

Computer Infrastructure is a basic service and requires high investment. As Figure 4.3 depicts all of the six MFIs have Local Area Networks and four have Wide Area Networks in addition to the Local Area Network. The Wide Area Networks are the VPN service subscribed from Ethio-Telecom for connecting the branches from the Head Offices. The MFIs who have WAN are those MFIs implemented MIS. The WAN is primarily used for accessing the MIS from the branches to the Head Offices.

Figure 4.3: Perception of Respondents towards the availability of computer Infrastructure



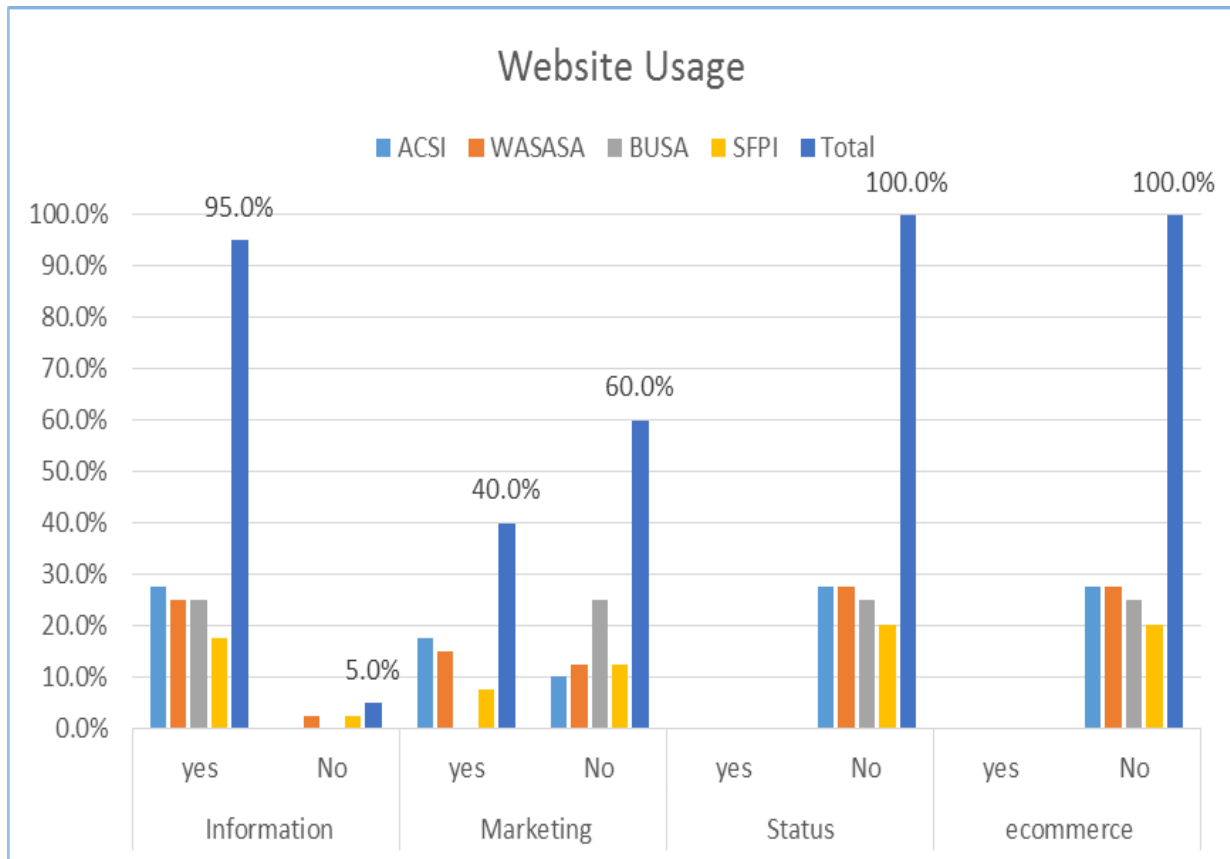
#### 4.4 Website Usage

These days, organizations invest huge amounts of money for website development and administration. The usage of the websites vary from organization to organization depending on the objectives and missions of the organizations. The usage also depends on the understanding of the organizations towards the benefits of the websites. Some institutions use web technology very seriously and others use it for a very limited purpose. Generally, websites are used for Promotions, Marketing, Advertisements, Provision of Information, e-learning, etc. Organizations use web technologies for one or more of the aforementioned purposes. Figure 4.3, depicts out of the six MFIs, four (ACSI, Wasas, Busa Gonofa, SFPI) have their own websites whereas the remaining two (VisionFund and OMO) do not have websites. The heights of the bars indicate the percentage of the respondents and the colors of the bars indicates the Microfinance Institutions.

With respect to the usage, most of the MFIs use their websites for providing information about their institutions and some use for marketing as well. As Figure 4.3 shows, from a total

of 40 respondents of the four MFIs with websites, 38 (95%) respondents indicated that the MFIs are using their websites just for providing information and 40% of the respondents indicated the MFIs are using their websites for marketing in addition to information. Generally, the survey depicted that the MFIs are using their websites primarily for providing information.

Figure 4.4: Perception of Respondents towards website Usage



Besides, all of the respondents of the MFIs with websites indicated that the development of the websites are undertaken by external consultancy firms. When it comes to the frequency of updating the websites the MFIs do not update their information frequently. This indicates that the contribution of the websites to the performance of the institutions is minimal or negligible.

#### 4.5 ICT Innovation Usage

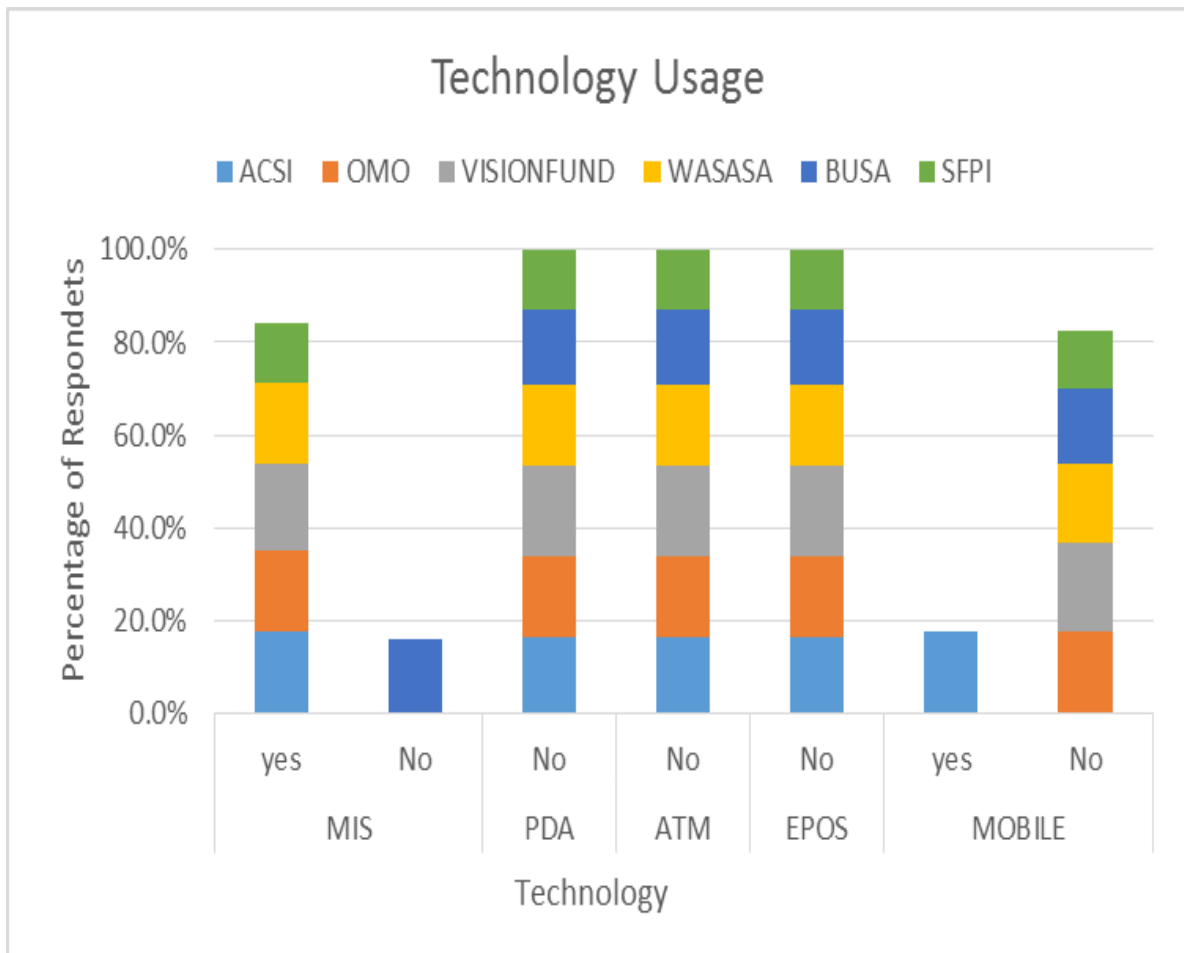
Nowadays, there are a number of ICT innovations promoting the business world. The application of the innovations depends on the type of business. Some of the tools are more suited to development and humanitarian activities and some are suited to the financial sector. Most microfinance practitioners identified technologies which are most suited to the

microfinance business and their application is highly contributing to the performance of the sector in many developing countries. MIS (Management Information System for the Financial Transaction), PDAs, Mobiles, ATM, EPOS and smart cards are the most common and widely used innovations promoting the sector. Literatures show that the prevalence and adoption of these innovations in the developing countries have been increasing from time to time. The study investigated the level of utilization of these innovations in the Ethiopian Microfinance Institutions.

As Figure 4.5 depicts, except Busa Gonofa all of the MFIs are using MIS(Banking Application) for managing their financial transaction. Besides the survey, observations and interviews indicated that ACSI and Visionfund have been using MIS for so long and Wasasa and OMO are just at the start. In addition, SFPI is using an open source MIS whereas the remaining MFIs use licensed Banking applications. The MIS is helping the MFIs to effectively manage loan portfolios, to monitor transactions, generating various reports for decision making, to deliver quality and transparent services to the clients. Furthermore, the MIS is a backbone for other ICT innovations for microfinance services and therefore the MFIs can enhance the use of the MIS incorporating it with other innovation. For example, Loan Officers can take palmtops to the field, therefore they can enter data directly to the palmtops instead of manually recording and upload to the MIS at the end of the day. The paper based transaction and manual data entry can be resulted in data delays for days even weeks and there is a high possibility of introducing errors during the data entry process.

With respect to the ICT innovations, only ACSI has started using Mobile Banking. The rest do not start using any of the technologies. However, these technologies are great opportunities for the MFIs to reach their rural clients. Limitation of budget is one of the challenges most cited by the MFIs for not adopting the technologies due to big investment required in terms of Infrastructure, connectivity and software in bringing these innovation to business. However, some of these customer focused services can be achieved in partnership with the currently emerging technology companies. The MFIs can buy the services without implementing the system used to run the services by their own. For example, the MFIs can adopt the mobile banking and agent banking (the branch franchise model) in partnering with these companies. Currently, there is a good beginning in the country that companies providing such services are emerging. “M-Birr” is one of these services designed by a company called MOSS ICT Consultancy.

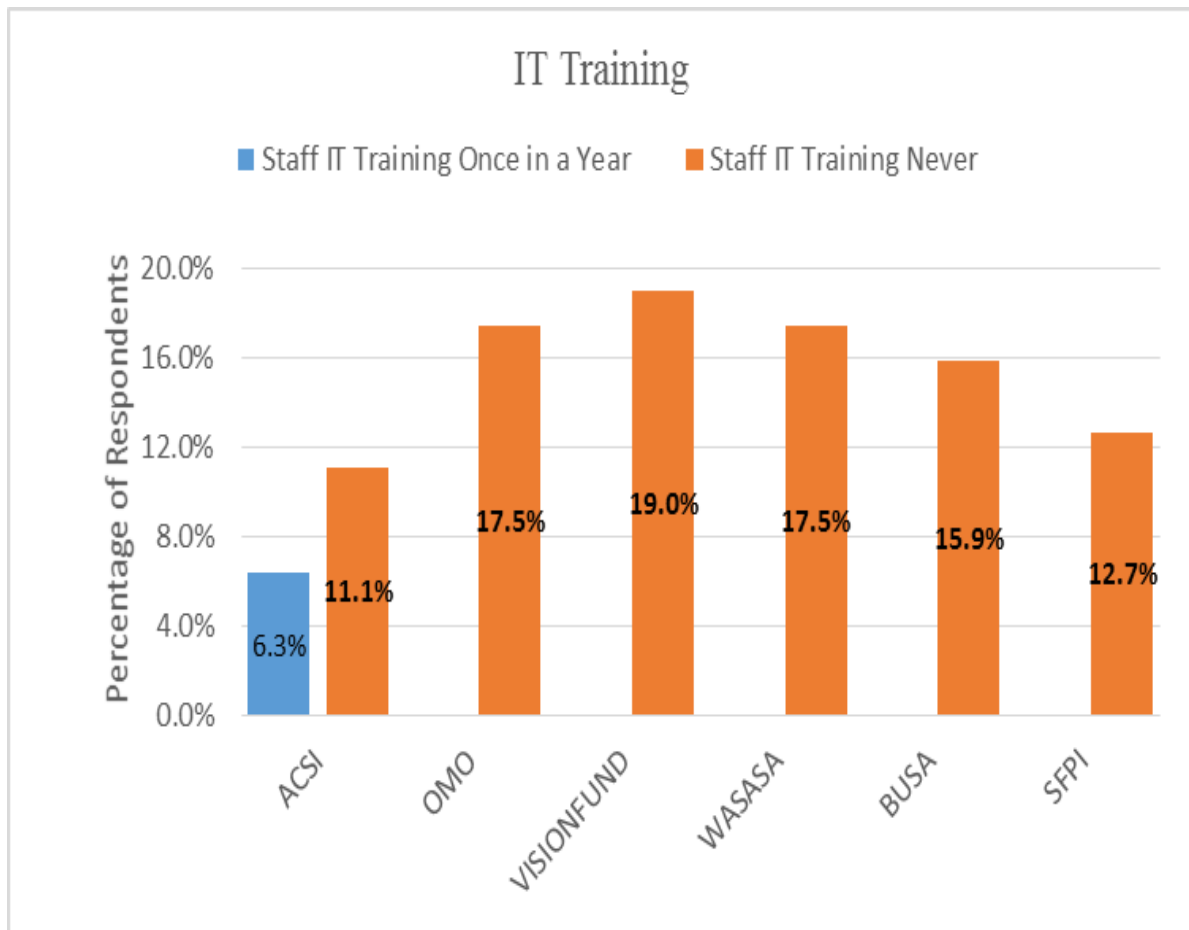
Figure 4.5 : Perception of Respondents towards Technology Usage



#### 4.6 Staffs ICT Training

Training is one of the big part in enhancing the adoption and usage of ICT services in organizations. The management of many organizations is interested in the benefits which can be acquired from the ICT services. However, most organizations fail to invest on staff training. The proper usage of ICT services increase staffs performance whereas the limited knowledge towards ICT leads to improper utilization of the services and hence will be reflected in poor performance of the staffs and the institutions as a whole. Literatures indicate that many employers haven't realized the positive impact of training and organizational performance or productivity. It is a fact that provision of efficient service by any organization depends on its workforce. As Figure 4.6 depicts, from the total of the six MFIs, except 4(6.3 %) respondents from ACSI, all of the respondents indicated that they never had capacity building training on IT. Only 4 respondents from ACSI said, they get IT training once in a year. It can be concluded that there is a big gap within the MFIs towards the awareness on the importance of IT services.

Figure 4.6: Perception of Respondents towards Employee IT Training



#### 4.7 IT Staffing

Employees are key determinants to the success of organizations. Maintaining adequate number of a well-trained and a well-qualified workforce is very critical. Lack of adequate number of qualified IT staff is the other common issues hindering the implementation of the right ICT solutions in the microfinance institutions. Limited management and analytical skills are the most common problems observed within the MFIs. As a result, many institutions fail to manage their IT services and to properly evaluate and negotiate ICT contracts. As a result, the institutions will end up in relying on expensive external advisors which are not able to provide adequate internal support during and after the implementation of the services. The other common problem in most Microfinance Institutions associated with staffing is IT being considered as a unit providing technical support than being part of the core business of the institutions. Whenever IT is not considered as part of the core business of an institution and led by unskilled IT managers, the IT strategy of the institutions will be affected and hence the IT risks will be reflected in the poor performance of the institutions.

There are various factors contributing to the success of every business. Literatures prove that those organizations that do invest on ICT increase their market share, financial performances and overall competitiveness. This is one of the gaps which has not been realized in most MFIs in Ethiopia. Figures 4.8 & 4.10 depicts the reason for the inadequate number of IT staffs and the recognition given to the IT in the institutions. Figure 4.7 shows, three of the six MFIs (Wasasa, Busa Gonofa and SFPI ) do not have adequate number of IT staffs. Figure 4.8 depicts, from the total respondents of the aforementioned MFIs 69% indicated Limitation of budget, 13.8 % indicated the less recognition given to the IT department, 13.8 % indicated high staff turnover and 3.4% indicated the outsourcing of the IT services as a reason for the inadequate number of IT staffs. In addition to the inadequate number of IT staffs, IT is not represented in the management in the institutions. Figure 4.9 depicts IT is not represented in the management in three MFIs (Wasasa, Busa and SFPI). As Figure 4.10 indicates that 100% of the respondents from the three MFIs with inadequate number of IT staffs indicated that IT is not recognized as part of the core business and is not represented in the Management. Generally, the survey result shows that most of the institutions do not have adequate number of IT staff and at the same time IT is recognized as an add-on or a unit providing technical support than part of the core business of the institutions.

Figure 4.7: Perception of Respondents towards IT Staffing

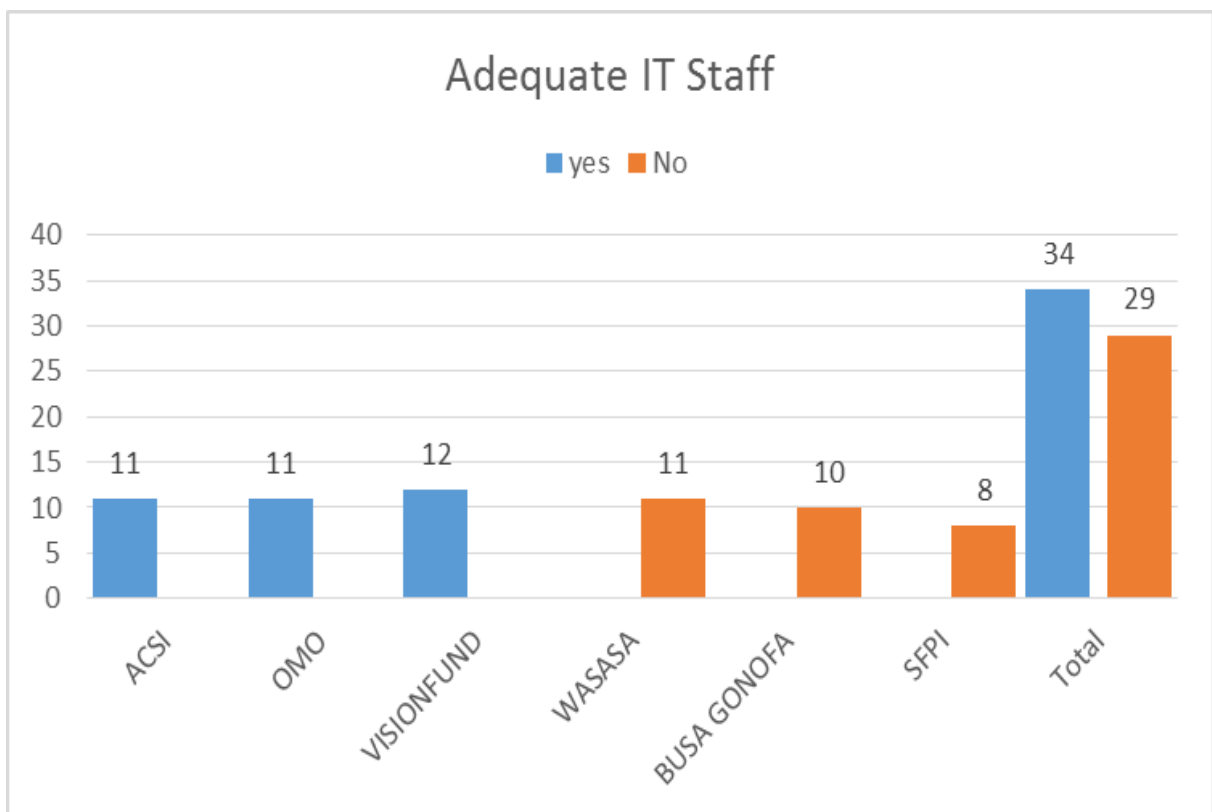


Figure 4.8 : Perception of Respondents towards the reasons for Inadequate IT Staffs

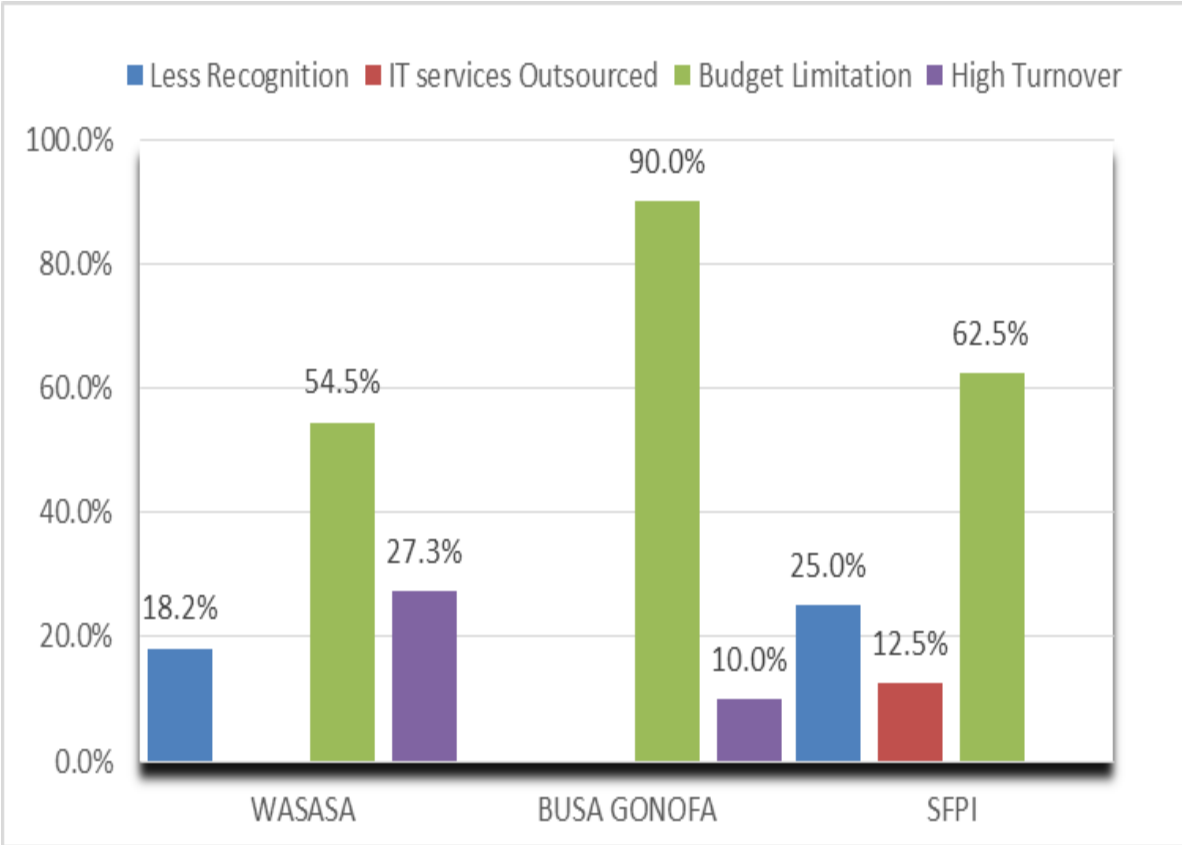


Figure 4.9: Perception of Respondents towards the Representation of IT in the Management

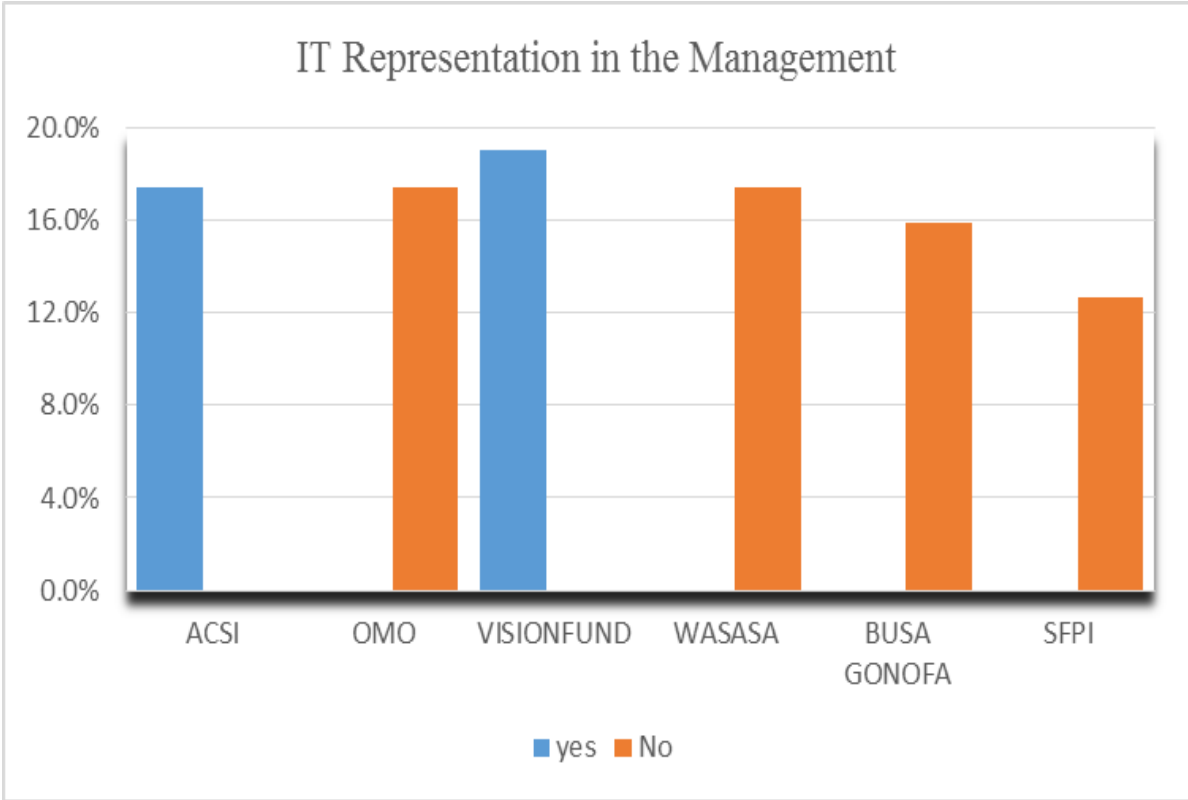
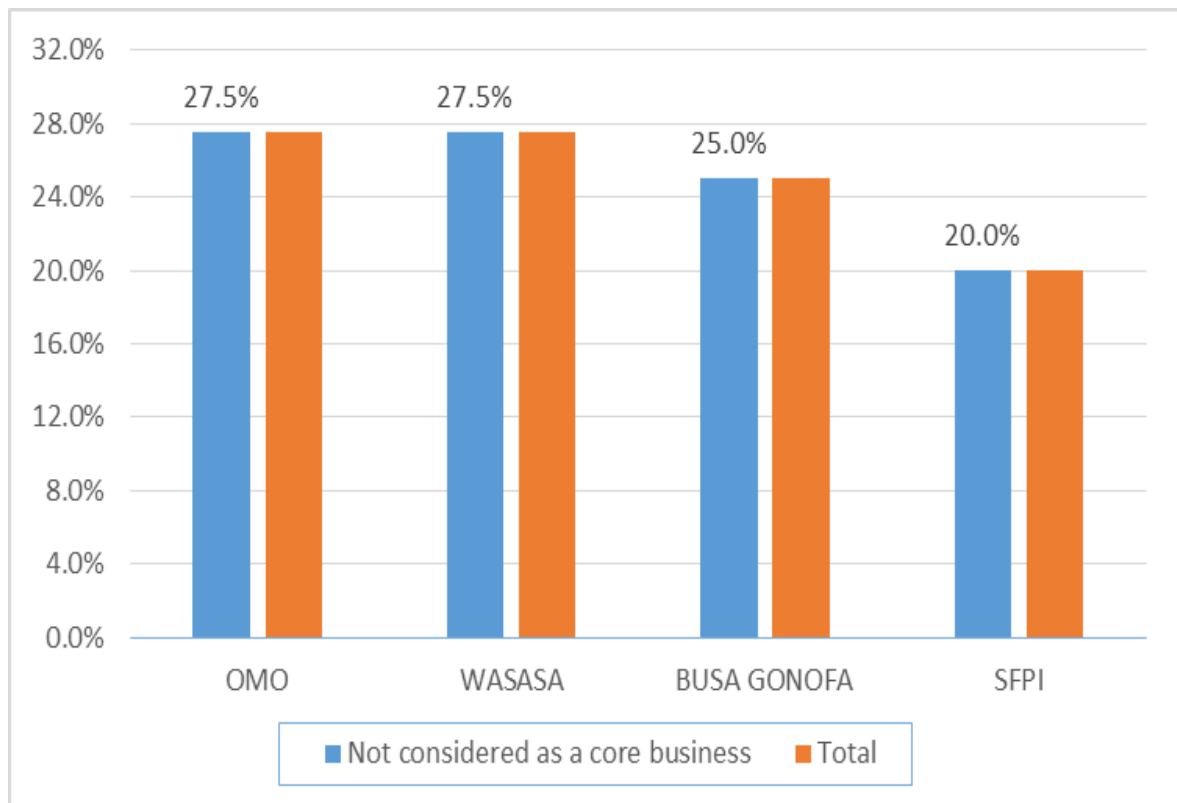


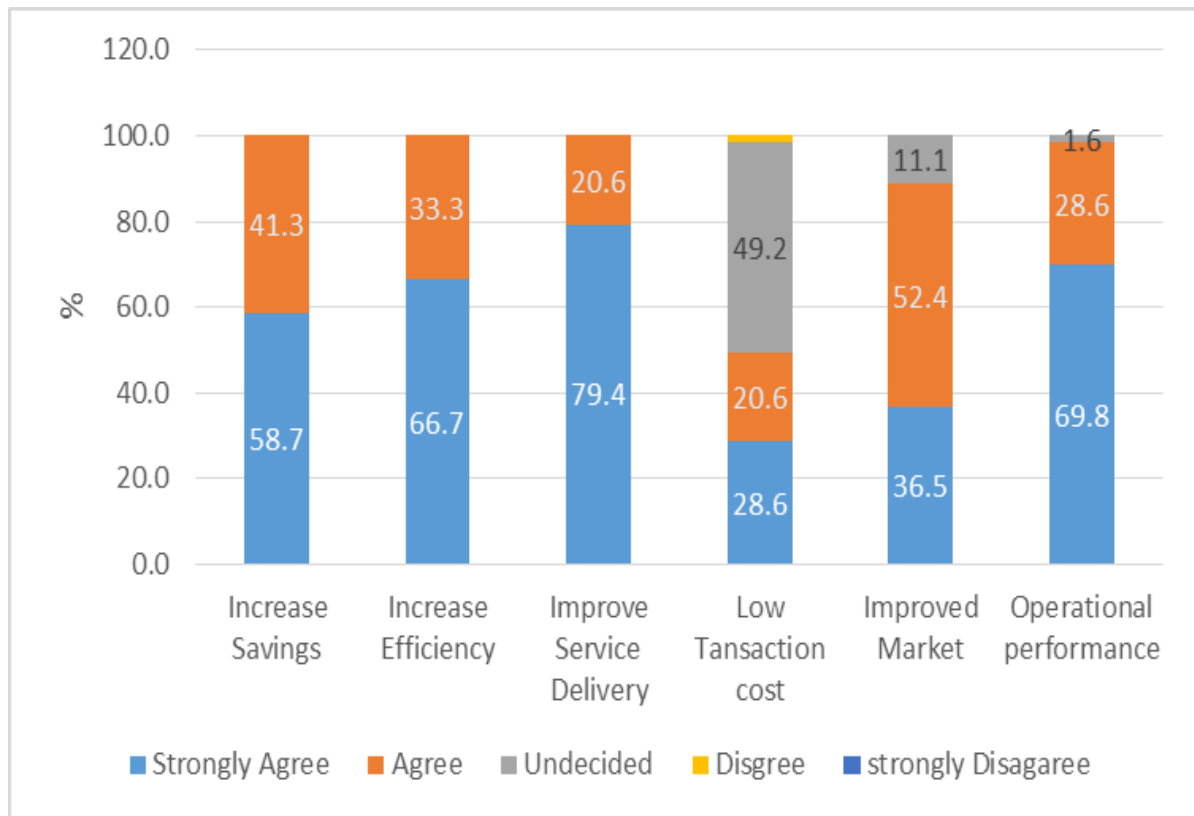
Figure 4.10: Perception of Respondents towards the reason for IT not represented in the Management



#### 4.8 Contribution of ICT to MFIs

Despite the challenges the MFIs facing in rolling-out most the ICT innovations in supporting their business, most of the respondents confirmed that the existing limited ICT services within the institution have contributed to the performance the institutions. Figure 4.11 depicts that the respondents strongly agreed that ICT contributes in increasing efficiency (66.7%), improved service delivery (79.4%), increased savings (58.7%), improved market performance (28.6%), Improved Operational performance (69.8%). Some respondents agreed on increased savings (41.3 %), increased efficiency (33.3%), improved service delivery (20.6%), improved market performance (52.4 %), improved operational efficiency (28.6%). There were 49.2 % and 11.1 % respondents who were undecided on whether ICT contributes low transaction costs and improved market respectively. Only 1.6 % or One employee disagreed on the contribution of ICT on low transaction cost. The overall survey result shows ICT highly contributes to the performance of the MFIs. The heights of the bars indicates the percentage of the respondents and the bands in the bars indicate the choices of the respondents towards the question.

Figure 4.11: Perception of Respondents towards the Contribution of ICT to MFIs.



#### 4.9 Barriers of ICT Usage

Associated with the limited usage of ICT, the study has investigated factors contributed towards the limited usage. Table 4.4 presents the perception of respondents towards the various barriers. All of the respondents agree that expensive software, expensive qualified personnel associated with the limitation of budget and poor Telecom Infrastructure contributed to the limited usage of ICT within the MFIs. The unavailability of local capacity to develop MIS, software for ATM, POS and other innovations is the source for the expensive software costs.

Table 4.4: Perception of Respondents towards the barriers of ICT Usage

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Disagree
<b>Expensive hardware</b>		15	26	22		
<b>Expensive software</b>	34	29				
<b>Expensive skilled</b>	1	62				

<b>personnel</b>						
<b>Poor Telecom Infrastructure</b>	32	31				
<b>Lack of Benefit</b>				63		
<b>imitation of Budget</b>	63					

#### **4.10 Discussion of the Findings**

The assessment on the usage of ICT in the Microfinance institutions in Ethiopia with a case of ACSI, OMO, VisionFund, Wasasa, Busa Gonofa and SFPI reveals the findings that are very critical to improve the level of usage of ICT in the institutions so as to improve their performances. The study comes up with the following findings.

##### **Connectivity Services**

Through all data collection methods ( questionnaires, interviews and observations), it is found that all the MFIs in this study have internet access. Most of the MFIs are using a combination of Broad band connection with fiber optics and ADSL lines with copper. As the Fiber optics service is limited to Addis Ababa and the main cities of the country, the branches are using the ADSL line with copper. Poor connectivity performance and frequent failure of the service are the major challenges the MFIs are facing. Internet being one of the big resource, having internet service is one step forward towards the usage of ICT in the MFIs. The study found out that the MFIs are using the internet for two very important purposes, for communication and looking for information. It is very clear that communication is very critical and it is one of the determinants for the success of an organization. The MFIs need to undertake a number of communication within among the staffs and outside with clients, vendors, donors and stakeholders. Internet is one of the powerful resource which help to meet this in a cost efficient way. If internet is efficiently used it will highly minimize operation costs. The researcher has observed some of the MFIs getting online support via skype and other collaboration tools from their software providers abroad and staffs providing online support from their Head offices to the branches. This is the other very important contribution of the internet to the business of the MFIs. One of the very important advantage of online support is it highly cuts travel costs and this is one ways towards reducing operation costs. However,

there is still a lot to be done on the usage of the internet within the MFIs in order get the most out of the services. Creating awareness within the staffs and having adequate qualified IT staffs and having adequate qualified IT staff for the creative and efficient management of the service are the big assignments for the MFIs.

The other important service which is very much related to internet is the availability of websites. The study found out that from the selected six MFIs four have their own websites. However, the purpose for which the MFIs using the websites is very much limited. Almost all the MFIs are using their websites primarily for providing information about their institutions and the websites are not frequently updated. Web technology is very powerful tools which can be used for a variety of purposes depending on the mission of organizations. They can be used for advertisements, promotions, e-learning, knowledge sharing, e-commerce, etc. Therefore, besides providing information, the MFIs can use their websites for other purposes which can add value to the performance of the institutions. The MFIs can meet this through having qualified professionals who are able to manage the service. The MFIs need to self-evaluate within themselves with this respect as well.

### **Computer Infrastructure**

The study revealed that most of the MFIs have both LANs and WANs. These are basic service which enable the MFIs to share their limited ICT resources. The MFIs are using the VPN (Virtual Private Network ) services subscribed from Ethio-Telecom as a WAN for connecting branches to their Head offices. The Wide Area Networks used for online financial transaction from Head Office to branches and for the transfer of other relevant data from the Head Office to the branches and Vice-versa. The MFIs agree that this has highly contributed to their business in fast delivery of the services to their customers and in having real-time data. In time when these services were unavailable staffs required to travel to their Head office for delivering data. This had affected the institution in incurring unnecessary operation cost, delays in reporting and data losses. Having real-time and accurate information is very important for decision makers. Therefore, the Infrastructure service with the MIS application are services playing a great role in enhancing the performance of the institutions. However, there is still a gap in terms of standardization and security. Observations shows that both the LANs and the WANs lack standardization and security. The Network cabling, the Network devices and the datacenter do not fulfill the basic requirements as financial sector. The high cost associated with the implementation of standardized ICT Infrastructure, and the lack of

adequate skilled staff in managing the services are the main challenges facing the MFIs with this respect.

### **ICT Innovation Usage**

With respect to the usage of innovative technologies such as MIS, Mobile Banking, ATMs, PDAs, Smart cards etc., the Ethiopian MFIs are lagging far behind as compared to MFIs in other countries. Recently, there is encouraging startup that many MFIs have been investing a huge amounts of money in implementing MIS. Some like ACSI have started using Mobile Banking linking with the M-Birr service. AMFIE is also proposing a road map for MFIs to use a shared MIS from a common data center. All these initiatives show that the MFIs are realizing the benefits of ICT in managing their operations. Especially associated with growth of their portfolio the implementation of appropriate Information System is becoming mandatory to the MFIs. Some of the MFIs have used MIS for a relatively longer period and some are on the way of implementation. For example; ACSI and VisionFund have been using MIS since 2009, Wasasa and OMO started since a year ago, SFPI is on the move from the open source to a standard MIS solutions.

The MIS is a very critical technology which helps the MFIs to gather and analyze accurate, timely and high-quality information about customers and transactions. MIS is the tool which enable the institutions to better organize their data for the purpose of decision making, efficiency and external reporting. Microfinance Institutions maintain large amounts of critical business data, from basic client information to detailed analysis of portfolio statistics. Benefits of MIS to the Microfinance Institutions include easier cash-flow management and forecasting, timely reporting regarding portfolio risks, real time reporting. In sum, an appropriate MIS can increase organization's efficiency and decrease operating costs. The survey results indicated that some MFIs have been using MIS and some are on the way towards implementation. It is found out from observation that the cost of acquiring and maintaining the system and lack of skilled staff operating on the system are the two big challenges facing the MFIs with respect to the usage of MIS. However, the usage of MIS to process data and report on activities is becoming a necessity not a matter of choice for the MFIs.

The usage of PDAs, ATMs etc. has not been started in any of the MFIs since this study was conducted. This is primarily due to the very little prevalence and adoption of the technologies in the country as a whole. The PDAs(Personal Digital Assistant) are small handled computers

that take advantage of portability and the ability to store and process large amounts of data. Several MFIs are now using PDAs for their operation. PDAs can replace the manual paper based methods of data collection and hence have an advantage of increasing data accuracy, operational efficiency and staff productivity especially in rural areas. Through PDAs customer officers can obtain an electronic list of customers, historical client information, fill out loan application forms, etc. This highly increases the data accuracy and the customer satisfaction as well. Though the usage of the PDAs is difficult due to the limited prevalence of the technology in the country and the limited budget of the institutions, the awareness with towards the opportunities and the benefits coming out should be there within the MFIs. However, there are still other client focused services currently available with which the MFIs can enhance their competitive advantage. One of these client focused services is the mobile banking (m-banking) service.

The m-banking service enables borrowers to receive loan disbursements and make loan payments using their mobile phones. Mobile phones provide an affordable service to the poor and are the most successful ICT innovations used by MFIs of many countries. “M-Pesa” one of the successful mobile payment service used in most African countries is a good example for this. This particular technology enables the MFIs to lend to individuals that are too geographically distant to coordinate with profitability. It also saves the borrowers cost of travelling to an MFI branch to conduct a transaction or check a balance. The question is “Is there any hope for the Ethiopian MFIs to use and benefit from such services?” The answer is, yes. Recently, there is a good beginning that companies providing such services are emerging. The emergence of these companies together with the improving telecom Infrastructure are good opportunities for the MFIs. The m-banking service known by the name “m-birr” designed by a company called MOSS ICT consultancy is one of these services widely operating in the country.

M-Birr is a mobile money service that enables the banked and unbanked people of Ethiopia to conduct financial transactions through the convenience of mobile phones. The service is provided by MOSS ICT consultancy. Currently, the company has 800 branches and 720 agents across the country. The MFIs which provide loans, savings, money transfer, micro insurance can increase their accessibility through these branches and agents (Selamawit, 2016). Together with the improving coverage of the mobile network in the country, this a great opportunity to the MFIs to serve the hard-to-reach rural communities minimizing their

operating cost.

In order to see the benefits of the m-banking service to the MFIs, it is important to review the current or traditional mode of operation of the MFIs and compare it with the m-banking enabled operation. In the traditional approach, the MFI customers are required to pass through a long loan repayment process. For example, in case of group loan the MFI customers would require to carry their cash to the group location. Meeting would be long as each customer's cash was counted and recorded by the group treasurer and then the group treasurer have to take all the cash to the MFI branch and finally deposit the money. In other circumstances loan officers would go to the group location and collect the cash and take back the money to the branch. Both scenarios incur time and travel costs for both the group and the MFI. In addition, both the group treasurer and the loan officer incur substantial security risk traveling to the branch with large amounts of cash. In most cases, MFI branches are far away from the group locations. But with m-banking, the process is simple and safer. At any time during the repayment period, when the customers have the cash flow to make their repayment(or even the portion of the repayment) they can walk to the nearby M-Birr agent load money into their account and load the electronic value to the MFI account directly. In a country where mobile Banking Infrastructure is available, MFIs can use the m-banking system to facilitate both loan repayments and deposits. In the context of Ethiopia, the MFIs can link with M-Birr platform and through educating their customer they can be benefited from m-banking service. Therefore, the MFIs need to see the opportunities around and strategically plan on how to make use of the opportunities. MFIs can get the below benefits by using m-banking.

- ✚ The first and the most obvious benefit is the MFIs can provide better customer service. m-banking can provide MFI customers the flexibility when and where they can make loan payments and deposits, shorten group meetings and decrease cases of theft and fraud.
- ✚ The MFIs can reach the hard-to-reach customers and hence can easily increase their outreach
- ✚ Reduce cost for the MFIs and the customers. Experiences of MFIs in other countries tells that m-banking reduces operation costs for the MFIs and these costs can be passed onto customers in the form of lower interest rates.

One of the challenges most cited by many MFIs for not using the services is the limitation of budget. Indeed, if the MFIs are required to establish their own m-banking Infrastructure, it is sound that limitation of budget could be a persuasive reason for not using the services. But the MFIs can achieve this by linking with the already established m-banking Infrastructure with a very minimal cost. The mobile service providers collect a transaction fee from the sender or the receiver of the payments. The problem lies on lack of exploring the available opportunities and on how to make use of the opportunities.

Generally, there is no doubt towards the contribution of ICT to the performance of the MFIs. This is reflected in the respondents attitude in section 4.7. However, the adoption and usage of ICT within the MFIs is still very much limited. One of the challenges for the limited usage of ICT as cited by most MFIs is limitation of budget. As one of the interviewee clearly indicated limitation of budget and awareness of the top management towards the benefits of the ICT services are the main challenges the MFIs are facing . Here is part of the interview of the interviewee .

*" I can see the usage of ICT in the MFIs from the saving mobilization perspective. The MFIs are collecting the savings from the poor communities and therefore this money should be managed properly. The clients should have confidence on the MFIs on how their money is managed. In order to ensure this a good ICT solution must be emplaced. This will make the clients to trust the MFIs and as a result it will create an opportunity for the MFIs to increase the number of clients and hence the performance of the MFIs will be positively impacted." The interviewee added, "limitation of budget and awareness are the two major constraints the MFIs are facing with this respect."*

Nevertheless, the implementation of appropriate ICT is not an option for the MFIs to stay sustainable and reach more customers. The other interviewee said that;

*"This time implementing appropriate ICT services is not an option for MFIs. Most of the budget for MFIs is coming from the savings from the clients. The clients of the MFIs are residing in the rural parts of the country. It is very difficult for these clients to travel long distances to place where the MFI branches are located. Mentioning his MFI, the interviewee said that the MFI has lost 85 % its saving clients due to this barrier. Therefore, it is time for the MFIs to reach the rural*

*communities with better technological innovations otherwise, the survival of the MFIs will be in question."*

Despite all the challenges, the MFIs are growing rapidly. The below data shows the performance of the six MFIs for three years period.

Table 4.5: Performance of MFIs

	2011		2013		2015		
	No Active Borrowers	Loan Outstanding	No Active Borrowers	Loan Outstanding	No Active Borrowers	Loan Outstanding	Total Capital
<b>ACSI</b>	694,993	1,940,827,401.00	894,867	4,359,619,713.10	916,736	6,302,137,776.95	2,435,786,607.62
<b>OMO</b>	327,888	585,102,740.00	327,888	569,495,417.40	327,888	585,102,740.00	229,079,421.00
<b>VISIONFUND</b>	45,331	101,205,955.00	58,269	267,711,521.00	73,114	356,168,963.98	260,654,739.00
<b>WASASA</b>	53,981	113,970,892.00	70,630	201,513,766.00	58,357	211,674,171.78	102,454,789.06
<b>BUSAGONOFA</b>	48,908	76,548,872.00	67,787	156,732,919.20	67,787	161,153,151.03	74,558,940.98
<b>SFPI</b>	33,342	50,807,161.00	36,842	104,164,122.90	36,550	135,838,336.37	68,901,070.90

Source : Association of Microfinance Institution (AMFIE)

As the table shows, the MFIs are progressively growing in terms of the number of clients, their loan outstanding balances and total capital. Those who have used ICT services for relatively longer time have shown a better improvement compared to the others. As the table shows, within the mentioned periods ACSI has shown a 66% increment in terms of the number of clients, VisionFund 80.6%, Wasasa 54%, Busa Gonofa 63% and SFPI 55 %. In terms of loan outstanding, ACSI shows a 162% increment, VisionFund 176%, Wasasa 156%, Busa Gonofa 105%, SFPI 133%. With respect to total capital, ACSI and VisionFund are

leading the scene. Though it is difficult to conclude the performance of the MFIs is a direct result of the usage of ICT, the achievements cannot be possible without the support of ICT in one or another way. Small operations may be managed with manual ledgers or spread sheets but it takes commercially designed software to track and manage huge financial transactions and to manage big operations as a whole. It is with the help of Information Technology that the MFIs are able to manage their Client portfolios, Loan Outstanding and Assets and therefore the significance ICT can be seen clearly from the performance of the MFIs.

### **Human Resource :**

Capitalizing not only on the opportunities of ICT and the Infrastructure and access, but also to the existence of ICT related human capacity is very important. The survey revealed that inadequate number of staff, lack of training and high staff turnover are common challenges in most MFIs. The inadequate number of staff and turnover are resulted from the less salary and benefit packages the MFIs are offering compared to other financial sectors like banks. The less recognition given to IT in some MFIs is also a reason for the turnover. Miss-management of staffs is also another factor for staff turnover. One of the interviewee from one of the MFIs

*" The high level intervention of the CEO to the works of the IT manager forced the Manager to leave the institution and the department is without a manager for about a year."*

Another interviewee said that;

*" The work of Microfinance institutions is very huge compared to the banks and therefore the staffs are mostly engaged in the daily routines. Due to this the institutions do not allocate time for the capacity building of their staffs. This a huge gap in the MFIs."*

## 5 CHAPTER FIVE:

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

The MFIs in Ethiopia have been using ICT services at different levels in supporting their business. The MFIs use the ICT services primarily for processing financial transactions and managing clients' portfolios, for communications, for data management, for sharing ICT resources, etc. This shows that the MFIs are appreciating the benefits of ICT services to a certain degree and most of the respondents agree that ICT plays a great role in improving the performance of the institutions. However, limitation of budget, lack of skilled IT personnel and the less recognition given to ICT by the management of MFIs are some of the challenges cited by the MFIs hindering the MFIs from using the ICT services extensively. Despite all these challenges, the MFIs are showing an encouraging operational performances which is revealed in the increase in the number of their clients, the increase in their capital and the increase in their loan outstanding balances as discussed in Chapter 4. It is very clear that most of the MFIs operation is supported by ICT in one or another way and therefore the contribution of ICT towards their performance is not questionable. It can be projected from this that the more and efficient adoption of ICT can be resulted in more operational performances. The experiences of MFIs in many developing countries can also ensure this. This study attempted to investigate what information technology services are being used in the MFIs, the extent to which the services are utilized and the potential challenges and shows the opportunities that ICT may bring about in enhancing performance of the institutions. The paper also sets a benchmark that can be used for further research.

Finally, after making thorough investigation, the research found out that ;

- ✚ From a range of technology services on which the assessment was made, most of the MFIs are using portions of the services. From the interviews and observations the researcher has also found that there is a good initiation towards the implementation and usage of ICT services within the MFIs. However, the type of ICT services adopted within the MFIs is still very much limited. The ICT innovations which brought about significant changes to the performances of MFIs in many developing countries have not been in use since this study was conducted.

- ✚ There is a big gap on the usage of the existing ICT services in the MFIs. Most of the ICT services, the computers, the internet, the websites, the Infrastructure etc. are underutilized. This is associated with the lack of skilled man power capable of managing the services.
- ✚ The study also revealed that there is a lack of skilled IT Staffs in most of the MFIs who are able to manage the ICT services in the institutions. This is primarily due to the less recognition given to ICT by the management and the high turnover resulted from the less salary and benefit packages.
- ✚ There are still opportunities available for the MFIs to better support their business with technology. The improving telecom Infrastructure and the emerging technology providing companies are good opportunities to the MFIs for the better adoption and usage of ICT services. The management of MFIs need to see the available opportunities and put a strategic direction on how to benefit from the opportunities.

## 5.2 Recommendations

The microfinance institutions are established with the aim of providing financial services to the rural poor community. Most of the poor communities are living in the rural parts of a country. To stay financially sustainable while increasing outreach are the basic challenges of the MFIs. Overcoming this challenge can only be achieving by introducing innovative operating methods. Literatures and the experiences of many Microfinance Institution across the world revealed that ICT is the only tool which can help the MFIs to achieve these two imperatives, Sustainability and Outreach. To this end, the below recommendations are forwarded for the MFIs in Ethiopia in order to better utilize the ICT services and benefit the most out of it.

- ✚ As the study revealed, most of the MFIs have computers, connectivity, LAN & WAN Infrastructures, websites and MIS. The study found out that most of the resources are not properly used relative to the investment. For example, besides communication and looking for information, the MFIs can use their connectivity and websites for e-learning and marketing and their LAN and WAN Infrastructures for knowledge sharing via implementing intranets and soon.
- ✚ Though the application of most of the ICT technologies like EPOS, ATMS and Smart cards is not feasible due to the current context of the country and to the context of the

MFIs, the other customer focused innovations like the mobile money transfer, Agent banking (the franchise model) can be applicable. The MFIs can achieve the usage of Mobile banking and Agent Banking services through partnering with the currently emerging technology companies Providing services like M-Birr, Hello cash, etc. with a minimal cost. The emergence of companies providing these services and the improving telecom infrastructure can be considered as good opportunities for the MFIs. Establishing branches incur a very high cost to the MFIs but mobile technologies enable the MFIs to reach more clients without opening physical branches.

- ✚ The top management of MFIs should recognize IT as part of the core business and thus IT should involve in the strategic planning of the institutions. In relation to this, the institutions need to work in having qualified and experienced IT professionals and should work on capacity building as well. IT services need to be managed by an experienced and well qualified professionals. If not, IT risks will automatically be business risks.
- ✚ Government, donors and other stakeholders should support and encourage the MFIs in adopting and using ICT. Donors and stakeholders can achieve this by providing grants specific to ICT implementation. The government can achieve this by providing grants and encouraging and supporting local companies to develop software tailored to the microfinance business.

Finally, this study gives an insight to the reader towards the level of ICT usage in the Microfinance institutions in Ethiopia, the way IT is recognized in the institutions, the challenges and the opportunities available. As this study was conducted in a relatively small population size, further research need to be conducted in order to draw a comprehensive conclusion on the relationship between ICT and MFIs in the context of Microfinance Institutions in Ethiopian. This study can be used as a benchmark for further studies on the subject.

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## APPENDIX 1 : SURVEY QUESTIONNAIRE

Dear Respondents,

I am currently pursuing Master's Degree at Addis Ababa University in Information Science. My final thesis is on the Usage of ICT in Microfinance Institutions in Ethiopia. The purpose of this study is to learn more about the Usage of ICT in Microfinance Institutions in Ethiopia. I believe the results will help to know the level at which ICT is utilized in the Microfinance Institutions and provide concrete Information on the opportunities that ICT may bring about in harnessing the efficiency of the MFIs. The study will also be used as a bench mark for further studies on the subject. Your company and you are part of a representative sample of the 32 MFIs in Ethiopia.

I recognize the value of your time, and sincerely appreciate your efforts. Individual responses are anonymous and all company level data will be held in confidence.

Please take 5 minutes to complete this survey and at your earliest convenience. You can send it via my email or I can collect in person.

Thank you for your time. Sincerely,

Abraham Abayneh

Tel : 0911696559

Email: [abrish.safe@gmail.com](mailto:abrish.safe@gmail.com)

It is recalled that the proper implementation and usage of ICT highly contributes to the performance of organizations. This questionnaire was distributed to the employees of six Microfinance Institutions selected for this study to examine the level of ICT usage in the institutions. In order to have accurate measures, the questionnaire was designed based on literatures from previous similar studies (Ssewanyana, 2007, 2009) and pre-existing questions were modified to meet this study.

**INSTRUCTIONS: PLEASE FILL, CIRCLE, OR THICK AS APPROPRIATE**

**SECTION 1: GENERAL INFORMATION**

1. Your Gender

- a) Male                      b) Female

2. Your Age

- a) 25 -34                  b) 35 - 44                  c) 45 - 54                  d) 55 – 64

3. Your Educational level

- a) Diploma  
b) Bachelor Degree  
c) Masters  
d) PHD  
e) Other (Specify )

4. Working Department

- a) Information Technology  
b) Finance  
c) Operation  
d) Human Resource  
e) Audit  
f) Other (Specify )

5. How long you worked in the Institution?

- a) Below 1 Year
- b) 1 -2 Years
- c) 3 - 5 Years
- d) 6 – 10 Years
- e) Above 10 years

6. Which year was the Institution established? \_\_\_\_\_

**SECTION 2: COMPUTER USAGE**

7. Employees and Computer Usage

Department	List Three Major Computer Uses in order of importance		
	Rank 1	Rank 2	Rank 3
Information Technology			
Finance			
Operations			
Administration			
Marketing /Sales			

Codes for columns. 1 - 3:

- 1. Word processing
- 2. Spreadsheets
- 3. Administration
- 4. Communication
- 5. Operation
- 6. Data management
- 7. Accounting
- 8. Pricing
- 9. Electronic bank transactions
- 10. Internet
- 11. Information processing

8. For how long has the Institution Using Computers?

- a) Less than 3 Years                      b) 3- 5 Years                      c) More than 5 years

9. What is the composition of the computer Infrastructure?

- a) One Computer
- b) Several Independent Computers
- c) Local Area Networked Computers
- d) Networked computers Linked to the external (Extranet)

10. What kind of software do you use?

- a) Proprietary Software : Window, Microsoft Office, e.tc
- b) Free and Open Source Software : Linux, Mifos , others

11. How much do you spend for the above software per year?

- a) less than \$ 1,000                      c) \$ 3,000 - \$ 5,000
- b) \$1,000 - \$3,000                      d) \$ above \$ 5,000

12. Which of the ICT technologies do you use in your operation?

- a) Management Information System (MIS)
- b) Personal Digital Assistant (PDA)
- c) Automatic Teller Machine (ATM)
- d) Electronic Point of Sales (EPOS)
- e) Mobile Phones (Mobile Banking )
- f) Agent Banking
- g) Smart Cards

13. How much do you spend for the above technologies per year?

**SECTION 3: IT DEPARTMENT**

14. Do you have an IT Department? a) Yes                      b) No (skip to q. 20)

15. Computer related Personnel

	High skilled ICT professional	Computer Associate professional	Low skill ICT professional
No of Employees			

**Note:**

- A. High skilled ICT professionals (Degree) such as Programmers, System Administrators.
- B. Computer Associate professionals (Diploma) such as computer operators, electronic technicians etc.
- C. Low skill ICT professionals (Certificate) such Data processors, Data clerks, equipment repairers etc.

16. Do you have enough IT staff ? a) Yes b) No (if No. Skip to 17)

17. What is the reason for not having adequate IT staff?

- a) Less recognition is given to IT relative to other business units
- b) Most of the IT services are outsourced
- c) Limitation of budget
- d) High turnover of IT staffs
- e) Other (specify)

18. Does the IT department represented in the Senior Management team a) yes b)No (if no skip to q.19)

19. Why IT is not represented in the Senior Management team?

- a) Much recognition is not given to IT relative to other business units
- b) IT is considered as a unit providing technical support rather than part of the core business
- c) Most of the IT services are outsourced
- d) Other (specify )

**SECTION 4: INTERNET USAGE**

20. Do you have access to the Internet? 1. Yes 2. No [skip to q.29]

21. How long have you had the Internet?

- a) Less than 3 years
- b) 3 - 5 Years
- c) More than 5 years

22. Which Connection technology do you use?
- a) Dial up
  - b) Fiber Optics Broad Band
  - c) ADSL Broad Band with Copper
  - d) Wireless technologies ( EVDO, 3G, 4G etc)
  - e) VSAT
23. How much do you spend for connectivity per year?
24. Does Your Company has web site on the internet? a) Yes b) No -- [ Skip to q. 30]
25. Who hosts your web site? a) Own Website b) Third Party Website
26. Who developed your website?
- a) Own Staff
  - b) Contracted Individuals
  - c) Contracted Firms
27. How often the website Information is updated?
- a) Frequently - Every week
  - b) Once in a month
  - c) Once Every Quarter
  - d) Once Every six Months
  - e) Once a year
  - f) Never
28. What do you use your website for?
- a) Marketing
  - b) To provide Information
  - c) Status
  - d) e-commerce (sales)
29. Internet Usage : If no , please indicate to what extent you agree on the following barriers of internet usage

Barriers	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
Lack of perceived benefit to the firm					
lack of security on the internet					
The Internet connection fee is too					

30. How often do you receive staff Training?

- a) Once a year
- b) 2-5 times a year
- c) More than 5 times a year
- d) Never

#### **SECTION 5: ICT AND MFI PERFORMANCE**

31. Highest level of Education of the decision Makers

- a) Post Graduate
- b) Graduate
- c) Diploma
- d) Other specify

32. Financial Performance 2014/2015

	2014	2015	2014/2015
Net Operating Income			
Total Assets			
Total equity			

33. Please indicate the extent to which you agree with the contribution of ICT to your organization.

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Increased Savings					
2	Increased Efficiency					
3	Improved Service					
4	Low Transaction					
5	Improved Market					
6	Improved Operational					

34. Please indicate the extent to which you agree with Barriers towards the barriers of ICT Usage

	Barriers to ICT Usage	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Expensive Software					
2	Expensive Hardware					
3	Expensive skilled IT personnel					
4	Poor Telecom Infrastructure					
5	Lack of Benefit to the firm					
6	Limitation of Budget					

## **APPENDIX 2: SEMI – STRUCTURED INTERVIEW QUESTIONS**

- 1) How do you evaluate the contribution of ICT on the operation of MFIs . Does ICT really contribute to the performance of the MFI?
- 2) Most MFIs are at the start of using services. What is the reason for the MFIs lagging behind in using the services??
- 3) The MFIs are expected to increase their outreach? How can they achieve this minimal operation costs
- 4) How is ICT department recognized in the MFIs
- 5) There is a shortage of ICT staffs in most MFIs and there is also a high turnover. What do you think is the reason for this?
- 6) What is the position of the MFIs in terms of staffs' capacity building