Addis Ababa University
School of Graduate Studies

Thesis on:

Credit Default Risk and its Determinants of Microfinance Industry in Ethiopia

Author:
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Supervisor: Dr. P. Laxmikantham

A thesis submitted to the School of Business and Public Administration of Addis Ababa University in partial fulfillment of the requirements for the Degree of Master of Science in Accounting and Finance

June, 2011

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Approved by Board of Examiners

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Chairman, Graduate Committee	Signature	Date
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Supervisor	Signature	Date
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Examiner	Signature	Date

Statement of Declaration

I, **Samuel Setargie Amera**, have carried out independently a research work on ―Credit default risk and its determinants of microfinance industry in Ethiopia" in partial fulfillment of the requirement of the M.Sc. program in Accounting and Finance with the guidance and support of the research supervisor.

This study is my original work and that has not been presented for any degree or diploma program in this or any other university/institutions, and that all source of materials used for the thesis have been duly acknowledged.

Declared by: **A. Samuel S.**

Signature: ______________________________

Date: __________________________________

Statement of Certification

From: **Dr. P. Laxmikantham**

Addis Ababa University

School of Graduate Studies

School of Business and Public Administration

M.Sc. program in Accounting and Finance

This is to certify that **Samuel Setargie Amera** has carried out his research work on the topic entitled **"Credit default risk and its determinants of microfinance industry in Ethiopia"**. The work is original in nature and is suitable for submission for the reward of the M.Sc. Degree in Accounting and Finance.

Supervisor: **Dr. P. Laxmikantham**

Signature: ________________________

Date: ______________________________

Dedication

This work is dedicated to my Grand Father Wubetu Meshesha for his love, patience, wisdom and spirituality! I will always remain grateful for your kindness. May the Lord place your soul in Heaven!

Acknowledgements

First and foremost, I thank the Almighty Lord for making this work possible. This thesis would not have been accomplished devoid of the huge prop up I have encountered from different people and institutions. I am incredibly much indebted to my thesis supervisor Dr. P. Laxmikantham, for his critical professional comment, constructive criticism, regular follow up, devotion, suggestion and useful advice have been invaluable inputs that have improved the quality of my work and also helped my career at large. Without him this study would have never reached its present stage. Hence, I remain grateful and thankful always. Besides, I would like to say thank you Dr. Venkati Ponnala for his professional comment.

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Above all Glory is to God for his unspeakable gifts!

A. Samuel S.

Abstract

Despite the current enthusiasms in applying the concept of microfinance as a poverty alleviation tool in many countries, the risk management aspects of micro-financing should not be overlooked. This paper highlights several incidences of default risks in microfinance industry. The problem identified was that microfinance programs perform scantily because of delay in repayment and high default rates. Hence, it was important to establish if these limitations prevailed in the selected 6 MFIs in Ethiopia schemed by determining the default rate and the grounds of the observed trends. Therefore, in order to address those issues, the researcher used primary data collected through structured questionnaire and referred secondary sources of data. As a result, the collected data and information were compiled and analyzed for possible indications of problem areas. So, the outcomes revealed that the MFIs default rate increased over the review period and averaged 27.1 per cent as well. The core factors of default were found to be poor business performance, in terms of low profitability or business losses. Besides, credit diversion to unprofitable uses, domestic problems, numerous dependents, and tenancy problems were other factors that caused credit default. Further, the inference results of the descriptive statistics and the probit model show that education, income, loan supervision, suitability of repayment period and availability of other credit sources are important and significant factors that enhance the credit repayment performance, while credit diversion and credit/loan size are found to significantly increase credit default. There were serious problems observed in the screening mechanism the institutions employed, i.e. borrowers who are good payers like literate were rationed more, while those who contribute to the default problem like male and who apply for larger loan amounts were rationed less. So, the lending institutions are particularly recommended to improve these problems observed in its rationing mechanism. Moreover, the processes should be worked out to identify borrower capacity and any obligations that may interfere with repayment. Finally, the selected MFIs should intensify recovery of outstanding balances from defaulters through increased borrower follow-up.

Key Words: *MFIs, credit default, credit diversion, loan rationing, impact, creditworthy.*

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List of Abbreviations/Acronyms

ACSI	Amhara Credit and Saving Institution, Share Company
ADCSI	Addis Credit and Saving Institution, Share Company
AEMFI	Association of Ethiopian Microfinance Institutions
ANRS	Amhara National Regional State
ASA	Association of Social Advancement
CBE	Commercial Bank of Ethiopia
CSA	Central Statistical Authority, Ethiopia
DBE	Development Bank of Ethiopia
DECSI	Dedebit Credit and Saving Institution, Share Company
ETB	Ethiopian Birr
FDRE	Federal Democratic Republic of Ethiopia
GB	Grameen Bank, Bangladesh
IDA	International Development Association
MDG	Millennium Development Goal
MEDAC	Ministry of Economic Development and Cooperation, Ethiopia
MFDR	Microfinance Development Review
MFI(s)	Microfinance Institution(s)
MTDP	Market Towns Development Project
NBE	National Bank of Ethiopia
NGO	Non Governmental Organization
PAR	Portfolio at Risk
SME(s)	Small and Medium Enterprises
UN	United Nations

Chapter 1 Introduction

This thesis scrutinizes Credit Default Risk and its Determinants of Microfinance Industry in Ethiopia. Credit is the provision of resources such as granting a loan by one party to another party which arranges to repay at a later date (Steven 2003). Default means to fail to pay the debt or other financial obligation.

The purpose of this chapter of the thesis is to provide background information on the main work. The lingering parts of the chapter are ordered as follows: The first section presents an overview of the microfinance institution as a background for the study. The second section gives credit policy in Ethiopia to abet the work. The third section provides a succinct overview of the Study Areas to brace the study. The fourth section provides problem statement. The objectives of the research are presented in fifth section. The sixth section is about research hypotheses. The seventh section offers significance of the work. The eighth section is scope of the study. The ninth part provides limitation of the study. Finally, the structure of the thesis presents in the tenth section.

1.1. Overview of the Microfinance Institution

Microfinance has evolved as an approach to economic development intended to benefit low income women and men. It expanded enormously in 1990s (Ledgerwood 1999). Policy makers, donors, practitioners and academics underline the role of microfinance as a powerful tool for poverty alleviation and economic development.

Ethiopia is one of the lowest income countries in the world. Its economy which is mainly dependent on agriculture has been hit by several internal and external shocks. Devastating wars, frequent draughts, high population growth, distorted investment environment, volatile primary product prices, etc have been some of the shocks the economy has been experiencing. These factors resulted in the decline of the economy as a whole, while the living conditions of the population have been continuously deteriorating (Dejene 1993).

After 1991, however, the government of Ethiopia i.e. Federal Democratic Republic of Ethiopia (FDRE) has taken financial alterations to reverse the economic decline and worsening poverty situation in the country. According to the report by MEDaC (1999) the Ethiopian economy has registered a recovery in economic performance since the introduction of economic reform program after a period of stagnation and decline for nearly two decades. Further, Microcredit to farmers and artisans needs to be routed through some voluntary agencies preferably of farmers and/or artisans (Souren Ghosal 2009).

According to Daley-Harris (2006), Microfinance Institutions (MFIs) are increasingly a central source of credit for the poor in many countries. The typical repayment schedule offered by a MFI consists of weekly repayment starting 1-2 weeks after credit/loan disbursement. Weekly collection of repayment installments by bank personnel is one of the key features of microfinance that is believed to reduce default risk in the absence of collateral and make lending to the poor viable.

Despite the sharp disjunction in the predictions offered by the rational economics model and the behavioral model, evidence on whether repayment frequency influences default rates in microfinance remains limited. Armendariz and Morduch (2005) report anecdotal evidence from Bangladeshi microfinance providers suggesting that microfinance contracts with less frequent repayment saw higher client default.

As affirmed above, given those situations and thoughts allied to credit default the researcher has interested to make inquiry on credit default risk and its determinants of microfinance institutions in Ethiopia in order to forward recommendations up on the deviations after the overall conclusion has been inwards.

1.1.1. Microfinance in Ethiopia

Ethiopia is land of contrast. Poverty is the main challenge and a fundamental issue of economic development in Ethiopia. The solutions to poverty are multifaceted as are its causes. Many argue that an inadequate supply of credit can affect production negatively.

Alleviation of poverty and promotion of economic development can therefore be facilitated through providing credit to the poor.

The formal financial sector has failed to reach the majority of the rural as well as urban poor. This has forced the poor to turn to the informal and semi-formal financial sources. However, credit from such sources is not only inadequate, but also exploitative and costly.

Although provision of credit to rural agricultural household for purchase of agricultural inputs and tools has since long been practiced in Ethiopia, credit schemes targeted at the urban or rural poor were non-existent until recently. Since the 1970s, however, some Non Governmental Organizations (NGOs) have been providing credit to poor households in some parts of the country, side by side with activities like delivering relief and development services (MFDR 2001; Mengistu 1997).

Wide scale micro-financing begun in 1990, following the credit agreement signed between the Ethiopian government and the International Development Association (IDA). The credit program was an urban micro-financing scheme that aimed at financing the Market Towns Development Project (MTDP), whose actual operation begun in 1994 (Mengistu 1997).

Since microcredit delivery and saving mobilization in Ethiopia are being carried out by NGOs, government departments, co-operatives and others in a fragmented and inconsistent way, the government took the initiative to establish a regulatory framework in order to facilitate sound development of the microfinance industry. Accordingly, proclamation No. 40/1996 was enacted to provide for the licensing and supervision of the business of micro-financing by empowering the NBE to license and supervise them managing for development result (MFDR 2000).

In Ethiopia, microfinance services were introduced after the demise of the Derg[2] regime following the policy of economic liberalization. Microfinance is taken as a shift from government and NGO subsidized credit programmers to financial services run by specialized financial institutions. With the shift some NGO and government microcredit programs were transformed to microfinance institutions. A regulatory framework was put in place to license and supervise the institutions (Proclamation No. 40/1996) under the country‘s state bank i.e. National Bank of Ethiopia (NBE). The regulatory framework was put in place as part of government‘s effort to liberalize the financial sector and lay down an alternative institutional framework to provide financial services mainly to the rural poor to boost agricultural production enable food self-sufficiency and reduce rural poverty. Most importantly experts observing the unsound financial practices of NGOs and government agencies recommended the regulatory framework to promote more systematic financial service provision and bring microfinance in the country within the existing financial system.

Currently, 31[3] MFIs have been licensed by the NBE and started delivering microfinance services since the issuance of the proclamation. These MFIs aim at poverty alleviation through targeting specific groups (reaching the poor) and group based lending. In a short period of time, the MFIs have managed to reach a sizable portion of the rural and urban poor, and in so doing have gained significant experience (MFDR 2000).

1.1.2. Credit policy in Ethiopia

The formal and informal financial sectors are the principal sources of finance for any investment or business that can be undertaken at micro, small-scale and large-scale levels in an economy. The major financial institutions in the formal financial sector in Ethiopia

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[2] The term *Derg* is an equivalent to a committee in Amharic Language referring to group of junior military officers that took over political power in 1974.

[3] As per the data base of National Bank of Ethiopia there are 31 MFIs in Ethiopia as of December 31, 2011

are the Commercial Bank of Ethiopia (CBE) and the Development Bank of Ethiopia (DBE). As Dejene (1993) noted, because of the elaborate paper work, bureaucratic lending procedures and stringent collateral requirements, the institutions do not deliver credit as and when needed. Moreover, they operate at high transaction costs.

During the imperial regime, the banking sector was partly owned by foreigners and the lending policy was mainly oriented to financing foreign enterprises and wealthy clients while domestic small borrowers were rationed out and forced to seek credit from informal finance (Mauri 1997). In addition, branch concentration was in few urban centers, with Addis Ababa alone, for instance, accounting for 64 per cent of branches in the country. Collateral requirements were up to 200%. The agricultural sector was almost neglected because financial institutions considered agricultural activity as risky investment (Itana 1994).

During the Derg regime (1974-1991) all financial institutions were nationalized and credit was mainly channeled to public enterprises, state farms and cooperatives. The provision of credit was not based on economic rationality but entirely on government preference. The private sector was marginalized. The discrimination against the private sector was not only in credit access but also in interest rate, which was for instance 9% for private sectors as opposed to 6% for public industrial enterprises since July 1986 (Itana 1994).

Abraham (2002) noted that with the downfall of the Derg, the private sector got equal access to credit with other sectors, banks were also given autonomy to decide by themselves based on purely commercial criteria and establishment of private banks and insurance companies was permitted. As a result credit/loan disbursed to the private sector, which was 49% in 1992/93 rose considerably and reached 87.7% in 2000/01. In fact there is still unsatisfied demand for credit from this sector of the economy due to inability to meet banks‘ lending requirements.
As Solomon (1996) noted the banks serve big businessmen and disregard poor households as bankable. Many small, creditworthy businessmen, with their viable

investment ventures, are denied access to institutional credit because they couldn't afford the required collateral. He also indicated that, –Overall; the prevailing operation of the formal financial institution in many low income countries such as Ethiopia is inefficient in providing sustainable credit facilities to the poor."

Regarding delivery of financial services access to institutional credit was very limited in Ethiopia. Because of this limited access, the majority of the poor get financial services through informal sources like moneylenders, Iqqub[4], Iddir (mutual aid society, burial society), merchants, friends and relatives, etc. The formal financial sources have not been interested in delivering credit to the poor. Even if the banks in the country, which are part of the formal financial sources decide to give credit to the poor (as in the case some banks have been forced to do so during the Derg regime) their outreach was also very limited for long. Thus, delivering financial services to the poor requires an innovative targeting deign and a mechanism of credit delivery that helps identify and target only the poor who can take the initiative and sustain productive use of loans.

In recent years, the informal and semi-formal lending institutions such as Iqqub, Iddir, money lenders etc. are becoming the dominant and important sources of finance for poor households in Ethiopia. According to Dejene (1993) these two institutions account for 81% of the agricultural credit.

The establishments of sustainable and profitable microfinance institutions that serve large number of poor households have been a prime component of the new development strategy of Ethiopia (Wolday 2000). NGOs have also been directly funding microcredit activities as part and parcel of poverty alleviation program since the 1970s (MFDR 2001).

[4] Traditional credit and saving institution with rotating fund. System of saving where by people from groups and pay periodically a fixed amount of money, which will be collected in a common pool, so that, in rotation, each member of the group can receive one large sum i.e. the sum of money paid by all in one period.

1.2. Statement of the Problem

An overwhelming majority of the world's poor live in the third world countries. Various approaches have been employed in alleviating poverty of which provision of credit that targets the poor is one. Many are now of the opinion that allowing the poor to have command over resources through credit can contribute towards poverty alleviation. Gibbons (1992) argues that the best way to do something about poverty is to let the people do their own thing. Nobody will have more motivation to change his/her situation than the sufferer himself/herself.

It is generally accepted that credit, which is put to productive use, results in good returns. But credit provision is such a risky business that, in addition to other reasons of varied nature, it may involve fraudulent and opportunistic behavior. The lender in the formal financial system is at a disadvantage of information on the borrower's behavior. Fortunately, group based micro-financing system that involves peer pressure and joint liability has evolved to counter the problems of a conventional bank that provides a collateral backed credit alienating the poor.

Given the above mentioned problem, the performance of most microfinance programs, however, has not been encouraging. Many have been plagued with such problems as high default rates, inability to reach sufficient numbers of borrowers, and a seemingly unending dependence on subsidies. Few of them have lived up to their original objective of "including the excluded" (Bhatt 1997).

For such MFIs to be successful, they should be sustainable both financially as well as institutionally. On top of sustainability, one has to include developmental effects like income on the target group as core measure of success. For agencies that are involved in the development or in assisting the development of a microcredit institution, it is recommended that profitability and sustainability should be the final goals, and therefore, the only indicators of success (Rudkins 1994). Although the performance of the MFIs in

Ethiopia has been impressive since their establishment, they are experiencing default problems.

According to Hunte (1996), default problems destroy lending capacity as the flow of repayment declines, transforming lenders into welfare agencies, instead of a viable financial institution. It incorrectly penalizes creditworthy borrowers whenever the screening mechanism is not efficient. Credit[5] default may also deny new applicants access to credit as the bank's cash flow management problems augment in direct proportion to the increasing default problem.

Further, MFIs should rather depend on loan recovery to have a sustainable financial position in this regard, so that they can meet their objective of alleviating poverty.

> "*Whether default is random and influenced by erratic behavior or whether it is influenced by certain factors in a specific situation, therefore, needs an empirical investigation so that the findings can be used by micro-financing institutions to manipulate their credit programs for the better*" (Khandker et al. 1995).

Despite its remarkable achievements, there remained several weaknesses in microfinance that need to be improved to ensure its continuous development and successful implementation. A critical aspect of microfinance that needs to be focused on is the risks management aspect. Microfinance is entrapped by various types of risks, such as default risk (Goetz et al. 1995), disaster risks (Karlan 2005), currencies risk, and interest rate risk and commercialization risk. However, this study focused on the issue of credit default risk in the specific context of microfinance. Default risk is chosen instead of other type of risks because default risk has severe negative repercussions on the success of microfinance. A series of defaults could lead to liquidity problem in the MFIs and would

[5] Credit risk is one of the most significant risks from a MFIs perspective.

consequently limit the ability of the MFIs to extend credit/loan to other recipients. As would be revealed later, due to the serious consequences of defaulted credits, the MFIs might resort to various ways to reduce the possibility of default among the borrowers.

As pointed out earlier, it is obvious that many rural credit schemes have sustained heavy losses because of poor credit collection. And yet a lot more have been dependent on government subsidy to financially cover the losses they faced through credit default. But, such dependence will not prove helpful for sustainability. MFIs should rather depend on credit/loan recovery to have a sustainable financial position in this regard; so that they can meet their objective of alleviating poverty. This study endeavored to investigate credit default risk in microfinance institutions. The problem identified is that microfinance programs perform poorly because of slow repayment and high default rates. Hence, it is important to establish if these limitations prevail in the selected credit and saving institutions of Ethiopia scheme by determining the average repayment delay and default rate and the causes of the observed trends.

Set the above discussed problems in the credit and saving institution along with the gap in the literature with regard to credit default risk in microfinance, the study attempted to assess the gap in credit repayment with reference to the aforementioned microfinance institutions in Ethiopia in order to forward accounting for microfinance institutions as such problems raised.

1.3. Objective of the Study

By taking the background of the above avowed problems, the study formulates the following objectives:

The principal aim of this study is to inspect the foundations of credit default from making on-time repayment of their debt in the microfinance institutions of Ethiopia scheme, with particular reference to borrowers in the selected credit and saving institutions.

To accomplish this principal objective, the study enabled the researcher to develop specific sub-objectives. These specific objectives are:

1. To identify the causes which are influencing the credit default problem of borrowers financed by credit and saving institutions;
2. To investigate determinants of credit default risk and the outcome of credit repayment on enterprises, families, and the community;
3. To evaluate the impact of selected microfinance institutions screening mechanism on default;
4. To assess the effect of default on enterprises, families, and the community.

1.4. Research Hypotheses

In order to achieve the problem statement and objective above, the study develops the following research hypotheses:

H_1: The bond flanked by credit default and credit/loan rationing and the factors affecting them are hypothesized based on matter-of-fact experiences. For that reason, borrowers‘ socio-economic distinctiveness, the outlook of the lending agency in properly screening borrowers and other economic state of affairs are hypothesized to explain credit repayment recital of borrowers.

H_2: Principally the capacity of borrowers to successfully use the credit/loan proceeds on income engendering tricks and also devotion on the part of the lending institution in following up the credit/loan utilization of its borrowers. In this regard, are hypothesized to be the most important determinants that can improve credit repayment performance.

H_3: Further, it is hypothesized the alike variables that are thought to elucidate credit repayment performance explain the credit rationing mechanism to be employed by the lending or credit and saving institutions.

H_4: Finally beneficiary‘s livelihood is expected to improve because of involvement in the credit scheme provided that the credit/loan is utilized effectively on activities that are income generating.

1.5. Significance of the Study

MFIs are engaged in providing credit to the poor so that they can generate income and employment for themselves. For these institutions, to be able to render such a service on a permanent basis, they should be viable and sustainable. They should not depend on donations or subsidies in the long run.

This requires an efficient credit repayment performance as well as an impact to be observed on the target beneficiaries. Although some studies have been conducted on the credit schemes that targeted the poor in Ethiopia, so far, this study believed to be relevant for: one, it will gravitate the concerned bodies to look for more effective solutions for the problems. Second, the concrete suggestions of the study will use by the concerned body at least to minimize the credit default problems that exist in the microfinance. Finally, the study will have valuable importance for further study and add new idea to the existing knowledge of microfinance and credit default risk.

1.6. Scope of the Study

The study focused on cause of credit default, screening mechanism and impact. Moreover, other schemes are not considered in this study. However, there is no reason to rule out the possibility that the findings of the study might workout for other related schemes. Hence, this study limited to the borrowers of selected MFIs i.e. ACSI, AdCSI, Wisdom, Gasha, Metemamen and Ghion MFIs, who are participating in the microfinance scheme of Ethiopia.

1.7. Limitations of the study

It is not denial that any research papers from its initiation to completion perhaps encounter a limitation. Besides, there are some of the limitations that face in the preparation of this research thesis are the time allotted is really too short and limited data sources of the microfinance industry of Ethiopia, inconvenience in selection group lenders as a variable of the study and lack of adequate reports here in the contact office of ACSI, Addis Ababa about ACSI for general understanding. For this reason, this limitation forces the author to incur additional cost to travel the head office of ACSI, Bahir Dar, Ethiopia.

1.8. Structure of the thesis

The study outlined and/or organized in five chapters. Chapter one presents introduction, which is the main skeleton of the study. *Chapter two* contains a review of the related literature including theoretical framework of the study, extensive review of empirical evidence on the subject matter of microfinance institution together with the circumstance of Ethiopia and knowledge gap and conclusion. The research design and methodology are presented in *Chapter three*. Chapter *four* presents results and discussion with the help of both descriptive statistics and econometrics analysis. *Finally*, *chapter five* presents conclusions and future research work.

Chapter 2 Review of Related Literature

Credit is the pivot on which the development of any sector rests. The Microfinance Institutions (MFIs), which are targeted towards providing smaller loans to the mass, have been operating in the country for long towards satisfying the credit demand of the lower class of the economy, mainly composed of the informal sector. Meanwhile, credit risk is the most important of the risk categories. It is the potential loss resulting from the poor quality of the MFIs assets particularly its credit/loan portfolio. The most obvious manifestations of risk in credit projects are poor portfolio quality that leads to bad debt losses that erode the capital of the lending microfinance institution. The major variable that should determine a MFI‘s risk classification system are: past and present experience with overdue payments and type of methodology used in delivering loans.

Set the luminosity of the above, the purpose of this chapter is to review the literature in the area of credit default risk in microfinance institutions. The review highlights definition of the credit and default, its main features and the problems it encounters. Furthermore, it tries to identify the gap in the literature.

The review has three sections. Section 1 presents a review of the theory of microfinance institution in summary. Section 2 presents a review of the relevant empirical evidences on credit default risk and its determinants on microfinance institutions. Finally, conclusion and knowledge gap present in the third. Besides, the flow of presentation of the literature review is based on the concepts rather not year.

2.1. Theoretical Review: Role of Microfinance

According to Rose (2007), Micro-financing is a strategy for alleviating poverty. It is broadly accepted that robust, labor-intensive, and equitable economic growth combined with larger outlays for social programs (especially directed toward the poor populace, now estimated at 1.3 billion people worldwide) is a winning formula in the fight against poverty (UN 1997).

Microcredit refers to small loans extended to poor people so that they can undertake self-employment projects that generate income and enable them to provide for themselves and their families. This form of credit is targeted toward people in the lower economic brackets of society (Johnson 1997).

In Kenya, the 2003–07 Economic Recovery Strategy for Wealth and Employment Creation (ERS); policy document has set a target to create 500,000 jobs annually during the recovery period. Accordingly, it intends that 88 per cent of those jobs be created in small and medium enterprises (SMEs). Therefore, provision of microcredit[6] is regarded not only as a tool for empowering the poor, but also as an instrument for alleviating poverty in Kenya. Microcredit generally is important to the growth and development of micro-enterprises. However, many credit programs previously viewed the poor as potential defaulters and placed credit programs beyond their reach. Even though wide experience today shows that poor people are not bad credit risks and that their repayment rates can be exemplary, the poor still are considered to be a high-risk credit population, expensive to serve, and unable to pay the full cost of credit; they are believed to require government subsidization of credit.

Meanwhile, very poor individuals are often described as high risk due to their lack of collateral and unstable sources of income and hence timely repayment of credits is often not anticipated. Holt (1994) and Christen (1997) cite credit repayment as one of the major challenges to microfinance, particularly in the Caribbean context, for instance, given that a poor repayment culture has plagued numerous microfinance initiatives within the region (Von Stauffenberg 2000; Lashley 2004). Dignard and Havet (1995) and ASA (1997) propose several causes of default in microcredit, which can be divided into four main

[6] This refers to a small loan, especially to someone living in poverty who would not qualify for a standard bank loan, often given to start a small business.

categories. These are organizational, household/financial, group dynamics and other factors such as geographical location and environmental degradation. Christen (1997) observes that initially between 1970s and 1980s, the latter three categories were held responsible for high delinquency rates in credit programs for the poor. Despite the various factors influencing default in microcredit programs, the current literature generally concedes that high repayment rates are a common feature of most microcredit programs (Dignard and Havet 1995; Brau and Woller 2004).

Further, in an era of unprecedented world-wide economic growth, it is interesting to note that the richest fifth of the world‘s people consume 86 per cent of all goods and services while about a fifth of the world‘s poor population (1.2 billion people) still live on less than US $1 a day and almost half of the world‘s population live on less than US $2 a day (UNDP 2002, Gibson 2009). Poverty is not simply having a very low income. It is a multifaceted phenomenon. In addition to low income, poor people also suffer from illiteracy, unsafe drinking water, and lack of access to basic health services. They live in remote and resource-poor areas. Frequently encountered with their vulnerability, the “chronically poor are unable to develop their personal capabilities or provide a good start in life for their children, and often die prematurely of preventable causes” (Alston and Shepherd 2008-09).

With the hastening of the global poverty crisis and the absence of an adequate social safety net for those marginalized and vulnerable sections of society in the less developed countries, a number of researchers have moved beyond the relentless pursuit of short-term toward long-term anti-poverty, environmentally sustainable paradigms to assist chronically poor sectors of society. Though remarkably polarizing issues, in the last three decades microcredit programs have been made available to the chronically poor as a viable option to involve them in the formal economic sector (Fisher and Sriram 2002).

In formal financial markets, the poor are excluded from establishing their own small businesses because they are not recognized as being creditworthy, i.e. unable to save, lacking verifiable credit history or goods to offer as collateral to secure credits/loans, forcing them to turn to traditional money lenders (Zamperetti and Franca Dalla Costa 2008).

Recognizing the needs, capacity, and the talents of the poor to repay the loans, microlending[7] programs are credits extended to group members rather than to individuals. In view of the contingent group loan approach, it is generally assumed that group members would have an incentive to monitor their progress and that this would lead to a greater rate of repayment of their loans since each borrower‘s creditworthiness would be a factor in the overall creditworthiness of the group (Fisher and Sriram 2002; Stiglitz 1990; Varian 1990; and Becker 1991). In short, the success of group lending creates positive incentives for members to repay because in case of default, no member of the group will receive future loans. For prompt repayment, there is repeat lending to the group. In group lending, the probability of moral hazard is largely reduced because all borrowers are members of the group and subject to peer pressure, group dynamics, cohesiveness, and the ultimate success of each member of the group (Ajit et al. 2006).

Microcredit is an investment in people, the poor and their abilities, which sharpens entrepreneurial initiatives, and strengthens developing countries‘ economies. It is a vital tool for economic development because it enables the poor to build assets, increase income, and reach self-sufficiency. Thus, microcredit not only delivers macro benefits but creates a silent revolution in poverty-stricken rural areas (Sharma 2005).

The Millennium Development Goals (MDGs) are seen by many as being overly modest. However, it needs to be mentioned in passing that this assessment omits or glosses over some of the greatest challenges to lowering the poverty rate. For instance, one of the most serious issues omitted in the report is the fact that it failed to establish that it is the lack of access to micro-landowning program that has caused many people to remain in poverty, and that microcredit loans have accomplished very little in solving the land ownership

[7] The process and business of making of small loan to poor people to enable them to start business, especially to help people in developing countries escape poverty.

systems in developing countries. Instead, the promotion of microcredit ventures in developing countries has the potential to create private groups (cutthroat money-lenders), which have vested interests in perpetuating the prevailing poverty situation (Elahi K.Q. and Danopoulos C. P. 2004).

Microcredit being the best way to create jobs, increase workers‘ productivity, and eradicate poverty, Banerjee and Duflo argue that, ―Although some microcredit clients have created visionary businesses, the vast majorities are caught in subsistence activities. Participants have no specialized skills and so must compete with all the other self-employed poor in entry-level activities (2006).” The risk is that new microfinance technologies targeting people with low incomes will be mistaken as benevolence.

The idea of microcredit as a key to socio-economic transformation has taken a prominent place in the international sphere. A number of voluntary associations, non-government organizations, friendly societies, savings and credit cooperatives, national and regional government organizations, and commercial banking institutions have joined hands in providing financial services to the marginalized sectors of the world‘s developing countries. Nonetheless, for microcredit programs to alleviate poverty in the long run, the participants need to demonstrate sensitivity to the environment and be involved in environmentally sustainable projects (Gehlich-Shillabeer 2008).

Currently, it has been reported by Forbes Magazine[8] that two microfinance institutions operating in Ethiopia are among the top 50 MFIs in the World. The Amhara Credit and Savings Institution (ACSI) rank sixth in the world and Dedebit Credit and Savings Institution (DECSI) ranks 31st in the world. The Forbes Magazine study was focused on the size of gross loan portfolio, efficiency (operating expense and the cost per borrower as a percent of the gross national income per capita of their country of operation), risk (looks at the quality of their credit/loan portfolios, measured as the percent of the portfolio at

[8] Forbes is a leading source for reliable business news and financial information and famous in ranking of it. Which is available at www.forbes.com

risk greater than 30 days), and returns (measured as a combination of return on equally weighted for an institution‘s overall ranking).

2.1.1. The Necessitate for Microfinance Institutions

The formal financial institutions played little role in financing development efforts in the rural areas. This is because they are clustered in urban areas, concentrate on funding large enterprises and are inaccessible to the rural poor especially in terms of distance (Sharma 2005).

In addition, the rural poor can‘t fulfill banking requirement to get credits. The requirements for collateral and intrinsic banking procedures are in most cases very difficult for the poor to deal with. The volume of loan demanded by small farmers is not appealing to banks. Such loans are difficult to manage and their processing not financially feasible (Ibid).

Dejene (2003) argues on the economic importance of the informal institutions in Ethiopia that the poor are often marginalized in the formal credit markets. This can be explained partly in terms of: 1) a lack of collateral, which makes lending to the poor a risky venture; 2) transaction cost of lending to and borrowing by the poor is often high; and 3) utility loss from repayment is higher for the poor as compared to the rich.

On the other hand, credit from informal sources is inadequate and moreover the interest rate charged is exorbitantly exploitative. Fidler and Webster (1996) note that although informal credit markets operate widely in rural areas, moneylenders typically charge very high interest rates, inhibiting the rural poor from investing in productive income generating activities.

2.1.2. Repayment Performance in Group Lending

Since the 1970s, group-lending programs have been promoted in many developing countries. A common characteristic of group lending is that the group obtains the loan under joint liability, so each member is made responsible for repayment of credits of his/her peers. Joint liability, but possibly more so, the threat of losing access to future credit, incites members to perform various functions, including screening of loan applicants, monitoring the individual borrower‘s efforts, fortunes and shocks, and enforcing repayment of their peers‘ loan (Zeller 1996).

The existing theoretical models of peer monitoring deduce that repayment performance in group lending programs is positively related to the homogeneity of members with respect to the riskiness of their projects (Stiglitz 1990; Besley and Coate 1995). In group-lending programs, the functions of screening, monitoring and the enforcement of repayment are to a large extent, transferred from bank to group members.

In addition, groups may also have a comparative advantage in enforcement of credit repayment. Group members can potentially employ social sanctions or even seize physical collateral from the defaulter (Besley and Coate 1995). Moreover, group members appear to be in a better position to assess the reason for default and to offer insurance services to members who are experiencing shock that are beyond their control (Zeller 1996).

Despite all the above-mentioned benefits, group lending is not without its problems. There are several factors that may undermine the repayment performance in group lending. Zeller (1996) discusses that since the risk of credit default by an individual is shared by his or her peers, a member may choose a riskier project compared to that in the case of individual contract, and may count on other members to repay his or her credit (i.e. adverse selection of risky projects). The study further notes that repayment incentives for a good borrower will vanish under joint liability, when he or she expects that significant number of peers will default.

Reikne (1996) assessed the factors that lead to the failure of group based lending system in urban areas and went on to the extent that the study recommended an individual credit system for a better credit repayment. According to him presence of high geographical mobility, low attachment to specific neighborhoods and peer groups consisting of competitors are the factors that frustrate the solidarity of groups in urban areas, and hence group lending is more applicable to the rural environment than to urban society.

2.1.3. Credit Markets and rationing

The market for credit differs from standard markets for goods and services in two important ways. As we know from the classical competitive theory, the first difference lies in the fact that in standard markets a number of agents take part in buying and selling a homogenous commodity. The second difference lies in the fact that the handover of the good or service and the payment for it occur simultaneously in such markets (Stiglitz 1990).

In contrast, credit received today by an individual is exchanged for a promise of repayment in the future. Since promises differ from person to person, and are frequently broken, there may be no objective way of determining that a promise will be kept (Jaffe and Stiglitz 1990).

As Stiglitz and Weiss (1981) noted, one way of explaining this condition associates it with short or long term disequilibria. In the short term, it is viewed as temporary disequilibrium phenomenon; i.e., the economy has incurred an exogenous shock, and for reasons not fully explained, there is some stickiness in the prices of capital (interest rates) so that there is a transitional period during which rationing of credit occurs. On the other hand, long term credit rationing is explained by governmental constraints such as usury (the act of lending money at an exorbitant rate of interest) laws or minimum wage legislation.

Jaffe and Stiglitz (1990) discuss certain features of credit/loan contracts and loan markets that make standard demand and supply model inapplicable, giving rise to credit rationing. These features include uncertainly the nature of loan contracts, and borrowers risk behaviour. For instance, uncertainty concerning the borrower‘s ability, or willingness of repaying loans when they are due, results in divergences between promised and actual repayments, creating risk of default. Since the response of lenders to uncertainty is determined in part by the extent of their risk aversion, they may use credit rationing to reduce default risk.

Credit/loan contracts specify the amount borrowed, the interest and non-price terms like collaterals, which constrain the borrower in order to reduce default. As the terms of contract change the behaviour of the borrower is likely to change. For instance, raising the interest rate decreases the return on projects that succeed. This could be due to the fact that higher interest rates induce borrowers to undertake projects with lower probability of success but higher returns when successful (Stiglitz 1990).

Since lenders are not able to control all the actions of their borrowers directly, they formulate the terms of credit contract in such a way that induces the borrower to act in the interest of the lender. For this reason, the expected return by the lender may rise less rapidly than the interest rate; and, beyond a point may actually decline. Clearly at such an interest rate beyond which the expected return to the lender starts to decrease, the demand for credit exceeds the supply of loans (Ibid).

Consequently, it may not be profitable to raise the interest rate or collateral requirements when a lender has excess demand for credit; instead lenders deny loans to borrowers. Hodgman (1960) considered risk of default as a reason for banks not to raise loan rates even though they face an excess demand.

Credit rationing is broadly defined as a situation where the demand for credits/loans exceeds the supply of loans at the going interest rate. Different types of credit rationing have been examined in the literature. Pehlivan (1996) as cited in Abraham (2002) saw it from the angle of loan size where borrowers receive a lesser amount of loan than they requested at a given loan rate.

Jaffe and Stiglitz (1990) broadened the classification and identified types credit rationing. These are: 1) A situation where a borrower may receive a credit of smaller amount than desired; 2) A situation where some individuals cannot borrow at the interest rate they consider appropriate based on what they perceive to be their probability of default; 3) A situation where a borrower may be denied credit, when a lender thinks of not being able to obtain its required return at any interest rate. The concept that will be addressed in this study is the first type of rationing.

2.1.4. Impact Assessment and Sustainability

Impact assessment studies are essential to evaluate the success of the program or to see whether the program brings the desired benefits to the target groups. Hulme (2000) noted that impact assessment studies have become increasingly popular with donor agencies, and in consequence, have become an increasingly significant activity for recipient agencies.

There are two major schools of thought that are popular in microfinance impact assessment. Hulme (2000) terms them as ‗intermediary' and ‗intended beneficiary' schools, based on their focus of impact. The intermediary school focuses purely on changes in the MFI and its operations. Two key variables are focused on in this approach: institutional outreach and institutional sustainability (Yaron et al. 1997).

Conventionally, economic indicators have been widely utilized in assessing the impact of microfinance where assessors are particularly interested in measuring changes in income, expenditure, consumption and assets. Sebsatd et al. (1995) distinguish between ‗domain of change' (e.g. household income) and ‗markers of change' (e.g. amount of income, number of income sources and seasonality of income) within each domain.

On the other hand, outreach is assessed on the basis of the type of clientele served and the variety of financial services offered; including the value and number of loans extended, the value and number of saving accounts, the number of branches and sub-branches, percentage of total population served, the real annual growth of the rural financial institutions' assets over recent years and the participation of women clients (Khandker 1995).

Sustainability relates to the ability of a program to continuously maintain its activities and services in order to meet its objectives. Snodgrass (1997) argues that a successful micro-enterprise support program is defined in terms of outreach, financial sustainability or socioeconomic impact.

2.1.5. Strategies to Minimize Defaults

Because of the vulnerability of the microcredit sub-sector, lending institutions continue to adopt different techniques to improve repayment frequency and grant more credit access to borrowers who pay their credits on time (Christoph 2002).

The Kenya, Women Finance Trust believes that small credits are expensive to administer and that the institution can survive only by charging competitive interest rates, lending to women, and keeping defaults to a bare minimum. Women are targeted as clients by this trust because they have been found to have a high propensity to repay (Ibid).

According to Mann (1993), some lenders prefer known clients to avoid default. People on a loan committee will give preference to an applicant with whom they have dealt previously. Hence; lending institutions will give money based on previous banking experience with the client. The same study also showed that institutions lend to profitable businesses that have cash flow available to pay back the credit.

Another strategy for dealing with default is lending to groups. The collective coming together of individuals is useful in a number of ways, including peer pressure that obliges the members to work within agreed norms. Although studies indicate that such schemes work well if groups are homogeneous and jointly liable for defaults, the practice of denying credit to all group members in case of default is the most effective and least costly way to enforce joint liability (Huppi and Feder 1990).

2.1.6. Three C's of Microcredit

Most literatures also describe three ―Cs" that should be observed to reduce default when providing microcredit: character, capacity, and capital (Sally 2011).

- Character refers to the way a person has handled past debt obligations. Paying heed to character includes determining the borrower‘s credit history and personal background, honesty, and reliability to pay credit debts (Ibid).

- Considering a borrower's capacity involves determining how much debt he or she can handle comfortably by analyzing income streams and identifying any legal obligations that could interfere with repayment (Ibid).

- Capital refers to a borrower's current available assets, such as real estate, savings, or investments that could be used to repay debt if income is unavailable (Ibid).

2.1.7. Types of Risks faced by Microfinance Institutions

There are number of risks that a MFI has to face. These risks could be of delinquencies, frauds, staff turnover, interest rate changes, liquidity, regulatory etc. but all these risks can broadly be classified into four major categories. These are credit risk, operational risk, market risk and strategic risk (Rangan 2010).

Of the above four categories Credit risk and Market risk are directly of financial nature and hence are called Financial risks while Operational risk and Strategic risk are of non-financial character and result mainly from human errors, system failures, frauds, natural disasters or through regulatory environment, weak board, poor strategy (Ibid).

Credit risk: is directly related to the portfolio of the organization and is one of the most significant risks from an MFI perspective. Whenever an MFI lends to a client there is an inherent risk of money not coming back, i.e. the client turning into a defaulter, this risk is called the Credit risk. Credit risk is simply the possibility of the adverse condition in which the clients does not pay back the loan amount (Rangan 2010).

MFIs try to have an objectives view of their credit risk and want to measure the extent of credit risk, which is the risk on their portfolio. There are various indicators, which help in measuring the credit risk profile of an MFI. Of these indicators portfolio at risk (PAR is considered to be the most effective and is now very common indicator across MFIs. Apart from PAR, Repayment rate and Arrear rate are other ratios, which also provide information about the portfolio quality of an MFI (Ibid).

Portfolio at risk or PAR tries to measure the amount of loan outstanding that the MFI stands to lose in case an overdue client does not pay a single installment from the day of calculation of PAR. PAR is the proportion of loan with overdue clients to the total loan outstanding of the organization. PAR% = (Loan outstanding on overdue loans/Total loan outstanding of the MFI) x 100. PAR is further refined by MFIs to make it meaningful by including ageing in it. So MFIs often calculate PAR 30, PAR 60, and PAR 90 etc. PAR30 means outstanding of all loans, which have overdue greater than 30 days as a proportion of total outstanding of the MFI. Besides, Arrear rate equals total overdue over total loan outstanding times hundred (Ibid).

Causes of High Credit Risk and managing them are (1) poor MIS, (2) Poor screening of borrowers, (3) Weak appraisal of loans, (4) Unclear communication about product and methodology, (5) No immediate follow-up, (6) Mixing other social activities with, (7) Poor product, (8) Natural disasters, (9) Corruption at field staff level such as taking bribe for loans or frauds can result in delinquencies, (10) Demotivated employees (Ibid).

2.2. Empirical Evidence

2.2.1. Credit Default and its Effect on Microfinance Programs

The most dangerous problem a microcredit program faces is repayment default. The Association for Social Advancement (ASA, a Bangladesh-based nongovernmental organization focusing on microfinance) has pointed out that if the money invested by the lending organizations cannot be recovered, the whole program may collapse.

Any formal lending program directed toward the poor faces a number of challenges. The first problem is exact targeting to ensure no Type I or Type II errors, as defined by Cornia and Stewart (1992). These are errors of omission of poor people and of inclusion of non-poor people. The second problem is screening to distinguish the good (creditworthy) borrowers from the bad (not-so-creditworthy) borrowers. Third, the funding agencies may not be able to monitor and ensure productive usage of the credits. Lending institutions must make good loans because default without sanctions will damage the people‘s commitment and the whole program may collapse. Moreover, there are some empirical evidence listed here under on the matter of credit default risk and its determinants of MFIs in different countries.

Vietnam

According to Izumida and Duong (2001), exceptional success was found in Vietnam. For example, Central Java‘s Badan Kredit Kecamatan has shown considerable promise in providing the access to microcredit and the convenience and flexibility desired by poor borrowers while ensuring the credit institution‘s financial viability by minimizing administrative costs and imposing interest rates sufficient to cover costs and prevent capital erosion.

Several factors predispose borrowers to default. Beneficiaries of microcredit tend to use their credit for the same limited range of small-scale activities. In any given situation, it is likely that only a limited range of economically viable small-scale activities is available to the poor and causes of default in government microcredit programs that there is a limited demand for the product of any particular activity (Bundell 1997). These factors increase poor people‘s vulnerability to defaulting.

Malawi

Diagne and Zeller (2001) analyzed the determinants of access to credit and its impact on farm and non-farm income and on household food security in Malawi. Their report showed that the contribution of rural microfinance institutions to small income holder can be limited or negative if the design of the institutions and their services do not take into account the constraints and demands of their clients.

A vast body of literature supports the view that borrower characteristics are highly influential determinants of repayment. There is also strong evidence that institutional characteristics are equally important and that both factors need to be taken into account if credit default is to be minimized (Derban, Binner, and Mullineux 2005).

Basu (1997) scrutinized why institutions remain unable to extend credit to rural poor people. His analysis indicated that, at best, poor peasants can offer as a mortgage an entitlement set comprising only future shares of their harvest—a commodity itself subject to risk. Credit repayment by borrower farmers is influenced by timeliness of input supply, participation in off-farm activities, and yield loss due to natural calamities, among other things (Hundie, Belay, and Demeke 2004). Consequently, lenders cannot advance loans without risking extensive loss of loanable funds. It is also true that public perception of credit programs is an important factor influencing default.

Tunisia

Studies in Africa have revealed a tendency for people to think that funds from the government are free and do not require repayment. Tunisia has had a strong tradition of non-repayment of government-provided loans (ENDA 2005). Similarly, Makina and Malobola (2004) studied the causes of low repayment for South Africa‘s Khula Enterprise Finance credits. They found that a major contributing factor for default was beneficiaries‘ perception that the microloans were free government grants.

Kenya

Regarding default in joint loan board programs, an impact study carried out by Kenya Consulting Associates attributed default to poor program management, which resulted in minimal follow-up on borrowers. The report noted that there are no systematic follow-up procedures.

Furthermore, commercial law in Kenya provides a debtor‘s limitation period. The law states, ―If a creditor does not demand repayment of the loan from his debtor within six years of the loan, he cannot enforce his claim in the court in case the debtor refuses to pay" (Hussain 1978).

Elsewhere, lenders of microcredit have been found to have limited, if any, means of mitigating damages in the event of default because poor people lack assets to back up their loans and poor countries lack civil infrastructure (such as adequate court systems) to collect bad debt. Without a safety net for credits in default, microcredit portfolios can fail if borrowers perceive that there are no consequences for defaulting on their credits/loans (Own contribution).

Nigeria

Ajayi (1992) employed correlation and multiple regression analysis in his study about factors affecting default in residential mortgages of the Federal Mortgage bank of Nigeria. His results revealed that cost of construction, monthly repayment, credit to value ratio, market value of property, age of borrower and annual income of borrower enhance credit defaults, while expected rental income from property reduces credit default. In addition, Njoku and Odii (1991) studied determinants of credit/loan repayment under the Social Emergency Loan Scheme in Nigeria. Their study showed that late release of loans, complicated loan processing procedures, credit diversion to non-agricultural enterprise low enterprise returns resulting from low adoption rate of improved agricultural technologies and emphasis on political considerations in loan approvals contributed to poor credit repayment performance of small holders. Loan volume, years of formal education, household size and interest paid on loan were found to positively and significantly affect that by Arene (1992). The study evaluated the credit delivery system of Supervised Agricultural credit repayment; while years of farming experience, loan period, farm size, farming as major occupation, farm output and value of assets were found to negatively and significantly affect credit/loan repayment.

The extra imperative study is Credit Schemes among smallholder maize farmers in Nigeria employing multiple regression analysis. The analysis indicated that loan size, farm size, income, age, number of years of farming experience, level of formal education and adoption of innovation are significantly and positively related to repayment rate. Distance between home and source of loan, household size and credit needs were found to be negatively related to repayment rate. Adeyemo (1984) used descriptive analysis on loan delinquency in multi-purpose cooperative union in Kwara state, Nigeria. The result showed that natural calamities, crop failure due to pest, poor storage facilities, lack of adequate transport facilities, sales income, farm size, education, tenure status of borrowers are factors associated with loan delinquency.

The research by Hunte (1996) inspected repayment behavior of borrowers and the credit rationing technology of lenders in a rural financial institution, Hunte estimated loan rationing and loan repayment equations using tobit model and found out that only 33 percent of the criteria utilized identified credit worthy borrowers implying that the screening system was not efficient.

Burkina Faso

According to Vigano (1993), about the case of development bank of Burkina Faso employed a credit-scoring model. The study found out that being women, married, aged, more business experience, value of assets, timeliness of credit/loan release, small periodical repayments, project diversification and being a pre-existing depositor are positively related to credit repayment performance. On the other hand, loan in kind, smaller loan than required, long waiting period from application to loan release and availability of other source of credit were found to have negative relation with credit repayment performance.

Madagascar

Further, Zeller (1996) analyzed the determinants of credit repayment of credit groups in Madagascar with the purpose of quantifying the effect of intra-group pooling of risky assets or projects by controlling for community level and program design factors that influence the repayment rate of group‘s loan. The researcher employed a tobit model using a data set on groups from six different lending programs. The results showed that socially cohesive groups pool risks by diversifying the members‘ asset portfolio so that their repayment performance is improved even in communities with high risk exposure Groups with higher level of social cohesion as measured by the number of common bonds, have a better repayment rate. Moreover the results also indicated that it is not the level of physical and human assets of group members but the degree of variance of such assets among members that leads to better repayment, by pooling risks among group members.

Tanzania

Meanwhile, Kashuliza (1993) used a linear regression model to investigate determinants of credit repayment in smallholder agriculture in the southern highlands of Tanzania. The study showed that level of education, attitude towards repayment; farm income and off-farm income positively affect credit repayment with farm income being significant, while age, household expenditure and household size have negative influence on credit repayment performance with household expenditure being significant.

Malawi

Chirwa (1997) used a probit model to estimate the probability of agricultural credit repayment in Malawi. The result indicated that crop sales, income transfers, degree of diversification and quality of information are positively related while size of club is negatively related to the probability of repayment. Other factors like amount of loan, sex, household size and club experience were found to be insignificant.

2.2.2. Is Default Risk an Issue in Microfinance?

Default risk refers to a situation where the lenders are unable to recover the credits that have been extended or the borrowers fail to fulfill their financial obligations at the stipulated time due to various reasons. In general, default risk is claimed to be a non-issue in microfinance. Taking Grameen Bank (GB) as an example, since its inception, the bank has distributed around Tk347.75 billion (or an equivalent of US$ 6.55 billion) in loans.

Of this amount, Tk313.11 billion (or US$ 5.87 billion) has been repaid[9]. The bank claims a credit recovery rate of 98.4 per cent in 2003, an improvement compared to the 95 per cent recovery rate claimed in 1998. In short, microlending is known to have very low default rate, such as in the case of Grameen Bank which has a default rate of as low as 2 per cent[10].

The role of sanctions in enhancing the willingness of individuals to repay their credits is also discussed in Besley and Coate (1995). They show how moderately successful group members may willfully decide not to repay their credits because of the burden of having to repay the unsuccessful members' loan. They note however, that in the presence of strong social ties among group members, willful default is minimized because potential defaulters are afraid of facing sanctions from both the bank and the community.

2.2.3. Real Incidences of Defaults in Microfinance

According to Kassim, Salina and Rahman (2008), it can be concluded that the MFIs are only concerned about extending financing without much effort being done to provide any form of post disbursement supervision. Post-disbursement supervision is highly relevant in ensuring the success of microfinance project due to the fact that around 80 per cent of the recipients of microfinance are illiterate women. Furthermore, around 82 per cent of these women had no business experience before joining the microfinance program, while the rest 18 per cent had some basic business experiences. The illiteracy of the recipients is rather serious to the extent that some do not even know how to count the amount of money that they received from the MFIs.

[9] ―Grameen Bank Historical Data Serious 2003" in English, Retrieved on March 09, 2011.
[10] One can see http://www.Grameen-info.org/

Commonly, the MFIs provide loan without any technical assistance except for some briefing of around five to ten minutes to the recipients. It should be emphasized that the technical assistance is just as important and should complement the financial assistance in ensuring the success of the business project (Own contribution).

Several incidences of default happened due to: case 1: lack of post-disbursement supervision leading to moral hazard, case 2: lack of training on basic business skills and knowledge, case 3: lack of health awareness resulting in the need to spend on medical expenses, case 4: burdensome immediate repayment schedule, case 5: lack of motivation to improve standard of living, case 6: multiple borrowings from different MFIs.

2.2.4. Causes of Defaults in Microfinance

Based on the real incidences of default mentioned above, in general, the causes of default can be divided into two categories: (I) weaknesses from the lender side such as Absence of post-disbursement monitoring system, lack of technical assistance given to the microfinance recipients, inexperienced field workers, burdensome immediate weekly payment system, lack of common accessible database of the microfinance recipients. (II) moral hazard problem on the borrower side such as hiding business, family member‘s illness, lack of, over-stretched financial commitments due to multiple borrowings from MFIs: amid the increased competition among the MFIs and the absence of a common database to keep track of the microfinance recipients, many recipients borrow from more than one MFIs, resulting in the difficulty to meet the multiple payment installments.

2.3. Conclusion and knowledge gap

The review of the literature discloses the existence of gaps of knowledge in respect of microfinance and credit default. As per the knowledge of the researcher, there are studies in developing countries like South Africa, Kenya, Malawi, Nigeria, Vietnam, Tanzania, Tunisia etc. For instance, in Kenya studies like causes of default in government microcredit programs. Lending programs directed toward the poor face unique problems of targeting, distinguishing between creditworthy and not-so-creditworthy borrowers, and monitoring the productive use of loans. Default on repayment poses a major challenge to the survival of microcredit programs, especially in relation to the achievement of lending institutions broad objectives. Borrowers in poverty have other pressing needs that may interfere with the productive use of the microcredit extended to them. Consequently, character, capacity, and capital play a role in credit repayment. In addition, diversion of funds to unprofitable uses, lack of discipline in the use of working capital, poor management skill and poor business performance are also the causes of default. These gaps lead to the researcher to the research idea and question of this study. ―What are the determinants of credit default risk in the Microfinance institutions of Ethiopia?" In identifying these causes of credit default and microfinance program helps the selected credit and saving institutions to make effective and efficient in its operation. Besides, as per the knowledge of the researcher, this study will help the selected and other related Microfinance Institutions in Ethiopia. The enormity and temperament of credit default in micro-financing institutions are not identified in the selected credit and saving institutions.

Finally, while the study is on credit default risk and its determinants of microfinance institutions in Ethiopia, the issue perhaps works for other allied concern. Besides, the subsequent chapter presents research design of the study.

Chapter 3 Research Design

The foregoing chapter has pointed out that the literature on credit default risk and its determinants of microfinance industry is restricted. More than ever empirical evidence from developing countries‘ in Africa and Asia continent perspective, in Ethiopia in meticulous, it has been shown that there is no comprehensive study in the determinants and analysis of credit default risk.

The purpose of this chapter is to describe the choice of appropriate research method for the study. Research design is specific research methodology philosophies and techniques used to achieve the objective of the study. It include philosophies and techniques used in opting alternative research methodology and technique such as qualitative, quantitative and mixed methodologies, sources of data, sampling plan and method of analysis. Further, this section organized in to two components. The first section describe about research approach (philosophy). The second section presents methods adopted for this study.

3.1. Research Approach

The research problem along with the philosophy of research methodology[11] would guide the choice of the appropriate research method. On the basis of knowledge claims (such as positivist, social constructivism, advocacy or participatory, and pragmatic approaches), strategy of inquiry that guide selection of particular research methods and specific research methods of data collection and analysis Creswell (2009) characterizes research approach in to quantitative, qualitative and mixed. Besides, the approach explains as follows:

[11] Although Merriam (1998) emphasized that there is a somewhat artificial dichotomy between the different categories of research designs, the literature on research methodology identifies three approaches to the study of human and social phenomena.

3.1.1. Quantitative research methodology

Quantitative research uses positivist knowledge claims (such as cause and effect thinking, reduction to specific variables and hypothesis, use of measurement and observation, and test of theories) employs strategies of inquiry such as experiments and surveys and collect data on predetermined instrument that yields statistical data (Creswell, 2009). The strengths of the quantitative methodology are – it follow scientific approach; bias from the researcher‘s influence is less; it can employee large sample size; it can test the validity and reliability of the instrument. So, the results can be believed and generalized for larger population.

3.1.2. Qualitative research methodology

Qualitative research approach is one in which the investigator often makes knowledge claims based primarily on the multiple meanings of individual experiences, socially and historically constructed meanings, participation in issues, collaboration or change oriented with an intent of developing a theory or pattern qualitative research methodology is based on constructivist or advocacy or both perspectives. Qualitative research is not intended to test a predetermined theory or hypothesis; instead, it is exploratory in nature and through induction it builds theories or hypotheses. In showing the lack of an established theory and exploratory nature of the qualitative research approach, McDonald and Daly (1992) noted that this approach is particularly essential when the researchers have little knowledge about the area of investigation. The strength of qualitative research is helps to generate a theory; also it explores issues which are not studied in the past. But it is criticized by bias because of researcher‘s interference.

3.1.3. Mixed approach

Mixed methods approach, which is believed to mitigate the biases of quantitative and qualitative approaches, is one in which a researcher tends to base knowledge claims on pragmatic grounds employing strategies of inquiry that involve collecting both quantitative and qualitative data either concurrently or sequentially to best understand research problems. It is more than simply collecting and analyzing both kinds of data both numeric information and text information (Creswell 2009). Mixed approach also has its strengths such as it aid to triangulate evidence and it helps to solve the problems associated with both qualitative and quantitative approach. But it requires an immense intensity of effort from the researcher as it include both designs.

Given the above points in the mind of the researcher, this study adopted mixed type of research approach in collecting and analyzing data in order to better understand the research problem. Mixed approach implemented sequentially, in which the researcher starts with gathering qualitative data and then gather quantitative data.

3.2. Population, Sample size and Sampling design

The study population is that ~~–a~~ggregation elements of from which the sample is actually selected" (Babbie 1989:170). Besides, there are 31 MFIs found in Ethiopia since its commencement of microfinance institution service in Ethiopia in 1996. Baker (1988:144) defines a sample as ~~–a~~ selected set of elements or units drawn from a larger whole of the elements, the population". This study, however, focused and selects 6 MFIs based on credit default, size and status of the share company i.e. categories[12] of the microfinance institution. Hence, the author select 6 MFIs by using simple random sampling from the list of the categories, namely Amhara Credit and Saving Institution Share company (S.C.) (ACSI) and Addis Credit and Saving Institution S.C. (AdCSI) from large MFIs, Gasha Microfinance Institution S.C. and Wisdom Microfinance Institution S.C. from medium MFIs and Ghion Microfinance Institution S.C. and Metemamen Microfinance Institution S.C. from small MFIs in order to represent the whole population which is covered more

[12] The National Bank of Ethiopia (NBE) categorizes Microfinance Institutions of Ethiopia as Large, Medium, and Small MFIs. one can see the category in Appendix IV

than 19 per cent of 31 MFIs found in Ethiopia. A representative sample can only guaranteed by drawn a sample methodically, thus enabling the researcher to obtain reliable results (De la Rey 1978:16). A sample of 240 clients were also selected using random sampling in order to manage the study effectively concerning the reasons for default among those who did not repay and those who repaid slowly, and concerning the factors influencing timely repayment by the regular borrowers. However, this does not mean that large sample size always leads to high level of accuracy (De La Rey 1978).

Consequently, the researcher used the repayment status of creditors to classify groups into 2 categories sample frame: fully-paid groups and nothing-paid groups. A stratified random sampling procedure employed to randomly select the sample groups from the strata. Stratified sampling guarantees representation from each disbursement strata at one level (Abay et al. 2009). This help to identify the variables and representation of fully-paid groups and nothing-paid groups.

3.3. Data Collection Instruments

The main source of data type for this work is primary and referred office documentation covers five encircling of credit/loans. The selected 6 MFIs have conducted more than 5 rounds of credit/loans since they began their operations in the districts. Nonetheless, the author of this work only include five year round of credit disbursement of the maturity of which has passed at the time of data collection were used i.e. credit extended during the last 5 years of rounds from 2006 through 2010.

The data were collected by distributing structured questionnaires i.e. open-ended[13] and closed-ended questionnaires to clients that was self-administered defaulters and non-defaulters in order to dig out borrower‘s personal and business details; causes of timely repayment; business performance; and the effect of credit repayment on the enterprise, family, and community. Consequently, survey is useful in that it usually: represents a

[13] Baker, 1988, points out that most of the guidelines for constructing open-ended questions are focused on ensuring that the respondent does not skip a question.

wide target population, generates numeric data, manipulates key factors and variables to drive frequencies etc (Abiy et al. 2009). Besides, discussions were made with borrowers, and relevant documents of the MFIs were also used.

Information obtained using the survey questionnaire includes:

- Borrower characteristics like age, gender, marital status, level of education, household size, occupation, etc.
- History of credit/loan (amount of credit, purpose and utilization of credit/loan etc.)
- Information on group formation (group monitoring, group responsibility, group action.)
- Information on income (from activities financed by the credit and from other sources.)
- Information like access to medical and educational facilities etc.
- Information on savings and financial recording
- Information on borrowers‘ perception of cost of credit default and adequacy of supervision, and other variables.

Information obtained from the MFIs office includes:

- Information on credit/loan like repayment period, credit/loan term, credit disbursement and amount of collection in the selected lending institutions, etc.
- Information like screening mechanisms, saving services, formation of groups/centers, etc.

3.4. Determinants of Credit Default

The methodologies used in this study to investigate the determinants of credit default, credit/loan screening mechanism and assessing impact of the credit scheme are conferred in detail here under.

3.4.1. Credit Default Performance

The credit default equation is précised based on the assumption that the verdict of the i[th] borrower whether to repay the credit in full or not depends on an unobservable utility index, U_i explained by a set of independent variables. This utility index, which designated that the probability of repaying credit in full will be greater if its value is larger, can be defined by a regression relationship as:

$$U_i = \beta' X_i + \varepsilon_i \text{ --- } (1)$$

Where: U_i = Utility index, β =Vector of parameters, X_i= Vector of explanatory variables (Maddala 1983).

The reason why the study use a utility index for the analysis of repayment performance is that, under normal circumstances, a borrower repays if he/she derives benefits from repaying. For example, if a borrower expects to get another round of credit, he/she will repay the current credit/loan.

In order to narrate this unobservable utility index (precisely a utility derived from repaying) to the verdict of repaying credit in full, the study assume that:

CDi = 1, if $U_i > 0$ (borrower repaid credit in full); or

CDi = 0, if $U_i \leq 0$ (borrower did not repay credit in full)

Where CD_i = credit default for the i[th] borrower.

Assuming U_i are normally distributed with a zero mean and variance δ^2, the probability that

$U_i; > 0$ can be computed as:

$$P_i = Prob\,(U_i > 0) = F\,(U_i) = F\,(\beta' X_i) \text{ --------------------------------------- } (2)$$

Where: F is the CDF – Cumulative Distribution Function.

Hence the likelihood function (the joint probability) is given by: (Maddala 1983).

$$C/L = Л_{LRi=1} Pi \; Л_{LRi=0} (1 - Pi) \text{ -- } (3)$$

To glance whether a borrower has repaid his/her credit or not, it needs to categorize borrowers into two to address the issue of determinants total credit default. So, it has to look for an appropriate model that enables us to analyze the determinants of credit default and probability of falling in either of the two groups. Application of Ordinary Least Squares (OLS) which in this case is the Linear Probability Model (LPM) - since the dependent variable is dichotomous- will be incorrect because of the following major problems: 1) non-normality of error terms; 2) heteroscedasticity of error terms; and 3) possibility of estimated probabilities lying outside the [0,1] range.

In practice the probability of repaying credit in full is expected to be non-linearly related to a set of explanatory variables, the estimated probabilities lying in the [0, 1] range. Such a specification would provide us with a Cumulative Distribution Function (CDF) from which the two commonly chosen distributions; namely, the logistic and the normal CDFs emerge. These CDFs give rise to the logit and the probit models respectively (Gujarati 1995, Pindyck and Rubinfeld 1981).

The logistic and the normal CDFs are very similar in their shape except that the former is slightly fatter around the tails than the latter (Maddala 1983). Although the choice between either of these models is difficult based on theory, the probit model is chosen for the purpose of this study because of the simplicity of getting the marginal effects of the coefficients.

On the other hand, credit/loan diversion rate, which is included as one explanatory variable in the repayment equation, is itself dependent on some of the other explanatory variables in the same equation. This necessitates the use of its fitted values to avoid interdependence between the variable and the error terms. The values of credit/loan diversion rate (ratio of amount of credit/loan diverted to total credit received) are limited between zero and one. Although the use of OLS is possible here, the two-limit Tobit[14] is a commonly applied model, in cases when the outcome is a probability or a percentage (Long 1997). This model is specified as:

$$CDR_i^* = \gamma X_i + \varepsilon_i \text{ --- } (4)$$

Where: CDR_i* is a latent variable and **Xi** and $\boldsymbol{\varepsilon_i}$ are set of explanatory variables and error terms respectively.

If CDR_i is the observed variable, the Tobit model will be:

$$\begin{aligned} CDRi &= 0, \text{ if } CDRi \leq 0 \\ &= CDR^*, \text{ if } 0 < CDR^* < 1 \\ &= 1, \text{ if } CDR^* \leq 1 \text{ --- } (5) \end{aligned}$$

Where: 0 and 1 are the lower and upper limits respectively. Thus, the models for credit default and credit/loan diversion can be given as follows:

$$CD = f\,(AG, GEN, EDU, CSZ, TM, CDR, INCOM, INCA, SRP, SPV, AREA, NDP, \varepsilon_i) \text{ --- } (6)$$

Where: CR = Credit Default

$$CDR = f\,(NDP, SPV, EDU, FR, INCA, CSZ, NTB, SRP, \varepsilon_i) \text{ --------------------------- } (7)$$

Where CDR = Credit Diversion Rate

But since the variable education is qualitative in nature, it is required to deem the mutually exclusive levels of education unconnectedly. In view of that, the study classifies borrowers into illiterate, primary, and high school and above high school. As a result, it needs dummies to be initiated so as to take care of levels of education. The study investigated in the subsequent section since the majority of the respondents are primary level and only very few are in the first, third and fourth category, it is better to classify

[14] The model is called *Tobit* because it was first proposed by *Tobin* (1958), and involves aspects of Probit Analysis, see Tobin J (1958), ―Estimation of Relationships for Limited Dependent Variables", Econometrica 26, 24-36.

them as those who are illiterate and those who are literate. Hence, the study needs one dummy to take care of these two categories. That is why equations (6) and (7) become:

CD = f (D, AG, GEN, EDU, CSZ, TM, CDR, INCOM, INCA, SRP, SPV, AREA, NDP, ε_i) -- (8)

CDR = f (D, NDP, SPV, EDU, FR, INCA, CSZ, NTB, SRP, ε_i) ------------------------- (9)

Underneath are given the file of the variables jointly with their definitions:

1. D = 1 if a borrower has gone to school and zero otherwise
2. CD = Credit Default (CD = 1 if fully repaid, zero otherwise)
3. AG = Age of borrower
4. GEN = Gender of borrower

   0 = female 1= male
5. EDU = Educational level of borrower

   1 = illiterate

   2 = Grade 1-8

   3 = Grade 9-12

   4 = above grade 12
6. CSZ = Credit/loan size in Ethiopian Birr (ETB)
7. TM = Timeliness of Credit/loan release

   1 = if timely released 0 = otherwise
8. CDR = Credit/loan Diversion Rate (ratio of credit/loan diverted to total credit received)
9. INCOM = Income from activities financed by credit/loan (annual)
10. INCA = Annual income from other activities (not financed by the credit/loan).
11. SRP = Suitability of Repayment Period

    1= if suitable 0 = otherwise
12. FR = Use of Financial Records

    1 = if borrower keeps financial records 0 = otherwise

13. SPV = Adequacy of Supervision visits made to a borrower

    1 = if adequate 0 = otherwise

14. AREA = Location of residence of borrower (1= urban 0= rural)
15. NDP = Number of Dependents
16. NTB = Number of Times Borrowed
17. ε_i = Error terms

Portrayal of the explanatory variables mutually with their expected signs is given here under:

1. Age: Vigano (1993) noted that with increase in age, it is usually expected that borrowers get more stability and experience. So the author expects this variable to have a positive impact on credit repayment performance.

2. Gender of Borrower: There is a belief among many microfinance specialists that female are better payers than male borrowers, taking into consideration their being more entrepreneurial that results from assuming more responsibilities in the internal affairs of a household (Vigano 1993).

3. Educational Level of Borrower: This variable is expected to have a positive impact on repayment performance in general. Considering normal circumstances, a more educated borrower is expected to use the loan effectively as compared to a less educated one. In this case the study expects a positive sign for the variable.

4. Credit/Loan size: Von Pischke (1991) noted that efficient credit/loan sizes fit borrowers‘ repayment capacity and stimulate enterprise. If amount of credit released is enough for the purposes intended, it will have a positive impact on the borrower‘s capacity to repay.

5. Timeliness of Credit release: If credit is disbursed in time, it is unlikely that it will be diverted to non-intended purposes. Johnson and Rogaly (1997) noted that timeliness of credit disbursement is important when credits are used for seasonal activities such as agriculture. In such cases a positive sign is expected.

6. Credit diversion: The impact of this variable depends on what use the diverted credit/loan is put in to it. If it is used for productive purposes than the intended ones then repayment will be enhanced. If on the other hand the credit is diverted to non-productive uses, it will have a negative impact. Therefore, the sing of this variable can't be predetermined.

7. Income from activities financed by the credit/loan: Kashuliza (1993) has concluded that farmers who obtained higher income from farming were more likely to repay their credit. But sometimes borrowers may be tempted not to repay if they see that the success of their business is such that they no mare need credit from the lending institution, as Adeyemo (1984) has shown in his study about credit/loan delinquency in a Nigerian multipurpose cooperative union. Hence, this variable may have positive or negative sign.

8. Income from other activities or sources: Some borrowers may have other sources of income like income from employment in government or private organizations of the borrower or other members of the family, pension, etc. Hence, this variable may assume positive or negative sing.

9. Suitability of Repayment period: It is expected that borrowers who find the repayment period suitable, perform better. Hence, the study expects a positive sign for this variable in this case.

10. Credit supervision period: If there is an incessant follow up and supervision visit to evaluate the credit/loan utilization and repayment, this makes borrowers to observe their obligation and improve the proper utilization of the credit thereby improving repayment performance. Therefore, the study expects a positive relationship.

11. Availability of other sources of credit: If borrowers have other sources of credit, they may use these sources to be able to settle their credit/loan obligation in case they want to continue borrowing from the same source or borrowers may feel careless. Therefore, the study expects a positive sign or negative sign.

12. Area: This variable is a dummy capturing the fact that the borrower lives in rural or urban areas. Borrowers in rural areas are predominantly farmers. Credit extended for agricultural purposes are expected to face problem of default because of risk and uncertainty attached to agriculture. Hence, the study expects a negative sign for this variable. Dependent on factors that are included in the credit repayment equation and some other variables, i.e., it is endogenous. These variables, which are hypothesized to affect credit/loan diversion, are described together with their expected signs as below:

I. Number of Dependents: As the number of dependents increases, the borrower will need more money to fulfill their requirements in addition to the obligation of credit repayment. For this reason, the study expects this variable to have a positive impact on credit diversion.

II. Credit/loan Supervision: The probability of using credit funds for non-intended purposes decreases if adequate credit supervision is made regarding credit/loan utilization. In such cases, the study expects a negative sign for this variable.

III. Suitability of credit repayment period: If borrowers find the repayment period suitable, they can utilize the credit proceeds effectively for the intended purpose than those who regard the period of repayment unsuitable. So, the study expects a negative sign for this variable.

IV. Other sources of income after credit: With increased income as a result of the availability of other sources of income created after program participation, borrowers may not be tempted to divert the credit to other purposes, since they have enough income. On the other hand, if they feel that they are self-sufficient after diversifying their income sources they may divert the credit proceeds. For this reason, this variable can either be positive or negative depending on the either of the situations explained above.

V. Credit/loan size: A credit/loan amount in excess of investment cost is more likely to tempt the borrower change his/her intended investment, i.e., divert the credit funds. So, a positive sign is expected for this variable.

VI. Use of financial recording methods: If borrowers keep records, it will be easier for them to follow up their credit utilization situation. Otherwise, they are likely to confuse the credit/loan proceeds with other incomes, thus finding themselves in a situation where they unintentionally divert loan to other purposes. Therefore, the study expects a negative sign.

VII. Number of times borrowed: If a borrower is a replicate borrower he/she may have acquired more experience on the institution‘s rules and regulations, and hence could efficiently utilize the credit for the intended purpose. On the other hand, since such borrowers may have the feeling that after borrowing and effectively using the credit for a relatively more years they no more need the credit/loan from MFIs and may be reluctant in using the credit as per the credit/loan agreement. Thus, the sign of this variable cannot be predetermined.

VIII. Education: Borrowers who are literate are likely to use the credit proceeds for the intended purpose, thus undermining credit diversion. But sometimes such borrowers may divert credits in search of more profitable areas of investment. As a result, its sign can‘t be determined a priori.

3.4.2. Credit screening (rationing) mechanism

The method of analysis employed by Hunte (1996) stands appropriate for this section of the study unlike the credit repayment equation, the dependent variable for the credit/loan rationing equation is continuous and limited between 0 and 1, i.e. the study has some who are rationed credit and others who are not. The appropriate model is tobit (Maddala 1983). But for the purpose of this study, since it is going to use a dummy variable by defining credit rationing to be equal to 1 if a borrower is not rationed and zero otherwise. Thus, the study used the logit model, which has given as:

$$CRATi^{*} = \alpha Xi + \varepsilon_i \text{------------------------------------} (10)$$

Where: CRATi* = is credit/loan rationing (CRAT =1 if a borrower is not rationed and zero otherwise).

Xi = Set of explanatory variables

ε_i = Error terms

NB: CRATi* are latent variables like the CRi*'s. All the explanatory variables of credit repayment equation are to be employed by the CRATi equation as well. Comparison of the sign and level of significance of the estimates in the two equations, i.e. credit repayment and credit/loan rationing equations, will accomplish the task of evaluating the accuracy of the screening mechanism as done in Hunte (1996).

3.5. Impact Assessment

To carry out impact analysis, control group method is one alternative. This requires a control group which is a sample of people similar in every respect but who have not received a credit, compared with samples that have (Johnson and Rogaly 1997). In practice it is not only difficult, but also time consuming, to find control groups that fulfill such a criteria.

So to avoid the above-mentioned difficulties the methodology suggested by Fiddler and Webster (1996) were employed for the purpose of this study. This methodology uses Wilcoxon Matched Pairs Non-Parametric test to assess the impact of a credit scheme on beneficiaries based on the situations of borrowers before and after the credit. Distinctively, the analysis employed descriptive statistics to assess impact of the credit scheme on income, access to education and medical facilities, savings, employment generation, food security, etc, before and after credit.

3.6. Data Analysis

The study tries to investigate the causes of credit default risk in the selected 6 MFIs. The major tools of statistical data analyses were descriptive statistics. Descriptive statistics can be described as the statistics used to summarize data (Mason et al. 1989:429). It provides a description of the features of a set of observations, viz percentage, modes, means, frequency distribution, kurtosis, skewness, variance, the standard error of the mean, and the standard deviation (Bohrnstedt et al. 1988:492). To facilitate data analysis, the researcher performed serial number and code on questionnaires before enter into Microsoft Excel software to be suitable for both descriptive and econometric analysis. The next chapter presents the results and discussion of each of the above method of inquiry.

Chapter 4 Results and Discussion

This chapter presents Descriptive Statistics and Econometrics Analysis of the study‘s findings on the credit default risk in the selected 6 MFIs of Ethiopia. The average repayment delay period and default rates are calculated and factors and/or determinants that contributed to credit default, slow repayment and credit screening mechanism are also presented in separate sections.

4.1. Operations of the study areas

Table 4.1 Number of clients being served by the selected 6 MFIs

Name of MFIs	**Operations of selected MFIs**				**Number of Clients**		
	Head office	Main Branch	Sub Branch	Districts	Male	Female	Total
ACSI	Bahir Dar	10, 13[15]	188	411	228,412	431,218	659,630
AdCSI	A.A.	7	17	116	82,801	109,760	192,561
Wisdom	A.A.	23	27	5	19,858	36,877	56,735
Gasha	A.A.	N.A.	6	17	6,444	4,467	10,911
Metemamen	A.A.	N.A.	5	15	419	10,056	10,475
Ghion	A.A.	N.A.	3	13	980	730	1,710
Total	---	33	246	577	338,914	593,108	932,022

Note: A.A. stands for the head office location of MFIs Addis Ababa. And N.A. is not available.

Source: compiled from author‘s survey, April 15, 2011.

[15] There are 13 Micro Banks in the operation of Amhara Credit and Saving Institution (ACSI) other than main branches. Besides, 7 micro banks are also found in AdCSI.

The head office of the selected 6 study areas (MFIs) are operating 1 in Amhara National Regional State (ANRS) and the remaining 5 are found in Addis Ababa City administration.

Amhara Credit and Saving Institution (ACSI) is one of the largest MFI in the world i.e. sixth in the world and first in Ethiopia. It has 10 main branch, 13 micro banks, 188 sub branches and 411 districts all over Amhara National Regional State, which establish its head office in Bahir Dar town, 564 kilometers far from the capital Addis Ababa, Ethiopia. ACSI has the most clients, the largest outstanding balance and the most branch networks. Amhara National Regional State is the second largest region in Ethiopia after Oromia. ACSI covers all districts in the region having opened at least one sub-branch in each, despite the challenges presented by the lack of infrastructure and remoteness. The region is physically characterized by difficult terrain and lack of transport infrastructure. Many districts have only rural and dry weather roads, making access during the rainy season difficult (Duressa 2009).

There are a total of 33 main branches, 246 sub-branches and 577 districts in the selected 6 MFIs for this study. As shown in table 4.1 above, the current total number of clients stands at 932,022. Besides, the total number of female beneficiaries is 953,108 (63.64%), while that of the male beneficiaries is 338,914 (36.36%).

The survey considered all 6 head office contacts and 13 districts namely Shum Abo and Bahir Dar district from ACSI, District 06, 10, 15 and 17 from AdCSI, Sholla, Lideta and Akaki District from Wisdom, Shiromeda and Mercato from Gasha, Kebena district from Ghion and Shashemene district from Metemamen MFI. Meanwhile, 240 sample size respondents were selected using simple random sampling from total beneficiaries of the program. However, the response rate for the selected MFIs borrowers are 210 (87.75%), provides that, 30 (12.5%) of the sample respondents are not returned the questionnaire. Pilot testing was made on AdCSI district 06 beneficiaries in order to make some modifications on the design of the questionnaire.

As pointed out above, a sample of 210 borrowers was selected randomly for this work. Out of the total respondents 180 (85.71%) have settled their loans in full while 30 (14.29%) failed to repay their credits/loans in full.

4.2. Characteristics of selected 6 MFIs respondents' profile

From the total number of borrowers in the sample 52 (24.12%) are female while 158 (75.24%) are male. From table 4.2 under, it is easy to observe that the proportion of male borrowers is larger than female.

Table 4.2 Gender of respondents from selected MFIs

Gender of borrowers	Frequency	Percentage (%)
Male	158	75.24
Female	52	24.76
Total	210	100

Source: Author's computation based on questionnaire responses, April 17, 2011.

Two hundred ten clients who received credits from the selected MFIs during the study period were analyzed. The survey result shows, the mean age for the whole sample is 43.5 years with the minimum and maximum being 20 and 67 respectively.

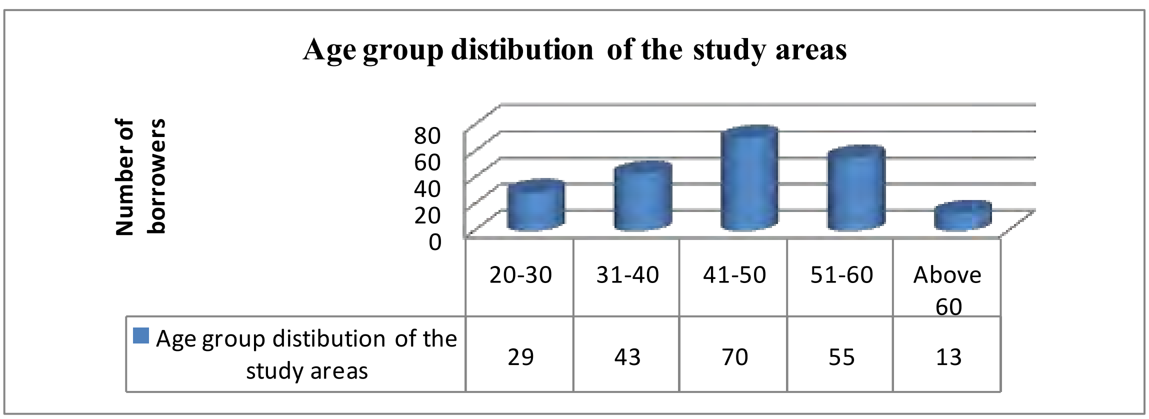
Table 4.3 Age group of the selected respondents

Age group	Frequency	Percentage (%)
20-30	29	13.81
31-40	43	20.48
41-50	70	33.33
51-60	55	26.19
Above 60	13	6.19
Total	210	100

Source: Survey result by author based on responses to study questionnaires, April 17, 2011.

The largest frequency and percentage is covered by sample age group of 41-50 in 70 and 33.33% respectively, where as the lowest frequency and percentage is going to sample age group of above 60 in 13 and 6.19% respectively.

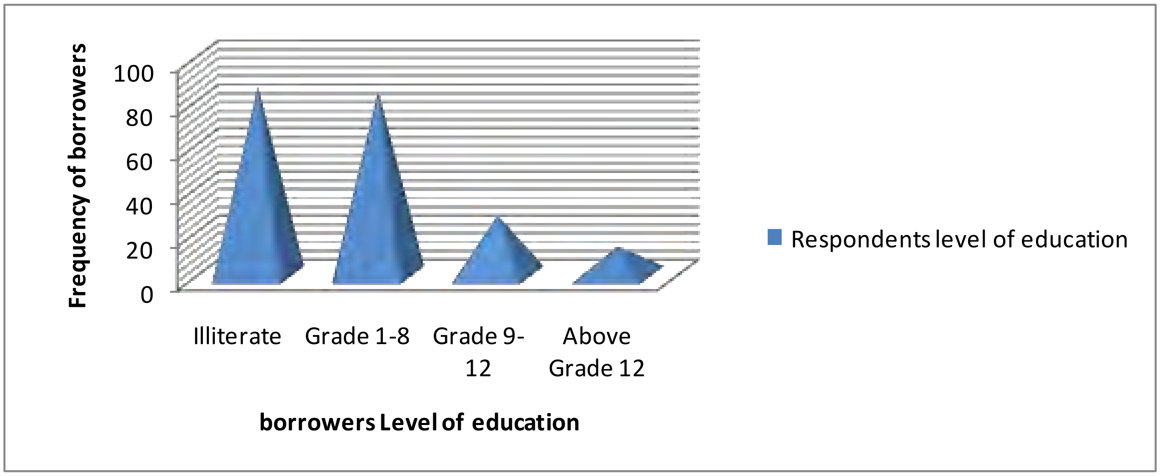
Figure 4.1 Age group distributions of the study areas.



Source: Author's computation based on responses to study questionnaires, April 17, 2011.

As proved from the questionnaire responses, the education level of borrowers in the sample ranged from no education to postsecondary training. Those who have attended either elementary or junior secondary school are 84 with 40% and those who attended 9 up to grade 12 are 27 (12.86%) above grade 12 are 13 (6.19%). Meanwhile, most of those who are illiterate are 86 (40.95%). Besides, the great majority of the clients were married 159 (75.14%); approximately 34 (16.19) were single; 8 (3.81%) divorced and 9 (4.29%) were widowed.

Figure 4.2 Respondents level of education.



Source: Author‘s computation based on responses to study questionnaires, April 17, 2011.

As can be seen from the table 4.4 under 86 (40.95%) of the sample borrowers can‘t read and write, provided that all of them i.e. 86 of the borrowers don‘t keep financial records, while only 7 (3.33%) being users of financial recording from level of education above grade 12. Whereas, 16 (7.62%) from level of education grade 1-8 and 21 (10%) from level of education grade 9-12 also used financial recording for their activities. So the large proportion of illiterate beneficiaries in the sample explains the poor status of financial recording habits [only 44 (20.95%) of the total borrowers in the sample keep records]. Most of those who don‘t use financial records[16], i.e. 166 out of 166, which is 149 (89.76%) reported lack of knowledge as the main reason for not recording their financial transactions, while the remaining 17 (10.24%) reported their financial position

[16] Formal record of the financial activities of a business, person, or other entity, often referred to as an account.

as being too little to keep records. Contrary to this, the respondents who used financial/accounting record are 44, out of 44, which are 39 (88.64%) reported to evaluate my activities profit or loss, while the remaining 5 (11.36%) reported for loan/credit repayment purpose.

Table 4.4 Respondents financial/accounting recording habits and level of education.

Using accounting record	Frequency of level of education				Total
	Illiterate	Grade 1-8	Grade 9-12	Above 12	
Yes	---	16	21	7	44
No	86	68	6	6	166
Total	86	84	27	13	210

Source: Author‘s computation based on responses to study questionnaires, April 18, 2011.

Type of loan products of the MFIs are a micro business loan which is ranging from ETB 700.00, the maximum loan size for this loan product is ETB of 5,000.00. A small business loan is disbursed relatively for well established business with a loan size of usually greater than ETB 5,000.00 and less than 50,000.00 for each entrepreneur. Whereas, house loan product have a maximum loan size of ETB 50,000.00 with loan term of 60 repayable months. Besides, customer loan product targets government and related employees that have fixed monthly salary; the loan is guaranteed by employers and deducted from payroll on monthly basis. The loan size depends on the borrower‘s salary and loan term is up to 24 months. Nonetheless, a short-term loan repayable within 6 months. The feasibility of the project is given the prime importance in the determination of the amount of loan to be given on credit and for controlling purpose using in one of the selected MFI called AdCSI to decide the loan size of the borrowers. Thus, it includes both working capital as well as investment.

Table 4.5 Loan size of Addis Credit and Saving Institution, Share Company

Description	For new clients	For existing clients
Individual	Up to ETB 30,000.00	Up to ETB 300,000.00
Joint venture and others	Up to ETB 60,000.00	Up to ETB 300,000.00
Cooperatives	Up to ETB 70,000.00	Up to ETB 300,000.00
Iddirs	On agreement	On agreement

Source: Author's compilation from the profile of AdCSI, April 19, 2011.

With respect to the purpose for which credit/loan was taken, the author observe that the majority of the borrowers, i.e. 62 (29.52%) took the credit for urban agriculture and purchasing of agricultural inputs such as fertilizers. The lower frequency is given for leather product i.e. 6 (2.86%). The lingering are taken the credit for the purpose of retail trade, production of construction inputs, metal and wood work, hotel and catering services and others with their particular percentage of 26.19%, 9.05%, 12.86%, 8.12%, and 11.43 respectively.

Table 4.6 Respondents purpose for which they took the credits

Purpose for which the credit was taken	Frequency	Percentage
1. Retail trade	55	26.19
2. Production of construction inputs (materials)	19	9.05
3. Metal and wood work	27	12.86
4. Hotel and catering services	17	8.10
5. Urban agriculture and purchase of its input	62	29.52
6. Leather product	6	2.86
7. Miscellaneous business (others)	24	11.43
Total	210	100

Source: Author's computation based on responses to study questionnaires, April 21, 2011.

In terms of sufficiency of the loan amounts released, table 4.7 below shows that 183 (87.14%) of the borrowers in the sample reported the credits/loans they received to be sufficient for the purpose they intended. On the other hand, 27 (12.86%) of borrowers declared that the credit/loan amount they took was not sufficient. This has some insinuation for credit/loan diversion.

Table 4.7 Respondents outlook on sufficiency of credit/loan size

Opinion on sufficiency of credit amount	Frequency	Percentage
Yes	183	87.14
No	27	12.86
Total	210	100

Source: Author‘s computation based on responses to study questionnaires, April 19, 2011.

To witness, if at all purpose of borrowing above in table 4.6 above has some association with credit repayment performance, table 4.8 is constructed from the survey data. In view of that, the higher default rate is at credits taken for the purpose of urban agriculture and purchase of its inputs which is 19.35%. Whilst production of construction materials taken the lower default rate 10.53%. The same trend is observed in the rest of the cases, i.e. more than 80% of the borrowers have repaid their credits. Indeed, 180 (85.71%) of my sample respondents are non-defaulters whereas 30 (14.29%) of the sample is defaulters.

Table 4.8 Statistics on non-defaulters and defaulters on selected 6 MFIs

Selected MFIs	Non-defaulters		Defaulters	
	Male	Female	Male	Female
ACSI	308,688	418,478	19,724	12,740
AdCSI	75,350	99,881	7,451	9,879
Wisdom	6,414	11,911	13,444	24,966
Gasha	5,247	4,050	697	417
Metemamen	386	9,235	24	548
Ghion	930	692	50	38

Source: compiled from author‘s survey, April 21, 2011.

Table 4.9 demonstrates the number of defaulters in the selected MFIs. The largest defaulters are found in ACSI and Wisdom i.e. 19,724 and 13,444 for male clients and 12,740 and 24,966 for female respectively. Contrary to this, the lowest proportion is going to Ghion and Metemamen MFIs.

Table 4.9 Respondents by repayment status and purpose of credit

Purpose for which the credit was taken	Defaulters	Non-defaulters	Total
Retail trade	6(10.91%)	49(89.09%)	55
Production of construction inputs (materials)	2(10.53%)	17(89.47)	19
Metal and wood work	3(11.11%)	24(88.89%)	27
Hotel and catering services	2(11.76%)	15(88.24%)	17
Urban agriculture and purchase of its input	12(19.35%)	50(80.65%)	62
Leather product	1(16.67%)	5(83.33%)	6
Miscellaneous business (others)	4(16.67%)	20(83.33%)	24

Source: Author‘s computation based on responses to study questionnaires, April 21, 2011.

Sufficiency of supervision[17] on credit/loan utilization is an important factor contributing to a better credit repayment performance. During the survey it was known that supervision for clients of MFIs all together is difficult. Nevertheless, supervision is done with main focus on of credit repayment. Only 81 (38.57%) of the respondents in the sample declared that we are supervised about credit utilization but it is not sufficient enough.

[17] Management by overseeing the performance or operation of a person or a group

Table 4.10 Respondents perception on adequacy of credit supervision

Adequacy of supervision by MFIs officers	Frequency	Percentage
Yes	129	61.43
No	81	38.57
Total	210	100

Source: Author's computation based on responses to study questionnaires, April 21, 2011.

From the table 9 above, 129 (61.43%) of this number borrowers, 81 (62.79%) of the sample reported that supervision is adequate, while 48 (37.21%) of the sample respondents said that supervision of credit/loan utilization is insufficient however, the respondents reported supervision is important for us.

On the subject of suitability of credit repayment only 28 (13.33%) of the sample respondents are with the outlook that the repayment period, which is not suitable. Of these i.e. 28 borrowers 17 (60.71%) recommended a repayment period that is longer than a year while the rest recommended a repayment period that is less than a year, with 11 (39.29%) of them showing preference of paying at least twice a year.

A further result is that 55 (26.19%) of the sample respondents have violated the credit/loan agreement, all of them diverting the loan proceeds to other purposes than they intended. Of these 26 (47.28%) reported that the credit agreement didn't match with their true intention they had in their mind, while 11 (20%) reported market problem, 9 (16.36%), too small credit/loan amount and 9 (16.36%) reported other reasons for not keeping their agreement.

Looking at how credit/loan is rationed, the author observes that 32 (15.24%) of the total respondents were rationed of which 22 (12.43%) are rural borrowers. Glimpse tables 4.10 here under. More will be said about credit/loan rationing in the imminent section 4.10.

Table 4.11 Area of respondents on credit rationing

Rationing	Urban	Rural	Total
Rationed	10 (7.35%)	22 (29.73%)	32 (15.24)
Non –rationed	126 (92.65%)	52 (70.27%)	178 (84.76)
Total	136 (100%)	74 (100%)	210 (100)

Source: Author‘s computation based on responses to study questionnaires, April 21, 2011.

Above and beyond, In view of the fact that, the credit delivery mechanism of the selected MFIs are a group based one that relies on peer pressure and social sanctions that exist among borrowers, questions regarding these issues were included in the survey instruments. And almost all of the borrowers responded ―yes" to questions regarding peer group that they know each other very well, feel responsible for each other and monitor each others‘ action.

Another variable of concern in this study is borrowers‘ attitude to cost of default. All the total respondents i.e. 210 (100%) reported that cost of default is high. Such an attitude has a clear implication in terms of improving credit repayment performance. Regarding the perceived costs of default 128 (60.95%), i.e. the majority of the borrowers responded social sanction as the most important factor forcing them to repay their credits in time. So, the author observe that group pressure and social sanctions are important factors affecting credit repayment performance of borrowers by serving as social collateral for the lending institution.

Table 4.12 Respondents perception about cost of default

Respondents perception about cost of default	Frequency	Percentage
Claims against personal wealth	33	15.72
Claim against guarantors	23	10.95
Social sanction (i.e. loss of social status)	128	60.95
Fear of losing additional in future	18	8.57
Other	8	3.81
Total	210	100

Source: Author's computation based on responses to study questionnaires, April 21, 2011.

Also some borrowers shift between the lending institution and moneylenders, i.e., they borrow from moneylenders for a very short period in order to repay the credit/loan they took from their customer MFIs and then they immediately repay the money lenders after lending institution releases the next cycle of loan.

Although this calls for a further investigation, it was known that only 11 (5.24%) of the sample respondents were found to have other sources of credit in addition to that of their customer MFI. 7 (63.64%) of these reported moneylenders as their additional source of credit while the rest 4 (36.36%) indicated that they also borrow from friends or relatives since their participation in the credit scheme by MFI.

Household size is another important variable considered in this study. The mean number of dependents within the households is 6.71 varying between a minimum of 1 and a maximum of 15. The mean number of dependents supported outside of the households of borrowers that constitute 12.86% of the sample respondents is 1.62 ranging between 1 and 4. Overall the mean number of dependents stands at 6.75 varying between 1 and 15. See table 4.13 below.

Table 4.13 Family unit characteristics of the selected 6 MFIs respondents.

Number of dependents	No.	Min.	Max.	Mean	St. Devi.
Number of dependents in the Household	183	1	15	6.71	2.49
Number of dependents outside the Household	27	1	4	1.62	0.97
Total number of dependents	210	1	16	6.75	2.54

Source: Author's computation based on responses to study questionnaires, April 22, 2011.

As revealed in table 4.14 about 51 (24.29%) of the borrowers in the sample reported their having income source before the credit program. However, 159 (75.71%) has not source of income other than the MFI credit program.

Table 4.14 Respondents by availability of income source before the MFIs program

Availability of Income source before the MFIs program	Availability of Income source before the MFI program	
	Frequency	Percentage
Yes	51	24.29
No	159	75.71
Total	210	100

Source: Author's computation based on responses to study questionnaires, April 23, 2011.

Contrary, as shown in table 4.15 below the majority of the borrowers, i.e.144 (68.57%) earn an annual income below ETB of 1,000.00, whereas only 4 (1.90%) were earning above ETB 5,000.00. before participating in the credit scheme.

Table 4.15 Respondents by household annual income in the selected 6 MFIs

Respondents annual range of income	Before the program of selected MFI	
	Frequency	Percentage
Below ETB 1,000.00	144	68.57
Between ETB 1,001.00 - 2,000.00	31	14.76
Between ETB 2,001.00 - 3,000.00	16	7.62
Between ETB 3,001.00 - 4,000.00	9	4.29
Between ETB 4,001.00 - 5,000.00	6	2.86
Above ETB 5,000.00	4	1.90
Total	210	100

Source: Author's computation based on responses to study questionnaires, April 23, 2011.

Vis-à-vis access to medical facilities all 210 (100%) of the respondents of reported having access to medical facilities. However, 64.76%, 1.43%, 10%, 4.29%, 19.52% of their medical expense is covered by borrowers himself/herself, served free, other family member, relatives and borrowers and other family members respectively. Although there is no as such a very significant increase in terms of access to medical services, the number of borrowers who reported themselves as being bearers of medical expenditure is the largest portion 3 of the respondents served free. This can be seen from table 4.16 here under.

Table 4.16 Respondents react on the bearer of medical expense

Bearer of medical expense	Frequency	Percentage
Borrower himself/herself	136	64.76
Served free	3	1.43
Other family members	21	10
Relatives	9	4.29
Borrower and other family member	41	19.52
Total	210	100

Source: Author's computation based on responses to study questionnaires, April 24, 2011.

In terms of medical expenditure before loan and after loan, the mean annual expenditure is ETB 128.32 and ETB 200.90 ranging between ETB 5 to Birr 1,000 for the former and between ETB 6 to ETB 1,300.00 for the latter. Although it shall test whether the credit scheme has brought about any change in this respect, it is obvious that the average expenditure on health services has increased after the program.

Table 4.17 Statistics on expenditure items and number of enrollment of school age students

Descriptive statistics of Expenditure	Freq.	Min	Maximum	Mean	Std. Dev.
Educational expenditure before credit	132	20	1,700.00	313.67	308.353
Educational expenditure after credit	171	1	2,800.00	443.21	405.635
Medical expenditure before credit	159	5	1,000.00	128.32	160.211
Medical expenditure after credit	164	6	1,300.00	200.89	213.154
Number of School age students enrolled before credit	183	0	10	1.3	1.62
Number of School age students enrolled after credit	184	0	10	2.07	1.75
Consumption expenditure before credit	210	300	6,000.00	1,432.57	686.201
Consumption expenditure after credit	210	500	25,000.00	2,031.11	1,781.80

Source: Author‘s computation based on responses to study questionnaires, April 24, 2011.

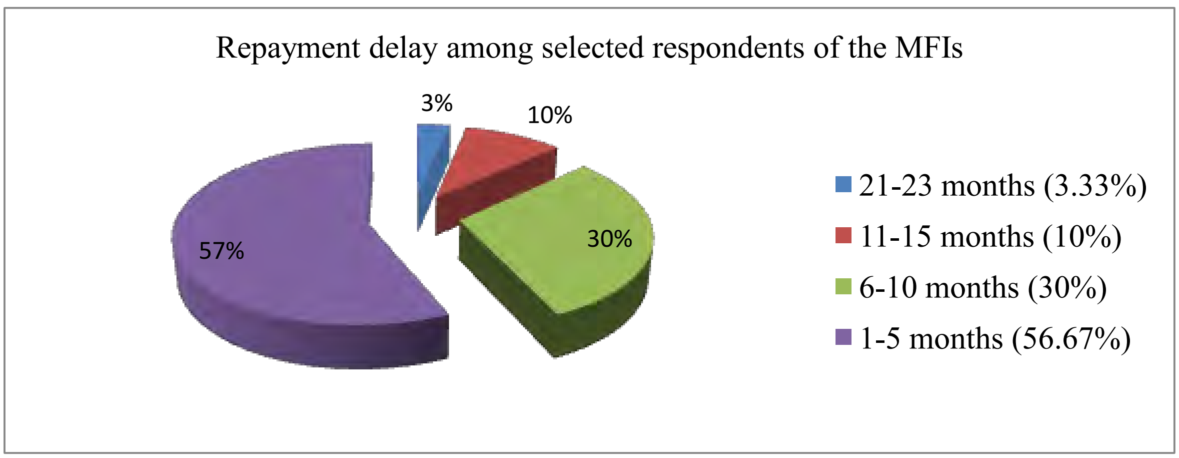
Similarly the mean number of school-age students enrolled has increased from 1.3 to 2.07, while the expenditure on education has shown an increment of ETB 129.54 on the average. The same is true of mean consumption expenditure, which has shown an increment of ETB 598.54 on the average as shown in table 4.17. These comparisons are made based on the data collected before and after participation in the credit scheme, which ranges from one to five years.

4.3. Credit Default Analyses in the selected MFIs

Because both slow repayment and default rates negatively affect the MFIs performance, identifying the average repayment delay and the default rate is important for this work.

Average repayment delay of the 210 sample selected MFIs beneficiaries studied, 30 exceeded the repayment periods stated in their credit/loan agreements. The repayment delays described in figure 4.3 are the months between the agreed repayment periods and actual completion of the loans by the slow repayers. The analysis revealed that slow repayers delayed repaying their credits for 1 to 23 months. Most of them cleared their loans within five months after the expiration of the credit/loan agreement period.

Figure 4.3 Repayment delay among selected 6 MFIs respondents



Source: Author‘s computation based on responses to study questionnaires, April 25, 2011.

The repayment holdup was calculated as the number of months delayed in completing a credit, divided by the agreed repayment period in months, and then multiplied by 100. Meanwhile, client who received a credit to repay in 12 months was more likely to repay it in 16 months, a client given a loan to repay in 18 months was more likely to repay in about 24 months, and so on.

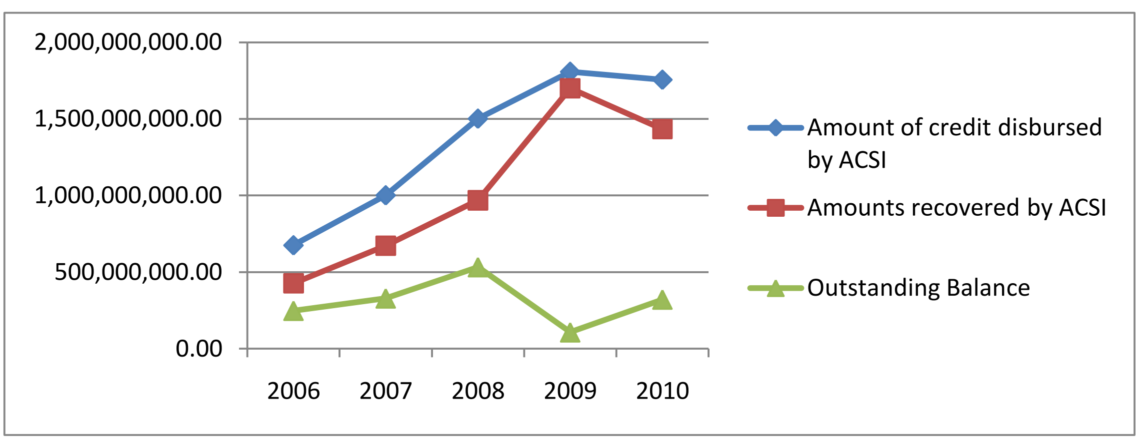
4.3.1. Repayment and default rates in the selected 6 MFIs

Repayment and default rates: in this study, it was also important to compute the study areas default rate i.e. the rate at which credit holder‘s default on the amount of money that they owe for the selected 6 MFIs scheme.

Table 4.18 ACSI‘s Repayment and Default Rates (Amounts in ETB – Ethiopian Birr)

ACSI‘s Performance in Years	Credit Disbursement in ETB	Amounts recovered by ACSI based on credit agreement	Outstanding balance in ETB	Default rate in percentage (%)
2006	675,701,970.00	427,278,196.00	248,423,774.00	36.77
2007	1,001,819,452.00	672,871,087.00	328,948,365.00	32.84
2008	1,501,515,623.00	968,950,607.00	532,565,016.00	35.47
2009	1,807,324,273.00	1,699,402,860.00	107,921,413.00	5.97
2010	1,755,414,210.00	1,433,906,889.00	321,507,321.00	18.32

Source: Author‘s compilation from ACSI head office data base, Bahir Dar, May 3, 2011.



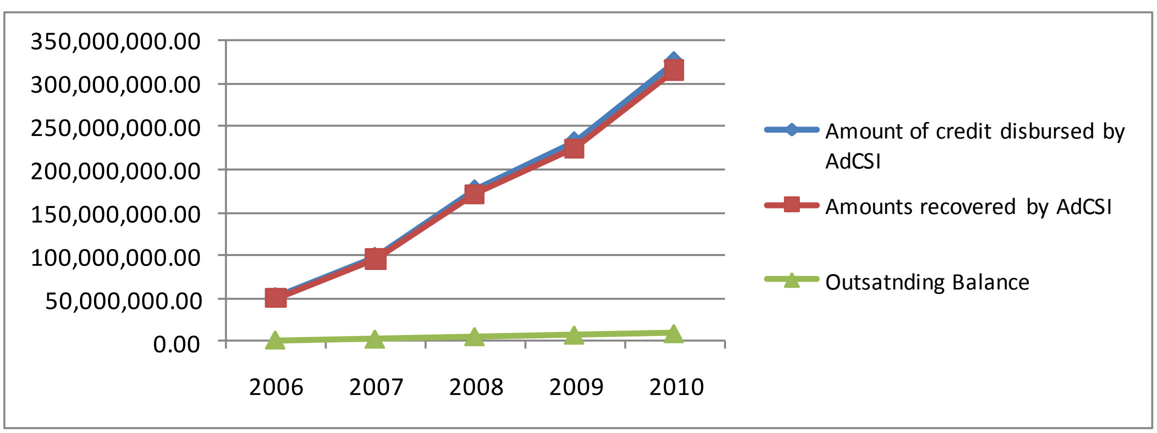
Graph 4.1: Credit Default Risk in Amhara Credit and Saving Institution (ACSI)

Table 4.18 revealed that ACSI's performance in 2006, 2007, 2008, 2009 and 2010 by contrasting total disbursements with total repayments and outstanding balances at the ends of the credit agreement periods. The default rate, therefore, is grounded on outstanding balances at the ends of the agreed repayment periods. It is understandable from the outstanding balances and amounts disbursed that this lending institution veteran default rates of 36.77 per cent, 32.84 per cent, 35.47 per cent, 5.97 per cent and 18.32 per cent for 2006, 2007, 2008, 2009 and 2010 respectively in ACSI.

Table 4.19 AdCSI Repayment and Default Rates (Amounts in ETB – Ethiopian Birr)

AdCSI Performance in Years	Credit Disbursement in ETB	Amounts recovered by AdCSI based	Outstanding balance in ETB	Default rate in percentage (%)
2006	51,007,943.00	50,038,792.08	969,150.92	1.90
2007	97,812,055.00	95,758,001.85	2,054,053.16	2.10
2008	176,195,929.00	171,086,247.1	5,109,681.90	2.90
2009	232,014,120.00	225,053,696.40	6,960,423.60	3.00
2010	325,011,358.00	316,236,051.30	8,775,306.67	2.70

Source: Author's compilation from AdCSI head office data base, May 5, 2011.



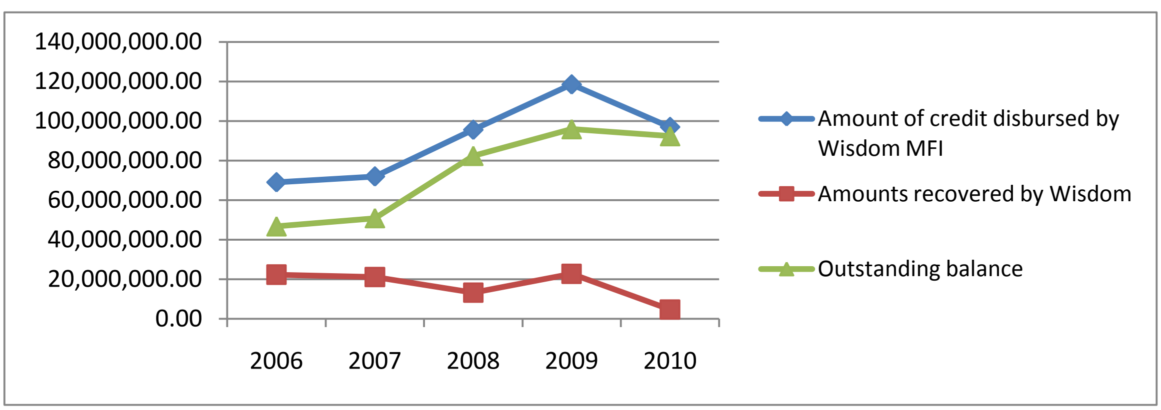
Graph 4.2: Credit Default Risk in Addis Credit and Saving Institution (AdCSI)

Table 4.19 discovered that AdCSI's performance in 2006, 2007, 2008, 2009 and 2010 by comparing total disbursements with total repayments and outstanding balances at the ends of the credit agreement periods. The default rate, as a result, is based on outstanding balances at the ends of the agreed repayment periods. It is comprehensible that the outstanding balances and amounts disbursed that the organization veteran default rates of 1.90 per cent, 2.10 per cent, 2.90 per cent, 3.00 per cent and 2.70 per cent for 2006, 2007, 2008, 2009 and 2010 respectively in AdCSI.

Table 4.20 Wisdom MFI Repayment and Default Rates (Amounts in ETB – Ethiopian Birr)

Wisdom Performance in Years	Credit Disbursement in ETB	Amounts recovered by Wisdom MFI	Outstanding balance in ETB	Default rate in percentage (%)
2006	68,929,898.00	22,262,929.00	46,666,969.00	67.70
2007	71,863,527.00	21,049,606.00	50,813,921.00	70.71
2008	95,504,665.00	13,197,620.00	82,307,045.00	86.18
2009	118,492,920.00	22,672,990.00	95,819,930.00	80.87
2010	96,930,185.00	4,644,110.00	92,286,075.00	95.21

Source: Researcher's compilation from Wisdom MFI head office data base, May 6, 2011.



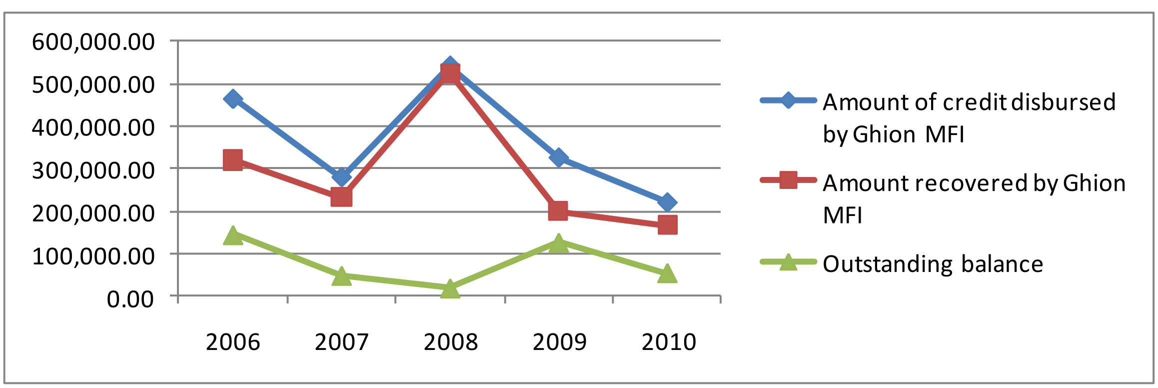
Graph 4.3: Credit Default Risk in Wisdom Microfinance Institution S.C.

Table 4.20 shows that the Wisdom's performance in 2006, 2007, 2008, 2009 and 2010 by weigh against total disbursements with total repayments and outstanding balances at the ends of the credit agreement periods. Hence, the default rate is based on outstanding balances at the ends of the decided repayment periods. It is also clear that the outstanding balances and amounts disbursed in this lending institution practiced default rates of 97.70 per cent, 70.71 per cent, 86.18 per cent, 80.87 per cent and 95.21 per cent for 2006, 2007, 2008, 2009 and 2010 respectively in Wisdom MFI.

Table 4.21 Ghion MFI Repayment and Default Rates (Amounts in ETB – Ethiopian Birr)

Ghion Performance in Years	Credit Disbursement in ETB	Amounts recovered by Ghion MFI	Outstanding balance in ETB	Default rate in percentage (%)
2006	464,000.00	320,000.00	144,000.00	31.03
2007	280,000.00	232,620.00	47,380.00	16.92
2008	542,000.00	524,630.00	17,370.00	3.20
2009	326,000.00	200,000.00	126,000.00	38.65
2010	220,480.00	166,700.00	53,780.00	24.39

Source: Researcher's compilation from Ghion MFI head office data base, May 6, 2011.



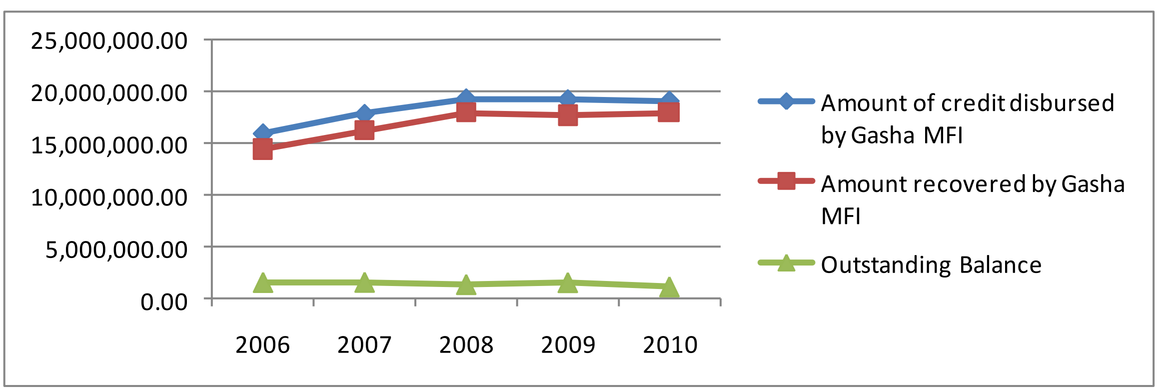
Graph 4.4: Credit Default Risk in Ghion Microfinance Institution S.C.

Table 4.21 demonstrate that the Ghion's performance in 2006, 2007, 2008, 2009 and 2010 by put side by side total disbursements with total repayments and outstanding balances at the ends of the credit agreement periods. The default rate, therefore, is based on outstanding balances at the ends of the agreed repayment periods. It is clear that the outstanding balances and amounts disbursed in this institution experienced default rates of 31.03 per cent, 16.92 per cent, 3.20 per cent, 38.65 per cent and 24.39 per cent for 2006, 2007, 2008, 2009 and 2010 respectively in Ghion MFI.

Table 4.22 Gasha's Repayment and Default Rates (Amounts in ETB – Ethiopian Birr)

Gasha Performance in Years	Credit Disbursement in ETB	Amounts recovered by Gasha MFI	Outstanding balance in ETB	Default rate in percentage (%)
2006	15,995,422.00	14,456,949.00	1,538,473.00	9.62
2007	17,850,235.00	16,297,605.00	1,552,630.00	8.70
2008	19,338,706.00	17,995,768.00	1,342,938.00	6.94
2009	19,251,574.00	17,727,867.00	1,523,707.00	7.91
2010	19,110,586.75	17,980,537.00	1,130,049.75	5.91

Source: Researcher's compilation from Gasha MFI head office data base, May 6, 2011.



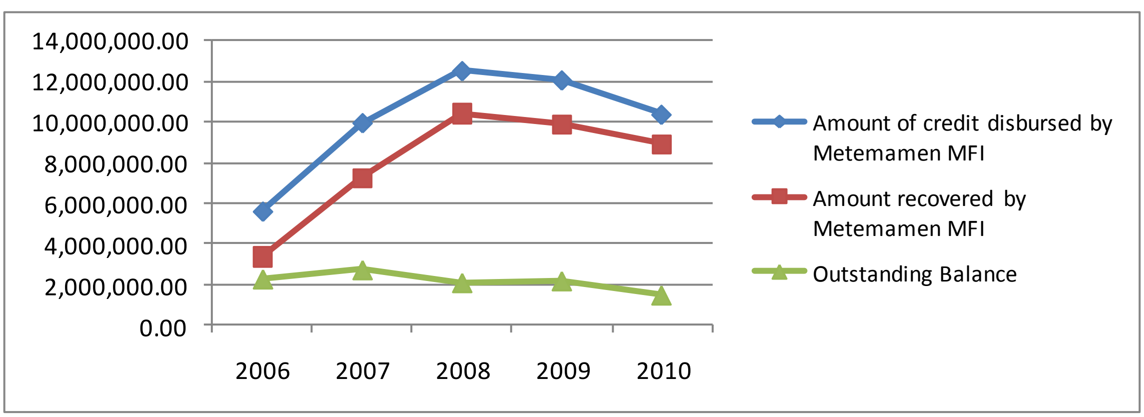
Graph 4.5: Credit Default Risk in Gasha Microfinance Institution S.C.

Table 4.22 illustrate that Gasha's performance in 2006, 2007, 2008, 2009 and 2010 by comparing total disbursements with total repayments and outstanding balances at the ends of the credit agreement periods. The default rate, for that reason, is based on outstanding balances at the ends of the agreed repayment periods. It is apparent that the outstanding balances and amounts disbursed in this organization veteran default rates of 9.62 per cent, 8.70 per cent, 6.94 per cent, 7.91 per cent and 5.91 per cent for 2006, 2007, 2008, 2009 and 2010 respectively in Gasha MFI.

Table 4.23 Metemamen MFI Repayment and Default Rates (Amounts in ETB – Ethiopian Birr)

Metemamen Performance in Years	Credit Disbursement in ETB	Amounts recovered by Metemamen	Outstanding balance in ETB	Default rate in percentage (%)
2006	5,616,281.00	3,339,708.84	2,276,572.16	40.54
2007	9,960,530.00	7,229,887.51	2,730,642.49	27.41
2008	12,514,600.00	10,420,318.51	2,094,281.49	16.73
2009	12,058,000.00	9,873,289.80	2,184,710.20	18.12
2010	10,372,153.65	8,889,430.00	1,482,723.65	14.30

Source: Researcher's compilation from Metemamen MFI head office data base, May 11, 2011.



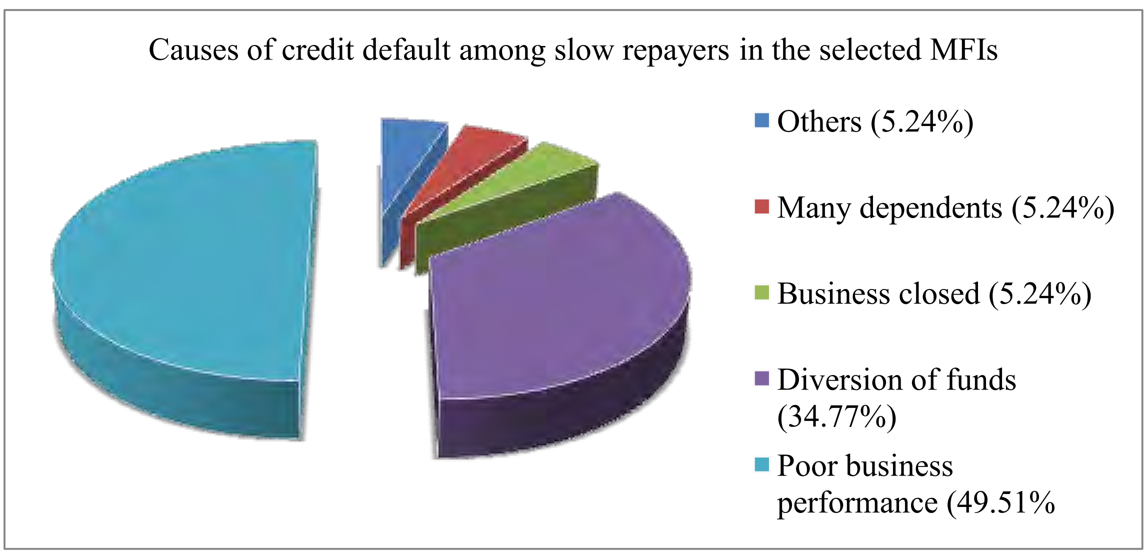
Graph 4.6: Credit Default Risk in Metemamen Microfinance Institution S.C.

Table 4.23 revealed that Metemamen's performance in 2006, 2007, 2008, 2009 and 2010 by weigh against total disbursements with total repayments and outstanding balances at the ends of the credit agreement periods. The default rate, consequently, is grounded on outstanding balances at the ends of the agreed repayment periods. It is lucid that the outstanding balances and amounts disbursed that this lending institution experienced default rates of 40.54 per cent, 27.41 per cent, 16.73 per cent, 18.12 per cent and 14.30 per cent for 2006, 2007, 2008, 2009 and 2010 respectively in Metemamen MFI.

4.4. Slow repayment of borrowers

Borrowers who exceed their agreed repayment schedules are viewed as a type of defaulter because they did not repay their credit/loans on time. Therefore, it was significant in this study to establish the causes of slow repayment.

Figure 4.4 Causes of Credit Default among Slow Repayers



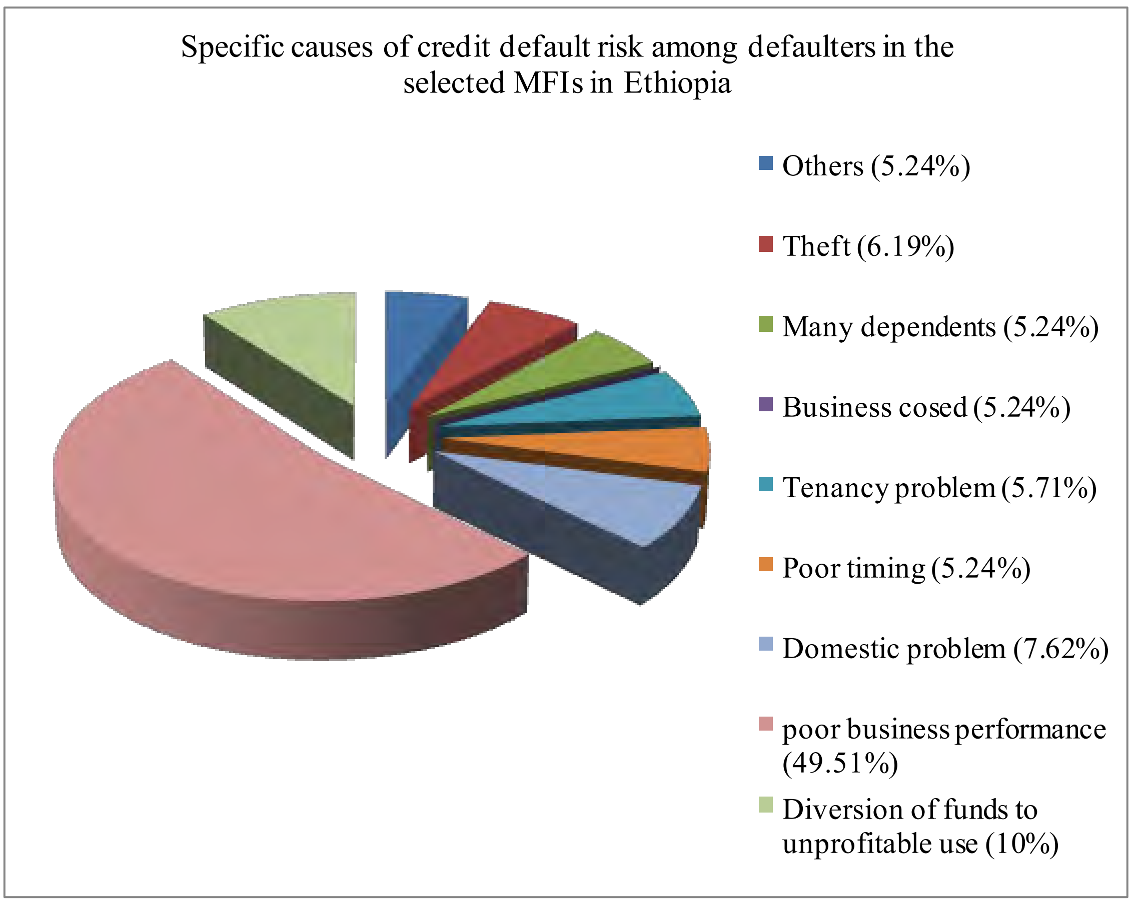
Source: Researcher's computation based on responses to study questionnaires, April 28, 2011.

Figure 4.4 shows the causes for credit default stated by the slow repayers. It emerges that diversion of funds and poor business performance were the key causes of untimely credit/loan repayments. Other borrowers were affected by business closure or by having many dependents.

4.5. Credit Defaulters

Using the responses gathered from the questionnaires, the study established a number of causes for credit default among ACSI, AdCSI, Wisdom, Gasha, Ghion, and Metemamen MFIs clients.

Figure 4.5 Specific causes of credit default among defaulters of the selected 6 MFIs in Ethiopia.



Source: Author‘s computation based on responses to study questionnaires, April 28, 2011.

Figure 4.5 offers a frequency distribution of the causes of default among the selected 6 lending institutions clients. Its fraction is allocated accordingly, 49.51 per cent of the defaulters attributed their non-repayment to poor business performance. 7.62 per cent cited domestic problems, and another 10 per cent admitted having diverted the funds to other unprofitable uses. Poor timing (5.24%), tenancy problems (5.71%), many dependents (5.24%), theft (6.19%), and business closure (5.24) also were named as causes for default, although on a small scale.

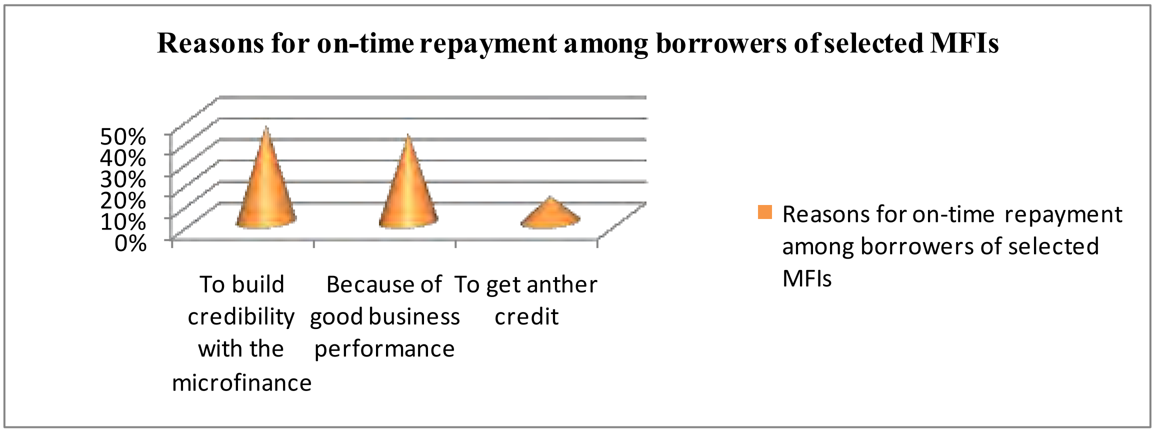
The ―other" causes (5.24 per cent) of nonpayment identified among the defaulting borrowers included harsh economic conditions, stiff competition, government policy banning certain activities, servicing of other loans, drought, and bad debts on services offered to their customers.

Lending institutions employees were unanimous in their belief that failure to prosecute defaulters was an important cause of credit default. Chances of default also increase when credit amounts given are lower than the amounts requested. And the lending institutions structure was described as too rigid and thus not responsive to changing client needs. Besides, the length of time it takes for a potential borrower to apply and get the loan has an effect on the use and repayment of the loan. In the selected MFIs program, on average it takes 1.43 months for an applicant to apply and receive a credit. Although the lending institution has computer facilities, those facilities do not contain appropriate software to process borrower‗s information promptly or to track potential defaulters. Despite the measures, the institutions believed that the default trend is increasing.

4.6. Factors influencing repayment of credit among regular borrowers

To institute factors that inclined repayment of credits disbursed by the selected MFIs, questions were posed to borrowers. The regular borrowers, who made timely payments in accordance with their agreed payment schedules, were asked to state what prompted them to repay on time; and the slow repayers were asked to state what caused them to repay the remaining balance after they failed to repay the credit as scheduled. The study sought to discover links between the motivations for repayment and credit default.

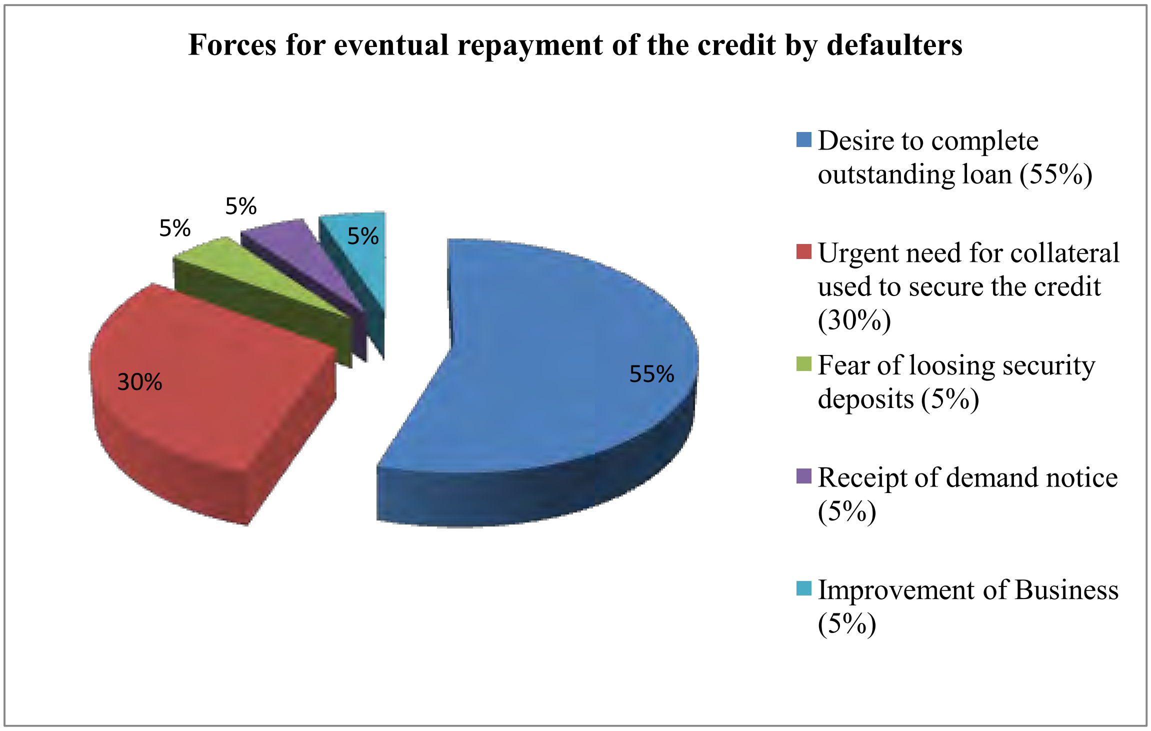
Figure 4.6 Reasons for on-time repayment among borrowers of selected MFIs



Source: Researcher's calculation based on responses to study questionnaires, April 29, 2011.

As the figure illustrates above, regular borrowers repaid their loans on time for three reasons: (1) because they wished to build credibility with the MFIs (50.00 per cent), (2) because they associated timely repayment with good business performance (33.33 per cent), and (3) because they wished to get another credit (16.67 per cent). The study also was keen to discover what triggered slow-repaying borrowers finally forced to repay the remaining outstanding balance.

Figure 4.7 Reasons for eventual repayment of credits by defaulters



Source: Researcher's calculation based on responses to study questionnaires, April 29, 2011

Figure 4.7 shows the stated reasons for eventual repayment of a MFIs credit. It reveals that 55% of the slow repayers eventually repaid because of a desire to fulfill the outstanding obligation. However, 30% repaid because they urgently needed collateral deposited at the lending institution, and 5% repaid because they feared losing that security deposits. Issuance of demand notices and improved business triggered full repayment of the credit for 10% of the defaulters.

4.7. Effect of repayment on enterprises, families, and the community

The study also sought to discover what repayment burdens placed on the enterprise might cause default. Responding to study questionnaires, one-third of the respondents pointed out repayment had no effect on the enterprise. The remaining two-thirds, however, said that repayment had led to a reduction in their stock levels. Some said that they were not able to make any savings because they used profits to repay the credit. Other borrowers said that they were using means beyond business to repay their credits. Some credit recipients even admitted suffering from depression as a result of the repayment burden, and they said the depression was affecting relationships with customers and was leading to poor business performance. As a result of repayment, some businesses had closed their doors. Those who were repaying were doing so to maintain trust with the lending institutions to avoid prosecution. Some borrowers explained that repayment was a burden only when sales were low.

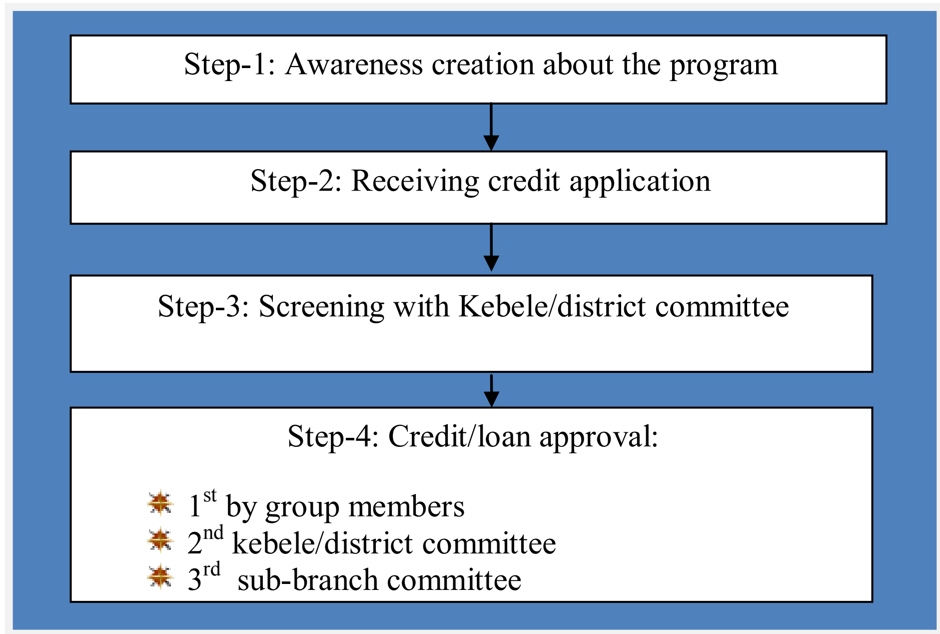
With respect to the burden on borrowers‘ families, around 20% said that repayment had no effect on the family. The remaining 80% said that repayment reduced family income and that children‘s school fee payments might be compromised. They noted that repayment was expensive because they had to spend a lot more on transportation.

Meanwhile, 66.19% of the borrowers also were aware of the effect of their repayment on the community. They said that community members benefited by credit/loan repayments. Some respondents noted that good repayment encouraged other community members to take credits and start businesses that provided needed goods and services to the community. They also pointed out that credit defaults cause the community to lose those goods and services and that poor credit repayment makes community members hesitant to take any credit for development.

4.8. The effect of selected MFIs screening mechanism on default

Hunte (1996) argues that default problems destroy lending capacity as the flow of repayment declines, transforming lenders into welfare agencies, instead of a viable financial institution. It incorrectly penalizes creditworthy borrowers whenever the screening mechanism is not efficient.

Figure 4.8 The Screening process mechanisms used by selected MFIs



Source: Responses from officers in the selected MFIs

Figure 4.8 above depicts the screening process mechanisms used by selected MFIs. Using these steps, the institutions used to identify the borrower either as creditworthy or non-creditworthy which may penalize the creditworthy borrowers due to insufficiency of the technique. According to Grameen Bank[18] model, the prospective clientele is identified after the purpose, functions, and mode of operation are explained to the population of the area covered. However, these selected MFIs take in to consideration residential status borrowers, business feasibility, positive cash flow, personal character, is it the business marketable, is the business legal and the 5 C‘s i.e. capital, collateral, character, condition and cash in order to deliver the credit and identify whether the clients are creditworthy or not.

[18] Grameen Bank is a microfinance organization and community development bank started in Bangladesh that makes small loans (known as microcredit or ―grameencredit”) to the impoverished without requiring collateral. *“Gram*” means ―*village*” in the Bengali language.

A vast body of literature supports the view that borrower characteristics are highly influential determinants of repayment. There is also strong evidence that institutional characteristics are equally important and that both factors need to be taken into account if credit default is to be minimized (Derban, Binner, and Mullineux 2005).

4.9. Creditworthy Versus Defaulters

In this section, the author tries to compare creditworthy borrowers with defaulters, in an attempt to identify the factors that influence the credit repayment behaviour of borrowers. Although, the number of the defaulters in the sample is small compared to those who settled their credits (non-defaulters), the comparison will somehow furnish an idea as to how the variables are influence the credit repayment performance. The comparison is done using t-test.

As shown in respondents repayment status in table 4.8 above, the author observe that 180 (85.71%) of the sample respondents have settled their credits in full and hence are creditworthy; while the rest 30 (14.29%) are defaulters. The mean age for creditworthy borrowers 42.9 is slightly greater than that of defaulters, which is 41.6. This implies defaulters are a bit younger than non-defaulters, showing that age is positively related to credit repayment performance.

Regarding gender, 75.24% of the creditworthy borrowers are male, which is lower than the corresponding figure (81.12%) for the defaulters. This implies that being male is negatively related to credit repayment performance as expected, although the difference is not statistically significant.

There is no significant difference between the two groups in terms of level of education, although creditworthy borrowers have attended on average grades 1-8 while defaulters are on average illiterate. This shows the existence of a positive relationship between education and credit repayment.

The mean credit/loan size for credit worthy borrowers is ETB of 1,451.67 which is greater than that of the defaulters i.e. ETB 1,543.21 showing that there is a negative relationship between loan size and credit repayment performance. This could be due to the screening/rationing mechanism although the difference is not significant according to the t-test.

Vis-à-vis credit fund diversion or credit diversion, 56.67% of the defaulters have diverted the credits they received to other purposes than precise in their credit agreement, while only 19.62% of the creditworthy borrowers diverted the credit they took to other purposes. This shows that credit diversion is negatively related to credit repayment performance. The t-test shows that there is a significant difference between the two groups of borrowers in terms of credit diversion.

With respect to perception of sample respondents about supervision on credit/loan utilization 87.14% of the creditworthy borrowers think that supervision of on loan utilization is adequate, while only 12.86% of the defaulters are of the opinion that the supervision on credit/loan utilization by the selected MFIs staff is sufficient. So the relationship between supervision and repayment performance seems to be positive as expected.

Concerning the perception of suitability of repayment period 86.67% of the respondents who consider it as suitable are creditworthy, which is greater than the corresponding figure for the non-creditworthy borrower i.e. 61.32%, which is a significant difference at the 1% level. This is an indication that the variable under consideration is positively related with repayment performance.

As explained earlier from a total of 73 borrowers who diverted their credits/loans 17 (23.29%) have indicated the fact that the credit agreement is not their initial intention of investment, while 15 (20.55%) of them gave other reasons for diverting the credit, of which 41 (56.16%) indicated unplanned health expenditure as a reason for their diverting the credit they received. In this regard, the mean annual health expenditure of creditworthy borrowers is ETB 87.50 while that for defaulters is below ETB 165.00, though the difference between the two groups is not significant.

The mean number of dependents for the creditworthy borrowers is 6.2, which is less than that for the defaulters i.e. 7.3. Here the author observes that, defaulters support on average a bigger number of dependents than creditworthy borrowers, although there is no statistical difference between both. This is equivalent to saying that the number of dependents that are supported by the borrowers is negatively related to credit/loan repayment performance.

4.10. Rationed versus non-rationed borrowers

The term rationing in this study pertains a situation where a borrower receives an amount of credit that is less than he/she requested[19]. As described in section 4.2, the proportion of those who are rationed (i.e. given credit amounts that are less than requested) is 15.24%, while the rest 84.76% were not rationed. The mean age of those borrowers who are rationed is 39.3, which is lower than the mean age of the borrowers who are not rationed i.e. 45.8. That is younger borrowers are more rationed than their older counterparts as is expected.

In terms of gender, 14.56% of the male are rationed which is less than that for the female borrowers 21.15%. This shows that female borrowers are being more rationed i.e. there is a positive relation between gender and credit/loan rationing, though not significant. This seems incorrect since female have performed better in terms of repayment than the male borrowers. Besides, 86 (40.95%) of the respondents are illiterate while the rest 124 (59.05%) are literate. 51 (41.13%) of the literate borrowers were rationed while only 21 (24.42%) of the illiterate borrowers were rationed, showing that the institution is rationing

[19] One can see the concept of credit rationing on chapter two literature review section.

literate borrowers more, which seems not correct when the credit repayment performance of such borrowers is taken into consideration. As explained in the previous section literate borrowers have performed better in terms of repayment than the illiterate ones.

The mean credit amount released to the borrowers who are rationed (ETB 1,561.38) is higher than that for the non-rationed borrowers (ETB 1,493.25). This implies the institutions is probably stricter on those borrowers who request credit amounts that are oddly larger, so that they are rationed to some extent; though the extent of rationing being not so severe that such borrowers still receive credit amounts that are on average larger than those who apply for a reasonable amount of credit according to the selected lending institutions preference. Here the author observes that the more borrowers apply for larger credits the more they are rationed, just in the way explained above.

The proportion of borrowers who are rationed and non-rationed is almost similar when one considers borrowers who perceive supervision as adequate. In fact there is a slight difference between the two groups with the proportion of those who are not rationed being slightly more than that for the former group, though the difference is very far from being significant. Similarly 130 (71.43%) of those who perceive repayment period as suitable are rationed, while the corresponding outcome of not rationed indicating a negative relationship. The difference between the two groups though is not significant.

In relation to area, the difference between the two groups happens to be significant at the1% level. The variable –area” is positively related to the credit rationing mechanism employed by the selected MFIs, contrary to what is expected. This is because most of the rural borrowers are farmers and this sector is associated with high risk, so that the lending institutions are expected to ration more rural borrowers than their urban counterparts. Moreover, urban borrowers are better in terms of credit repayment than their rural corresponding items.

The other variable of interest is number of dependents supported by the borrowers both within the household and outside. The difference between the two groups in this respect is again significant at the 10% level. Here the author observes that the mean number of dependents opponent the former rationed group is 6.7, which is greater than that for the latter group 6.2. So this variable is negatively related to the loan rationing as is expected.

Concerning credit diversion, this is in line with the author expectation. Consequently, it is not significant in this regard.

4.11. Credit Diverters versus Non-Diverters

The mean number of dependents for credit/loan diverters 6.93 is greater than that for the non diverters 6.88; the difference between the two groups being insignificant. This indicates that there exists a positive relationship between the variable number of dependents and credit diversion rate.

The mean number of the years diverters borrowed is 3.44, which is greater than that of the non-diverters 3.13. This difference between the two groups is significant at the 10% level. This could imply that number of years borrowed is positively and significantly related to credit diversion.

Diverters earn a mean monthly income of about ETB 1,112.43, which is less than that for the non-diverters ETB 1,152.94, the difference between the two groups being significant at the 5% level. This indicates that the income variable is negatively related to the probability of diverting credit.

On the other hand, diverters are on average little less than the non-diverters in terms of having additional sources of income after credit with both groups being almost similar in this regard. The same is true with the habit of financial recording, the relationship being negative but insignificant.

The proportions of credit diverters that perceive credit/loan supervision i.e. adequate are 60.11%, which exceeds that of the non-diverters 39.89%. This is contrary to what is expected, although the difference is statistically insignificant. Possible explanation for this could be the perception level of borrowers as to what credit/loan supervision is. As is tried to explain previously, what the majority of the respondents perceive is adequacy of the monthly appearance of the MFIs credit/loan officers on centre meetings with a main objective of collecting savings, in a way ensuring credit repayment. So, this perception does not truly represent the adequacy of supervision on credit/loan utilization.

On the topic of borrowers who perceive repayment period as suitable, 21.98% of the respondents are diverters, while 78.02% are non-diverters; implying that there is a negative significant relationship between credit diversion and such a perception. Similarly, 24.29% of literate borrowers are diverters, while 34.76% of the non-diverters are literate, the difference among the two groups in terms of education being almost significant at 10%.

The mean amount of credit received by the former group is ETB 1,414.09, which is less than that for the latter group, which is ETB 1,489.61. Although this implies a negative relationship between credit diversion and credit size, which is contrary to what is expected, the difference is not significant.

The proportion of borrowers who keep records in the diverters group 10% is slightly less than that in the non-diverters group 10.95%, showing the existence of negative but insignificant relationship. Meanwhile, the subsequent chapter, hence, endeavours econometric analysis on the topic of determinants of default risk to vivid the results of the study.

Chapter 5 Econometrics Analysis

In this stage the method of model estimation will be offered and the estimation outcomes will be discussed in detail. Hence, a stab will be made to compare the results obtained from the descriptive analysis given in the previous section with those obtained from the econometric estimation.

5.1. Determinants of credit repayment performance

As discussed in chapter 3, one of the explanatory variables that thought to influence the credit default equation is credit/loan diversion rate. Since this variable was identified dependent on some variables that are included in the credit default equation, credit diversion equation was estimated first and it‘s the fitted values were used in the equation of credit repayment performance, in order to avoid endogeneity[20].

It is obvious that heteroscedasticity[21] is a problem, which is highly associated with this study. Since the presence of heteroscedasticity would result in inconsistent estimators, it has to be corrected before any tests are carried out based on the estimation results obtained.

As bestowed in chapter three, since credit diversion rate is continuous and can assume any value between 0 and 1, the appropriate model to be employed here is Tobit, more specifically the two-limit Tobit model. However, this model has its own drawback in terms of correcting for heteroscedasticity, i.e. it is difficult to obtain robust[22] standard errors.

[20] Endogeneity can arise as a result of measurement error, autoregression with autocorrelated errors, simultaneity, omitted variables, and sample selection errors.
[21] Heteroscedasticity is a situation where the disturbance terms don‘t have constant variance.
[22] Robust estimation implies the model estimation is correct for Heteroscedasticity.

During the estimation process, the equation for loan diversion was detected to have problem of heteroscedasticity. Hence, this method employs the estimation of interval regression. According to the procedure interval regression is estimated using variables generated from the dependent variable and was shown how such a regression is used to obtain the same results as the Tobit regression. Thus, to obtain the robust standard errors, it is only a matter of adding the robust option to the interval regression. Accordingly, an interval regression is estimated using the variables generated from the dependent variable in the same way as explained above and on the other hypothesized explanatory variables. Next, the robust option is used on the same regression to correct for the problem of heteroscedasticity. The final estimates so obtained are given below.

Table 5.1 Maximum likelihood estimation for credit/loan diversion

Number of obs = 210

Wald chi2(8) = 15.64

Log likelihood = -106.99844 Prob > chi2 = 0.0478

	Coefficients	Robust Std. Err.	Z-value	Sig.
D	-0.2056432***	0.113016	-1.81	0.067
CSZ	0.0000411	0.0001404	0.29	0.770
SRP	-0.3266075*	01147342	-2.85	0.004
INCA	-0.0000298	0.0001758	-0.17	0.865
FR	0.1500751	0.1702739	0.88	0.378
SPV	-0.0172498	0.0985662	-0.18	0.861
NDP	0.0004972	0.0191063	0.03	0.979
NTB	0.0754362***	0.0481348	1.57	0.117
Cons	-0.2642259	0.2515055	-1.05	0.293
/sigma	0.5177089	0.0467682		

*significant at 1% ***significant at 10%

The estimated model is significant at the 5% level. As shown in the table 5.1, credit diversion is positively related to number of dependents supported by the borrower, use of bookkeeping, credit/loan size and number of times borrowed from the same source. Education, income from other sources loan supervision and suitability of credit repayment period were found to be negatively related to loan diversion. Suitability of repayment period was found to be significant at 1%, while education and number of times borrowed were found to be significant at 10%.

The sign of the variable representing the use of financial recording systems has an unexpected sign i.e. positive however insignificant. The reason for this could be the fact that, even the few educated ones are unable to use modern and accurate methods of keeping financial records. The rest of the variables have exhibited the expected signs. Further, the results indicate that education, number of times borrowed and suitability of repayment period are significant determinants of credit diversion. The positive sign for education indicates that, literate borrowers have effectively used the loan for the intended purposes. But those who borrowed for more years on the average have contributed to the increase in the probability of diversion, may be due to the fact that they no more need further credits from the same source.

Imminent to the discussion of the estimates of the probit model for credit default equation, the existence of problem of heteroscedasticity has been detected. This has necessitated the estimation of robust model. The estimation results are presented in table 5.2. Nevertheless, the overall goodness of fit indicates that it is significant at 1%, implying that the explanatory variables used in the regression equation explain the variation in the dependent variable quite well.

Table 5.2 Maximum likelihood estimate of a probit model for credit default

Probit estimates

Number of obs = 210
Wald chi2(10) = 53.07
Prob>chi2 = 0.0000
Pseudo R^2 = 0.8070

CD	Coefficients	Robust Std. Err.	Z- value	Sig.
D	1.218347***	0.6817127	1.79	0.074
GEN	-0.1295234	0.6335709	-0.2	0.838
AG	0.0077951	0.1234208	0.06	0.95
AGSR	-0.00043	0.0013922	-0.31	0.757
INCOM	0.0346739	0.0145101	2.39	0.017
SRP	2.166316*	0.6107892	3.55	0.000
NDP	-0.0415804	0.1120186	-0.37	0.710
CSZ	-0.0020723**	0.001014	-2.04	0.041
SPV	0.9705793***	0.5811818	1.67	0.095
FITCDR	-9.794303**	4.710661	-2.08	0.038
Cons	-3.491235	2.933985	-1.19	0.234

*significance at 1% **significance at 5% *** significance at 10%

Among the variables that were thought to affect credit repayment performance, variables like, use of financial recording methods, income from other sources and area are dropped because they were inestimable using the software.

Explanatory variables used in the estimation of credit repayment performance equation were found significant. According to the estimates, credit diversion fitted value of credit/loan diversion rate (FITCDR) is significant and negatively related to credit repayment performance as expected. The negative sign probably implies the use of diverted funds for non-income generating purposes, and it is significant at 5%.

Consequently, gender, credit/loan size and number of dependents are all negatively related to the probability of credit repayment, none being inconsistent with prior expectation. Only credit/loan size is significant at 5% level. This shows that the higher the credit/loan size, the lower the probability of repaying the credit/loan. The negative sign for gender indicates that female borrowers are better payers of credit than their male counterparts, although it is not significant. On the other hand age was found to be positive, while age squared turned out to be negative. This shows that, as age increases, the probability of credit repayment increases up to a certain level of age beyond which performance will decline i.e. there is a non-linear relation. Both these variables are statistically insignificant.

Moreover, incomes from activities financed by the credit/loan, suitability of repayment period and loan supervision literacy are positively and significantly related to loan repayment performance. The coefficient of the dummy for education above grade zero or literate is significant 10% level of significance, indicating that with more education borrowers can use the credit efficiently and invest on more productive and income generating activities enabling them to settle their credit/loan obligation in time.

5.2. Evaluation of the loan rationing mechanism

Harmonizing table 5.3 below, 6 variables included in the model were found to be significant. According to the estimates presented in the table, credit diverters, borrowers supporting larger number of dependents, borrowers earning more income and literate borrowers are more rationed, i.e. the probability of such borrowers being rationed is high. On the other hand, borrowers who are older, male, apply for larger loan size, perceive supervision as adequate, and perceive the repayment period as suitable. Literacy level, age, suitability of repayment period, number of dependents and credit diversion are found to be significant in the model.

Table 5.3 Maximum likelihood estimate of a logit model for loan rationing

Probit estimates Number of obs = 210

Wald chi2(10) = 22.95

Prob > chi2 = 0.0180

Log likelihood = -72.055849 Pseudo R^2 = 0.1246

CRAT	Coefficients	Robust Std. Err.	Z- value	Sig.
D	-0.5928361**	0.2545076	-2.33	0.020
GEN	0.1747426	0.2897258	0.6	0.546
AG	0.1202621***	0.064093	1.88	0.061
AGSR	-0.0013319***	0.0007051	-1.89	0.059
INCOM	-0.0073434	0.0050361	-1.46	0.145
SRP	0.5073275***	0.3421386	1.78	0.108
NDP	-0.1135034**	0.0502756	-2.26	0.026
CSZ	0.0002257	0.0004294	0.53	0.599
SPV	0.0408717	0.2420632	0.17	0.866
FITCDR	-2.878546***	1.72271	-1.67	0.095
Cons	-1.534739	1.475238	-1.04	0.298

**significance at 5% ***significance at 10%

With this brief description of the estimation result, the evaluation of the loan rationing (screening mechanism), according to Hunte (1996), if a variable is positively signed in both equations, then the borrower with such a characteristic is correctly identified as creditworthy. If it is negatively signed in both equations, then the borrower with such a characteristic is correctly identified as non-creditworthy and hence should be rationed.

Meanwhile, if on the other hand a variable is positive in the credit repayment equation and negative in the rationing equation, then the screening technique is incorrectly rationing a creditworthy borrower. Likewise, if a variable is negative in the repayment equation but positive in the rationing equation, it implies that the borrower having such a characteristic that results in poor credit recovery is less rationed while he/she must have been rationed more. In view of that, borrowers who are aged perceive the repayment period as suitable, perceive credit/loan supervision as adequate are correctly identified as being creditworthy and were not rationed or are less rationed. Correspondingly, borrowers who are credit diverters and support larger number of dependents are correctly identified as being non-creditworthy, and hence are rationed.

Conversely, borrowers who earn more income from activities financed by the credit/loan and who are more educated are incorrectly rationed despite being creditworthy, while those who applied for larger credit amount and those who are male are less rationed in spite of the fact that they contribute to poor loan recovery rate. Overall according to the evaluation technique given above the screening mechanism employed by selected MFIs seems to be sound, since in most of the variables, the criteria used were correct. In concluding this slice, it is important to point out that although in over half of the criteria discussed above the screening technique was sound in the selected 6 MFIs.

4.12.3. Assessing the impact of 6 MFIs Scheme

The impact indicators to be used include effect of the program on income, access to education, access to health facilities and nutritional status.

The author attempted to quantify the changes achieved in this regard in the descriptive analysis. Nonetheless, such effects of the credit scheme should be analyzed by comparing the indicators before and after participation in the credit scheme. This requires hypothesis testing by formulating the null and the alternative. In the interim, test of hypothesis can be classified into two: parametric and non parametric. The former is just the standard tests like the t-test, which are based on the distributions of the population. Such tests require assumptions about certain properties of the parent population from which the sample is taken.

However, the non-parametric tests on the other hand do not require such assumptions. They are used with two related variables to test the hypothesis that the two variables have the same distribution. It makes no assumptions about the shapes of the distributions of the two variables. These tests take into account information about the magnitude of differences within pairs and give more weight to pairs that show large differences than to pairs that show small differences. The test statistic is based on the ranks of the absolute values of the differences between the two variables. Since such tests are helpful in comparing the situation before and after participation in the loan scheme, the study will employ Walcoxon's matched pairs non-parametric test.

This test calculates the differences between each observed values and ranks these differences in order of magnitude, beginning with the smallest absolute difference. Next the actual signs of the differences will be sorted out to corresponding ranks and the sums of the positive and negative ranks are calculated, after which they are denoted as T+ and T- respectively.

If Y_b and Y_a denote a variable Y that is observed before and after a certain change, then the alternative hypothesis and the test statistic can be set as follows i.e. the null hypothesis being $Y_a=Y_b$.

Alternative hypothesis	Test Statistics
H_1: $Y_a < Y_b$	T^+
$Y_a > Y_b$	T-
$Y_a \neq Y_b$	Smallest of T^+ or T^-

When start checking whether the living and economic condition of the borrower has improved after the loan using the income variable. Denoting the mean annual income before and after the loan by TAINCB and TAINCA our hypothesis becomes:

H_0: TAINCA = TAINCB

H_1: TAINCA > TAINCB, and the following test result were obtained:

Ranks		N	Mean rank	Sum of ranks
TAINCA-TAINCB	Negative Ranks	69[a]	46.97	3152
	Positive Ranks	22[b]	41.21	473
	Ties	119[c]		
	Total	210		

a TAINCA < TAINCB b TAINCA > TAINCA c TAINCB = TAINCA

Test Statistics[a]	TAINCA-TAINCB
Z	-4.821[b]
Asymp. Sig. (2-tailed)	0.000

a Wilcoxon Signed Ranks test b based on positive ranks

The above test indicates that the null hypothesis is rejected at the 1% level of significance. This confirms that the average annual income of the borrowers after loan is significantly greater than that before the loan. Meanwhile, the same result is obtained for expenditure on education and annual expenditure on consumption i.e. rejects the null hypothesis at 1 % level of significance.

Prior to concluding this section, there are some points that deserve explanation about the aforementioned positive impact of the credit/loan scheme. In all the cases, the study has seen income and expenditure levels after loan being significantly greater than that before the loan. But, mere increase in income and expenditure levels may not necessarily imply that the living condition of the borrowers has improved. Besides, cost of living rises over time due to various reasons and household size gets larger and larger from time to time. This may be reflected in increased expenditures of consumption, education and health care; while no notable improvement is observed in terms of the nutritional health status, etc. Also there is problem of recalling earlier sources and levels of income. The subsequent chapter, thus, presents the strengths and weaknesses of the study coupled with implications to the Ethiopian government, MFIs in particular and future research directions.

Chapter 6 Conclusions and Future work

The rationale of this last chapter is to review the intact thesis and bring to light future research directions. Accordingly, section one presents an abridgment of the thesis and its major findings. Section two presents recommendation and section three is about implication for further study.

6.1. Conclusions and major findings of the study

In this study attempt was made to look into the factors that affect the repayment performance of microfinance borrowers and to evaluate the credit/loan rationing mechanism used by the MFIs. Moreover, it assessed the impact of the credit scheme on the economic and living conditions of the borrowers. Mutually descriptive statistics and econometric analysis were carried out to accomplish the above-mentioned tasks.

The descriptive statistics show that only 24.76% of the respondents are female. This indicates that little is done on the part of the lending institutions in terms of woman empowerment, particularly in the rural areas. The majority of the respondents are illiterate 86 (40.95%). Rural borrowers receive on average smaller credit/loan amounts than their urban counterparts.

On the topic of credit/loan utilization 55 (26.19%) of the respondents have violated loan agreement, their main reasons being inconsistency of the agreement with their initial intention and market problems.

As revealed in table 4.14 about 51 (24.29%) of the borrowers in the sample reported their having income source before the credit program. However, 159 (75.71%) has not source of income other than the MFI credit program.

With the aim of identifying the determinants of credit default, an attempt was made to judge against defaulters with non-defaulters. Accordingly, the author was found to be on average a bit younger with more proportion of them being male, illiterate, and loan diverters. They also receive a smaller credit amounts, earn smaller income, and support more dependents than the non-defaulters. The difference between the two groups was found to be significant in terms of credit/loan diversion and income.

Alike analysis was done on credit/loan rationing. Accordingly, borrowers who are younger, applied for larger credit amount, a larger proportion of those who are rationed were literate and loan diverters, while a relatively less proportion of them perceive supervision as adequate and the repayment period as suitable is more. Concerning credit/loan diversion, diverters on average support more dependents, have borrowed for more years, have fewer sources of additional income and receive smaller credit/loan amounts.

The findings of the econometric analysis presented in chapter 4 reveal that, education, suitability of repayment period and numbers of times borrowed are significant determinants of the probability of loan diversion.

Factors that are found to be significant determinants of credit default performance were education, credit/loan size, and credit diversion, availability of other credit sources, credit/loan supervision, and suitability of credit repayment period and income. All of these factors except credit diversion and credit/loan size increase the probability of credit default. While, number of dependents and being male reduce the credit repayment performance in addition to credit diversion and credit/loan size.

Coming to the screening technique, the empirical evidences show that although there were some problems of separating between creditworthy borrowers from those who are not, in most of the cases the techniques was found to be good. Factors like income, level of education were incorrectly used to ration creditworthy borrowers, while the selected lending institutions wrongly used credit/loan size and gender to identify borrowers who shouldn‘t be rationed despite their being non-creditworthy. The rest gender variables were used efficiently and accurately to identity borrowers into creditworthy and non-creditworthy.

On the topic of impact, it was found that the credit scheme has contributed positively towards improving the income, access to education, and access to health service of borrowers. Overall it seems that the scheme is contributing towards reducing poverty.

Based on the major findings of this study, the following conclusions could be drawn along with some recommendations to be brought to the attention of the selected MFIs and any other interested parties.

Generally, the evidences in the study reveal that the overall default performance of the borrowers and the screening technique, which the lending institutions follows to ration credit to its clients, were more or less found to be sound. Similarly, it was found that the credit scheme has contributed positively in terms of improving the incomes, access to education, access to health facilities and nutritional status of the borrowers.

Particularly, credit diversion was found to be one of the important and significant factors influencing credit default negatively, i.e. it increases default risk significantly. This variable is itself influenced by many factors, of which loan supervision, education and suitability of repayment period were found to reduce the probability of diverting credit to non-productive uses that ultimately lead to reduced recovery rate. So, there is a need for a continuous supervision on credit/loan utilization and training so as to reduce both the problem of using credit/loan for non-income generating activities as well as lack of skill observed because of the wide-scale illiteracy on the customers of MFIs in Ethiopia.

The extra significant determinant that was found to undermine the repayment performance was loan size. This implies that there is a need to determine an appropriate loan amount that just suffices the project cost or purpose of the borrowing, through a thorough investigation of the demand for credits and plans submitted by borrowers.

Causes like income, availability of other sources of credit and being female were found to enhance the probability of repayment. Although designing the lending strategy in such a way that factors enhancing the repayment performance are duly taken in to account can be recommended and needs a great care. For instance, income was found to significantly increase the probability of repaying the credit in full. But it is not recommended to exclude those with low income hoping to reduce credit default, since this contradicts the very objective of MFIs.

Notwithstanding those factors, however, and drawing from the literature reviewed, this study observed that credit default averaging 27.1 per cent is very high. Sustainable microfinance programs, such as the Grameen Bank, were found to have low default rates (roughly an average of 3 per cent). Therefore, reducing the selected MFIs default rate is a survival priority for the credit/loan program. Sufficient repayment rates are necessary to facilitate re-disbursement of financing, and they contribute to achieving the MFIs objectives. Borrowers' major source of income was found to be the business enterprise particularly in urban area, and the predominant cause of default was poor business performance. Therefore, it can be concluded that borrowers who depend on their poorly performing businesses default.

The study also found that delays in disbursing funds to borrowers may be as great as two months from the time a loan application is filed. Timely disbursement enables a borrower to match acquired resources to business needs. With such delays, there is a possibility that business priorities and market conditions will have changed by the time funds are received. That situation can lead to a diversion of funds for some unprofitable uses and so to an increased chance of credit default.

On the other hand, evidences in this study show that female borrowers have performed better in terms of credit repayment than their male counterparts. Nevertheless, the number of women being served particularly in the rural parts of the district is very small. This is also in conflict with one of the objectives of the establishment of such an institutions; i.e. empowerment of women. So, the institutions have to do much in this direction.

In line with the basic idea of improving the credit/loan repayment performance, the screening of borrowers deserves good attention. From the evidence provided in this study, borrowers with more income and educational level were incorrectly rationed despite their being creditworthy, while those applying for larger credit/loan amounts and those who are male were rationed less despite their being non-creditworthy.

Moreover, in the regression result, some of variables that were significant in the credit default equation were also found significant in the rationing equation during the comparison of the two equations that was made to evaluate the rationing mechanism. This means that, important information is being ignored as in the case where some variables contributing to good repayment performance are neglected when it comes to the use of these variables in identifying good borrowers with such characteristics. As a result, another area of focus as far as rationing is concerned should be towards using more of the factors that can be used for identifying clients into creditworthy and non-creditworthy, while at the same time the institutions should attempt to avoid incorrect use of such factors as criteria for rationing.

6.2. Recommendations

This study has found that improving the selected MFIs performance is a prerequisite to make it more effective in carrying out its mandate and providing technical support to micro-enterprises so as to improve their profitability. To this end, the selected MFIs of Ethiopia should consider the following recommendations:

- Strengthen its management information systems to produce up-to-date credit/loan repayment statements for borrowers and to enable early detection of potential default problems. Doing so will help the MFIs take quick follow-up actions, such as providing debt counseling or issuing demand notices.

- Toughen its staff by enhancing the capacity of its computer applications. This will enable optimal use of the available computer facilities, speed up loan processing, and ensure timely disbursements and collection of credits.

- Intensify its follow-up on borrowers to improve recovery of outstanding loan balances accruing to slow re-payers and defaulters.

- Revise its borrower appraisal instrument to help identify deserving but vulnerable micro-entrepreneurs. Vetting should determine how much debt the borrower can handle comfortably, his or her income streams, and any other obligations that might interfere with repayment. Doing so can enable the selected MFIs board to provide the borrower with appropriate counseling and support to avoid credit default.

- Rationing those with more income could be seen, as a deliberate pro-poor action on the part of the lending institutions, if at all it is done with such an intention. On the other hand, the majority of the institutions clients whose eligibility for participation in the scheme is based on the criteria of being poor are illiterate. Since most of the time literacy and wealth are positively related, and that it seems that the selected lending institutions are focusing more on equity than efficiency by rationing the literate clients more strictly than the illiterate ones.

6.3. Implication for further study

There are a number of issues which deserve further research direction. This thesis focused on credit default risk of MFIs in Ethiopia. The relevance of the findings of the thesis perhaps limited with the selected 6 MFIs. Since from the data collected for this study the number of respondents that reported having access to other credit sources is very few, this finding needs to be further studied. Also there may be a need to test if there is some sort of association between credit repayment and purpose of borrowing. Besides, who is right credit worthy borrowers for Ethiopian MFIs is the question of this thesis author? Conceivably, will an issue of further study.

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Appendix I - Survey instrument (English version)

Addis Ababa University
School of Graduate Studies
School of Business and Public Administration
M.Sc. Program in Accounting and Finance

Questionnaires that have filled by borrowers of microfinance institutions in Ethiopia

Objective: This questionnaire is designed by Samuel Setargie to conduct a research on **"Credit Default Risk and its Determinants of Microfinance Industry in Ethiopia"** as the partial fulfillment of the requirements for the completion of Masters Degree in Accounting and Finance, Addis Ababa University under the supervision of Dr. P. Laxmikantham. Besides, the study invites you to participate in this research in the form of questionnaire. On this matter, you are selected as one who could provide relevant information. The information supplied by you will be treated as confidential and its access is only restricted to my supervisor and myself for the justification of the study. However, completion of the questionnaire is voluntary i.e. if you decide that you no longer want to be involved in this study, you are free to withdraw at any time without adverse consequence. Meanwhile, if you would like to obtain a summary of the results of this research, I am happy to send you copies of the overall findings up on completion of it.

The fact that the microfinance industry is characterized by risk flexed state. This study will focus on unearthing the tie existing between credit default risk and determinants of Microfinance Institution (MFIs). This adds vivacity to this inquiry as it has raised one of the pivotal issues existing on the microfinance industry. Thus, your expressed ideas in this regard are so crucial to the progression of Ethiopian microfinance industry in general and knowledge in exploring decision making in particular.

Thank you in advance for your kind cooperation and sparing of your precious time!

Additional Information:

I. You need not disclose your name
II. Put a tick mark √ in the boxes □ or in the blank spaces ___________________ that correspond your answer.
III. Circle the letter of the choice that is most appealing to you, e.g. ©
IV. Write your answer in the space provided is so required. *Your answer*.
V. For open-ended questions you may use the blank space provided _______________ or you may use additional paper, if the space is not adequate. *Your answer*
VI. For further information, you perhaps contact the investigator Samuel Setargie by the following address: Tell: +251 912 845425 and E-mail: samicheck29@yahoo.com

Date ____________________________________ G.C/E.C.

SECTION I: PERSONAL DETAILS

1.	Area of borrower	______________________ Microfinance institution

2.	How old are you (Age)?	_______________________________________ years

3.	What is your gender?	
	Male ☐ 1	Female ☐ 0

4.	What is your position in marital status?	
	1. Single	☐
	2. Married	☐
	3. Divorced	☐
	4. Widowed	☐

5.	Level of education?	
	1. Illiterate	☐
	2. Grade 1-8	☐
	3. Grade 9-12	☐
	4. Above grade 12 (please describe)___________	☐

6.	How many dependants are there with in/outside the family unit?	
	1. Zero	☐
	2. One	☐
	3. Two	☐
	4. Three	☐
	5. Four and more (please describe) ___________	☐

7.	What is your occupation (work)?	
	1. Main	
	2. Second	
	3. Others (please specify)	

SECTION II: CREDIT/ LOAN UTILIZATION

8.	What was the purpose for which the credit was taken?	
	5. Retail trade	☐
	6. Production of construction inputs (materials)	☐
	7. Metal and wood work	☐
	8. Hotel and catering services	☐
	5. Urban agriculture and purchase of its input	☐
	6. Leather product	☐
	8. Miscellaneous business (please describe others) ______________________________	☐

9.	Was the amount of credit received adequate for the purpose that you projected?	
	Yes ☐ 1	No ☐ 0

10.	If your response is No for question number 9, what was the amount you request?	______________________ Ethiopian Birr (ETB)

11.	Did you spend the entire credit on purposes specified in the loan agreement?	
	Yes ☐ 1	No ☐ 0

12.	If your response is No for question number 11, what was/were the cause(s) for spending part/entire credit/loan on non-intended purposes?	
	1. The credit amount was not enough for the intended purpose	☐
	2. The credit/loan agreement did not coincide with my initial intention	☐
	3. Market problem	☐
	4. To repay another loan	☐
	5. To make a more profitable business	☐
	6. Other (please describe) ______________________	☐

13.	Do you have the sentiment that you might be sued in case of failure to repay the credit/loan?	
	Yes ☐ 1	No ☐ 0

14.	Do you challenge to know or monitor the credit/loan utilization of the other members of your group (if you take your loan in group)?	
	Yes ☐ 1	No ☐ 0

15.	If your response is Yes for question number 14, what action do you take in case you observe wrong utilization of credit/loan, say usage of loan for non-intended purpose?	
	1. Inform your customer MFIs	☐
	2. Accuse the credit/loan diverter	☐
	3. Put social sanction	☐
	4. Other (please describe) ___________________	☐

SECTION III: CREDIT/LOAN REPAYMENT

16.	Did you have any source of credit other than your customer Microfinance Institution?	
	Yes ☐ 1	No ☐ 0

17.	If your response for question number 16 is Yes, what is your source?	
	1. Iqqub (rotating credit association)	☐
	2. Iddir (mutual aid society)	☐
	3. Money lenders	☐
	4. Friends/relatives	☐
	5. Banks	☐
	6. Other (please describe) ___________________	☐

18	How many times and how much money did you receive from these sources during the past 5 years?		
	Sources	Year	Amount of credit/loan
		2010	
		2009	
		2008	
		2007	
		2006	

19.	Have you finished repayment on credit from these sources?	
	Yes ☐ 1	No ☐ 0
20.	Is the repayment period set by your customer Microfinance institution suitable in your opinion?	
	Yes ☐ 1	No ☐ 0

21.	If your response for question number 20 is No, recommend a suitable period?
	____
	____
	____

22.	What is the status of your recent credit/loan?	
	1. Fully repaid	☐
	2. Repayment schedule	☐
	3. Repayment in arrears	☐

23.	If your response for question number 22 is repayment in arrears, what was the problem for the credit to be in arrears?	
	1. Credit based business activity was unprofitable	☐
	2. Used some of the credit for household living expense	☐
	3. Sold on credit but did not get paid back on time	☐
	4. Loss of assets acquired by the credit/loan	☐
	5. Other (please describe)___________________________	☐

24.	Do you identify the cost of credit/loan default to be high?	
	Yes ☐ 1	No ☐ 0

25.	If your response for question number 24 is Yes, which one of the following is most important in forcing you to repay the credit/loan in time?	
	1. Claim against personal wealth	☐
	2. Claim against guarantors	☐
	3. Social sanction (e.g. loss of social status)	☐
	4. Fear of losing additional credit/loan in future	☐
	5. Other (please describe) ___________________	☐

26.	What prompts you to repay the credit on time? (non defaulters)	
	1. To build credibility with the microfinance	☐
	2. Because of good business performance	☐
	3. To get another credit	☐

27.	What are the causes which force you to default? (for defaulters)	
	1. Poor business performance	☐
	2. Domestic problems	☐
	3. Diversify the funds to unprofitable uses	☐
	4. Poor timing	☐
	5. Theft	☐
	6. Business closure	☐
	7. Tenancy problem	☐
	8. Many dependants	☐
	9. Other (please describe) __________________	☐

28.	What forces you to repay the remaining balance after you fail to repay it as schedule?	
	1. Desire to complete outstanding credit/loan	☐
	2. Urgent need for collateral used to secure the credit	☐
	3. Fear of losing security deposits	☐
	4. Receipt of demand notice	☐
	5. Improvement of business	☐

29	What is the effect of repayment on your area occupation and/or enterprises?	
	1. Has no effect on the enterprises	☐
	2. Leads to reduction in your stock levels	☐
	3. Not able to make any savings out of your profits	☐
	4. Results in high depression and which in turn affects the relationship with customers and leading the poor business performance	☐

SECTION IV: SUPERVISION, CONSULTATIVE VISITS AND TRAINING

30.	Have you ever been supervised regarding credit/loan utilization by your customer Microfinance Institution staff?	
	Yes ☐ 1	No ☐ 0

31.	Have you ever been supervised for your credit repayment performance?	
	Yes ☐ 1	No ☐ 0

32.	If your response for question number 31 is Yes, how many times you supervised?	__________________ times

33.	Was the supervision of staffs adequate in order to improve your default of the credit/loan?	
	Yes ☐ 1	No ☐ 0

34.	Do you consider supervision as being important for credit/loan repayment?	
	Yes ☐ 1	No ☐ 0

35.	Did you get any training before receiving the credit/loan in order to efficiently utilize it?	
	Yes ☐ 1	No ☐ 0

36.	If your response for question number 35 is Yes, what kind of training was it?	
	1. Business	☐
	2. Marketing	☐
	3. Saving	☐
	4. Bookkeeping	☐
	5. Other (please describe)____________________	☐

37.	Do you think that the training has helped you to increase your income and repay the credit/loan on time?	
	Yes ☐ 1	No ☐ 0

SECTION V: INCOME AND WEALTH

38.	What was your annual income from activities financed by credit/loan?	
	1. Below ETB 1,000.00	☐
	2. Between ETB 1,001.00 – 2,000.00	☐
	3. Between ETB 2,001.00 – 3,000.00	☐
	4. Between ETB 3,001.00 – 4,000.00	☐
	5. Between ETB 4,001.00 – 5,000.00	☐
	6. Above ETB 5, 000.00	☐

39.	Do you have other/new sources of income currently?	
	Yes ☐ 1	No ☐ 0

40.	If your response for question number 39 is Yes, what are these sources and annual income from them?	
	Source	Annual income
	______________________________	______________________________
	______________________________	______________________________
	______________________________	______________________________

41.	What is the estimated value of your assets currently?	
	1. Below ETB 1,000.00	☐
	2. Between ETB 1,001.00 – 3,000.00	☐
	3. Between ETB 3,001.00 – 5,000.00	☐
	4. Between ETB 5,001.00 – 7,000.00	☐
	5. Between ETB 7,001.00 – 10,000.00	☐
	6. Above ETB 10,000.00	☐

SECTION VI: EMPLOYMENT AND PRODUCTION

42.	How many workers are there other than yourself helped with your work currently?	________________ number

43.	If you indicate a number of workers in your business for question number 42, who are they?	
	1. Family members	☐
	2. Apprentice	☐
	3. Hired labor	☐
	4. Other (please describe)___________________	☐

SECTION VII: EXPENDITURES AS CREDIT DEFAULT RISK

44.	Do your family and yourself have access to health service currently?	
	Yes ☐ 1	No ☐ 0

45.	If your response for question number 44 is Yes, who is/was the bearer of medical expense?	
	1. Myself	☐
	2. Served free	☐
	3. Other family members	☐
	4. Relatives	☐
	5. Myself and other family members	☐

46.	If you cover your medical expenditure, what is your average expenditure during the last 12 months/5 years?	________ETB for 12 months ________ETB for 5 years

47.	Is/was your medical expenditure determines your credit repayment?	
	Yes ☐ 1	No ☐ 0

48.	Is/was you or your children going to school for education?	
	Yes ☐ 1	No ☐ 0

49.	If your response for question number 48 is Yes, is there any payment for education?	
	Yes ☐ 1	No ☐ 0

50.	If your response for question number 49 is Yes, is/was your education expenditure determines your credit repayment?	
	Yes ☐ 1	No ☐ 0

51.	What is the average annual consumption expenditure of your household:	
	1. During the last 12 months?	______________________ETB
	2. During the last 5 years?	______________________ ETB

52.	Is/was the average increment of annual consumption hurts your credit repayment rate?	
	Yes ☐ 1	No ☐ 0

SECTION VIII: MARKET SITUATION AND CREDIT BENEFIT

53.	Please list the major products and/or services produced from your business that is financed by the credit/loan from your customer Microfinance Institution?
	1. ____ 2. ____ 3. ____

54.	How was the demand for your product that you produced and/or service rendered?	
	1. High	☐
	2. Average	☐
	3. Low	☐

55.	What was the trend of profits in the level of your business in the past 5 years?	
	1. Increased	☐
	2. Decreased	☐
	3. Stayed the same	☐

56.	If your response for question number 55 is increased, what do you think is the reason behind?	
	1. Sufficient fund	☐
	2. Availability of market	☐
	3. Quality advantage	☐
	4. Favorable price	☐
	5. Other (please describe)____________________	☐

SECTION IX: INFORMATION ON OTHER ISSUES

57.	Did you have a saving account before participating in this credit and/or microfinance institution scheme?	
	Yes ☐ 1	No ☐ 0

58.	If your response for question number 57 is Yes, what is the average amount that you manage to save monthly?	____________________ ETB

59.	Do you keep accounting records for your activities that you take the loan?	
	Yes ☐ 1	No ☐ 0

60.	If your answer for question number 59 is Yes, for what purpose you keep record?	
	1. To evaluate profit and loss	☐
	2. For loan repayment purpose	☐
	3. Other (please describe) ____________________	☐

61.	If your answer for question number 59 is No, explain the reason(s) of not keeping records?	
	1. Lack of knowledge	☐
	2. Transaction too small to keep a record	☐
	3. Other (please describe) ___________________	☐

62.	What is your overall opinion about the credit scheme?
	____ ____

Thank you for your participation in the study!

Appendix II - Survey instrument (Amharic version)

አዲስ አበባ ዩኒቨርስቲ

የድኅረ ምረቃ ትምህርት ቤት

የቢዝነስና ፐብሊክ አድሚኒስትሬሽን ትምህርት ቤት

አካወንቲንግና ፋይናንስ ትምህርት ክፍል

ለኢትዮጵያ አነስተኛ ብድርና ቁጠባ ተቋማት ተጠቃሚዎች የተዘጋጀ የጥናት ማጠይቅ፡፡

የጥናቱ ዓላማ ፤ የዚህ ጥናት ርዕስ “Credit default risk and its determinants of microfinance industry in Ethiopia” ነው፡፡ የጥናቱን ማጠይቅ ያዘጋጀው ሳሙኤል ሰጥአርጌ ሲባል በአሁኑ ጊዜ በአዲስ አበባ ዩኒቨርስቲ ወስጥ የቢዝነስና ፐብሊክ አድሚኒትሬሽን ትምህርት ቤት የአካወንቲግና ፋይናንስ የማስተርስ ድግሪ ተማሪ ነው፡፡

ለተከበሩ የጥናቱ ተሳታፊዎች፤

እርሰዎ በዚህ ጥያቄና ሚልስ ላይ እንዲሳተፉ ተመርጠዋል፡፡ በዚህ ጥያቄና ሚልስ ላይ መሳተፍ ሙሉ በሙሉ በፈቃደኝነት ላይ የተመሰረተ ነው፡፡ የጥያቄና ሚልሱ ወጤት የተሳታፊዎች ማንነት ሳይለይ በአጥኚው እና በአማካሪው አማካኝነት ለጥናቱ ዓላማ ብቻ ይወላል፡፡ስለዚህ ጥናቱ የሚከሄደው ለትምህርት ማሟያ ጽሑፍ ለማፍ ብቻ ይሆናል፡፡ ይህ በእንዲህ እንዳለ የጥናቱን ግኝት ጠቅላላ ጭምቂ ሀሳብ አጥኙ ትምህርቱን ከጨረሰ በኋላ ቢጠይቁ በፈለጉት ጊዜ ሊያገኙ ይችላሉ፡፡

ወርቃማ ጊዜዎን ተጠቅመው የጥናቱ ተሳታፊ በመሆንዎ በቅድሚያ እናመሰግናለን!

ተጨማሪ መግለጫዎች፤

1. ማጠይቁን ሲሞሉ እባክዎ ሥምዎን አይጥቀሱ፡፡
2. በምርጫ ጥያቄዎች ላይ ዕርስዎን ያሳማዎትን አማራጭ በሳጥኑ ☐ ላይ የዚህን ✓ ምልክት በማድረግ ይምረጡ፡፡
3. በክፍት ቦታ (ዳሽ ሙላ) ጥያቄዎች ላይ ገው ክፍት ቦታ ለሚልስዎ ካልበቃዎት ዕባክዎ ተጨማሪ ወረቀት ተጠቅመው ሀሳብዎን ይቋጩ፡፡
4. ለተጨማሪ ሚጃ አጥኚወን ሳሙኤል ሰጥአርጌ በሚከተለው አድራሻ ማጠየቅ ይችላሉ፡፡
   ስልክ +251 912 84 54 25

   ኢ_ሜል: samicheck29@yahoo.com

ማጠይቁ የተሞላበት ቀን ____________________________________ ዓ.ም.

ክፍል አንድ፡ የግል ሁኔታ መግለጫ /ማብራሪያ

1.	በየትኛው ብድርና ቁጠባ ተቋም ነው የሚጠቀሙት?	________________ ብድርና ቁጠባ ተቋም

2.	ዕድሜዎ ስንት ነው?	____________________________ ዓመት

3.	ፆታ?	
	ወንድ □ 1	ሴት □ 0

4.	የጋብቻ ሁኔታ?	
	1. ያላገባ/ች	□
	2. ያገባ/ች	□
	3. የፈታ/ች	□
	4. የሞተበት/ባት	□

5.	የትምህርት ደረጃዎ?	
	1. ያልተማሬ	□
	2. ከ1-8ኛ ክፍል	□
	3. ከ9-12 ክፍል	□
	4. ከ12 ክፍል በላይ (ይግለጹልን)____________________	□

6.	ምን ያህል ሰዎች በዕርሰዎ ዕረዳትነት ከቤተሰበዎ ጋር ወይም ከቤተሰበዎ ውጭ በጥገኝነት ይኖራሉ?	
	1. ዜሮ	□
	2. አንድ	□
	3. ሁለት	□
	4. ሦስት	□

	5. አራትና ከዚያ በላይ (ይግለጹልን)_______________	☐
7.	በወሰዱት የብድር ገንዘብ ምን እየሰሩበት ነው?	
	1. ዋና ስራዎ ____ 2. ሁለተኛ ሥራዎ ____ 3. ሦስተኛ ስራዎ ____ 4. ሌሎች (እባክዎ ይግለጹልን) _________________________________	

ክፍል ሁለት፡ የብድር ገንዘብ አጠቃቀም

8.	ለምን ዓላማ ነው ብድሩን የወሰዱት?	
	1. ለችርቻሮ ንግድ	☐
	2. ለፈጠራ ስራ ወይም አዲስ ምርት ለማምረት	☐
	3. ለሞተር ተሽከርካሪ ጥገና	☐
	4. ለሆቴልና ምግብ ቤት አገልግሎት	☐
	5. ለሌላ ንግድ ሥራ (ይግለጹልን)____________	☐

9.	በብድር ያገኙት ገንዘብ ለሰሩት ላቀዱት ተግባር በቂ ነው?	
	አዎ ☐ 1	አይበቃም ☐ 0

10.	ለጥያቄ ቁጥር 9 መልሰዎ አይበቃም ከሆነ፤ ዕርሰዎ ምን ያህል ነበር የጠየቁት?	____________________ የኢትዮጵያ ብር

11.	በብድር ያገኙትን ጠቅላላ ገንዘብ በብድር ስምምነቱ መሰረት ለታሰበው ዓላማ ዕያዋሉት ነው?	
	አዎ ☐ 1	አይደለም ☐ 0

12.	ለጥያቄ ቁጥር 11 መልስዎ አይደለም ከሆነ፤ ለሌላ ተግባር ያዋሉበት ምክንያት ምንድን ነበር ወይም ምንድን ነው?	
	1. ብድሩ ላስብኩት ተግባር ስለሚበቃ	□
	2. የብድር ስምምነቱ ወል ስለብድሩ ተግባር አይናገረም ነበር	□
	3. የገበያ ችግር ስለነበር	□
	4. ከሌላ ለወሰድኩት ብድር ክፍያ ስላዋልኩት	□
	5. ለሌላ ትርፋማ ተግባር ወይም ንግድ ሥላዋልኩት	□
	6. ሌላ (ይግለጹልን)_______________________________	□

13.	የተሰጠዎትን ብድር ለመክፈል በተሥማማቡት ቀን ባለመክፈለዎ ተከሰው ያወቃል?	
	አዎ □ 1	አላውቅም □ 0

14.	ከበድርና ቁጠባ ተቋሙ የወሰዱት ብድር በማህበር ተደራጅተው ከሆነ፤ ሥለብድሩ አጠቃቀምና ቁጥጥር ተግዳሮት ገጥሞዎት ያውቃል?	
	አዎ □ 1	አያውቅም □ 0

15.	ለጥያቄ ቁጥር 14 መልስዎ አዎ ከሆነ፤ በትክክለኛው አካሔድ ብድሩን የሚጠቀሙ የማህበሩ አባሎች ላይ ምን አይነት እርምጃ ወስደዋል ወይም እንዲወሰድ አድርገዋል?	
	1. ብድሩን ለሰጠን ተቋም ተናግሬያለው	□
	2. ብድሩን ለሌላ ተግባር ያዋለውን ከስሸዋለሁ	□
	3. ከማህበራችን እንዳይሰራ ሚቀብ እንዲጣልበት አድርጌያለሁ	□
	4. ሌላ (ይግለጹልን)________________________________	□

<u>ክፍል ሦስት፡ ብድር አመላለስ</u>

16.	ከዚህ ብድርና ቁጠበ ተቋም ውጭ ሌላ ብድር የሚገኙበት ምንጭ አለዎ?	
	አዎ □ 1	የለኝም □ 0

17.	ለጥያቄ ቁጥር 16 ሜልሰዎ አዎ ከሆነ፤ የእርሰዎ የብድር ምንጭ ምንድን ነው?	
	1. ዕቁብ	□
	2. ዕድር	□
	3. የአራጣ አበዳሪዎች	□
	4. ጓደኞች ወይም ዘመዶች	□
	5. ባንኮች	□
	6. ሌላ (ይግለጹልን)____________________	□

18.	ከላይ በጥያቄ ቁጥር 17 ከጠቀሷቸው የብድር ምንጮች ውስጥ ባለፉት አምስት አመታት ምን ያህል ገንዘብ በብድር መልክ አገኙ?		
	አመት	የብድር ምንጭ	የብድሩ ማጠን
	2002ዓ.ም		
	2001ዓ.ም		
	2000ዓ.ም		
	1999ዓ.ም		
	1998ዓ.ም		

19.	ከጥያቄ ቁጥር 17 የብድር ምንጮች ያገኟቸውን ብድር ከፍለው ጨርሰዋል?	
	አዎ □ 1	አልጨረስኩም □ 0

20.	ያበደረዎ ብድርና ቁጠባ ተቋም ለብድር አመላለስ ያስቀመጠው የጊዜ ሰሌዳ ለዕርሰዎ ምቹ ነው?	
	አዎ □ 1	ምቹ አይደለም □ 0

21.	ለጥያቄ ቁጥር 20 ሜልሰዎ ምቹ አይደለም ከሆነ፤ ለዕርሰዎ የሚመችዎትን የብድር አመላለስ የጊዜ ሰሌዳ ቢጠቅሱልን?
	____ ____ ____

22.	እርስዎ የወሰዱት ብድር በምን ደረጃ ላይ ይገኛል?	
	1. ብድሬን ሙሉ በሙሉ ከፍያለሁ	☐
	2. በተቀማጠው የጊዜ ሰሌዳ ዕየከፈልኩ ነው	☐
	3. ወዝፍ ብድሬን ወይም ዕዳዬን ዕየከፈልኩ ነው	☐

23.	ለጥያቄ ቁጥር 22 መልሰዎ ወዝፍ ዕዳየን ዕየከፈልኩ ነው ከሆነ፤ ብድረዎ በውዝፍ የቆየበት ምክንያት ምንድን ነበር?	
	1. ተሰማርቼበት የነበረው ሥራ ትርፋማ ባለመሆኑ	☐
	2. ከፈሉን ብድር ለግል ወይም ለቤት ወጭ ሥላዋልኩት	☐
	3. በሠዓቱ ተከታትየ ሥላልከፈልኩ	☐
	4. ከብድር በወሰድኩት ገንዘብ የገዛሁት ንብረት ስለከሰረ ወይም ዋጋው ሥለቀነሰ	☐
	5. ሌላ (ይግለጹልን) ________________________	☐

24.	ብድርዎን በሰዓቱ ባለመክፈለዎ የሚያወጡት ተጨማሪ ወጪ ከፍተኛ መሆኑን ያወቃሉ?	
	አዎ ☐ 1	አላውቅም ☐ 0

25.	ለጥያቄ ቁጥር 24 መልሰዎ አዎ ከሆነ፤ ከሚከተሉት ውስጥ ብድርዎን በሰዓቱ እንዲከፍሉ ከሚያስገድደዎት ምክንያት ዋናው ምንድን ነው?	
	1. የግል ሃብት ንብረቴን ስለሚነካ	☐
	2. ዋስ የሆነኝ ባልደረባ ብድሬን እንድከፍል ሥለሚያስገድደኝ	☐
	3. በኀብረተሰቡ ዘንድ ያለኝን ተቀባይነት ላለማጣት	☐
	4. ወደፊት የምጠይቃቸውን ብድሮች እንዳልከለከል በመፍራት	☐
	5. ሌላ (ይግለጹልን)__________________________________	☐

26.	ብድርዎን በሰዓቱ ዕንዲመልሱ የገፋፋወት ምክንያት ምንድን ነው? (በጊዜው ብድራቸውን ለሚመልሱ)	
	1. ብድር ወስጀ መመለስ እንደምችል ለማሳየት	☐
	2. የተሰማራሁበት ተግባር አፈፃፀሙ ጥሩ ስለሆነ	☐
	3. ሌላ ተጨማሪ ብድር ለማግኘት እንዲረዳኝ	☐

27.	እዳዎን በጊዜው እንዳይከፍሉ ያደረገዎ አሰገዳጅ ምክንያት ምንድን ነው? (ብድራቸውን በሰዓቱ ለማይከፍሉ)	
	1. የተሰማሩሀበት ተግባር ደካማ የሆነ አፈፃፀም በመኖሩ	☐
	2. የወስጥ ወይም የግሌ ችግር በመኖሩ	☐
	3. ገንዘቡን ትርፋማ ወዳልሆነ ተግባር በማጠቀሜ	☐
	4. ብድሩን የወሰድኩበት ጊዜ ትክክለኛ አለመሆኑ	☐
	5. ሰርቆት	☐
	6. የተሰማሩሀበት ስራ በማዘጋቱ	☐
	7. ሌላ (ይግለጽልን)______________________________	☐

28.	ዕዳዎትን በመክፈያው ጊዜ ሳይከፍሉ ቆይተው አሁን የቀረበዎትን ዕዳ ዕንዲከፍሉ ያስገደደዎ ምክንያት ምንድን ነው?	
	1. ወዘፍ እዳየን ከፍዬ ለሜጨስ ስለፈለግኩ	☐
	2. በአስቸኳይ ያለኝ ንብረት እንዳያዝ ሥለተፈለገ	☐
	3. ያስቀመጥኩት ገንዘብ በዋስትና ዕንዳላጣው በመፍራት	☐
	4. መክፈል ዕንዳለብኝ ሥለተነገረኝ	☐
	5. የተሰማሩሀበት ዘርፍ ስለተሻሻለ	☐

29.	ዕዳዎትን በመክፈለዎ ምክንያት በተሰማሩበት የሥራ ዘርፍ ምን አይነት ለወጥ ታዬ ?	
	1. ምንም አይነት ለወጥ የለም	☐
	2. ያለኝ ሸቀጥ ቀንሷል ወይም የንግድ ዕንቅስቃሴየ ቀንሷል	☐
	3. ከማዙርፈው ትርፍ በቁጠብ ሜልክ ማስቀመጥ አልቻልኩም	☐
	4. የደንበኞች ግንኙነትና የንግድ ዘርፌ ቀንሷል	☐

ክፍል አራት፡ ቁጥጥር፤ የምክር ጉብኝት እና ስልጠና

30.	ብድርን በአግባቡ አጠቃቀምን በተማለከተ በብድርና ቁጠብ ተቋሙ ሰራተኞች ቁጥጥር ተደርጎብዎት ያወቃል?	
	አዎ ☐ 1	አያውቅም ☐ 0

31.	ሶላ ወሰዳት ብድር የመጣስ አፈፃፀም ላይ ቁጥጥር እና የምክር አገልግሎት ተደርጎለዎት ያውቃል?	
	አዎ □ 1	አያውቅም □ 0

32.	ለጥያቄ ቁጥር 31 ሜልሰዎ አዎ ከሆነ፤ ምን ያህል ጊዜ ቁጥጥር ተደርጎበዎ ያውቃል?	____________________ ጊዜ

33.	በመስሪያ ቤቱ ሰራተኞች የተደረገለዎ ቁጥጥር ብድርዎን ዕንዲከፍሉ ከሜድረጉ አኳያ በቂ ነበር?	
	አዎ □ 1	አይበቃም □ 0

34.	በሜሰሪያ ቤቱ ሰራተኞች የሜደረገው ቁጥጥር ለብድር አመላለሱ ጠቃሚ ነው ብለው ያስባሉ?	
	አዎ □ 1	አላስብም □ 0

35.	ብደሩን ከተቋሙ ከመሠሰደዎ በፊት ገንዘቡን በአግባቡ እንዲጠቀሟት ያገኙት ስልጠና አለ?	
	አዎ □ 1	የለም □ 0

36.	ለጥያቄ ቁጥር 35 ሜልሰዎ አዎ ከሆነ፤ ምን አይነት ስልጠና ነበር ያገኙት ወይም የተሰጠዎት?	
	1. ሶላ ንግድ /ወይም ስራ	□
	2. ስለ ገበያ	□
	3. ስለ ቁጠባ	□
	4. ስለ ሒሳብ ማዝገብ አያያዝ	□
	5. ሌላ (ይግለጹልን)________________________	□

37.	የተሰጠዎት ስልጠና ገበዎትን ለማሳደግ እና ዕዳዎትን ለመክፈል እረድቶኛል ብለው ያስባሉ?	
	አዎ □ 1	አልረዳኝም □ 0

ክፍል አምስት ገቢ እና ሐብት

38.	በብድር ካገኙት ገንዘብ በሰሩት ስራ ምን ያህል ዓመታዊ ገቢ ያገኛሉ?	
	1. ከ1000 ብር በታች	□
	2. ከ1001 ብር እስከ 2000 ብር	□
	3. ከ2001 ብር እስከ 3000 ብር	□
	4. ከ3001 ብር እስከ 4000 ብር	□
	5. ከ4001 ብር እስከ 5000 ብር	□
	6. ከ5000 ብር በላይ ___________________	□

39.	በአሁኑ ሰዓት ሌላ የገቢ ምንጭ አለዎት?	
	አዎ □1	የለኝም □0

40.	ለጥያቄ ቁጥር 39 መልሰዎ አዎ ከሆነ፤ የገቢ ምንጮችዎንና ዓመታዊ ገቢዎን ቢጠቅሱልን?	
	የገቢ ምንጭ	ዓመታዊ ገቢ
	_______________________________	_______________________________
	_______________________________	_______________________________
	_______________________________	_______________________________

41.	በአሁኑ ወቅት ያለዎት ንብረት ምን ያህል ይገመታል?	
	1. ከ1,000 ብር በታች	□
	2. ከ1,001 ብር እስከ 3,000 ብር	□
	3. ከ3,001 ብር እስከ 5,000 ብር	□
	4. ከ5,001 ብር እስከ 7,000 ብር	□
	5. ከ7,001 እስከ 10,000 ብር	□
	6. ከ10,000 ብር በላይ _______________	□

ክፍል ስድስት፡ ሥራ እና ቅጥር

42.	በአሁኑ ሰዓት በዕርሰዎ የስራ ዘርፍ ከእርሰዎ ውጭ ምን ያህል ሰራተኞች ይገኛሉ?	________________________ ያህል (በቁጥር)

43.	ለጥያቄ ቁጥር 42 መልስዎን በቁጥር ከገለጹ፤ እነማን ናቸው?	
	1. የቤተሰብ አባሎች	□
	2. የእጅ ሞያ ተማሪ	□
	3. ቅጥር ሰራተኞች	□
	4. ሌላ (ይግለጹልን)________________________	□

ክፍል ሰባት፡ ወጭዎች ለብድር አለመመለስ ያላቸው አደጋ ወይም ተጽእኖ

44.	እርሰዎና ቤተሰብዎ የጤና አገልግሎት ያገኛሉ?	
	አዎ □ 1	አላገኝም □ 0

45.	ለጥያቄ ቁጥር 44 መልስዎ አዎ ከሆነ፤ የህክምና ወጭዎን ማን ነበር የሚሸፍንልዎ?	
	1. ራሴ	□
	2. ነፃ ህክምና	□
	3. የሌላ ቤተሰብ አባል	□
	4. ዘመድ	□
	5. እኔ እና ሌላ የቤተሰብ አባል	□
	6. ሌላ (ይግለጹልን)________________________	□

46.	የህክምና ወጭዎችን ዕርሰዎ የሚሸፍኑት ከሆነ፤ በአማካኝ ላለፉት 12 ወራት እና 5 ዓመታት ምን ያህል ነበር?	________________________ የኢትዮጵያ ብር ለ 12 ወራት ________________________ የኢትዮጵያ ብር ለ 5 አመታት

47.	የህክምና ወጭዎ በብድር አመላለሰዎ ላይ ተጽእኖ ያሳድሮበዎታል?	
	አዎ □ 1	አያሳድርብኝም □ 0

48.	ዕርሰዎ ወይም ልጆችዎ ወደ ትምህርት ቤት ይሄዱ ነበር ወይም ይሄዳሉ?	
	አዎ □ 1	አልሄድም/ዱም □ 0

49.	ለጥያቄ ቁጥር 48 መልሰዎ አዎ ከሆነ፤ የትምህርት ወጭ አለብዎ?	
	አዎ □ 1	የለብኝም □ 0

50.	ለጥያቄ ቁጥር 49 መልሰዎ አዎ ከሆነ፤ የትምህርት ወጭዎ በብድር አመላለሰዎት ላይ ተጽእኖ ያሳድርበዎታል?	
	አዎ □ 1	አያሳድርብኝም □ 0

51.	የቤተሰበዎ አማካኝ አመታዊ የፍጆታ ወጭዎች ስንት ነው?
	1. ባለፉት 12 ወራት ______________________ የኢትዮጵያ ብር 2. በለፉት 5 ዓመታት ______________________ የኢትዮጵያ ብር

52.	የዕርሰዎ ቤተሰብ አማካኝ አመታዊ የፍጆታ ወጭዎች በመጨመራቸው በብድር አመላለሰዎ ላይ ተጽእኖ ያሳድርበዎታል?	
	አዎ □ 1	አያሳድርብኝም □ 0

ክፍል ስምንት፡ የገበያ ሁኔታ እና የብድር ጥቅም

53.	በብድር ከብድርና ቁጠባ ተቋም ባገኙት ገንዘብ የሰሯቸውን የስራ ወጤቶች ወይም የሚሰጡትን አገልግሎት በዘረዝሩልን?
	1. ______________________________ 2. ______________________________ 3. ______________________________

54.	የሥራ ወጤታዎ ወይም የሚሰጡት አገልግሎ ምን ያህል ተፈላጊ ነው/ናቸው?	
	1. ከፍተኛ	□
	2. መካከለኛ	□
	3. ዝቅተኛ	□

55.	ባለፉት አምስት (5) አመታት ከተሠማሩበት የሥራ ዘርፍ ያገኙት የትርፍ ዕርከን ወይም ደረጃ እንዴት ነበር?	
	1. ጨምሯል	□
	2. ቀንሷል	□
	3. ተመሳሳይ ነው	□

56.	ለጥያቄ ቁጥር 55 ምላሰዎ ጨምሯል ከሆነ፤ ለሚጨምሩ ምክንያት ምንድን ነው ብለው ያስባሉ?	
	1. በቂ የገንዘብ ምንጭ መኖሩ	□
	2. ገበያ ስለተገኘ	□
	3. ጥራት ያለው ምርትን ማጠቀሜ	□
	4. ተስማሚ ዋጋ በማቅረቤ	□
	5. ሌላ (ይግለጹልን)________________________	□

ክፍል ዘጠኝ፡ ሌሎች መረጃዎች

57.	በብድርና ቁጠበ ተቋም ከመታቀፉዎ በፊት በገንዘብ ተቋማት የቁጠበ ገንዘብ ነበረዎ?	
	አዎ □ 1	የለኝም □ 0

58.	ለጥያቄ ቁጥር 57 ሜለሰዎ አዎ ከሆነ፤ በአማካኝ በወር ምን ያህል ገንዘብ በቁጠበ ሜልክ ያስቀምጡ ነበር?	________________________ የኢትዮጵያ ብር

59.	በብድር በወሰዱት ገንዘብ ለሚሰሩት ስራ የሂሳብ ማዝገብ አያያዝ ይጠቀሙ ነበር?	
	አዎ □ 1	አልጠቀምም □ 0

60.	ለጥያቄ ቁጥር 59 ሜለሰዎ አዎ ከሆነ፤ ለምን ዓላማ ነበር የሂብ ማዝገብ አያያዝን የሚጠቀሙት?	
	1. ትርፍና ኪሰራዬን ለማምገም ወይም ለማዛዘን	□
	2. ለብድር አመላለስ እንዲረዳኝ	□
	3. ሌላ (ቢገልጹልን)________________________	□

61.	ለጥያቄ ቁጥር 59 ምላሰዎ አልጠቀምም ከሆነ፤ የሂብ ማዝገብ አያያዙን በምን ምክንያት ነው የሚጠቀሙት?	
	1. በቂ ዕውቀት ስለሌለኝ	□
	2. የሚደረጋቸው የንግድ ወሎች ወይ ሰራዎች ለመሚዝገብ ትንሽ ስለሆኑ ወይም አመች ስላልሆኑ	□
	3. ሌላ (ቢገልጽልን)________________________	□

62.	ሥለ ብድርና ቁጠባ ያለዎን አጠቃላይ ሀሳብ ምን እንደሆነ አብራርተው ቢገልጹልን?

በጥናቱ በማተፊዎ በድጋሚ እናማስግናለን!

Appendix III

Addis Ababa University
School of Graduate Studies
School of Business and Public Administration
M.Sc. Program in Accounting and Finance

Questionnaires that have filled by officers in microfinance institutions

Objective: This questionnaire is designed by Samuel Setargie to conduct a research on **“Credit Default Risk and its Determinants of Microfinance Industry in Ethiopia”** as the partial fulfillment of the requirements for the completion of Masters Degree in Accounting and Finance, Addis Ababa University under the supervision of Dr. P. Laxmikantham. Besides, the study invites you to participate in this research in the form of questionnaire. On this matter, you are selected as one who could provide relevant information. The information supplied by you will be treated as confidential and its access is only restricted to my supervisor and myself for the justification of the study. However, completion of the questionnaire is voluntary i.e. if you decide that you no longer want to be involved in this study, you are free to withdraw at any time without adverse consequence. Meanwhile, if you would like to obtain a summary of the results of this research, I am happy to send you copies of the overall findings up on completion of it.

The fact that the microfinance industry is characterized by risk flexed state. This study will focus on unearthing the tie existing between credit default risk and determinants of Microfinance Institution (MFIs). This adds vivacity to this inquiry as it has raised one of the pivotal issues existing on the microfinance industry. Thus, your expressed ideas in this regard are so crucial to the progression of Ethiopian microfinance industry in general and knowledge in exploring decision making in particular.

Thank you in advance for your kind cooperation and sparing of your precious time!

Additional Information:

VII. You need not disclose your name

VIII. Put a tick mark √ in the boxes ☐ or in the blank spaces ___________________ that correspond your answer.

IX. Circle the letter of the choice that is most appealing to you, e.g. ©

X. Write your answer in the space provided is so required. *Your answer*.

XI. For open-ended questions you may use the blank space provided _______________ or you may use additional paper, if the space is not adequate. *Your answer*

XII. For further information, you perhaps contact the investigator Samuel Setargie by the following address: Tell: +251 912 845425 and E-mail: samicheck29@yahoo.com

Date ________________________________ G.C/E.C.

SECTION ONE: GENERAL INFORMATION OF MFIs

1.	Name of this microfinance institution?	_________________________________ MFI

2.	What is your position in this Microfinance Institution (MFI)?					
	Your position		Years of service in the current capacity			
			Up to 1	1 - 3	3 - 5	More than 5
	1. General manager	☐	☐	☐	☐	☐
	2. Vice manager	☐	☐	☐	☐	☐
	3. Operations manager	☐	☐	☐	☐	☐
	4. Administration & Finance head	☐	☐	☐	☐	☐
	5. Planning and promotions	☐	☐	☐	☐	☐
	6. Sub-branch office coordinator	☐	☐	☐	☐	☐
	7. Credit division head	☐	☐	☐	☐	☐
	8. Loan analyst and assessor	☐	☐	☐	☐	☐
	9. Credit/saving expert	☐	☐	☐	☐	☐
	10. Other (please describe) _______	☐	☐	☐	☐	☐

3.	About operation of the microfinance institution
	➧ Head office (location) ________________________________ ➧ Main branch(s) (in number) ____________________________ ➧ Sub branch (s) (in number) _____________________________ ➧ Districts (in number) _________________________________

4.	How many clients are there in this microfinance institution?		
	Number of clientele in this Microfinance Institution		
	Male	Female	Total

SECTION TWO: CREDIT/LOAN DEFAULT

5.	How many of the clientele are paid their credit/loan in full based on the loan/credit repayment agreement?		
	Number of active borrowers in this Microfinance Institution		
	Male	Female	Total

6.	How many of the clients are defaulters of loan/credit?		
	Number of Defaulters in this Microfinance Institution		
	Male	Female	Total

7.	What is your belief regarding the causes of credit/loan default?	
	1. Failure to prosecute defaulters	☐
	2. Lack of proper follow-up due to inadequate funding for operations and maintenance resources	☐
	3. When loan amount given are lower than the amounts requested	☐

8.	Have you ever observed that the length of time it takes for a potential borrower to apply and get the credit/loan has an effect on the repayment of the credit/loan?	
	Yes ☐ 1	No ☐ 0

9.	If your answer is Yes for question number 8, How long does it take to complete the loan/credit application process?	
	1. Around One month	☐
	2. Up to two months	☐
	3. Up to three months	☐
	4. More than four months	☐
	5. Other (please describe) ____________________	☐

10.	What is your attitude towards the information system which has been used by this microfinance institution?	
	1. To record on clients are inadequate	☐
	2. Facilities do not contain appropriate software to process borrower information promptly	☐
	3. Data related to borrowers are manually kept in files	☐
	4. Cases of loan-over and under-repayment exist	☐
	5. Properly designed information system is there	☐
	6. Other (please describe) ____________________	☐

11.	Which factors could be considered as causes of loan/credit default?	
	1. Diversion of funds to unprofitable uses	☐
	2. Lack of discipline in the use of working capital	☐
	3. Poor management skills	☐
	4. Poor business performance	☐
	5. Other (please describe) __________________	☐

12.	What measure do you have to deal with various categories of loan/credit default?	
	1. Sales of defaulter's security to recover the outstanding balance	☐
	2. Causes of long-lasting default are forwarded to the state counsel for prosecution	☐
	3. Counsel the defaulters on the importance of repaying the loan on time	☐

13	If you believe on the measure of question number 12, what is the trend of default currently?	
	Decreasing ☐ 1	Increasing ☐ 0

14.	How is the performance of this microfinance institution regarding credit/loan disbursed and/or recovered from the year 2006 – 2010? (You can use separate page(s) if you have any more illustration.)		
	Fiscal Year	Amount disbursed by this MFI	Amount recovered by this MFI
	1. 2006		
	2. 2007		
	3. 2008		
	4. 2009		
	5. 2010		

15.	What screening mechanism do you use to identify creditworthy borrowers from non-creditworthy borrowers before credit/loan disbursement?
	____

Thank you for your participation in the study!

Appendix IV

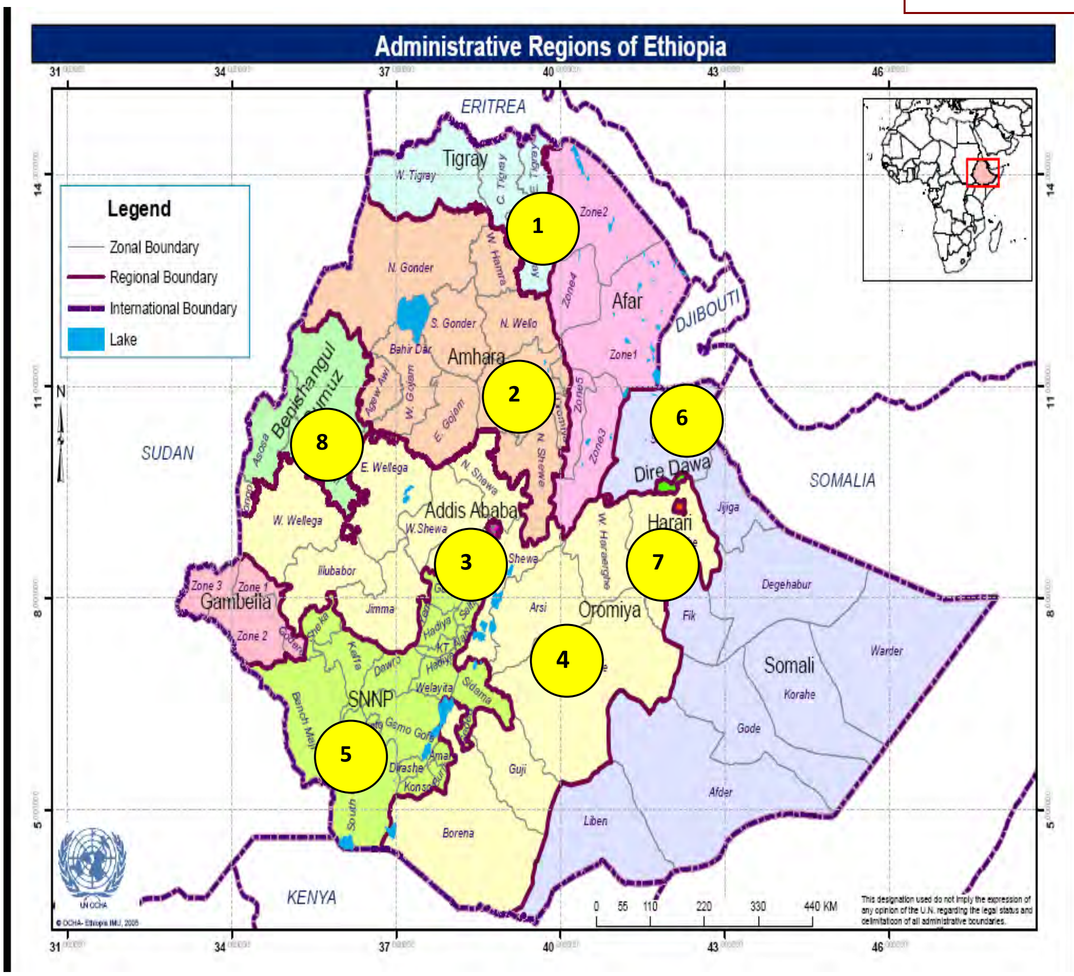
List Microfinance Industry in Ethiopia

No	Name of Microfinance Institutions	Head Office	Categories allotted by NBE
1	Amhara Credit and Saving Institutions S.C.	Bahir Dar	Large
2	Dedebit Credit and saving Institutions S.C.	Mekelle	Large
3	Oromiya Credit and Saving Institution S.C.	Addis Ababa	Large
4	Omo Credit and Saving Institution S.C.	Hawassa	Large
5	Addis Credit and Saving Institution S.C.	Addis Ababa	Large
6	Specialized Financial and promotional Institution	Addis Ababa	Medium
7	Gasha Microfinance Institution S.C.	Addis Ababa	Medium
8	Wisdom Microfinance Institution S.C.	Addis Ababa	Medium
9	Sidama Microfinance Institution S.C.	Hawassa	Medium
10	Buussa Gonofaa Microfinance Institution S.C.	Addis Ababa	Medium
11	PEACE Microfinance Institution S.C.	Addis Ababa	Medium
12	Meklit Microfinance Institution S.C.	Addis Ababa	Medium
13	Eshet Microfinance Institutions S.C.	Addis Ababa	Medium
14	Wassassa Microfinance Institution S.C.	Addis Ababa	Medium
15	Benishangul Gumuz Microfinance Institution S.C.	Assosa	Medium
16	Dire Dawa Microfinance Institution S.C.	Dire Dawa	Medium
17	Agar Microfinance Institution S.C.	Addis Ababa	Medium
18	Harbu Microfinance Institution S.C.	Addis Ababa	Medium
19	Africa Village Financial Services S.C.	Addis Ababa	Small
20	Shasemene Eddir Yelimat Agar Microfinance S.C.	Shasemene	Small
21	Meket Microfinance Institution S.C.	North Wollo	Small
22	Metemamen Microfinance Institution S.C.	Addis Ababa	Small
23	Ghion Microfinance Institution S.C.	Addis Ababa	Small
24	Letta Microfinance Institution S.C.	Addis Ababa	Small
25	Digaf Microcredit Provider S.C.	Addis Ababa	Small
26	Harar Microfinance Institution S.C.	Harar	Small
27	Lefayda Microfinance Institution S.C.	Addis Ababa	Small
28	Tesfa Microfinance Institution S.C.	Addis Ababa	Small
29	Dynamic Microfinance institution S.C.	Addis Ababa	Small
30	Gambella Microfinance Institution S.C.	Gambella	Small
31	Somalia microfinance Institution S.C. (coming soon)	JiJiga	-------------

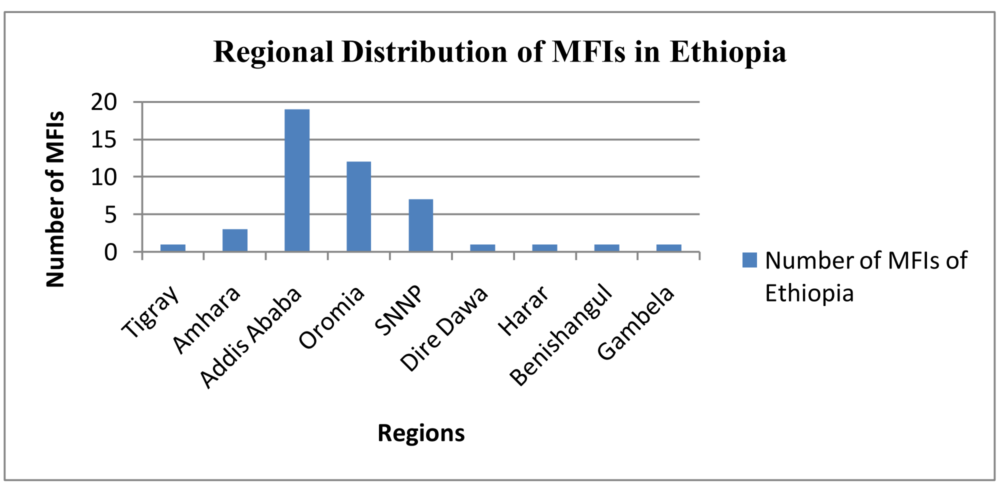
Source: National Bank of Ethiopia and Association of Ethiopian Microfinance Institutions

Appendix VI Destiny Map of Ethiopian Microfinance Institutions

Legend MFIs Destiny



1. DECSI
2. ACSI, Meket, Wisdom, Ghion
3. ADCSI, Aggar, AVFS, Digaf, Gasha, Meklit, SFPI, Wisdom
4. AVFS, Bussa Gonfa, Eshet, Gasha, Harbu, Letta, Wisdom, Wassa, Metemamen, OCSSCO, PEACE, SFPI,letta
5. Letta, Metemamen, Omo, PEACE, Sidamo, Shashimene, Wisdom, Aggar
6. Dire
7. Harari
8. Benshangul



Appendix VII: Selected MFIs under review

Name of MFIs	Gross credit portfolio	Credit balance per borrowers	Voluntary savings	Compulsory savings
ACSI	1,548,902,150	2,180	483,488,506	346,027,277
AdCSI	243,929,992	2,798	25,005,078	37,752,941
Wisdom	82,307,145	1,451	9,284,221	11,087,929
Gasha	15,725,404	1,216	294,505	4,664,584
Metemamen	8,259,836	789	---	2,333,004

Source: Association of Ethiopian Microfinance Institutions (AEMFI)

Name of MFIs	Capital Asset Ratio	Liability Ratio	Debt/Equity ratio	Deposits to credit	Deposits to Assets
ACSI	31%	31%	2.20	31%	25%
AdCSI	70%	10%	0.43	10%	9%
Wisdom	44%	11%	1.26	11%	10%
Gasha	28%	2%	2.87	2%	2%
Metemamen	78%	0%	0.28	0%	0%

Source: Association of Ethiopian Microfinance Institutions (AEMFI)

Name of MFIs	Return on Assets	Return on Equity	Operational self-sufficiency	Financial Self-sufficiency
ACSI	8%	25%	240%	88%
AdCSI	4%	6%	192%	29%
Wisdom	0%	0%	96%	56%
Gasha	2%	8%	112%	49%
Metemamen	0%	0%	102%	39%

Source: Association of Ethiopian Microfinance Institutions (AEMFI)

Name of MFIs	Financial Revenue Ratio	Profit Margin	Normal Yield of Gross profit	Real Yield on Gross Profit
ACSI	13%	58%	16%	-20%
AdCSI	8%	48%	9%	-25%
Wisdom	18%	0%	18%	-19%
Gasha	21%	11%	17%	-19%
Metemamen	15%	2%	18%	-18%

Source: Association of Ethiopian Microfinance Institutions (AEMFI)

Name of MFIs	PAR > 30 Days	PAR > 90 Days	Write-off Ratio	Credit/loan loss Ratio	Risk Coverage	Non-earning liquid Assets
ACSI	2%	1%	0%	0%	42%	7%
AdCSI	3%	2%	1%	1%	23%	14%
Wisdom	3%	2%	0%	0%	60%	8%
Gasha	26%	18%	6%	6%	43%	13%
Metemamen	9%	7%	4%	4%	52%	26%